

### **DEVELOPING A CAREER AND TECHNICAL EDUCATION (CTE) PROGRAM:**

### MARINE BIOLOGY RESEARCH SELF STUDY

AUTHOR: MAURICIO GONZALEZ, M.Sc.

ADVISOR: EDWARD BIEDERMANN, Principal

(With Harbor "Field" Class by Ann Fraioli and Jeremy Lynch)

URBAN ASSEMBLY NEW YORK HARBOR SCHOOL

NEW YORK

2014

### **Table of Content**

Со	nter	nt	page
*	СТ	E Self Evaluation Forms	
		Sections A, B, & C	5
	$\triangleright$	Section D	42
*	Pro	ogram Description, Objectives, Justification, & Sequence	59
*	Te	aching Licenses	63
*	Cu	rriculum Standards Crosswalk	64
	$\triangleright$	Introduction to NY Harbor	66
		Introductory Marine Research	97
	$\triangleright$	Intermediate Marine Research	123
	$\triangleright$	Advanced Marine Research	145
*	W	ork-Based Learning	
	$\triangleright$	Rubric to Evaluate Student Progress at Internship	162
	$\triangleright$	Sample Work Site Learning Plan	163
	$\triangleright$	WSEP: Work Skills Employability Profile	165
	$\triangleright$	Sample Skills Employability Competencies List	176
*	En	dorsement Letters and Agreements	
		Assessment	194
	$\triangleright$	Articulations	200
	$\triangleright$	Internships	222
	$\triangleright$	Curriculum Endorsements	225
*	Fo	rmative Assessments	
		Science Research Project Conference Report	233
		Biweekly Assessment of Student Performance	235
		Marking Period Self Assessment	237
*	An	nexes	
	$\triangleright$	Modifications for Students with Special Needs	238
	>	Summative Assessments	239
	$\triangleright$	WBL and Course Alignment	241
		Self Study Agendas	257
		Annual Consumables Rudget	275

Con	tent	page
*	Annexes (continued)	
	New York Harbor School College Office Welcome Letter to Families	238
	New York Harbor School Student Opportunities	239
	New York Harbor School Course Listings	241
	Sample Student Permanent Record	257
	Sample Student Grade Summary Report	275
	Sample NOCTI Exam Reports	238
	> Sample IEPP	239
	➤ MBRP Industry Partners	241
	➤ MBRP Work-Based Learning Brochure	239
	MBRP Program Brochure	241
	New York Harbor SEALs Brochure	238
	NY State Education Department CTE Approval Application	239
	<ul> <li>CTE Application for Supplemental Funding</li> </ul>	241
	MBRP Final Assessment Specifics	257
	<ul> <li>CTE External Review Documentation</li> </ul>	275
	NYHS CTE External Review Schedule	257
	NY State Education Department CTE Approval Letter of MBRP	275



## **Career and Technical Education Program**

### **Self-Evaluation Form**

Deadline: Monday, December 3rd, 2012

### Revised September 2012

Name of School:	Urban Assembly New York Harbor School
School address:	Battery Maritime Building, 10 South Street, Slip 7, NY, NY 10004
DBN:	02M551
Principal Name:	Edward Biedermann
Principal e-mail:	ebiedermann@nyharborschool.org
Principal's contact number:	212.458.0800
CTE Program Name:	Marine Biology Research Program
Program CIP code:	030205
Proposed program start date: Year program will apply for approval	2013
CTE Contact Name:	Edward Biedermann
CTE Contact Number:	917.409.5000
CTE Contact e-mail address:	ebiedermann@nyharborschool.org

### Please note:

This form is required for non-approved programs and for programs that require re-approval. Failure to report program information may result in a loss of VTEA funding.



### Section A: How to use this form

This self-evaluation form must be completed for schools seeking New York State Program Approval for their CTE program(s). It is designed to assist you in your own self-evaluation for submission to the New York City Department of Education (NYCDOE) CTE team. When this form is submitted, CTE team members will examine its content and decide if the findings are convincing, likely to meet the required standard and therefore warrant an external review visit to assess and confirm your evaluations.

Current Program Status	Use if
Non-approved moving toward approval	<ul> <li>You submitted an LOI but did not submit a SEF during SY 2011-12 OR</li> <li>Your program is in years 2-3 of operation OR</li> <li>Your program is going to have its first graduating class and you did not submit a SEF in SY 2011-12</li> </ul>
Re-approval required	<ul> <li>Your program has <i>lapsed/expired</i> prior to 2012 and you submitted the LOI during SY 2011-12         OR</li> <li>Your program has <i>recently</i> expired in June 2012 and you submitted only the LOI during SY 2011-12</li> </ul>

### This form is in four parts:

Section A Guidance on how to use the form

Section B Self-evaluation of the quality of the CTE program

Section C List of supporting documents

Section D Data Tables and Program Development Plans

THIS SECTION IS A SEPARATE DOCUMENT CONTAINING THE FOLLOWING ITEMS:

- Data Tables 1-7
- Program Development Plan (all programs)
- Re-approval program data (Re-approvals only)

### Sections A and B, C, and D should be emailed to cteprogramapproval@gmail.com

The self-evaluation form is a summative document, intended to record the outcomes of your on-going process of rigorous self-evaluation in Section B. When completing Section B of this form, school evaluators should be guided by the Evaluation Schedule, noting the following:

- When completing this form, respond to the questions provided to ensure that you have fully evaluated the component
- You should begin each section with your judgments of overall quality by placing an X in the box that best fits your judgments. Be sure to refer to the relevant Quality Indicators (QIs) that are set out at the end of each component section in the Evaluation Schedule to guide your judgments

To help ensure that your self-evaluation form narrative is convincing, you should make clear what evidence has been used to make the evaluation and indicate where, upon request external evaluators can review the evidence. It is not necessary to describe the evidence in great detail but it should be accessible for review.

The narratives for each of the five components of the program evaluation schedule should be consistent with and explain the judgments that you insert at the beginning of each section. It should also represent the collective agreement of the self-study team and have been approved by them. Section C of the self-evaluation form provides a list of the factual information required to accompany the application.



### SECTION B: Self-Evaluation of Quality of the CTE program

### School and CTE program Context

Outline the proposed CTE program of Study, explain what students are expected to achieve by the time they finish their studies and how the program meets a demand.

The failure of our urban public schools to produce scientifically literate college bound teenagers reflecting city demographics is well known. Equally disturbing is the lack of representation and participation in STEM (Science, Technology, Engineering and Math) of ethnic groups who are over-represented below the poverty line. Our nations research institutions and private engineering firms increasingly look outside our borders to recruit and hire competent scientists. This program will focus on changing these trends and connect our youth to the skills and knowledge necessary to be competitive in college and enter the STEM fields. The vehicle for this transformation will be student-formulated, problem-based projects that aim to restore NYC's marine resources.

The Marine Biology Research Program is a 3 yr. program that will jump start high school students in core marine science topics employing hands-on, problem-based learning strategies. Students will begin by building and studying simple aquatic ecosystems; formulate experiments with these systems; learn the biology, chemistry, physics, and ecology behind them; and apply basic instrumentation techniques to monitor them. Once these sets of "in house" skills have been mastered, the program will then shift students' attention to the natural ecosystems around Governor's Island through the formulation of projects around 3 main topics: oyster restoration, habitat characterization, and water/air quality monitoring with a student built and maintained network around the Hudson River Estuary. Students will learn how to formulate projects, submit professional reports, present at national and international research fairs (e.g. Intel Science and Engineering Fair), and, ultimately, use their own data to propose resource management solutions to local government agencies. Upon satisfactory completion of this program students will also be eligible for 12 college credits, Geographic Information System map-making SPACE certification, Natural Resources Systems Management certification, and other professional opportunities that will give them a competitive advantage in college and industry.



# Curriculum and Instruction C1 Program Objectives and Expectations

Judgments: Make your judgments about this component and enter X in the appropriate box that			
best fits this aspect	best fits this aspect of your program		
High Quality (additional to meeting standard)	Program objectives are well established, challenging, and well-matched to student needs.     They are routinely and proactively shared with students, parents, and teachers and linked closely to course plans and their review.		
Meets standard	Program has clear objectives and high expectations that are:		
	aligned with the school's mission,		
	appropriate for its target population, and clearly defined for students, parents, teachers,		
	and school community		
	integrates postsecondary career and education expectations		
Under-developed	Program objectives do not communicate high expectations and do not meet the full range		
	of intended students' needs. Links to the scope and sequence of courses within the		
	program are patchy.		

**Directions:** Please provide documentation for item 1 as indicated in section C List of supporting documents. For item 2 please provide a narrative response.

### **C1 Program Objectives and Expectations**

Supporting Document(s) Required:

- Course Documentation: course descriptions, syllabi, or documents which make reference to the program objectives and expectations.
- 1. What are the programs' objectives and expectations?

  Please provide the supporting documents in place of a narrative for this item as indicated in section C.
- 01. Prepare students for resource management and conservation.
- 02. Give students a rigorous foundation in marine science.
- 03. Expose students to professional settings and careers in marine science.
- 04. Prepare students for college with rigorous research projects and college credit bearing courses.
- 05. Train students to use cutting edge technology (e.g. remote sensing equipment and Geographic Information Systems).
- 06. Characterize Governors Island's marine environment and support the Oyster Restoration Project.
  - 2. How are the objectives and expectations shared with students, parents, teachers and the school community?

The curriculum objectives are well established, challenging, and well matched to students needs. They are routinely shared with all stakeholders.

The curriculum crosswalk, aims, objectives, and plans are available on the program's web page <a href="http://harborseals.org/sample-page/">http://harborseals.org/sample-page/</a> and on School Press releases

(i.e.https://app.e2ma.net/app/view:CampaignPublic/id:30249.11007808736/rid:a8955582c96304c4ed68d 01315f789d8)

All Course materials and lessons will be posted on the Harbor SEALs web site (<u>www.harborseals.org</u>). Most of the 10<sup>th</sup> grade Introductory Marine Research Class is already live.



### **C2 Program Sequence of Courses**

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits			
this aspect of your p	this aspect of your program		
High Quality (additional to meeting standard)	<ul> <li>Program has demonstrated itself to be comprehensive and very well-planned and sequenced so that courses build systematically on students' knowledge and skills over, at least, two years.</li> </ul>		
$\boxtimes$	<ul> <li>Students' varied activities and challenging work, including: access to an extensive range of work-based learning activities that meet the full range of students' needs and aspirations and promotes a deeper understanding of the career field and industry.</li> </ul>		
Meets standard	<ul> <li>Program has a coherent sequence of courses that is scaffolded, non-duplicative, and requires at least 2 years for completion.</li> </ul>		
	<ul> <li>Learning experiences for students encompass a variety of activities and resources—including work-based learning—to link both academic knowledge and technical skills.</li> <li>A Career and Financial Management course, taught as an integrated or stand-alone course of study, is part of the sequence.</li> </ul>		
Under-developed	<ul> <li>Program courses exist in outline but are not fully scaffolded and/or adequately sequenced to enable students to build on their knowledge and skills systematically.</li> </ul>		
	<ul> <li>There are some sequences of work where student experiences are limited by a lack of resources and/or work-based learning which inhibit their acquisition of knowledge and skills.</li> </ul>		
	A Career and Financial Management Course is not established		

**Directions:** Please complete table 1 in section D for items 1 and 2. This indicator requires documentation in place of a narrative response.

C2 Program Sequence of Courses
Supporting Document(s) Required:
Program Course Sequence (Table1) in section D of the self-evaluation form.
<ol> <li>Provide a coherent sequence of courses that is scaffolded, non-duplicative, and requires at least 2 years for completion.</li> </ol>
Introductory Marine Research I (five single periods/week)
Introductory Marine Research II (five single periods/week)
Intermediate Marine Research I (two triple periods/week; total = 6 periods/week)
Intermediate Marine Research II (two triple periods/week; total = 6 periods/week)
Advanced Marine Research I (two triple periods & one double period/week; total = 8 periods/week)
Advanced Marine Research II (two triple periods & one double period/week; total = 8 periods/week)
All courses run on a semester calendar.
Summer Marine Research Courses are only eligible for college credit at the moment. We are working to figure out how to also attach high school credit to them.
<ul> <li>Is the Career and Financial Management course taught as an embedded or stand alone course of study?</li> <li>Stand alone  Integrated</li> </ul>



### C3 Curriculum Alignment with State/Industry Standards

<b>Judgments:</b> Make your judgments about this component and enter <b>X</b> in the appropriate box that best fits this aspect of your program		
High Quality (additional to meeting standard) ⊠	The curriculum and course sequence is fully aligned with both NYS Learning and other core academic standards and with industry-based competency standards on completion, with clear mapping of links between course components and these standards.	
Meets standard	Curriculum and course sequence is aligned with NYS Learning Standards (English     And Mathematics Colored Course Development and Co	
	<ul> <li>Language Arts, Mathematics, Science, Social Studies, and Career Development and Occupational Studies) and other core academic standards.</li> <li>Curriculum is also aligned with industry-based competency standards that students are expected to know at the conclusion of their studies.</li> </ul>	
Under-developed	<ul> <li>Some elements of the curriculum and course sequence are aligned with academic or NYS Learning Standards but there are significant gaps.</li> </ul>	
	The curriculum meets some industry-based competency standards expected by the end of the course of study but there are significant elements that are not yet covered or not fully integrated into the program.	

**Directions**: Please provide the curriculum crosswalks for each course as indicated in section C List of Supporting Documents for item 1. Item 2 requires a narrative response.

C3 Curriculum Alignment with State/Industry Standards		
Supporting Document(s) Required:		
Curriculum-Standards Crosswalks (for all courses including CFM)		
<ol> <li>Are all course curricula aligned to the New York State, Common Core, and Career Development Occupational Standards to ensure that students acquire the skills and competencies required? Please provide the supporting documents in place of a narrative for this item as indicated in section C.</li> </ol>		
Common Core Standard  New York State Standards  CDOS standards  Yes No  Yes No		
We are currently working to align each individual lesson to the Common Core and New York State Standards. Most individual lessons align with all three Standard categories.		
2. How was the curriculum selected or developed for this program? How is the curriculum aligned to industry-based competency standards?		
All aspects of the curriculum have been cross referenced with the three Standard categories and have been endorsed by various universities and associated industries. It was designed based on industry experience but with the basics in mind. Industry content was extracted from a series of text books and field books in the area of study. Drafts of the curriculum have been submitted to Professional Advisory Committee members from partnering universities and Industry for commenting. Letters of endorsement are attached. All three Standard categories have been made explicit in the curriculum map.		
Additional information of the standards of the Geographic Information Systems Certification which will serve as the practical assessment component of the program can be found at:		





http://www.digitalquest.com/certification.html?panel=1

Additional information of the standards for the Natural Resources Systems Certification which will serve as the theoretical assessment component of the program can be found in <a href="http://www.nocti.org/PDFs/JobReady/1228">http://www.nocti.org/PDFs/JobReady/1228</a> Natural Resource Systems.pdf

### **C4 Qualified Faculty**

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits			
this aspect of your p	this aspect of your program		
High Quality (additional to meeting standard)	Course teachers and leaders are state certified, highly effective, and have extensive industry experience and connections relevant to the program taught.		
Meets standard	<ul> <li>Program courses are taught by state-certified teachers with expertise of specific CTE program based upon industry experience and certification.</li> </ul>		
Under-developed	• Some or none of the staff are state-certified to teach CTE programs and may not have specific expertise, pertinent industry experience, or certification required for the program.		

**Directions:** Please complete table 2 in section D for items 1-3. Item 4 requires a parrative response

item 4 requires a narrative response.			
C4 Qualified Faculty			
Supporting Document(s) Required:			
<ul> <li>List of CTE certified program teachers and work-based learning coordinator (Table 2) in section C of the self-evaluation form</li> </ul>			
<ul> <li>Copies of each teachers NYS CTE certification including the work-based learning coordinator's extension certificate (WBL coordinator must also hold a valid CTE certification)</li> </ul>			
Screen shots printed from the NYS Office of Teaching Initiatives or the TEACH website are acceptable. <a href="http://eservices.nysed.gov/teach/certhelp/CpPersonSearchExternal.jsp?trgAction=INQUIRY">http://eservices.nysed.gov/teach/certhelp/CpPersonSearchExternal.jsp?trgAction=INQUIRY</a>			
<ol> <li>Are all of the teacher(s) state-certified with expertise in the specific industry area aligned to the CTE program?</li></ol>			
<ol> <li>Are there currently teachers on staff with temporary certifications? Yes No If so please list the teacher, their area of certification and the status of their temporary certification. (Please provide copies of their applications for extensions and or professional certification as indicated in section C.)</li> </ol>			
<ol> <li>Does the work-based learning coordinator hold the extension certificate from NYSED?</li> <li>✓ Yes ☐ No</li> </ol>			
I'm currently taking the required course work (Organization of Diversified Cooperative Work Study Programs) with Sue Gubing and Buffalo State University to apply for the WBL Coordinator extension this year.			
4. If your program collaborates with external programs to support work-based learning provide a brief description of the structure currently in place.			
There are various programs and institutions that have a MOU with either the program directly or with			



the school in the Natural Resources Management field. Those with a direct link to the program send the program coordinator registration information or the coordinator reaches out directly with them to set up WBL internships and experiences for the students. Those with a more general link to the school provide registration information through the College Office where there is a specialist who reaches out to me to offer these opportunities. Students that qualify and show interest are given an application to register that requires a series of documents e.g. working papers, copy of SS, Internship Plan, etc. Students are then put through an interview process by either the program coordinator or the offering institution. Approval signatures are then obtained and schedules are determined. Once at the site, students are required to complete a series of tasks as outlined in the Plan and must keep a weekly journal. Students are encouraged to use their experience to gather data for a long term research project that will allow them to apply for college credit. Students that choose this path will present their research in the school's science symposium.

### C5 Preparing Students for Program's Technical Assessment

<b>Judgments</b> : Make your judgments about this component and enter <b>X</b> in the appropriate box that best fits this aspect of your program		
High Quality (additional to meeting standard)	The curriculum is highly effective in enabling students to master needed skills and knowledge for the respective program of study's industry technical assessment, as shown by a record of success.	
Meets standard	Content and scope of curriculum prepares students to master the program's technical assessment and pursue a variety of postsecondary options within the given industry.	
Under-developed	A significant proportion of students do not take program's technical assessment or do not pass the exam.	

**Directions:** Please provide narrative responses to items 1-6 below.

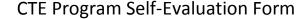
### C5 Preparing Students for Program's Technical Assessment

1. Is the coursework progressive and sequential?

Yes, the course work is not only these but very demanding so as to realistically prepare students for a career in STEM.

2. How does the coursework help students master the technical assessments and/or earn industry credentials?

The coursework covers most of the topics in the technical assessment either through direct teacher led instruction or through student led experiential learning opportunities interspersed throughout the sequence of study. Though the program meets the needs for the theoretical assessment, it currently does not have the necessary materials to meet the practical assessment in Geographic Information Systems, SPACE. Due to the costly nature of these materials, more time and/or resources are required to obtain these materials. We have included this in our Development Plan. It must be noted that not all students will take the SPACE exam. Only students who have not developed their Independent Research project will take the SPACE GIS assessment. We propose using the completed Independent Research Project, participation in at least 3 STEM fairs, and obtaining college credit as the main vehicle for completing the practical portion of the assessment requirement. The reasoning is that in order to complete the previous, the level of work must be practical college/industry level since it is being conducted with the aid of a research scientist at a research institution or equivalent. This gives students 2 points of entry into success in my program: those who can master the college level independent research component and those that





are more apt for a teacher led, procedural type approach such as that provided by GIS. To illustrate this better, this year, the seniors who fell behind in their independent research project during their junior year have been very successful with the GIS sequence while those that kept up with the independent research component have won 1<sup>st</sup> place in regional competitions and plan on competing in the New York Science and Engineering Fair and Intel this round for scholarship money and recognition. This is a strong example of multiple entry points for the various levels of student achievement in the MBRP.

3. How are students being prepared for the technical assessment?

The program is scaffolded with theoretical classes and hands-on experiential projects that are long term. Throughout the program the students are building upon prior knowledge and applying these skills to a real-life project. This affords them the experiences and knowledge necessary in Natural Resources Management. In addition, students are given study guides and formative assessments/projects throughout the year.

- 01) Research Report Students will receive step-by-step guidance to complete a research project and communicate the various stages of this work orally and written throughout the three years of the program's duration,
- 02) Journal style article Students will learn technical reading and writing skills and the American Psychological Association style throughout the 3 years in the program to format a journal article of their research,
- 03) Research portfolio Students will be required to keep a portfolio of their research progress and exemplary work including drafts and literature summaries which will be evaluated 3 times during the academic year,
- 04) Project defense Students will be required to present their research work at various stages of development in order to gain the confidence required to present their project results in front of a professional audience,
- 05) NOCTI exam Students will be required to complete theory workshops, field work, and lab work that will convey the information required for the NOCTI exam on resource management,
- 06) GIS SPACE certification Students will be required to complete theory workshops, field work, and lab work that will convey the information required for the SPACE GIS STEM certification.
- 4. How are students selected to take the technical assessment? Are all students scheduled to take the technical assessment?

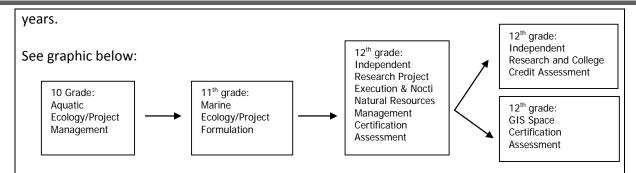
For the moment, all students have been required to take the theoretical NOCTI technical assessment and 100% have passed in two separate years. We will provide a score report during the External Review Visit.

As explained in item 2 above, we haven't provided students with the SPACE GIS practical assessment. We plan on having the capacity to start teaching the full curriculum to seniors by December 2014.

Also, as proposed above in item 2, we would like to add as the Independent Research Component that is college credit bearing as our main practical assessment. In this manner, students who do not qualify for this rigorous challenge can opt for the more teacher led SPACE GIS certification pathway in their senior year.

To be clear, both pathways build upon prior knowledge obtained in the previous two scaffolded





5. When will students take the assessment?

Students take the theoretical NOCTI Natural Resources Systems and the practical SPACE GIS assessments towards the end of their senior year.

As proposed, students will obtain college credit during their 11<sup>th</sup> grade summer and school year and 12<sup>th</sup> grade summer and school year. However, in addition to obtaining college credit, they must compete in 3 regional science fairs and write a professional research paper & poster board in order to qualify for this route of the practical assessment.

6. How many students will take the assessment this year?

All 12<sup>th</sup> grade students will take NOCTI Natural Resources Systems assessment (i.e. 15).

No student will take the SPACE GIS assessment this year.

9 students in the 11<sup>th</sup> grade are on track to receive college credit this year.

3 students were successful at obtaining 2 college credits each last year.

More students would have qualified for college credit last year but there was a delay in getting the appropriate paper work in to SUNY Albany.

### **C6 Program Access for All Students**

Judgments: Make your judgments about this component and enter X in the appropriate box that		
best fits this aspect of your program		
High Quality (additional to meeting standard)	Students from different social and ethnic backgrounds or with specific needs/disabilities are supported very effectively. The school places a high priority on equality of access to its program and can point to striking examples of vulnerable students being supported well and consequently making good progress.	
Meets standard	Program is designed to guarantee access for students regardless of gender, race,	
	<ul> <li>ethnicity, and/or disabilities.</li> <li>Modifications are made to accommodate students who require alternative learning, testing, equipment, facilities, and other articulated needs.</li> </ul>	
Under-developed	Significant groups of students are unable to access the full program because of a lack	
	<ul> <li>of programmatic adaptations or resources.</li> <li>Curriculum materials and testing arrangements are not modified sufficiently to take account of the full range of student knowledge and skills, resulting in a significant gap of under-performing students or students not given the opportunity to participate.</li> </ul>	



Directions: Please complete table 3 in section D for item 1 and provide a narrative response.

### **C6 Program Access for All Students**

Supporting Document(s) Required:

- Program Enrollment Data (Table3) in section C of the self-evaluation form.
- 1. What accommodations are made for students with IEPs? (please share any documents, sample lesson plans or share anecdotal information)

Students with IEPs and all other students have the opportunity to advance in this course because achievement is individually tailored. All students are encouraged to meet with the instructor once every two weeks. During these meetings, progress is tracked, tasks are set, advice is given, and questions are answered. The results of these meetings are recorded on a Science Research Project Conference Report (formerly called a GOAL planner) by the student and on a spread sheet by the instructor. The Report is kept in the student's portfolio and all previous reports must be available at all meetings to keep track of the student's progress. An evaluation is also given to the student after every individualized meeting with clear expectations that need to be met.

Alternative formative assessments have been incorporated into the program such as portfolio reviews, research journal reviews, multiple drafts of research papers, multiple drafts of slide show presentations, extended time to submit required research components, one-on-one teacher/student meetings for project advancement, office hours available by appointment, group work, hands-on activities, encouragement to look for advisor and mentors in students' given area of research interest, etc. Content reviews are incorporated into the curriculum via scaffolding to help prepare students for summative assessments.

The only reason why this is not "High Quality" is that the process has to be streamlined and applied more effectively. This will happen with time as the program coordinator spends less time building the program's formal components and more time with the students.



### **Work-Based Learning**

W1 Established Work-Based Learning Sequence

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits		
this aspect of your program		
High Quality (additional to meeting standard)	<ul> <li>There is a formal and structured work-based learning scope and sequence that all students from the program follow via a progression of rich and varied practical experiences including career exploratory activities, job readiness training, mentoring and industry-based competitions. Activities expose students to all aspects of an industry and meet the range of students' needs and aspirations.</li> <li>Activities lead up to internships through well-established partnership with one or more hosts who provide industry-appropriate assignments</li> </ul>	
Meets standard	<ul> <li>There is a work-based learning scope and sequence that provides grade-appropriate career exploratory and job readiness activities throughout the program sequence. Activities range in skill building and application, from industry site visits and guest lectures, to job-shadowing and career-related competitions, that lead up to internship opportunities.</li> <li>Internships are done in partnership with a host that places students in a work setting (where appropriate) to gain authentic workplace experiences through an internship.</li> </ul>	
Under-developed	<ul> <li>Formal work-based learning partnerships are only in development or offer very limited opportunities for students to gain relevant practical experience through internship, exploratory activities or other external workplace experience.</li> <li>Activities or internship do not necessarily align to the program area of study.</li> </ul>	

**Directions:** Please complete table 4 in section D for item 1 and check the WBL programs and/or experiences provided for students in item2.

W1 Es	tablished Work-Based Learning Sequence			
Supporting Document(s) Required:				
•	Work-Based Learning Sequence (Table 4) in section C	oft	he self-evaluation form.	
1.	Is there a WBL scope and sequence in place? $igtimes$	Yes	□ No	
2.	Which of the following WBL activities are current	tly ir	n place? Check all that apply.	
	New York State Registered Programs		Other Work-based Learning Experiences	
	Cooperative CTE Work Experience Program (CO-OP)	X	Worksite tours	
	Career Exploration Internship Program (CEIP)	Х	Job shadowing	
	General Education Work Experience Program (GEWEP)	Х	Youth apprenticeships	
	Work Experience and Career Exploration X On-site projects			
	Program (WECEP)		Supervised licensed clinical experience (Health Occupations)	
		X	Community service/learning	
		X	School-year/summer internships	
			Other (please explain)	



### W2 Student Access to WBL

Judgments: Make	your judgments about this component and enter <b>X</b> in the appropriate box that
best fits this aspect	of your program
High Quality (additional to meeting standard)	<ul> <li>Student participation in WBL activities is very high. The varied range of opportunities and good information provided to students enables them to be involved in making choices and placements to be tailored to their needs. Consequently, students gain the most from their experiences, regardless of academic ability, race, gender, ethnicity or disability.</li> </ul>
Meets standard	<ul> <li>Program ensures that all students in program are aware of and given an opportunity to participate in work-based learning.</li> <li>Work-based learning program is designed to guarantee access for students regardless of gender, race, ethnicity, and/or disabilities.</li> <li>Modifications are made to ensure access to work-based learning</li> </ul>
Under-developed	While there are some WBL opportunities, there are too few to meet the needs of all students. Those with specific needs/disabilities have limited access to WBL.

**Directions**: Please complete table 3 in section D if you have not already included the number of students who are participating in work-based learning for item 1. Provide a narrative response for item 2.

### W2 Student Access to WBL

Supporting Document(s) Required:

- Program Enrollment Data (Table3) in section C of the self-evaluation form.
- 1. How are students informed about work- based learning opportunities offered in this program?

The program coordinator offers the WBL opportunities throughout the school year as they are made available. Opportunities will be posted in the Harbor SEALs website on a special WBL page that will be password protected to avoid conflict with non-Harbor school students. Only Harbor school students will be given the password. Opportunities may also be posted in the lab bulletin board.

Proof of internship placements in the form of applications and Work Site Plans are stored in student portfolios and will be made available during the Site Visit.

2. How are work-based learning activities adapted to enable students with disabilities or specific learning needs to participate?

The program has a work based learning scope and sequence that begins with discreet exposure of students to professional settings and experiences such as conferences, expert lectures in post secondary institutions, visits by industry professional lecturers to the school, and the development of program/industry relate technical skills throughout the school year. In the advanced levels of the program, students will be required to submit a professional level research project completed in collaboration with a scientist or expert mentor. Students will then be encouraged to pursue an internship with the mentor or other related program site to gain authentic workplace experience.



### W3 Assessing Student Progress in WBL

Judgments: Make your judgments about this component and enter X in the appropriate box that best			
	fits this aspect of your program		
High Quality (additional to meeting standard)	• Students understand the knowledge and skills they are expected to gain from their WBL experience, including internships, through a detailed training plan and use of the appropriate skills & competency profile which addresses various settings and types of activities. For internships, there is a clear link between the training plan and the students' performance evaluation with the employer. Students are fully engaged participants in systems for evaluating and recording their learning and progress with the school and their employer, where applicable.		
Meets standard ⊠	<ul> <li>Student learning and progress through work-based learning component are assessed and documented through an agreed-upon system of evaluation process developed by the school. There is a student evaluation process specific to internships developed by the school and the employer.</li> <li>The student has a training plan and skills &amp; competency profile (e.g., Work Skills Employability Profile document) to follow and monitor over the course of the work-based learning sequence and/or internship.</li> </ul>		
Under-developed	<ul> <li>Assessment arrangements are informal and few systems are in place to ensure consistency between WBL activities and internship placements. Students have limited guidance specific to the WBL setting and about the knowledge and skills to be developed through WBL.</li> </ul>		

**Directions:** Please provide the Evaluation Rubric and Training Plan as indicated in section C list of supporting documents and provide narrative responses to items 1-4.

### W3 Assessing Student Progress in WBL

Supporting Document(s) Required:

- Evaluation Rubric
- Student Training Plan
- 1. How is student learning assessed in work-based learning?

For professional visits or industry tours, students are required to fill out an evaluation form outlining what they learned, questions they asked, answers they received to those questions, and a general journal section that is completed in brainstorm fashion.

For WBL internships, students keep a detailed <u>Guide</u> in their portfolios that includes the following sections:

- □ Internship Contract
- □ Internship Standards of Conduct
- □ Internship Site Orientation Checklist
- □ Work Site Learning Plan
- □ Worksite Journals:
- □ Intern Assessment Form
- Student Internship Evaluation
- □ Student Self Evaluation

Students and internship sites fill out their respective sections. Students are then expected to prepare a slide show and professional presentation of their experiences to share with the cohort the following school year. The target audience for the presentations are fellow students in September and Professional Advisory Committee members in December.





Specifically, in the section named "Work Site Learning Plan," tasks are defined that are site specific, the skills necessary to perform them are defined, the schedule is defined, processes are defined, safety precautions are defined, etc. Also, the "Worksite Log" section provides the student with a series of guiding questions that they can use to answer what they learned and other comments.

- 2. How is the student training plan used to assess student progress? There are 2 "Intern Assessment Forms that are filled out in the middle of the experience and then a follow up towards the end. This form is filled out by the site supervisor. Based on the information obtained students the work will be modified as needed.
  - 3. How is the Work Skills Employability Profile used to monitor student progress over the course of the work-based learning sequence and/or internship, and program course sequence?

Each student has a "Work Skills Employability Competencies List" that they get signed as they complete industry skills throughout the program sequence. Students are required to meet one-on-one with the program coordinator at least once a month to update the Profile. At this point, progress is assessed and goals with time requirements are defined. This is kept in a special form that students maintain in their portfolios that they must bring with them to the meeting. Old goals are assessed and new ones defined. A grade is given for this "Student/Advisor" meeting. If the skill can be assessed during the meeting then it is performed. If not, then the student sets up a time when that skill can be assessed during a field experience.

4. How is it maintained throughout the years at the school? Where and by whom?

The "Work Skills Employability Profile" is kept by the student in their portfolio. The portfolios are kept in the class room in a specially designated shelf.



### W4 Connection Between WBL and Class Instruction

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits		
this aspect of your program		
High Quality (additional to meeting standard)	<ul> <li>WBL scope and sequence is well established, of high quality and builds systematically on the school-based curriculum so that both dovetail with academic and industry skill standards. Consequently, students typically make good progress in their overall learning and specific skills acquisition.</li> </ul>	
Meets standard	<ul> <li>Work-based learning complements school-based learning and the program curriculum.</li> <li>Skills and job competencies practiced or expected to be acquired through work-based learning are aligned with academic and industry standards.</li> </ul>	
Under-developed	<ul> <li>There are some work based learning activities in place but the knowledge and skills gained from the program curriculum are not sufficiently integrated with those of WBL to enable one to reinforce the other.</li> <li>Skills and competencies associated with WBL have not been aligned with academic and industry standards.</li> </ul>	

Directions: Please provide the work skills employability profile as indicated in section C list of supporting documents and provide a narrative response to item 1.

### W4 Connection Between WBL and Class Instruction

Supporting Document(s) Required:

- Work-skills employability profile
- 1. How does the work-based learning sequence complement or build on the school-based curriculum to align both academic and industry skills?

Principally, WBL will give the student the experience of work in a professional setting that the schoolbased curriculum cannot deliver. Among the skills obtained is how to gather data alongside an industry specialist. The school-based curriculum teaches students how to gather data in more prearranged formats and the student is guided along each step of the way. In the WBL experience the student is expected to be able to trouble shoot and take ownership of the work. For example, in the class, students learn how to calibrate their instruments. The instructor guides them each step of the way and teaches the theory behind calibration. In the WBL experience, the student is expected to perform these skills without having to be told whenever instrumentation is required and to understand how the data is affected by it.



### W5 WBL Internship Orientation for Students & Employers

<b>Judgments</b> : Make your judgments about this component and enter <b>X</b> in the appropriate box that best fits this aspect of your program		
High Quality  (additional to meeting standard)	<ul> <li>Clear and accessible processes (see "Meets standard" items for full scope) for guiding students, parents/guardians, and employers in preparation for WBL.</li> <li>These processes are have a history of being well-established, comprehensive and understood by both students and employers. Some practices are exemplary and consequently, the school can point to examples of highly successful WBL experiences which may involve students with special needs.</li> </ul>	
Meets standard	Process in place to prepare students and employers for WBL experience, including job-readiness training, student organizations, provisions of learning guidelines & procedures for students and employers, as well as process for assessing the work-based learning experience (including individualized Work Skills Employability Profiles, training plans, career plans, etc.).	
Under-developed	Dialogue between the school, students and employers to prepare and guide them for WBL is not structured or systematic enough to ensure that each placement is guided by learning guidelines and procedures for both employers and students.  Consequently, students are not prepared enough to gain the most from their experience and cannot be assessed around clearly identified criteria	

**Directions**: Please provide a list of host employers in table 5 in section D and provide narrative responses for items 1 and 2.

### W5 WBL Internship Orientation for Students & Employers

Supporting Document(s) Required:

- List of work-based learning internships and host employers available to students (Table5) in section D of the self-evaluation form.
- 1. Describe the process including activities and materials used to prepare students for internship placements.

The school-based curriculum prepares the student for internships by:

- Teaching basic computer skills,
- Data gathering in the lab and field,
- Using professional instrumentation for experiments,
- Teaching the project formulation and management process,
- Drilling students with professional presentation practice,
- Requiring students to read peer reviewed journal articles,
- Requiring students to prepare a literature review and writing a scientific report,
- Giving student the opportunity t develop leadership skills and team building efforts,
- Teaching students to keep detailed logs of work, lists of materials, and protocols,
- 2. Describe the process for host employers for internship placements.

Host employers have application materials that can include relevant essay writing, teacher recommendations, and formal paper work copies (i.e. Working Papers). They also have an interview process where they evaluate a student's "Work Skills Employability Profile" and portfolio.



### W6 WBL Evaluation by School & Industry Partner

<b>Judgments:</b> Make your judgments about this component and enter <b>X</b> in the appropriate box that best fits this aspect of your program		
High Quality (additional to meeting standard)	<ul> <li>Processes and procedures for evaluating the quality of the WBL program are systematic, routine to the school, and draw on both employers' and students' views. There is an emerging track record of effective steps taken to improve aspects of provision or adapt to changing industry needs in partnership with employers.</li> </ul>	
Meets standard	<ul> <li>School and participating employers have processes to evaluate and develop and review the WBL and internship activities each year based on employer and student experiences as well as emerging program and industry needs.</li> </ul>	
Under-developed	<ul> <li>Arrangements for reviewing and improving the quality of WBL are informal and may not cover all the activities or internship placements. Consequently, there is limited secure and reliable information available to guide improvements to quality or to adapt to changing industry needs.</li> </ul>	

**Directions**: Please provide a narrative response for item 1.

### W6 WBL Evaluation by School & Industry Partner

- 1. How are WBL activities and internships evaluated by the following groups:
  - a) the school

Students are expected to prepare a slide show and professional presentation of their experiences to share with the cohort the following school year. The target audience for the presentations are fellow students & CTE staff in September, and Professional Advisory Committee members in December. Evaluation forms filled out by students will be reviewed during the Self-study meetings, by the individual program coordinators, and during Professional Advisory Committee meetings.

b) students

Students have an evaluation form that they fill out towards the end of the experience.

c) industry partners

Once a year, during our Professional Advisory Committee meetings, our Industry Partners and post-secondary partners will evaluate the internship activities through the student filled evaluation forms and the student presentations performed by seniors.

These evaluation forms are part of the packet the student/industry partners receive.



# Assessment and Accountability A1 Industry-Recognized Technical Assessment

http://www.digitalquest.com/certification.html?panel=1

regional science fairs.

http://www.albany.edu/uhs/

Judgments: Make your judgments about this component and enter X in the appropriate box that			
best fits this aspect	best fits this aspect of your program		
High Quality (additional to meeting standard) ⊠	<ul> <li>Technical assessments and end of sequence examinations are comprehensive and of high quality. Students understand the assessment criteria and marks awarded to enable them to better respond with what is required. A variety of assessments are used that fit the purpose of assessing the full range of knowledge and competencies for the industry, including knowledge-based and performance-based.</li> </ul>		
Meets standard	<ul> <li>The technical assessment is comprised of written examination(s), student project(s) and student demonstration/performance(s), all of which have clear criteria and scoring rubrics.</li> <li>Program's end-of-sequence exam is sanctioned by industry partners and aligned with industry-defined skills/competency standards.</li> <li>Where applicable, upon successful completion of industry-approved technical assessment, students will acquire portable licensing, certification, or credentials supported by state/national associations and/or by business/industry.</li> </ul>		
Under-developed	<ul> <li>Technical assessments seem too broad in range and type and lack criteria that collectively cover the range of knowledge and skills or scoring rubrics to ensure consistency.</li> <li>Assessments may not align, or only partly align, with industry standards and are not sanctioned by industry partners.</li> <li>Students do not gain portable licensing, or industry-recognized certification or credentials.</li> </ul>		

**Directions:** Please provide the Letter of support as indicated in section C list of supporting documents and provide narrative responses to items 1-4.

# A1 Industry-Recognized Technical Assessment Supporting Document(s) Required: • Letter of support from business/industry partner 1. Which industry-approved technical assessment is used to evaluate student learning and skills at the completion of the program sequence? Please provide the name and numerical code if applicable. Technical assessments and end of sequence examinations are comprehensive and of high quality. They've been produced by nationally and industry accredited organizations. Students have access to study guides to help them respond with what is required. Evidence: Theoretical Assessment - NOCTI Natural Resources Systems - http://www.nocti.org/PDFs/JobReady/1228 Natural Resource Systems.pdf Practical Assessment 01 - Digital Quest's SPACE GIS -

Practical Assessment 02 – SUNY Albany College Credit (Independent research project approved by a scientist mentor and Scientific Review Committee, college level research paper written, and compete in 3





2. Does the technical assessment include written, demonstration and project components? Provide samples.

Theoretical Culminating Assessment - NOCTI Natural Resources Systems -

http://www.nocti.org/PDFs/JobReady/1228 Natural Resource Systems.pdf

This assessment includes only written multiple choice components.

Practical Culminating Assessment 01 - Digital Quest's SPACE GIS -

http://www.digitalquest.com/certification.html?panel=1

This assessment includes written and final project components. Digital Quest does not allow for a sample of its assessment to be posted. Please contact them directly for a sample.

Practical Culminating Assessment 02 – SUNY Albany College Credit (Independent research project approved by a scientist mentor and Scientific Review Committee, college level research paper written, and compete in 3 regional science fairs.

http://www.albany.edu/uhs/

Course Syllabus

http://collegenow.cuny.edu/sciencefair/rules-and-guidelines/

This assessment includes demonstration, written, and project component. The demonstration component is evaluated by the scientist mentor or program instructor during field or lab data acquisition. The written and project component in the form of a research portfolio, research journal, research plan, research paper, and poster board are evaluated by the course instructor, a scientific review committee during the Professional Advisory Committee meeting, and when competing in the New York City Science and Engineering Fair.

3. Which form of assessment is used as the final or culminating project? (portfolio, project, etc.)

The technical assessment, SPACE assessment project, and final research paper/portfolio/or lab notebook are used as the culminating assessments. See above point for more detail.

- 4. Do students earn an industry license or certification or eligibility for advanced training or apprenticeship in the field upon successful completion of the technical assessment(s)? If so, please list certification title(s) below.
- A) SPACE Certification by Enterprise for Innovative Geospatial Solutions (EIGS)
- B) NOCTI Certification for Natural Resources Systems
- C) 12 College Credits through SUNY Albany
- D) Certification for competing in a Science Research Fair.



### A2 Mechanisms to Monitor Student Achievement

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits			
this aspect of your pr	this aspect of your program		
High Quality (additional to meeting standard)	There are highly effective procedures for assessing students' performance toward program objectives and technical standards that are monitored by program leaders for their consistency. A range of assessment methods are used, each guided by clear criteria and scoring rubrics that students are clearly made aware of.		
Meets standard	<ul> <li>There are established assessment procedures (formal testing, portfolio, Work Skills Employability Profile etc.) to monitor and evaluate students' attainment of program objectives, academic and technical standards.</li> <li>There are clear criteria and scoring rubrics used to assess student learning.</li> </ul>		
Under-developed	<ul> <li>Assessment is not guided by clear procedures or monitored for quality. Students are assessed using informal methods that may not be clearly linked to course objectives, assessment criteria, or technical standards. Scoring methods for assessing student learning do not routinely use clear scoring schemes linked to criteria.</li> </ul>		

Directions: Please provide a narrative response for item 1.

### A2 Mechanisms to Monitor Student Achievement

1. Which assessment procedures are in place (formal testing, portfolio, work skills employability profile, etc.) to monitor and evaluate the students' attainment of program objectives, academic and technical standards?

The following formative assessments exist to determine student progress during development. Click on each hyperlink for more information:

- A) Research Journal
- B) Work Skills Employability Profile
- C) Portfolio
- D) Biweekly Science Research Project Conference Report
- E) Biweekly assessment of student performance
- F) Project management step inventory
- G) Project management chronograms



### A3 Mechanisms to Gather and Use CTE Program Data

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits			
this aspect of your p	this aspect of your program		
High Quality (additional to meeting standard) ⊠	<ul> <li>A comprehensive database of student assessments enables course leaders to monitor student performance over time, make timely interventions and provide additional support where necessary. Teachers have good access to such data, use it effectively to guide instruction, and review the effectiveness of course components. Consequently, student achievement is reasonably consistent across different groups and abilities.</li> </ul>		
Meets standard	<ul> <li>There is an established process for the school to gather and maintain data on CTE student performances and cohort achievements.</li> <li>Such data is analyzed and used to drive instruction, evaluate student needs, and design support to meet such needs.</li> </ul>		
Under-developed	<ul> <li>While records of student assessments are retained, these may not be reviewed and coordinated regularly in a systematic process to sufficiently give a full picture of student performance or to analyze where strengths and weaknesses lie to guide instruction, identify student needs, or review its impact of the program objectives.</li> </ul>		

**Directions**: Please provide narrative responses for items 1 and 2.

### A3 Mechanisms to Gather and Use CTE Program Data

1. How does the school gather and maintain data on CTE student performance and cohort achievements?

Our two-step process for gathering and using CTE assessment data helps to ensure that student performance can be monitored over time, that teachers have access to data and can use it effectively to guide instruction, and that student achievement is reasonably consistent across all groups of students:

- Data collection and needs analysis: Following the administration of interim and end-of-year
  or end-of-program assessments, individual teachers grade their students' assessments
  according to the industry-recognized rubric. Student performance data is submitted to the
  CTE Department Team for departmental review:
  - ✓ CTE student achievement by class
  - ✓ CTE student achievement by cohort
  - ✓ CTE student achievement by subgroup

The CTE Department Team analyzes student performance trends and pinpoints areas in need of intervention (e.g., revisiting certain topics, providing targeted support to specific subgroups, organize small group tutoring sessions, etc.).

- Instructional interventions: Over the followings weeks, teachers implement the
  interventions discussed, using formative assessments to provide interim data on their
  students' progress. Through instructional rounds and teacher evaluations, the principal also
  provides individual teachers with additional student support strategies, and opportunities to
  reflect on the effectiveness of their practice.
- 2. How is data analyzed and used to drive instruction, evaluate student needs, and design support to meet the needs of students?

The CTE Department Team guides its analysis of student data by three questions:



- ✓ What were the top 3-5 items/standards that the most students missed within the cohort?
- ✓ What were the top 3-5 items/standards that the most students missed within each class?
- ✓ What were the top 3-5 items/standards that the most students missed within each subgroup?

As the team unpacks achievement trends relevant to different groups of students – both strengths and weaknesses – they also chart out common variables and possible causes of student misunderstandings for each trend. This discussion is followed by a brainstorming session designed to generate intervention approaches that could address each of the areas in need of improvement, such as:

- reteaching select topics
- targeted practice on standard-specific items
- strategic grouping for in-class assignments
- one-on-one tutoring
- small-group tutoring
- note-taking support
- tiered assignments
- revised seating arrangement

After each successive assessment throughout the course, each strategy is catalogued and reviewed by the team for its overall effectiveness in improving student outcomes.

### A4 Mechanisms to Gather School-wide Data

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits			
this aspect of your	this aspect of your program		
High Quality (additional to meeting standard) ⊠	<ul> <li>The school keeps comprehensive yearly data on each student that meets the standard required. In addition, the school seeks other relevant information such as postsecondary plans and attendance rates to help guide its developmental work. Systems enable such data to be analyzed for patterns and trends, including ethnicity, gender and special education needs.</li> </ul>		
Meets standard	<ul> <li>School collects and maintains yearly data on student enrolment, program completers, high school diploma recipients, students receiving special education services, work-based learning participants, students that pass all three components of technical assessment, and postsecondary placements.</li> <li>All CTE courses are coded appropriately in STARS (formerly HSST).</li> </ul>		
Under-developed	<ul> <li>Some yearly data is kept on aspects of the CTE program but there are gaps in important areas. The system may not be structured sufficiently well to enable program leaders to make regular analyzes that can inform decisions about quality and effectiveness of the program.</li> </ul>		

**Directions**: Please provide narrative responses for items 1 and 2.

### A4 Mechanisms to Gather School-wide Data

1. How does the school collect and maintain annual data on student enrolment, attendance, program completers, diploma recipients, students receiving special education services, workbased learning participants, students that pass the technical assessment?

In order to enable program leaders to make informed decisions about the quality and effectiveness of the program, our school collects and maintains comprehensive yearly data using





the following DOE database systems:

- ✓ ATS student enrolment and attendance
- ✓ STARS student achievement; course completion (with appropriate CTE coding); high school diploma recipients; students that pass their technical assessments
- ✓ SESIS special education
- ✓ In-house records work-based learning participants

In addition, our guidance counsellors meet with each student in the first semester of their senior year to discuss and prepare for postsecondary plans, and keep in-house records of the status of each student's postsecondary placements upon graduation.

2. Which systems are in place to analyze data annually?

The CTE Department Team meets regularly for both a midyear and end-of-year review to review longitudinal trends and student achievement data and to ensure program stability and effectiveness from year to year. At each review, the team considers the following questions:

- Enrolment Has enrolment in the program remained consistent from year to year? Has enrolment in the program increased or decreased? Does enrolment remain consistent between subgroups?
- Attendance Does student attendance exceed the school's average year-to-date attendance goal of 91%? Does student attendance remain consistent between subgroups?
- Program Completers Does the program completion rate meet the school's goal of having 100% of the students who graduate also complete a program? If not, do program completion rates remain consistent between subgroups?
- **Diploma Recipients** Does the rate of diploma recipients remain consistent from year to year? Do the rates of diploma recipients remain consistent between subgroups?
- Students Receiving Special Education Services Are the number of students with IEPs
  enrolling, attending, completing programs, and receiving diplomas at the same rate as
  students without IEPs? Does the program provide supports necessary for students with
  IEPs to achieve at levels commensurate with or exceeding the levels at which they achieve
  in their core academic subjects?
- Work-Based Learning Participants Has the number of students participating in workbased learning experiences remained consistent from year to year? Has participation remained consistent between subgroups?
- Students that pass the Technical Assessment Has the percentage of students passing the technical assessment remained consistent from year to year? Has the percentage of students passing remained consistent between subgroups?



### A5 Process for Annual Evaluation of CTE Program

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits			
this aspect of your pr	this aspect of your program		
High Quality (additional to meeting standard) ⊠	<ul> <li>Annual evaluation is systematic and central to the school's ethos of continuous improvement. Information is sought from all stake holders and the school to rigorously evaluate the impact of components of the program on outcomes for groups of students, including ethnicity, gender and special educational need. Consequently, school has demonstrated striking examples of programmatic changes made that have raised the quality of provision.</li> </ul>		
Meets standard	<ul> <li>School has formal process to annually evaluate program outcomes and effectiveness based on various data points (student performance, teacher feedback, advisory council feedback, etc.).</li> </ul>		
Under-developed	<ul> <li>Processes for evaluating the program are limited and may not be structured sufficiently to cover all elements. Reviews do not seem to fully integrate an account of outcomes, such as student achievement in program components, student attendance, completion rates and advisory council feedback, to be rigorous and objective.</li> </ul>		

**Directions:** Please provide narrative responses for items 1 and 2.

### A5 Process for Annual Evaluation of CTE Program

1. How does the school annually evaluate the program outcomes to promote improvement?

Our school evaluates program outcomes and effectiveness on a semi-annual basis through the midyear and end-of-year reviews conducted by the CTE Department Team and submitted to the School Leadership Team. This process allows us to pursue our value of continuous improvement by seeking rigorous and objective feedback on the outcomes for each program. We do this by ensuring that each review collects information and evaluates the impact of components of the program on student outcomes for different groups of students, including:

- student subgroups based on NCLB subgroups
- student subgroups based on gender
- students with Individualized Education Plans

The CTE Department Team uses a variety of data points to evaluate program effectiveness at each review, including student achievement data, teacher surveys, and feedback from the Professional Advisory Committee.

2. How are stakeholders involved in this process?

Members of the CTE Department Team include representatives of:

- CTE program leaders
- Professional Advisory Committee members

Members of the School Leadership Team include representatives of:

- Administration
- Teachers
- Parents
- Students



- Staff
- Community-Based Organizations

Representatives are elected to their positions on the instructional leadership team by their own members, ensuring that each group's voice will be heard. These stakeholders are seen as integral to the school's overall success, and as invaluable contributors to the improvement of our CTE programs, specifically.

### **Partnerships**

P1 Involvement of External Partners

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits				
this aspect of your pr	this aspect of your program			
High Quality (additional to meeting standard) ⊠	High Quality (additional to meeting standard)  • The range of business/industry/labor and postsecondary partners involved in the advisory group reflects the extensive and influential roles that external partners play the implementation of the program. The advisory group's role is well-defined and			
Meets standard	<ul> <li>Program has a business/industry/labor and postsecondary advisory group that participates in the review and maintenance of the program, including content, course sequence, instructional setting, work-based learning scope and sequence, technical assessment, postsecondary planning, and equipment to ensure that there is alignment with industry standards, expectations, and trends. Such industry-based partners validate the curriculum to be appropriate for preparing students with skills and knowledge required for entry into industry and/or postsecondary education</li> </ul>			
Under-developed	<ul> <li>There are a few business/industry/labor partners involved in the review and maintenance of the program but they are not organized into an advisory group, their involvement is limited or may not cover key aspects of the program content, sequence, instructional setting and resources. Consequently, they cannot provide a secure validation of the quality of provision in preparing students for entry into industry and/or postsecondary education.</li> </ul>			

**Directions:** Please complete table 6 in section D, provide the articulation agreement as indicated in section C list of supporting documents and provide narrative responses for items 1-3.

P1 Involvement of External Partners			
Supporting Document(s) Required:			
Composition of Self-study team (Table 6)			
Postsecondary articulation agreement(s)			
Identify partners that have reviewed your CTE program.			
Columbia University – Lamont Doherty Earth Observatory*			
Yellow Springs Instruments Inc.*			
Roger Williams University*			





Huc	lson	River	Foun	datio	n*

Manhattan College\*

Sea Savers Inc.\*

Stevens Institute of Technology

**ESRI Inc** 

**Digital Quest Inc** 

2. How do your partners provide support in the review and maintenance of your CTE program? Partners are considered Professional Advisory Committee members and meet as a group once a year to evaluate the various components of the program. In addition, these same members will meet with the program director independently throughout the year or communicate via e-mail to develop specialized portions of the program. This is an ongoing process. Generally, the curriculum outline and other written materials are printed before a meeting and are sent for their review. Partners then annotate the written materials and return it to the director. Examples of these materials are available upon request.

3. Has this curriculum been reviewed and approved by postsecondary/industry partners and determined to be appropriate for the industry/career area?

Yes. See list above with asterisk (\*).

Articulation agreements will be shared during a career and college readiness lesson during the junior semester course Intermediate Marine Research II, will be permanently posted on a lab bulletin board, and <u>shared in the Harbor SEALs web page</u>. These agreements will also be distributed and shared during PTA meetings.



### P2 Industry Review of Program's Technical Assessment

<b>Judgments:</b> Make your judgments about this component and enter <b>X</b> in the appropriate box that best fits this aspect of your program			
High Quality  (additional to meeting standard)	There is a demonstrated strong collaboration and well-developed yearly processes with business/industry and post secondary partners in the process of evaluating the quality and rigor of the program's industry technical assessment. Feedback is comprehensive, reliable and leads to improvements where appropriate. School follows up on verification of the rigor and relevance of its assessment to industry skill standards by encouraging/helping students to obtain appropriate industry work credential/license or advance to postsecondary education/training.		
Meets standard	<ul> <li>Business/industry and postsecondary partners participate in the review of the program's technical assessment on an annual basis and validate it as appropriate instrument to evaluate student's skills and knowledge:</li> <li>based on industry standards and needs, and/or</li> <li>to obtain credentials/license to pursue career in given industry, and/or</li> <li>to advance into postsecondary education, training, etc.</li> </ul>		
Under-developed	<ul> <li>There is some involvement by business/industry and postsecondary partners in the review of the program's technical assessment but it is limited in scope and may not be regular (not even annual). The review may not be sufficiently structured or related to industry standards, postsecondary education, or requirements to obtain credentials/license to work in the given industry to provide a secure validation of its quality.</li> </ul>		

**Directions:** Please provide a narrative response for item 1.

P2 Industry Review of Program's Technical Assessment			
Supporting Document(s) Required:			
Current business/industry-partner articulation agreement			
1. To what extent do business/industry and postsecondary partners participate in the review of the programs' technical assessment?			



### **Program and School Capacity**

PSC1 Systematic Process for Program Evaluation & Improvement

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits			
this aspect of your program			
High Quality (additional to meeting standard) ⊠	<ul> <li>An advisory committee has demonstrated a history of being well-established and influential in shaping the development of the program.</li> <li>The committee can draw on a wealth of relevant expertise to advise on current needs and trends and collaborate in the program.</li> <li>It is well organized, vigorous, and has the capacity to meet the school's needs in updating the curriculum and technical assessment, providing technical assistance and extending partnerships.</li> </ul>		
Meets standard	<ul> <li>Program-specific advisory committee is engaged in ongoing improvement of the program through:</li> <li>review and updating of curriculum and technical assessment,</li> <li>keeping the school apprised of current trends and needs in the given career/technical industry area,</li> <li>identifying key partners for program,</li> <li>providing technical assistance,</li> <li>aligning resources for school use, and engaging in other collaborative efforts.</li> </ul>		
Under-developed	<ul> <li>A program specific advisory committee is being established but may not have the breadth of expertise that reflects the industry/career area. It is beginning to work with the school to review its program, advise on curriculum components and their technical assessment and to provide technical assistance, but its influence is not yet central to the school's monitoring and review.</li> </ul>		

**Directions**: Please provide evidence of the work of the self-study group as indicated in section C and provide a narrative response for item 1.

# PSC1 Systematic Process for Program Evaluation & Improvement Supporting Document(s) Required: • Evidence of the work of the self-study group 1. To what extent does the advisory committee influence the evaluation of the program to promote improvement? The Professional Advisory Committee (PAC) is made up of numerous representatives of industry and post-secondary organizations. They have reviewed and updated the curriculum and given advice on how to improve it on a yearly basis. Their input has been instrumental and all encompassing when it comes to developing the program. They have provided technical assistance and aligned significant resources for the program.



### **PSC2 Postsecondary Guidance and Counseling**

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits		
this aspect of your program		
High Quality (additional to meeting standard) ⊠	The school has demonstrated a high reputation among program students for the quality and range of guidance counseling to support them. Students feel very well informed of the range of options available and have clear postsecondary plans that they readily seek advice and plan pathways for their futures.	
Meets standard	<ul> <li>School provides guidance counseling support for program students.</li> <li>Guidance staff and teachers make effort to provide students and families with information and choices for career and higher education awareness, exploration, and planning as viable postsecondary pathways.</li> </ul>	
Under-developed	<ul> <li>Guidance counseling support for program students and their families is quite limited and may not be sufficient to meet the full range of students' needs and aspirations. There is no clear system in place.</li> <li>Some students may not have immediate access to guidance when making key choices about options for career and higher education.</li> </ul>	

**Directions**: Please provide a narrative response for item 1.

### **PSC2 Postsecondary Guidance and Counseling**

1. How do guidance staff and teachers provide students and families with information and choices for postsecondary pathways?

The New York Harbor School College Office spearheads efforts to support students and families with postsecondary choices. The College Office provides services to all Harbor School students from ninth through twelfth grades and currently has three full-time staff members – a Director of College Placement, College Advisor, and Student Opportunities Coordinator.

All students are provided with college and career guidance each year at Harbor School. The College Office staff provides information about enrichment programs, internships, extra-curricular, and employment opportunities and assists students with completion of applications for programs and opportunities. These programs and opportunities allow students to explore various careers and interests, while also gaining experiences and skills necessary for college and career. The staff supports students with resume writing and interviewing skills and offers a workshop series on topics including financial management, proper electronic communication, and cover letter writing.

The College Office staff also assists students with registration for the College Board website and Naviance, both of which provide students with information and resources about post-secondary options. These resources include career interest inventories and college and scholarship searches, as well as timelines for students in each grade to guide their progression toward college and career.

Additionally, the College Office sponsors visits to a variety of colleges and universities for students in all grades. Students have the opportunity to visit private colleges and universities, as well as schools within the State University of New York (SUNY) and City University of New York (CUNY) systems in an effort to expose them to as many different types of colleges as possible.

Beginning in junior year, students participate in a College Advisory class and receive one-on-one counseling with the Director of College Placement or the College Advisor. During these sessions, students discuss career options and potential majors, develop lists of colleges to investigate/visit, and





discover potential scholarships for which they may qualify. Students also register for and take the SAT or ACT in the spring of the junior year. Over the summer between junior and senior year, students continue to investigate colleges on their list and draft their college essays. College Office staff is available throughout the summer to answer students' and families' questions and assist with arranging visits.

In senior year, students again register for and take the SAT or ACT in the fall, while college advisors work with students to complete applications to CUNY, SUNY, and private schools. Students request letters of recommendation from teachers, while also seeking advice about post-secondary plans and college applications. Additionally, advisors assist students and families with the financial aid process, particularly completion of the Free Application for Federal Student Aid (FAFSA) and the Tuition Assistance Program (TAP) application.

Families receive information in various ways from the College Office, including via email, mailed letters, and personal phone calls. A letter introducing the office staff and the services offered by the staff is sent to at the beginning of each school year. Additional letters and emails are sent throughout the school year informing families about various deadlines, events, and programs. Advisors also contact families by phone to discuss students' post-secondary plans and progress toward graduation. College Office staff, in conjunction with the PTA, sponsor workshops for students and families related to post-secondary options, the college application process, and financial aid.

Finally, there are great resources that have been posted in the program web site that take the students step-by-step through the post secondary path way. Please visit the following resources:

- http://harborseals.org/sample-page/college-preparation/
- http://harborseals.org/contact/
- 2. How many staff members work in the college office? –

The College Office is funded for 3 staff members - the Director, College Advisor, and the Student Opportunities Coordinator.

3. Please describe the college application and financial aid "walk through" process and provide guidance materials shared with students and families.

Beginning in junior year, students receive one-on-one counseling with a college advisor. During these sessions, students discuss career options and potential majors, develop lists of colleges to investigate/visit, and discover potential scholarships for which they may qualify. Students also register for and take the SAT or ACT in April, May, or June. Over the summer between junior and senior year, students continue to investigate colleges on their list and draft their college essays. In senior year, students again register for and take the SAT or ACT in October or November. College advisors work with students to complete applications to CUNY, SUNY, and private schools through the Common Application. Students continue to research and apply for scholarships; they also request letters of recommendation from teachers. In November, students and staff participate in Harbor Up All Night, an overnight program in which students and staff edit and revise college essays and complete applications. By December of senior year, students have completed their college applications and essays, and all application materials are submitted to colleges. Advisors collect financial information from parents throughout the fall semester in order to assist students and parents with the financial aid process. With assistance from college advisors, students request a FAFSA PIN and complete the FAFSA online in January (and update it as needed). College advisors, in conjunction with the PTA, sponsor financial aid workshops for parents and students in January.

4. What postsecondary guidance is provided to students who choose a career pathway other than





marine biology?

All students are provided with college and career guidance in the same way from our office. If students wish to pursue post-secondary education or career opportunities outside of their CTE program, college advisors work with the students to choose college majors related to their desired career and assist in finding appropriate colleges for these students.

5. How are parents informed and involved in the postsecondary counseling provided to students?

Parents receive information in various ways from the College Office, including via email, mailed letters, and personal phone calls. A letter introducing the office staff and the services offered by the staff is sent to the parents and guardians of seniors in early September. Additional letters and emails are sent throughout the school year informing parents and guardians about various deadlines, events, and programs. Advisors contact parents by phone as needed.



### **PSC3 Professional Development for Faculty**

Judgments: Make your judgments about this component and enter X in the appropriate box that best fits			
this aspect of your program			
High Quality (additional to meeting standard) ⊠	<ul> <li>Continuous professional development of staff is central to the school's ambitions for promoting high quality in the program.</li> <li>Through systematic appraisal of teachers' skills and expertise in relation to program needs, the school invests in a coordinated effort to ensure that teachers are up-to-date and highly skilled.</li> <li>Plans for the program's improvement routinely identify and adopt professional development needs to ensure their success.</li> </ul>		
Meets standard	<ul> <li>Professional development is provided for teachers to stay current with changes and emerging trends in the industry and instructional practices through externships, industry specific workshops, conference, performance evaluations, further schooling, and other professional development opportunities.</li> </ul>		
Under-developed	<ul> <li>Professional development of teachers involved in the program is provided but it is not linked closely to program needs and tends to be provided on an ad-hoc basis.</li> <li>Access to professional development may not be consistent across all teachers.</li> </ul>		

**Directions:** Please provide a narrative response for item 1.

### **PSC3 Professional Development for Faculty**

1. Describe the types of professional development provided for teachers to stay current with changes and emerging trends in the industry? (externships, industry specific workshops, conference, performance evaluations, further schooling, other)

Teachers are allowed to participate in industry conferences and professional development. Teachers actively seek new externships opportunities to stay up-to-date in their skills and are encouraged to take industry specific college courses formally or informally through free online programs such as EdX (<a href="https://www.edx.org/">https://www.edx.org/</a>). Industry partners such as NOAA, SEArc, Columbia University, Manhattan College, ESRI, etc. have provided specific workshops to train the instructors in specific to general content.

We have provided a list of PD that we've been a part of in the MBRP below. There are flyers, booklets, and notes taken during these events to serve as evidence.

### PD LOG

#	Date	Conference Topic	Sponsoring Organization
1	11/07/11	University in the High School	SUNY Albany
		professional development	
2	11/19/11	Science Expo with topics in heavy	St. Francis College
		metals.	
3	01/30/12	Data driven instruction	NOAA
4	06/14 –	OSHA training	UFT – National Labor College
	06/19/12		
5	06/28/12	Sea level rise – Surface Elevation	Lamont-Doherty Earth Observatory
		Tables	
6	03/01-	Virtual Lab training	Black Rock Forest
	02/13		

# CTE Program Self-Evaluation Form

7	03/14/13	Using Primer and Permanova for ecological statistics analysis	Dr. Shimrit Perkol-Finkel, SeaArc Inc.
8	04/09/13	MWA 2013 Waterfront Conference	Metropolitan Waterfront Alliance
9	04/16/13	Running a Citizen Science Program – Writing a Quality Assurance Project Plan	EPA
10	11/02/13	Genetic Barcoding	Cold Spring Harbor – Urban Barcode Project
11	02/03/14	CTE Summit: Career Training for the Knowledge Economy	UFT
12	Spring Semester	CTE 550 Organization of Diversified Cooperative Work-Study Programs	Buffalo State University
13	03/23/14	Dignity for all Students Act	UFT
14	04/05/14	Developing Business Partners for WBL	UFT
15	04/16/14	Project Management: Managing Risks and Issues	NYCPMI



# **PSC4 Program Information**

Judgments: Make y	our judgments about this component and enter X in the appropriate box that best fits
this aspect of your	program
High Quality (additional to meeting standard)  ⊠	<ul> <li>Channels of communication are varied, proactive, and effective in reaching all students and their families, regardless of background, home language or ethnicity. Information on CTE program and services is of high quality and there is a good access to additional information.</li> </ul>
Meets standard	<ul> <li>School provides information on CTE program and services to all students and families, including special populations.</li> <li>Information is available in variety of languages and school use different channels of communications to promote the program.</li> </ul>
Under-developed	<ul> <li>Information on CTE program and services is provided to students and families but harder to reach families may not have access to it because of language difficulties or limited communication channels.</li> </ul>

**Directions**: Please provide a narrative response for item 1.

# **PSC4 Program Information**

1. How does the school provide information on the CTE program and services to all students and families, including special populations and regardless of background or home language? Which arrangements have been made to distribute this information?

Provide examples from any of the following sources: promotional materials for students and parent, including the relevant pages from the NYCDOE High School Directory, school report cards, brochures specific to the program, newsletters, press releases, and website materials.

Web based program information -

A web page has been developed to provide information for students and parents. See

http://harborseals.org/sample-page/curriculum/

Other sources:

http://newyorkharborschool.org/our-curriculum/career-tech-education/

More general info:

http://www.newyorkharborschool.org/documents/harbor-current-application.pdf and http://nyharborschool.tumblr.com/

The school newspapers highlight CTE programs and are available upon request.

Other more specific <u>brochures</u> are given out to prospective students and guardians.

Classroom time is given to instructors to visit all new potential 9<sup>th</sup> grade candidates and present the program.



# **PSC5 Adequate Program Equipment and Facilities**

Judgments: Make y	our judgments about this component and enter <b>X</b> in the appropriate box that best fits
this aspect of your	program
High Quality (additional to meeting standard)	Accommodation and facilities are comprehensive, of high quality and well maintained.     Specialist equipment is provided in all key areas of the program to enable all students to develop and master the full range skills and competencies required.
Meets standard	Safe and appropriate facilities and equipment are available to accommodate the teaching and learning demands of program.
Under-developed	While there is adequate accommodation for the program, there may be a lack of specialist facilities and equipment in key components of the program to adequately enable students to develop their skills and competencies in significant areas.

Directions: Please provide a narrative response for item 1.

## **PSC5 Adequate Program Equipment and Facilities**

1. Explain how you determine that the equipment available is safe and appropriate to accommodate the teaching and learning demands of the program?

The program follows OSHA regulations for its facilities and equipment. Extensive field and lab safety training is mandatory for all students. First Aid and safety equipment is provided and clearly placed and labelled. Emergency action plans are elaborated by students as part of their training on a yearly basis.

However, because the program is in its development stages, there is still a lack of comprehensive and high quality equipment in all key areas of the program. They are being obtained and developed as the program evolves. A lot of the equipment is expensive and requires multiple years of budget investment to complete.

The curriculum guide and assessment needs determine what equipment and safety procedures require to be met.

During our PAC meetings, industry and post-secondary partners will be asked to fill out a questionnaire to determine the adequacy of the lab.

Currently, there is a plan to invest about USD 100,000.00 dollars to make improvements to the lab. The plans have been evaluated and approved by the PAC.

# **Equipment Evaluation:**

Equipment is evaluated as per our <u>Quality Assurance Project Plan</u>. Evaluating equipment is part of the instruction given to students in the MBRP. Many of the lessons are specifically designed to teach students to calibrate and maintain instruments. These skills are outlined in our <u>Skills Employability Competencies Skills</u> list.

## Equipment needed:

GIS equipment (Plotter for GIS map printing, Server for GIS digital library)

Laptops for each student

Digital microscopes and stereoscopes



# CTE Program Self-Evaluation Form

Genetics equipment (PCR machine, water baths, electrophoresis chambers, centrifuges, micropipettes, ice machine, autoclave, etc.) Oven Incubator YSI physical-chemical parameter handhelds Fire proof fridge Water filtration system Vanveen grabs Seine Nets **Neuston Net with Manta** Tricycles with storage capacity Gasoline for boats Life vests Waders Wet suits Lab coats Blue tooth and radio antennas and receivers Long range walkie talkies Software for each laptop (Primer/Permanova, ArcGIS, Microsoft Office, Matlab, SPSS, digital microscope software) Subscription to Journals and JSTOR Website maintenance Equipment maintenance **Equipment Insurance** There is an extensive annual budget document attached to the end of this document.

You have completed Section B of the self-evaluation form. Please continue on to Section C the list of supporting documents below and review the data tables and the program development plan in section D to ensure it is complete. Sections A and B, C, and D should be emailed to <a href="mailto:cteprogramapproval@gmail.com">cteprogramapproval@gmail.com</a>



# **Section C: List of Supporting Documents**

Your completed submission must include both the documents noted in this section and the information requested in the data tables provided in Section D of this form.

## Please note:

- If you have already submitted some of these documents for your program, you must submit the rest in order
  for your submission to be considered complete. Please indicate where you have already submitted any of the
  documents/tables listed below by checking the boxes next to each item.
- Please provide documents or complete tables that capture any recent changes or updates that have been implemented to your program since last school year.
- For any documents that are missing or not currently in place please identify these items in the development plan and provide an explanation of how you plan to meet these requirements in the coming school year.
- Where appropriate, please rename files to make documents easily identifiable (example: abbreviatedschoolname\_programname\_postsecondaryarticulation.doc)
- Acceptable document formats are Microsoft Excel/Word documents or PDFs

# \*Please e-mail all starred items as attachments or as an electronic zipped folder to <a href="mailto:cteprogramapproval@gmail.com">cteprogramapproval@gmail.com</a>.

# 1 X \*Course Documentation

For example: Program objectives and expectations, course descriptions, course syllabi

# 2 Program Course Sequence (Table 1)

See Section D: Data Tables and Program Development Plans

\*Please provide a copy of STARS report 6.52 or a custom report to show the full program sequence

# 3 X \*Curriculum-Standard Crosswalks

Crosswalks demonstrating alignment to CDOS and Common core learning standards for all courses in the program sequence

# 4 \times List of CTE certified program teachers (Table 2)

See Section D: Data Tables and Program Development Plans

AND

## \*Copies of state certifications

for all CTE teachers and the work-based learning coordinator this includes the work-based learning coordinator's extension certificate

# 5 Work-Based Learning Coordinator (Table 2)

See Section D: Data Tables and Program Development Plans

# 6 Program Enrollment Data (Table 3)

See Section D: Data Tables and Program Development Plans

This item serves two purposes, one to capture enrollment data and two, to identify the number of students receiving special education services and the number of students participating in work-based learning activities.

# 7 Work-Based Learning Sequence (Table 4)

See Section D: Data Tables and Program Development Plans



# Technical Assessment (s) and Industry Certification(s)

# 8 × \*Evaluation Rubric

This document is used to assess student progress in work-based learning supply a copy of the evaluation rubric or a completed evaluation form for assessing work-based learning

# 9 X \*Training Plan

The student training plan is a document used by the school and host employer to set expectations for the internship and track student progress during the WBL opportunities.

Please provide a copy of a completed Training Plan with student ID removed.

# 10 X \*Completed work-skills employability profile

Please provide a copy of a completed work-skills employability profile with student ID removed.

- 11 \(\sumeter \) List of work-based learning internships and host employer available to students (Table 5)

  See Section D: Data Tables and Program Development Plans
- 12 × Letter/s of support from industry partner(s)

Please supply a copy of a supporting letter from industry partner(s) confirming that they have reviewed the technical assessment used for the CTE program of study and recognize it as a valid instrument in evaluating students' technical knowledge and skills in the industry.

# 13 Composition of Self-Study Team (Table 6)

See Section D: Data Tables and Program Development Plans

# 14 X \*Postsecondary articulation agreement(s)

Valid for length of approval period

# 15 X \*Current business/industry-partner articulation agreement

An articulation agreement with a business/industry partner that provides postsecondary training, apprenticeship, and/or employment opportunities for students who successfully complete the program.

# 16 \( \subseteq \text{\*Evidence of the work of the self-study group} \)

This might include examples of agendas, minutes, sign-in sheets.

PLEASE CONTINUE TO COMPLETE ANY REMAINING PARTS OF SECTION D of the Self-Evaluation Form (separate document)

A confirmation of receipt will be sent once your submission is received. All submissions should be sent to cteprogramapproval@gmail.com.

Contact Chrisann Lucchetto, Director of Program Approval at 212-356-3733 or Clucche3@schools.nyc.gov OR

Jennifer Velez, Associate Director of Program Approval at JVelez9@schools.nyc.gov if you have questions or concerns regarding your submission.



# **CTE Self-Evaluation Form**

# SECTION D: DATA TABLES AND PROGRAM DEVELOPMENT PLANS

CTE School and Program I	CTE School and Program Information (For schools with multiple programs please use one form per program.)
Name of School:	Urban Assembly New York Harbor School
DBN:	02M551
Principal Name:	Edward Biedermann
CTE Program Name:	Marine Biology Research Program
Program CIP code:	030205
Proposed program start date:	2013
CTE Contact Name:	Edward Biedermann
CTE Contact Number:	917.409.5000
CTE Contact e-mail address:	ebiedermann@nyharborschool.org

DIRECTIONS: Please fill out the tables in this document and e-mail the complete document to cteprogramapproval@gmail.com. This document may be submitted in a zipped folder along with the attachments listed in Section C.

# Table of Contents:

Table 1: Program Course Sequence

Table 2: Qualified Faculty

Table 3: Program Enrollment Data

Table 5: List of Work-Based Learning host employers for internship placements Table 4: Work-Based Learning Sequence

Table 6: Composition of Self-study team

 Table 7: (Re-approval only)
 Re-approval Program Data

Program Development Plan



# TABLE 1: PROGRAM COURSE SEQUENCE

SCHOOL: \_\_Urban Assembly New York Harbor School\_ PROGRAM NAME: \_Marine Biology Research Program\_ CIP#\_\_030205\_\_

Grade	Course Code	owing on the state of the state	Instructor(s)	Term	Unit of	If course is integrated
Level	in STARS	כסמואל ומוות	Name(s)	semester	Credit	or specialized
10	RQS61TQR-01	Introductory Marine Research I	Mauricio Gonzalez	Fall	1	CFM
10	RQS62TQR-01	Introductory Marine Research II	Mauricio Gonzalez	Spring	1	CFM
11	RQS63TQR-01	Intermediate Marine Research I	Mauricio Gonzalez	Fall	1	CFM
11	RQS64TQR-01	Intermediate Marine Research II	Mauricio Gonzalez	Spring	1	CFM
12	RQS65TQR-01	Advanced Marine Research I	Mauricio Gonzalez	Fall	1	CFM
12	RQS66TQR-01	Advanced Marine Research II	Mauricio Gonzalez	Spring	1	CFM
For Care	ser and Financial or if it is integrat	anagement: Indicate below into any of the courses liste	the CFM course that students from the program complete (indicate if it is a stand-alone or independent dabove). If CFM is embedded inside the above courses please list CFM in the column labeled as	e if it is a star e list CFM in	nd-alone or the colum	independent n labeled as
integra	integrated or specialized.	jd.				

NYSED UNITS or \_\_\_6\_ NYC CREDITS TOTALS: \_\_\_\_\_ NYSED טואיט כי \_\_\_\_ \_\_\_ Two NYC Credits equal one NYSED unit.  $oxed{igwedge}$  Integrated Career and Financial Management Stand- alone course



# **TABLE 2: QUALIFIED FACULTY**

SCHOOL: \_\_Urban Assembly New York Harbor School\_ PROGRAM NAME: \_Marine Biology Research Program\_ CIP#\_\_030205\_\_

		New York State CTE Certification(s)	NYSED Certificate	
Teacher's Name	Course Taught from CTE Program	Subject Area	temporary or	Industry Certification(s)
		Type of certificate (Initial/Professional/other)/Year	(T or P)	
Mauricio Gonzalez	Introductory Marine Research I & II	Natural Resources and Ecology 7-12	T (Initial)	Marine Biology
	Intermediate Marine Research I & II			Degree;
	Auvailceu iviaillie Neseaicii i & II	Initial Certificate 2012 - 2017		Scuba Diver;
				Rescue Diver;
				ESRI ArcGIS -
				Geographic
				Information
				System Desk
				Top II; OSHA
				Certified
Mauricio Gonzalez	Work-Based Learning Coordinator	*WBL Extension Certificate	Ь	
*Presently enrolled in WBLCourses (See attached paperwork)	rses (See attached paperwork)			

# **DUPLICATE PAGES AS NEEDED**



# Creative Solutions for 21st Century Education 3.0

March 20, 2014

This is to confirm that Mauricio Gonzalez is enrolled in <u>#CTE550</u> - <u>Organization of Work Study Programs</u>, 3 graduate credits, from Buffalo State College.

He should be completed with the first course by May 15<sup>th</sup> and will be taking the second course, CTE555, beginning on August 28<sup>th</sup>, 2014. CTE555 ends on December 15, 2014.

Susan Gubing
Online Instructor for Buffalo State College
631-979-6452

# **Buffalo State Contact:**

Sean Connors, M.S.Ed.
Distance Learning/Continuing Education Coordinator
Continuing Professional Studies
Buffalo State College
1300 Elmwood Ave.; Cleveland 210
Buffalo, NY 14222

Phone: (716) 878-5907 Fax: (716) 878-5930

Website: www.buffalostate.edu/continuingstudies/

connorss@buffalostate.edu

Susan H. Gubing sue@careersmarts.com

116 Brooksite Drive, Smithtown, NY 11787 (631)979-6452



# **TABLE 3: PROGRAM ENROLLMENT DATA**

OVERALL TOTALS	Male	Female	Total			
	Total	Total				
Number of students enrolled in the CTE Program	30	26	26			
Number of enrolled students receiving special education	4	4	8			
services.						
Number of students participating in work based learning (WBL) activities	30	26	26			
Of the WBL students, the number who are participating in WBL Internships.	7	10	17			
Vaccote	Grade 9	Grade 9	Grade 9	Grade 10	Grade 10	Grade 10
category	Male	Female	Total	Male	Female	Total
Number of students enrolled in this CTE program.				13	9	19
Number of enrolled students receiving special education services.				2	2	4
Number of students participating in work based learning (WBL) activities				13	9	19
Of the WBL students, the number who are participating in WBL Internships.				0	0	0
Catagory	Grade 11	Grade 11	Grade 11	Grade 12	Grade 12	Grade 12
category	Male	Female	Total	Male	Female	Total
Number of students enrolled in this CTE program.	11	9	20	9	11	17
Number of enrolled students receiving special education services.	1	1	2	1	1	2
Number of students participating in work based learning (WBL) activities	11	6	20	9	11	17
Of the WBL students, the number who are participating in WBL Internships.	4	9	10	3	4	7



**TABLE 4: SEQUENCE OF WORK BASED LEARNING** 

GRADE	INDICATE WHICH WBL EXPERIENCES ARE MADE AVAILABLE TO STUDENTS IN EACH GRADE. YOUR
	PROGRAM SHOULD OFFER A CONTINUUM OF EXPERIENCE LEADING TO AN INTERNSHIP OR PART TIME EMPLOYMENT.
6	Guest Speakers, Industry Field Trips, Career Types, OSHA Introduction, Orientation to
	Maritime Career Paths, Resume Skills Through Self Expression (Reflective Journaling),
	Employability Skills (Time Management, Organization, Preparation, Professional
	Speaking), Data Organization, Peer Review, Quantitative Assessment of Water Quality
	Data, Qualitative Assessment of Weather, CSO Modeling, Skiff Modeling Activity
	Career Path Conferencing, Introduction to Usage and Safety of Industry Standard
	Equipment, Self Assessment with Holland Code
10	Guest Speakers, Industry Field Trips, Career Types, Transferrable Skills
11	Interviews, Guest Speakers, Self Assessment (Holland Code, Temperament Style,
	Multiple Intelligences), Career Exploration, Career Plan & ePortfolio, Rights-
	Responsibilities-Safety, Transferrable Skills, Employment Relationships, Industry
	Competitions, Unpaid & Paid Internships, Essential Documents, Training Plan, Child
	Labor Laws, Safety, Basic Workplace Orientation, Hours of Employment, Performance
	Appraisal, Workplace Journal, Aspects of Industry, Performance Evaluations, Unions,
	Entrepreneurship, Transitional/Employability Skills
12	Developing Career Plan and ePortfolio, Transferrable Skills, Career Search, Preparing
	for Interviews, Applying for Jobs, Interviews, Interview Follow-up, Strategies for
	Changing Jobs, Guest Speakers, Industry Competitions, Job Shadowing, Unpaid & Paid
	Internships

WBL experiences might include: Career Research, Career Interviews, Class trips, Guest Speakers, Industry Competitions, Job Shadowing, Mock Interviews, Paid or Unpaid Internships



Name of Technical Assessment(s):

1229 Numerical code (where applicable): 01. Vendor name: NOCTI

02. Vendor name: Digital Quest

03. Vendor name: SUNY Albany

04. Vendor name: New York City Science and Engineering Fair

# Industry Certifications offered:

01. NOCTI Natural Resources Systems (Theoretical)

02. Geographic Information System: SPACE Certification (Theoretical and Practical)

03. College Credit: 12 Research Credits from State University at Albany (Theoretical and Practical)

04. New York City Science and Engineering Fair Certification (Practical)



# TABLE 5: LIST OF WORK-BASED LEARNING INTERNSHIPS AND HOST EMPLOYER AVAILABLE TO STUDENTS

Host Employer:	Columbia University
Internship Description:	Research Assistant
Typical Assignments:	Project management and execution
Indicate skills, concepts, and work competencies gained and how the information is integrated into instruction:	Skills & Competencies: Project formulation, data collection, data entry, Salt marsh habitat restoration Integration: The projects that students work on in their internships serve to boost year long projects that the students are required to complete for the school year. Students sometimes use the projects directly or apply the skills they learn to new or similar projects. For example, data entry is one of the key skills gained in this internship. Students can use these new skills to improve their data management.

# DUPLICATE AS NEEDED OR PROVIDE A SEPARATE DOCUMENT AS EVIDENCE OF YOUR INTERNSHIP PLACEMENTS

Host Employer:	Rutgers University
Internship Description:	Research Assistant
Typical Assignments:	Project management and execution



Skills & Concepts: Project formulation, data collection, policy, technical reading	Integration: The projects that students work on in their internships serve to boost year long projects that the students are required to complete for the school year. Students sometimes use the projects directly or apply the skills they learn to new or similar projects. For example, technical reading is one of the key skills gained in this internship. Students can use their improved technical reading skills to read through new peer reviewed journal articles in order to build their literature review.
Indicate skills, concepts,	and work competencies gained and how the information is integrated into instruction:

Host Employer:	Manhattan College
Internship Description:	Lab assistant/Research Assistant
Typical Assignments:	Project management and execution
Indicate skills, concepts, and work competencies gained and how the information is integrated into instruction:	Skills & Concepts: Project formulation, data collection, marine resource habitat restoration  Integration: The projects that students work on in their internships serve to boost year long projects that the students are required to complete for the school year. Students sometimes use the projects directly or apply the skills they learn to new or similar projects. For example, data collection and field work are two key skills gained in this internship. Students can use these new skills to improve their data gathering and management skills as well as how to prepare for field trips and manage a field day.



Host Employer:	The Nature Conservancy
Internship Description:	Habitat Restoration Technician
Typical Assignments:	Habitat Restoration and Resource Management
Indicate skills, concepts, and work competencies gained and how the information is integrated into instruction:	Skills & Concepts: Biological Corridors, trail restoration, financial management skills, data collection, water quality monitoring Integration: The projects that students work on in their internships serve to boost year long projects that the students are required to complete for the school year. Students sometimes use the projects directly or apply the skills they learn to new or similar projects. For example, one key skill in this internship is habitat restoration. Many biological resources have been impacted by society and have been left in suboptimal conditions. These resources provide services to people and other resources (e.g. forests processing CO2 into O2, avoiding excessive river and lake evaporation, etc). Restoring forests helps to,
	l theretore, improve water resources which are key tor human subsistence. Students now get to but theory into practice.

Host Employer:	Wildlife Conservation Society
Internship Description:	Natural Resources Management
Typical Assignments:	Maintaining and studying zoological and aquarium specimens and enclosures



Indicate skills, concepts, and work competencies gained and how the information is integrated into instruction:

Skills & Concepts: Resource management, data collection, environmental monitoring

required to complete for the school year. Students sometimes use the projects directly or apply the skills they learn to new or Integration: The projects that students work on in their internships serve to boost year long projects that the students are similar projects. For example, one key skill in this internship is habitat maintenance. Many biological resources have been impacted by society and have been left in suboptimal conditions. These resources provide services to people and other resources (e.g. forests processing CO2 into O2, avoiding excessive river and lake evaporation, etc). Preserving zoos and aquariums helps to educate the public about the importance of the natural world around us



# TABLE 6: COMPOSITION OF SELF-STUDY TEAM

*Membership	Name	Title	Affiliation
School administrator(s)	Edward Biedermann	Principal	UANYHS
CTE teachers	Mauricio Gonzalez	Program Director	UANYHS
CTE teachers	Brendan Malone	CTE Chair	UANYHS
Academic teachers/core subjects	Jeremy Lynch	Teacher	UANYHS
Guidance personnel	Christopher Budano	College Guidance	UANYHS
UFT	Mike Moshos	UFT Chair	UANYHS
PTA	Nerissa Alvarez	Co-President	UANYHS
Student	Edwin Castillo	Student	UANYHS
Business/industry partner(s)	James Hall	GIS Consultant	DOE – GIS consultant
Business/industry partner(s)	James Lodge	Project Scientist	Hudson River Foundation
Postsecondary representatives	Michael Judge	Professor and Chairperson	Manhattan College
Other program stakeholders	Matt Leahey	President	Sea Savers Inc
Other program stakeholders	Philip Orton	Post-Doctoral Research Associate	Stevens Institute of Technology
Other program stakeholders	Dave LaShell	ESRI	Sr. Account Executive
**Eregiency of fill self-study team	Full PAC meeting = once a year	ar	
and for sub-aroun montings	Sub group meetings = once per week	er week	
and/or sub-group incedings	PAC individuals = various (meeting log available)	eeting log available)	

<sup>\*</sup>For example, Children's First Network representative, UFT Chapter Leader, representative of students with disabilities, student representative, community representative, parent representative.

<sup>\*\*</sup>For example, quarterly or bi-annual meetings with industry and postsecondary partners, weekly/monthly meetings with school level stakeholders.



# TABLE 7: RE-APPROVAL PROGRAM DATA

# Programs intending to submit for Re-approval must provide 5 years of data for each of the following items:

Program Data	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	Cumulative total
1. How many students have completed the coursework for this program of study since it was last approved or re-approved? Please indicate totals by program year.						
<ol> <li>Of the total number of students who have completed the coursework for this program of study, how many received special education services (including 504 plans and IEPs)?</li> </ol>						
3. How many students completed the technical assessment used in this program?						
4. Of the total number of students who have completed the technical assessment, how many passed?						
5. How many students received a technical endorsement?						
6. How many students who have completed this program participated in work-based learning?						
7. Of the total number of students who have participated in work-based learning, how many participated in the following work-based programs during the approval period?	ated in work-based	learning, how many	y participated in the	following work-bas	sed programs during	the approval
Cooperative CTE Work Experience Program (CO-OP)	<u> </u>	Worksite tours		Job shadowing	lowing	
Career Exploration Internship Program (CEIP)	YC	Youth apprenticeships	S	School-year internships	School-year/summer internships	
General Education Work Experience Program (GEWEP)	н) 	Supervised licensed clinical experience (Health Occupations)	inical experience	Commu	Community service/learning	
Work Experience and Career Exploration Program (WECEP)	Ō	On-site projects		Other (p	Other (please explain)	



# **CTE Program Development Plan**

Please use the tables provided to share your goals for program improvements related to curriculum and instruction, work-based learning, assessment and accountability, partnerships, and program and school capacity. Provide plans for projected improvements to be made over the current school year.

Area of Key Priority	
<ul> <li>Curriculum and Instruction</li> <li>Work-Based learning</li> <li>Assessment and Accountability</li> <li>Partnerships</li> <li>Program and School Capacity</li> </ul>	
Outline of actions to be taken:	Expected outcomes:
Action 01: Streamline internship experiences with the program.	Outcome 01: Activities lead up to internships through well-established partnership with one or more hosts who provide industry-appropriate assignments
	Outcome 02: Activities expose students to all aspects of an industry and meet the range of students' needs and aspirations.
Additional support/ resources needed	Target completion date:
Will need 3 meetings (45 min each) with the WBL Coordinator.	April 2014

# **DUPLICATE AS NEEDED**



		Expected outcomes:	Outcome 01: Clear mapping of links between course components and these standards.	Target completion date:	June 2014				Expected outcomes:	Outcome 01: Web page on program information translated to Spanish.
Area of Key Priority	<ul> <li>Curriculum and Instruction</li> <li>Work-Based learning</li> <li>Assessment and Accountability</li> <li>Partnerships</li> <li>Program and School Capacity</li> </ul>	Outline of actions to be taken:	<b>Action 01</b> : Align Curriculum Scope and Sequence to Common Core Standards.	Additional support/ resources needed	Lists of the standards, lap top, and curriculum crosswalk.		Area of Key Priority	<ul><li>Curriculum and Instruction</li><li>Work-Based learning</li><li>Assessment and Accountability</li><li>Partnerships</li></ul>	✓ Program and School Capacity Outline of actions to be taken:	Action 01: Translate all program informational media into Spanish.



	Outcome 02: Brochures and application materials translated to Spanish.
Additional support/ resources needed	Target completion date:
Lap top with internet connection, information in English.	December 2014
Area of Key Priority	
Curriculum and Instruction	
<ul> <li>── Work-Based learning</li> <li>○── Assessment and Accountability</li> <li>○── Partnerships</li> </ul>	
Program and School Capacity	
Outline of actions to be taken:	Expected outcomes:
Action 01: Acquire all SPACE GIS materials in order to be able to offer SDACE GIS certification	Outcome 01: Acquisition of all SAPCE GIS materials.
	<b>Outcome 02</b> : Students will have the necessary materials to train to qualify for SPACE GIS certification.
Additional support/ resources needed	Target completion date:
Lap top with internet connection,	December 2015
Series 1/Book 1 – Introduction to GIS/RS Concepts	



Series 1/Book 2 – Introduction to GIS/RS Tools and Processes	
USD 3,000.00	
Series 2/Book 1 – Advanced GIS Tools and Processes	
Series 2/Book 2 – Extended Tools in Surface Analysis	
USD 2,500.00	
Teacher resources (lesson plans, digital presentations, resource CD, dial up tech support	
USD 12,000.00	
Localized Data	
USD 9,000.00	



Author: Mauricio Gonzalez, M.Sc.

Director, Marine Biology Research Program

Advisor: Edward Biedermann

Principal

Version: 130825

# Marine Biology Research Program: Program Description, Objectives, Justification, and Sequence

# Classification of Instructional Program (CIP) Code

New York State Education Department uses CIP codes to characterize CTE program types. Schools may select from more than 500 unique CIP codes to characterize the program they offer.

3. Use Appendix A to select a CIP code for your program.

Code:	030205	Program:	Water, Wetlands and Marine Resources Management

## **Program Name**

4. Thinking about the content area and CIP code you selected, create a name for the program.

Marine Biology Research Program

# **Program Description and Objectives**

5. Describe the program.

The Marine Biology Research Program is a 3 yr. program that will jump start high school students in core marine science topics employing hands-on, problem-based learning strategies. Students will begin by building and studying simple aquatic ecosystems; formulate experiments with these systems; learn the biology, chemistry, physics, and ecology behind them; and apply basic instrumentation techniques to monitor them. Once these sets of "in house" skills have been mastered, the program will then shift students' attention to the natural ecosystems around Governor's Island through the formulation of projects around 3 main topics: oyster restoration, habitat characterization, and water/air quality monitoring with a student built and maintained network around the Hudson River Estuary. Students will learn how to formulate projects, submit professional reports, present at national and international research fairs (e.g. Intel Science and Engineering Fair), and, ultimately, use their own data to propose resource management solutions to local government agencies. Upon satisfactory completion of this program students will also be

eligible for 12 college credits, Geographic Information System map-making SPACE certification, Natural Resources Systems Management certification, and other professional opportunities that will give them a competitive advantage in college and industry.

- 6. List the objectives of the program.
  - 01. Prepare students for resource management and conservation.
  - 02. Give students a rigorous foundation in marine science.
  - 03. Expose students to professional settings and careers in marine science.
  - 04. Prepare students for college with rigorous research projects and college credit bearing courses.
  - 05. Train students to use cutting edge technology (e.g. remote sensing equipment and Geographic Information Systems).
  - 06. Characterize Governors Island's marine environment and support the Oyster Restoration Project.

# **Program Justification**

7. Explain how the program meets a particular demand for its students. You may want to describe a demand in the labor force or a benefit to postsecondary education. Use as much data as possible.

The failure of our urban public schools to produce scientifically literate college bound teenagers reflecting city demographics is well known. Equally disturbing is the lack of representation and participation in STEM (Science, Technology, Engineering and Math) of ethnic groups who are over-represented below the poverty line. Our nations research institutions and private engineering firms increasingly look outside our borders to recruit and hire competent scientists. This program will focus on changing these trends and connect our youth to the skills and knowledge necessary to be competitive in college and enter the STEM fields. The vehicle for this transformation will be student-formulated, problem-based projects that aim to restore NYC's marine resources.

# **Program Sequence and Credentials**

8. List the sequence of courses and the industry-recognized credentials that support those courses.

Grade	Term	Course	Industry-Recognized Credential
9	Fall		
9	Spring		
	Fall	*Introductory Marine Research I	
10	Fall	**(IntroMarResrchI)	
10	Spring	*Introductory Marine Research II	
	Spring	**(IntroMarResrchII)	
		* Intermediate Research Methods	2 college credits – UHS
	Summer	**(IntResrchMeth)	
11		***Intermediate Methods of Science Research	
11		*Intermediate Marine Research I	
	Fall	**(InterMarResrchI)	4 college credits – UHS
		***(UHS - Intermediate Science Research)	

		*Intermediate Marine Research II	
	Spring	**(InterMarResrchII)	
		***(UHS - Intermediate Science Research)	
		* Advanced Research Methods	2 college credits – UHS
	Summer	**(AdvResrchMeth)	
		***Advanced Methods of Science Research	
		*Advanced Marine Research I	
12	Fall	**(AdvMarResrchI)	4 college credits – UHS
		***(UHS - Advanced Science Research)	NOCTI Natural Resources
		*Advanced Marine Research II	Management
	Spring	**(AdvMarResrchII)	SPACE Certification for GIS
		***(UHS - Advanced Science Research)	

<sup>\*</sup> DOE/NYHS Course Name

<sup>\*\*</sup> DOE/NYHS Course Abbreviation

<sup>\*\*\*</sup> SUNY Albany/UHS Course Name

# Core Competencies

9. List all core competencies students will acquire after four years in the program.

Knowledge	General Skills
Project Management	Project formulation, execution, and presentation.
Instrumentation	Technical reading and writing skills.
Zoology	Running and maintaining high tech physical-chemical data retrieval devices and telemetry.
Marine Botany	Designing, building, and maintaining model ecosystems.
Oceanography	Systematics and phylogeny.
Aquatic Chemistry	Population, community, and ecosystem ecology.
Marine Ecology	Lab technology.
Atmospheric science	Lab procedures.
Sampling Methods	Applied ecological statistics.
Ecological data processing, statistics, and analysis	Basic + intermediate general computer technology.
Geographic Information Systems	GIS: Data table build, conversion to points + shape files on map, + spatial analysis.
Resource Management	Natural Resource planning and thematic mapping
Career and Financial Management	Research conservation strategies and advocacy.

# **Progressive Coursework**

10. Organize core competencies into a progression of knowledge and skills by course.

Grade	Term	Course	Knowledge	Skills
d	Fall			
n	Spring			
Ç	Fall	Introductory Marine Research I	Instrumentation; Invertebrate zoology Vertebrate zoology; Marine Botany; Aquatic Chemistry, Basic Chemistry + Physics; Basic Project Management.	Designing, building, and maintaining model ecosystems; basic computer technology, search engine skills, + basic GIS (i.e. Google Earth, Google Maps)
2	Spring	Introductory Marine Research II	Marine Ecology: population, community, and ecosystem ecology. Evolution; Project Management; Basic Geographic Information System technology	Lab technology skills (i.e. dissection, bacteria culture, microphotography, cell staining; Technical reading and writing; Sampling Techniques; Data table build
	Fall	Intermediate Marine Research I	Project Management, Instrumentation; Project Management;	Technical reading and writing; Sampling techniques; Geographic identification and manipulation.
11	Spring	Intermediate Marine Research II	Project Management, Instrumentation, data table creation + data processing, Basic GIS: Geographic Positioning Systems +	Applied statistics and statistics software (i.e. R); project formulation, execution, and presentation; Geographic identification and manipulation; Career and Financial Management
,	Fall	Advanced Marine Research I	Project Management, Instrumentation, Intermediate Geographic Information Systems technology.	Benthos sampling techniques, Conversion of data build into GIS systems; Production of geospatial figures.
71	Spring	Advanced Marine Research II	Project Management, Instrumentation; Internship + Professional Skills, Intermediate Geographic Information Systems technology	Research conservation strategies and advocacy; Running and maintaining high tech physical-chemical data retrieval devices and telemetry. GIS spatial analysis.



Once a certificate is issued it appears on the TEACH system and is valid immediately. The effective date is dictated by Department regulations as either February 1 or September 1 of a school year. For a full explanation see the <u>memo dated June 4, 2007 from the Senior Deputy Commissioner of Education.</u>

Person Inquiry

MAURICIO GONZALEZ

Certificates

Description	Effective Begin Date	Effective End Date	Status	Date of Certificate Action
General Science 7-12 Extension Permanent Extension	02/01/2010		issued	
Biology (Grades 5-9) Professional Certificate	09/01/2010		Issued	
Biology 7-12 Permanent Certificate	02/01/2010		issued	
Natural Resources & Ecology 7-12 Initial Certificate	02/01/2012	01/31/2017	Issued	
Generalist In Middle Childhood Education (Grades 5-9) Internship Certificate	09/01/2008	08/31/2010	Expred	
Biology & General Science 7-12 Temporary License	09/01/2002	08/31/2003	Expired	
Biology & General Science 7-12 Provisional Certificate	09/01/2004	08/31/2011	Expired	
Biology & General Science 7-12 Limited Certificate	09/01/2003	08/31/2004	Expired	
Students With Disabilities (Grades 5-9), Generalist Internship Certificate	09/01/2008	08/31/2010	Expired	

Dene

Contact | Related Links | FAQ University of the State of New York - New York State Education Department Contact NYSED | Index A - Z | Terms of Use











Author: Mauricio Gonzalez, M.Sc.

Director, Marine Biology Research Program

Advisor: Edward Biedermann

Principal

Version: 131118

RE: Curriculum – Standards Crosswalk

# Core Competencies

9. List all core competencies students will acquire after four years in the program.

Knowledge	General Skills
Project Management	Project formulation, execution, and presentation.
Instrumentation	Technical reading and writing skills.
Zoology	Running and maintaining high tech physical-chemical data retrieval devices and telemetry.
Marine Botany	Designing, building, and maintaining model ecosystems.
Осеаподгарну	Systematics and phylogeny.
Aquatic Chemistry	Population, community, and ecosystem ecology.
Marine Ecology	Lab technology.
Atmospheric science	Lab procedures.
Sampling Methods	Applied ecological statistics.
Ecological data processing, statistics, and analysis	Basic + intermediate general computer technology.
Geographic Information Systems	GIS: Data table build, conversion to points + shape files on map, + spatial analysis.
Resource Management	Natural Resource planning and thematic mapping
Career and Financial Management	Research conservation strategies and advocacy.

# **Progressive Coursework**

10. Organize core competencies into a progression of knowledge and skills by course.

Grade	Term	Course	Knowledge	Skills
C	Fall			
n	Spring			
Ç	Fall	Introductory Marine Research I	Instrumentation; Invertebrate zoology Vertebrate zoology; Marine Botany; Aquatic Chemistry, Basic Chemistry + Physics; Basic Project Management.	Designing, building, and maintaining model ecosystems; basic computer technology, search engine skills, + basic GIS (i.e. Google Earth, Google Maps)
0	Spring	Introductory Marine Research II	Marine Ecology: population, community, and ecosystem ecology. Evolution; Project Management; Basic Geographic Information System technology	Lab technology skills (i.e. dissection, bacteria culture, microphotography, cell staining; Technical reading and writing; Sampling Techniques; Data table build
	Fall	Intermediate Marine Research I	Project Management, Instrumentation; Project Management;	Technical reading and writing; Sampling techniques; Geographic identification and manipulation.
11	Spring	Intermediate Marine Research II	Project Management, Instrumentation, data table creation + data processing, Basic GIS: Geographic Positioning Systems +	Applied statistics and statistics software (i.e. R); project formulation, execution, and presentation; Geographic identification and manipulation; Career and Financial Management
Ç	Fall	Advanced Marine Research I	Project Management, Instrumentation, Intermediate Geographic Information Systems technology.	Benthos sampling techniques; Conversion of data build into GIS systems; Production of geospatial figures.
71	Spring	Advanced Marine Research II	Project Management, Instrumentation; Internship + Professional Skills, Intermediate Geographic Information Systems technology	Research conservation strategies and advocacy; Running and maintaining high tech physical-chemical data retrieval devices and telemetry. GIS spatial analysis.

# 9th Grade CTE Curriculum Crosswalk - Introduction to New York Harbor (Harbor Class)

Ann Fraioli & Jeremy Lynch

# Course Philosophy

It is the source of life. It fills us, surrounds us and sustains us. Our very existence depends on it. Since its beginning, human civilization has been shaped by its relation to the Earth's waters. In turn, New York has been built upon its harbor and estuary. In order to understand how human agriculture, transportation, industry and social development are inexorably linked to the waters of New York Harbor students must first understand the science and life of this estuarine environment. This course provides the structure for students to explore in depth the bodies of water they are accustomed to literally only seeing on the surface.

## Course Description

As the freshman course for New York Harbor School and as an introduction to the New York harbor and estuary, the following course will focus on a scientific, cultural, historical, and geographic introduction to the New York harbor and the various water bodies that make up the estuary. This course is also the students' introduction to the six Career and Technical Education programs of study: Aquaculture, Marine Biology Research, Marine Systems Technology, Ocean Engineering, Professional Diving, and Vessel Operations. Students visit different sections of the estuary and meet environmentalists, boat builders, industry personnel, waterfront advocates and others professionals. Students also study specific scientific concepts and compare and contrast the water bodies in terms of their physical make-up, their aquatic life their industry uses and environmental issues.

This course is not a series of field trips. Students explore 14-17 different field locations around the New York Harbor Estuary. These field experiences emphasize the skills of observation and inference, water quality testing and analysis, comparative analysis, perseverance and reflection. This course follows the same rigorous standards as all other classes and is an interdisciplinary course, which covers reading non-fiction, graphing information, the scientific method, and primary source document analysis and interpretation.

As with all Harbor curricula, this course will have the following four goals:

- To use the resources of the harbor and a study of the harbor to teach the content and skills of the core
  academic classes.
- To use Waterkeeper Alliance and the South Street Seaport Museum as a model for studying, preserving and advocating for the New York City community, and as a model for rigorous teaching and learning.
- To use the resources of the water to better connect students to themselves and to their community.
- To introduce all 9th Graders to the six Career and Technical Education Program of Study.

# Course Content - Units of Study

- Unit 1 Governors Island
- Unit 2 Village Community Boathouse
- Unit 3 River Project
- Unit 4 Coney Island
- Unit 5 American Museum of Natural History
- Unit 6 SUNY Maritime
- Unit 7 Oysters
- Unit 8 Harlem River
- Unit 9 Dead Horse Bay
- Unit 10 SCUBA
- Unit 11 Ocean Engineering and Marine Systems Technology
- Unit 12 Industrial Waterfront

Unit 13 Newtown Creek

Unit 14 Bronx River

Unit 15 Gowanus Canal

Unit 16 Schooner Pioneer I

Unit 17 Schooner Pioneer II

# Prerequisite Skills - Students Should Be Able To

- Follow directions
- Come prepared with class materials & outdoor equipment

# Course Skills - Students Will Be Able To

- 1. Conduct Scientific Water Quality Studies
- 2. Perform basic SCUBA skills
- 3. Perform robotic skills
- 4. Perform boat handling and navigation skills
- 5. Perform woodworking skills
- 6. Perform marine biology dissections and testing
- 7. Perform oyster farming basics

Unit #:	One	Unit Title:	Introduction to Harbor Class		
		_		Duration of	
Course:	Introductio	n to New Y	ork Harbor	Unit:	3 Days

DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	I can relate the class expectations to the six pillars of character	Brainstorm and group poster work
HW	I can compose an essay based upon observations and inferences I made at a body of water	Summer Homework Assignment – Essay, observation/inference
Vocab	I can record and memorize key terms that will be used throughout the year in Harbor Class	Vocabulary work
Prep	I can demonstrate that I am prepared to go out on a day long field experience	Gear check-off
Intro	<ul> <li>I can use my five senses to make observations and inferences about Governors Island</li> <li>I can identify the safety issues around pier and docks</li> </ul>	<ul><li>Observation and inference chart</li><li>Short answer lab questions</li></ul>
Station 1	<ul> <li>I can identify marine structures both on a nautical chart and in the harbor</li> <li>I can safely put on a PFD and board a small boat</li> </ul>	<ul><li>Short answer lab questions</li><li>Demonstration of skill</li></ul>
Station 2	I can describe why we test water quality in harbor class	Water quality data sheet
Station 3	I can understand and explain the history of and land expansion on the NY Harbor	Short answer lab questions, map activity
Journal	I can relate my Harbor Class field experience to past learning experiences	Journal writing
Post	Using my journal entry I can relate the six pillars of character to my experience in the field	Writing extension

Unit Overview Essential	The purpose of this cycle is to introduce students to the habits and procedures of Harbor Class. We will cover the history of Governors Island, introductory nautical chart work, water quality testing methods, and boat safety. We will also teach them how we travel as a class. We will bookend the field experience by relating the six pillars of character to the work that we do in Harbor Class.  How can I be a contributing member of the Harbor Class community						
Question(s):	What is expected of me in Harbor Class?						
Common Core / NYS Content Standards	Translate quantitative or technical information expressed in words in a into visual form (e.g., a table or charand translate information expresse visually or mathematically (e.g., in equation) into words.		art) measurements, or performing technical tasks, attending to special cases or exceptions				
Content	Small Boat Handling Skills Nautical Chart Basics Water Quality Testing			Nautical Charts – dividers, parallels Journal Writing Water Quality Testing On Water Safety			
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary		6 Pillars of Character Nautical Chart PFD Metadata Dissolved Oxygen Salinity PH Turbidity			
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus		MBRP VO			
		Texi Resou		Charts Map of NY/NJ Estuary PFDs Native American History Reading			

Jnit #:	2	Unit Title:	Village Community Boathouse		
				Duration of	
Course:	Harbor Clas	S		Unit:	2 weeks

DAY	D A Y	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	1	I can determine the comparative density of fresh and salt water	Density lab

DAY	D A Y	DAILY LEARNING TARGET	STUDENT WORK PRODUCT					
HW	2	· · · · · · · · · · · · · · · · · · ·	can describe salinity and PH levels of the ocean and why they are Reading and Worksheet particular levels					
Vocab	3	can record and memorize key terms that will be used throughout the Vocabulary work year in Harbor Class						
Prep	4	can demonstrate that I am prepared to go out on a day long eld experience Gear check-off						
Intro	5		5. 5.1p 5.15.150					
Station 1	6	I can use prior of knowledge of nautical charts to plot a course Harbor	on the NY  Village Community Boathouse Lab:  Nautical Chart work (dividers, parallels, compasses), Water Quality Testing, Rowing, Journaling					
Station 2	7	I can recall the procedure for Water Quality testing from last of I can explain why pH is an important addition to our battery of Quality tests						
Station 3	8	I can build on my small boat knowledge and safely board and d a small boat from a ladder	isembark "					
Journal	9	I can relate my Harbor Class field experience to past learning experiences  Journal writing						
Post	1 0	I can identify the six CTE programs and categorize the work do Harbor Class into each program.	ne in Binder work, and check in					
Ur Over		Today we will work with an organization called Village Co at Pier 40 on the Hudson River. With the help of their Wh we will learn how to row! We will also continue with our about navigation and using nautical charts to plot a cours areas of the harbor.	itehall gig row-boats, and some volunteers water quality testing and we learn more					
Essential Question(s):								
Common Core / NYS Content Standards		terms, and other domain-specific words and phrases as they are used in a specific measur scientific or technical context relevant to when context relevant to	precisely a complex multistep procedure arrying out experiments, taking ements, or performing technical tasks, and to special cases or exceptions in the text.					

Content	Small Boat Handling Skills Nautical Chart Basics Water Quality Testing	Skills	Nautical Charts – Dividers, Parallels, Compasses Water Quality Testing Small Boat Handling Skills – On and Off Water, Positions, Safety
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	Turbidity pH Strait Coxswain Oar Gunwale Rudder Latitude Longitude PFD
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus  Texts / Resources	MBRP MST VO  Charts, Maps, Compasses, Dividers, Parallels, Water Quality Kits, PFDs

Unit #: 3 Unit Title: River Project

Duration of

Course: Harbor Class Unit: 2 Weeks

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	1	I can explain the difference between a healthy ecosystem and an unhealthy ecosystem	Group Share Out
HW	2	I can describe a food web and its importance in the harbor	Reading, writing
Voc	3	I can record and memorize key terms that will be used throughout the	Vocabulary work
ab	3	year in Harbor Class	
Pre p	4	I can demonstrate that I am prepared to go out on a day long field experience	Gear check-off
Intro	5	I can identify the harbor's importance during 9/11	9/11 exhibit and questions
Stati on 1	6	I can review the purpose and procedure for all Water Quality tests with the help of my small group.	River Project Lab: water quality testing, benthic grab questions, plankton questions, minnow trap questions, journaling

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Stati on 2	7	I can identify the organisms we retrieve in the minnow traps and the benthic grab.	и
Stati on 3	8	I can place organisms we encounter today into a local food chain.  I can analyze the importance of biodiversity to the estuary food web and ecosystem	и
Jour nal	9	I can relate my Harbor Class field experience to past learning experiences	Journal writing
Post	10	I can use my knowledge from the field to complete a quiz	River Project Quiz

Unit Overview	Today we journey back to the West Side of Manhattan to study the Hudson River in greater detail.  We will work with an organization called the River Project to conduct water quality testing and observe aquatic organisms near the piers of the lower Hudson. It's time to get our hands wet!		
Essential Question(s):			
Common Core / NYS Content Standards	Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).  Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.		
Content	Species Identification Water Quality Benthic Zone id Photic Zone - Plankton	Skills	Water Quality Testing Species Identification Phyto vs Zooplankton Identification Understanding of NY/NJ harbor worker's importance during 9/11
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	native – exotic – invasive – organism – invertebrate – vertebrate – autotroph – heterotroph – photic zone –

			biological indicator –
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus	MBRP Aquaculture SCUBA
		Texts / Resources	Benthic Grab Plankton Nets Microscopes Slides, pipettes, magnifying boxes Rope Gloves

Unit #: 4 Unit Title: Atlantic Shore

Duration of Course: Harbor Class Unit: 2 Weeks

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	1	I can identify and describe the features of different aquatic biomes.	Notes, Class Discussion, Field Preparation
HW	2	I can compare and contrast Coney Island pre European and post European contact; the formation and evolution of Coney Island	Reading and questions
Voc ab	3	I can record and memorize key terms that will be used throughout the year in Harbor Class	Vocabulary work
Pre p	4	I can demonstrate that I am prepared to go out on a day long field experience	Gear check-off
Intro	5		
Stati on 1	6	I can describe what lives in an intertidal zone and why it's unique. I can define adaptation and identify adaptations unique to intertidal organisms.	Atlantic Shore Lab, water quality testing, beach combing and fish identification, Coney Island history and photography, aquarium tour and student work (lab)
Stati on 2	7	I can define and provide examples of invasive species. I can classify different organisms according to biological classification systems	и
Stati on 3	8	I can complete water quality testing with my peer group	Water Quality Data Sheet
Jour nal	9	I can relate my Harbor Class field experience to past learning experiences	Journal writing
Post	I can assess my own knowledge of aquatic biomes, adaptation, native vs		Wrap up Notes, Quiz

Unit Overview	This cycle we will visit the New York Aquarium, which is located next to Coney Island and the Atlantic Ocean. In the Aquarium we will be observing many species of organism in exhibits that represent their natural habitat. We will be testing the water quality of the Atlantic Ocean so that we can compare it to the water quality of the New York Harbor Estuary. On the Coney Island Beach we will collect and identify as many different kinds of organisms as we can find.				
Essential Question(s):					
Common Core / NYS Content Standards	Follow precisely a complex multister procedure when carrying out exper taking measurements, or performing technical tasks, attending to special or exceptions defined in the text.	eriments, analysi ng attend		pecific textual evidence to support sis of science and technical texts, ding to the precise details of explanations scriptions.	
Content	Seining for species Species Identification Aquarium Visit Coney Island Geography and History Coney Island Photography and Imagery Throughout History	Skil	ls	Water Quality Testing Species Identification Understanding of CI History Photography Observation/Inference Journal Writing Image evaluation	
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary		adaptation – biodiversity – biome – ecosystem – community – population – habitat – niche – sessile – substrate –	
Summative Assessment	Lab Journal Writing	Modific / Extens / CTE Fo	sions	MBRP Aquaculture	

Texts /	Seine Net
Resources	Rubber Boots
	Cameras
	Images
	Water Quality Bag

Unit #:	5	Unit Title:	American Museum of Natural History			
				Duration of		
Course:	Harbor Clas	SS		Unit:	2 Weeks	

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Dro	1	I can compare and contrast land biomes and aquatic biomes	Biome exercise ('round the room) and
Pre	'	T can compare and contrast land biomes and aquatic biomes	notes
HW	2	I can define biome and discuss factors that affect them	Reading and questions
Voc	3	I can record and memorize key terms that will be used throughout the	Vocabulary work
ab	3	year in Harbor Class	
Pre	4	I can demonstrate that I am prepared to go out on a day long	Gear check-off
р		field experience	
Intro	5		
		I can identify organisms and use museum resources to learn about new	AMNH lab, Biological Classification,
Stati		ones	Aquatic Ecosystem Compare and
on 1	6	I can define biodiversity	Contrast, Land Biome Reading and
		I can classify organisms according to biological similarities	Comparison to Aquatic Biomes
Stati	7	I can compare the estuary ecosystem to other aquatic ecosystems	и
on 2	/	I can decipher important information in museum exhibits	
Stati	8	I can complete water quality testing with my peer group	Water Quality Data Sheet
on 3	O		Water Quanty Bata Sheet
Jour	9	I can relate my Harbor Class field experience to past learning	Journal writing
nal	,	experiences	
Post	10	I can use my knowledge from the field to further understand and identify	Quiz, wrap-up discussion and notes
1 031	10	land and aquatic biomes	Quiz, wrap ap discussion and notes

Unit Overview	This cycle we will visit the Museum of Natural History where we will visit the Hall of Biodiversity and the Hall of Ocean Life. You will see a tropical rainforest and visit the biomes of the world. You will continue to learn about the scientific classification (taxonomy) of life and explore the deepest reaches of the ocean. Enjoy!
Essential Question(s):	

Common Core / NYS Content Standards	Follow precisely a complex multister procedure when carrying out expertaking measurements, or performing technical tasks, attending to special or exceptions defined in the text.	riments, among g relation		alyze the structure of the relationships ong concepts in a text, including Itionships among key terms (e.g., force, Ition, reaction force, energy).		
Content	Classification of species Biomes Biodiversity of the oceans	Skills		Water Quality Testing Observation/Inference Journal Writing Classification		
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary		biodiversity – biome – continental shelf – overharvest – extinct – endangered – threatened – colony – taxonomy – scientific name –		
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus  Texts / Resources		/ Aquaculture SCUBA / Ocean Engineering  Texts / Flashlights		Aquaculture SCUBA Ocean Engineering  Flashlights Water Quality Bag Poster Paper
Unit #: 6	Unit Title: SUNY Maritime					

Unit #:	6	Unit Title:	SUNY Maritime		
				Duration of	
Course:	Harbor Clas	SS		Unit:	2 Weeks

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
	1	I can describe the programs and types of degrees offered at SUNY	
Des		Maritime.	KWL Sheet, group reading and
Pre		I can create a kwl sheet listing what I know, want to know, and (during	discussion
		post) learned about SUNY Maritime	

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
HW	2	I can summarize the types of jobs I can get and the qualifications I need to work in the shipping/boating industry	Reading and questions
Voc	3	I can record and memorize key terms that will be used throughout the	Vocabulary work
ab	3	year in Harbor Class	
Pre	4	I can demonstrate that I am prepared to go out on a day long	Gear check-off
р	4	field experience	
Intro	5	I can describe the admissions requirements at SUNY Maritime	Question and answer period
C1 - 1'		I can describe the IALA "B" buoyage system	SUNY Maritime Lab, Water Quality
Stati	1 6	I can identify lateral, cardinal, safe water, danger, and special marks	Data Sheet, Hands on knot tying,
on 1		(buoys)	Buoyage IALA "B" discussion
Stati	7	I can tie a square knot, a bowline knot, and a sheet bend	и
on 2	,		
Stati	8	I can complete water quality testing with my peer group	Water Quality Data Sheet
on 3	0		Water Quality Bata Sheet
Jour	9	I can relate my Harbor Class field experience to past learning	Journal writing
nal		experiences	
		I can describe the steps necessary to obtain a TWIC and MMC credential	
		I can explain the median wages of engineers, operators, captains, mates	
Post	10	and pilots, as well as oilers and sailors.	Quiz
1 031	10	I can organize the work in my binder	Quiz
		I can refer back to the work in my binder	
		I can analyze the water quality temperature trends from this fall	

Unit Overview	This cycle we will visit SUNY Maritime, a college under the Throgg's Neck Bridge in the Bronx. Today you should start thinking about where you would like to go to college and what you would like to study. We will be getting a tour, meeting some of the professors and testing the Water Quality right next to Long Island Sound! Be sure to look back at your questions from yesterday, so you can get them answered today.			
Essential Question(s):				
Common Core / NYS Content Standards	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text		
		Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics.		

Content	Knot Tying Buoyage Systems Water Quality Testing	Skills	Water Quality Testing Observation/Inference Journal Writing Basic Knot Tying Buoyage System
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	cadet – regiment – MMC – TWIC – line – sound – hypoxia –
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus  Texts / Resources	VO OE MST  Water Quality Bag Dividers, Compasses, Parallels Buoyage Systems Manual

Unit #:	7	Unit Title:	Oysters	
			Duration of	
Course:	Harbor Clas	SS	Unit:	2 Weeks

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
		I can define keystone species	
		I can recognize the Eastern Oyster to be a keystone species due to their	Keystone Species notes, classroom
Pre	1	role in providing valuable shelter & habitat for many other estuarine	discussion
		organisms, improving water quality, and reducing bank erosion	
HW	2	I can interpret images to describe the oyster's importance in early NY history	Reading, images, questions
Voc	3	I can record and memorize key terms that will be used throughout the	Vocabulary work
ab	3	year in Harbor Class	
Pre	4	I can demonstrate that I am prepared to go out on a day long	Gear check-off
р	4	field experience	
Intro	5		
Ct c t:		I can describe oysters as bivalve mollusks that live in marine & brackish	Oyster Lab, Water quality testing,
Stati	6	habitats	Oyster identification and biology,
on 1		I can identify the range and habitat of the Eastern Oyster.	Building a filter project, The Big

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
		I can describe oyster feeding habits	Oyster reading, Oyster reef building
		I can draw & explain the life cycle of an oyster.	project, journal write
		I can describe the method of reproduction associated with the Eastern	
		Oyster.	
Stati		I can explain the ecological value of oyster reefs.	п
on 2	7	I can identify factors that have led to the decimation of local oyster reefs.	
0112		(Overharvesting, habitat loss, sedimentation & pollution).	
Stati	8	I can complete water quality testing with my peer group	Water Quality Data Sheet
on 3	U		Water Quanty Bata Sincet
Jour	9	I can relate my Harbor Class field experience to past learning	Journal writing
nal	7	experiences	
Doct	10	I can define why oysters are both a historical and ecological keystone	Quiz/Assessment, wrap-up notes and
Post	10	species	classroom discussion.

Unit Overview	"Obviously, if you don't love life, you can't enjoy an oyster." – Eleanor Clark, writer, scientist, 1959.			
Essential Question(s):				
Common Core / NYS Content Standards	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.		expres (e.g., a inform	ate quantitative or technical information assed in words in a text into visual form a table or chart) and translate ation expressed visually or athematically n an equation) into words.
Content	Oyster Reef Biology Oyster Measuring Oyster Care Oyster Importance Oyster as a Filter	Ski	lls	Water Quality Testing Observation/Inference Journal Writing Oyster Measurement Oyster Filter Contest Eat an Oyster!

Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	oyster reef – restoration – spawn – spat – mollusk – bivalve – siltation – dredge – keystone species – bioindicator –
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus	Aquaculture SCUBA MBRP
		Texts / Resources	Oyster Filter Materials Calipers Water Quality Bag Oyster Nets

Unit #:	8 l	Unit Title:	Harlem River		
				Duration of	
Course:	Harbor Class			Unit:	2 Weeks
				•	

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	1		
HW	2	I can demonstrate knowledge of how our water is treated. I can define CSO and discuss why CSOs are such an issue in NYC	Reading and questions
Voc	3	I can record and memorize key terms that will be used throughout the	Vocabulary work
ab	3	year in Harbor Class	
Pre	4	I can demonstrate that I am prepared to go out on a day long	Gear check-off
р	4	field experience	
Intro	5		
		I can define solid waste and provide several examples.	Harlem River Lab, Water Quality
Stati	,	I can differentiate between sanitary landfills and open dumps.	Testing, Guided nature walk, CSO
on 1	6	I can identify some of the major concerns associated with solid waste	sketch & identification, journal write
		(i.e. pollution, decomposition, finite natural resources, space, etc)	
		I can identify the Combined Sewer System (CSS) as the one implemented	и
C1 ~ 1!		by NYC to deal with wastewater.	
Stati on 2	7	I can explain what Combined Sewer Overflow (CSO) is and describe	
0112		when & why it happens.	
		I can describe the importance of salt marsh habitats to native organisms.	

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Stati	8	I can complete water quality testing with my peer group	Water Quality Data Sheet
on 3	O		vvater Quanty Data Sneet
Jour	9	I can relate my Harbor Class field experience to past learning	Journal writing
nal	9	experiences	
		I can describe the difference between renewable and nonrenewable	
		resources	Notes based on video. Participation
Post	10	I can explain what happens to my sewage when I flush the toilet or use	in CSO model activity. Notes & sketch
		the shower.	based on CSO model.
		I can compare what happens to sewage on a dry day versus a rainy day.	

Unit Overview  Essential Question(s):	This cycle we will focus on three main topics: restoration in New York City, salt marshes and CSOs (Combined Sewer Overflows). We will go up to the Harlem River in Manhattan where we will visit Swindler Cove Park and Sherman Creek, two areas that used to be illegal, open dumps, but have been restored as natural parks.			
Common Core / NYS Content Standards	Follow precisely a complex multister procedure when carrying out exper taking measurements, or performing technical tasks, attending to special or exceptions defined in the text.	iments,		
Content	CSO Identification Landfill vs Open Dump Restoration	Skills	Water Quality Testing Observation/Inference Journal Writing CSO Sketch CSO Identification	
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	sewage treatment plant – sewer – combined sewer – effluent – dry weather overflow – wastewater – urban runoff - nutrients – pathogen – floatable –	

Summative	Lab	Modifications	MBRP
Assessment	Journal Writing	/	Aquaculture
		Extensions	
		/	
		CTE Focus	
		Texts /	Water Quality Bag
		Resources	Boots, Jackets, other Hiking Gear

Jnit #:	<u>9</u> L	Jnit Title:	Dead Horse Bay			
				Duration of		
Course:	Harbor Class			Unit:	2 Weeks	

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	1		
HW	2	I can describe the history of Dead Horse Bay	Reading and questions
Voc ab	3	I can record and memorize key terms that will be used throughout the year in Harbor Class	Vocabulary work
Pre p	4	I can demonstrate that I am prepared to go out on a day long field experience	Gear check-off
Intro	5		
Stati on 1	6	I can define wetlands and differentiate between various types of wetlands. I can draw connections between wetlands and solid waste disposal. I can explain what ecological succession is and give examples of specific pioneer species found at DHB. I can identify native and invasive species at Gerritsen's Creek and DHB. I can explain plant adaptations that estuarine species of DHB have to deal with in terms of coastal ecology (i.e. high salt concentrations, daily temperature fluctuations, seasonal climate change, tides, etc)	Dead Horse Bay Lab, Water Quality Testing, beachcombing, Salt Marsh guided hike, species identification, journal write
Stati on 2	7	I can describe what a dune is and explain its ecological significance.  I can define erosion and provide specific examples of agents of erosion (i.e. wind, water, tides, etc)  I can describe why Phragmites and American Beach Grass are important for the ecology of the salt marsh.	и
Stati on 3	8	I can complete water quality testing with my peer group	Water Quality Data Sheet
Jour nal	9	I can relate my Harbor Class field experience to past learning experiences	Journal writing
Post	10	I can connect what I observed at the Dead Horse Bay landfill with my own habits as a consumer.  I can compare New York's garbage removal from the 19 <sup>th</sup> century to the	Notes based on powerpoint and video.

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
		present.	
		I can differentiate between <u>reduce</u> , <u>reuse</u> , <u>recycle</u>	

Unit Overview	This cycle we will be visiting an example of the wetland biome out near Jamaica Bay. In the past this area was mostly covered in <b>Salt Marshes</b> . Today, due to development, there are very few wetlands left in New York City. We will be studying the significance of wetlands past and present for both people and wildlife.					
Essential Question(s):						
Common Core / NYS Content Standards	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.					
Content	Invasive versus native species Species Identification Understanding Landfills Erosion Dunes and Issues related to	Skills	Water Quality Testing Observation/Inference Journal Writing Species ID Invasive and Native Species ID			
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	landfill - succession - erosion - beach - dune - native species - exotic species - invasive species - pioneer species - salt marsh -			
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus	MBRP SCUBA			

	Texts /	Water Quality Bag
	Resources	Outdoor Gear
		Species Images
		Gloves

Unit #:	10	Unit Title:	SCUBA	
			Duration of	
Course:	Harbor Cla	ass	Unit:	2 Weeks

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	1	I can be prepared to go into the pool. I can watch the PADI video and answer multiple-choice questions.	Multiple choice questions
HW	2	I can summarize basic SCUBA safety protocols	Reading questions share out
Voc	3	I can record and memorize key terms that will be used throughout the	Vocabulary work
ab	3	year in Harbor Class	
Pre p	4	I can demonstrate that I am prepared to go out on a day long field experience	Gear check-off
Intro	5		
Stati		I can assemble the tank, regulator and BCD	
on 1	6	I can follow the proper safety procedures in and around the pool	Discovery Dive Lab, journal write
		I can listen to an industry professional and describe his work	
Stati	_	I can clear my mask	и
on 2	7	I can breathe underwater	
01 11		I can follow directions given by the SCUBA instructor	
Stati	8	I can complete water quality testing with my peer group	Water Quality Data Sheet
on 3			
Jour	9	I can relate my Harbor Class field experience to past learning	Journal writing
nal		experiences	
Post	10	I can recall the steps of putting together and donning my scuba equipment	Quiz

Unit Overview	Today we are going to the Bushwick High School Campus to use the pool and learn about our Professional Diving Program here at Harbor School. We will also meet Lenny Speregen, a commercial diver here in New York Harbor.
Essential Question(s):	

Common Core / NYS Content Standards	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.						
Content	SCUBA Dive SCUBA Basics SCUBA Professional Opportunities	Skills	Water Quality Testing Observation/Inference Journal Writing SCUBA Basics SCUBA Jobs Knowledge				
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	CTE - SCUBA - BCD - SPG - buoyancy - atmospheric pressure - equalize - ascend/descend - gauge - purge valve -				
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus	SCUBA Coor				
		Texts / Resources	SCUBA Gear PADI Dive Literature Lenny and Equipment				

Jnit #:	_11	Unit Title:	t Title: Ocean Engineering & Marine Systems Technology			
			Duration of			
Course:	Harbor Clas	SS	Unit:	2 Weeks		

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	1		
HW	2		
Voc	3	I can record and memorize key terms that will be used throughout the	Vocabulary work

	l			
DAY	DAY	DAILY LEARNING TARGET STUDENT WORK PRODUCT		
ab		year in Harbor Class		
Pre	4	I can demonstrate that I am prepared to go out on a day long	Gear check-off	
р	4	field experience		
Intro	5			
Stati	4			
on 1	6			
Stati	7			
on 2	/			
Stati	8	I can complete water quality testing with my peer group	Water Quality Data Sheet	
on 3	8		water Quality Data Sneet	
Jour	9	I can relate my Harbor Class field experience to past learning	Journal writing	
nal	7	experiences		
Post	10			
	•			
	Unit			
O	verviev	V		

Unit Overview				
Essential Question(s):				
Common Core / NYS Content Standards	Follow precisely a complex multister procedure when carrying out expertaking measurements, or performing technical tasks, attending to special or exceptions defined in the text.	iments,		
Content		Skil	ls	Water Quality Testing Observation/Inference Journal Writing

Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus  Texts / Resources	

Unit #:	_12	_ Unit litle:	Industrial Waterfront			
				Duration of		
Course:	Harbor Cla	ass		Unit:	2 Weeks	
			·			

			T
DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	1	I can analyze the evolution of New York's Industrial Waterfront over time through the use of historic documents I can describe how the Brooklyn Navy Yards are using green technology to change the face of the area	Document Based Questions, historic maps, observation and inference small group work
HW	2	I can describe how the Navy Yards are using green technology to revamp the area	Reading and questions
Voc	3	I can record and memorize key terms that will be used throughout the	Vocabulary work
ab		year in Harbor Class	
Pre p	4	I can demonstrate that I am prepared to go out on a day long field experience	Gear check-off
Intro	5		
Stati on 1	6	I can compare the Brooklyn Navy Yard to the Atlantic Basin Terminal I can compare the landfill at Brooklyn Navy Yard to the landfill in Lower Manhattan and Governors Island I can compare the past uses of the Navy Yard to the present uses	Port Authority Lab, Water Quality Data Sheet, dry dock flip book, journal write
Stati on 2	7	I can describe the various jobs available at shipping ports I can analyze pilings for evidence of marine borers I can assemble a flip book	и
Stati on 3	8	I can complete water quality testing with my peer group	Water Quality Data Sheet
Jour nal	9	I can relate my Harbor Class field experience to past learning experiences	Journal writing

	DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
	Post 10	10	I can show the similarities and differences between the Brooklyn Navy	Comparing and contrasting historic
		10	Yards and the Brooklyn Marine Terminal	maps, political cartoons and writings

Unit Overview	Today we will visit two industrial waterfronts: The Port Authority's Atlantic Basin and the Brooklyn Navy Yard. As you learn about these two places think about the similarities and differences that you see. Why did these areas become and remain industrial (as opposed to recreational or commercial)?				
Essential Question(s):					
Common Core / NYS Content Standards	Follow precisely a complex multister procedure when carrying out exper taking measurements, or performing technical tasks, attending to special or exceptions defined in the text.	iments, 3			
Content	Water Quality Testing Shipping Industry Standards Shipping Industry Security Naval History Navy Yards Past and Present Navy Yards Impact on NYC	Skills	Water Quality Testing Observation/Inference Journal Writing Security Training Historic Fact Find		
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	Port Authority of NY & NJ – container – containerization – Marsec – Dry dock – Stewardship – sustainability – Green building – LEED –		
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus	VO MST		

	Texts /	Security Training Video
	Resources	Dry Dock pictures
		Water Quality Bag

Unit #:	_13	_ Unit Title:	Newtown Creek		
				Duration of	
Course:	Harbor Cla	ass		Unit:	2 Weeks

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT	
		I can analyze a Document Based Question and make inferences based		
		upon its content	Ppt notes, DBQ group work	
Pre	1	I can observe primary source documents and record what I see	DBQ individual work	
		I can analyze primary source documents to better understand the	DBQ marvidual work	
		development of Newtown Creek		
HW	2	I can compare the former uses of Newtown Creek to the current ones and discuss environmental issues that reflect this usage	Reading <u>Heartbeats in the Muck</u> and questions	
Voc	3	I can record and memorize key terms that will be used throughout the	Vocabulary work	
ab	3	year in Harbor Class		
Pre	4	I can demonstrate that I am prepared to go out on a day long field experience	Gear check-off	
р				
Intro	5			
Stati		I can analyze charts to describe how Newtown Creek has changed over	Water Quality Data Sheet, Newtown	
on 1	6	time	Creek Lab, Chart Work, Map Work	
01 11		I can identify CSOs and SPEDES	n	
Stati on 2	7	I can identify possible unchecked pollution issues along the shoreline of		
OH Z		Newtown Creek.		
Stati	8	I can complete water quality testing with my peer group	Water Quality Data Sheet	
on 3			,	
Jour	9	I can relate my Harbor Class field experience to past learning	Journal writing	
nal		experiences		
Post	10	I can use the same primary source documents to write a dbq essay about	DBQ Essay	
		how the Newtown Creek has changed over the last 400 years		

Unit Overview	Today we will be exploring the Newtown Creek & you never know what you may see! We will be joined by staff from the U.S. Merchant Marine Academy at Kings Point. We will be helping out our local Hudson Riverkeeper by patrolling Newtown Creek and looking for possible pollution issues.
------------------	---

Essential Question(s):							
Common Core / NYS Content Standards	Follow precisely a complex multister procedure when carrying out expertaking measurements, or performing technical tasks, attending to special or exceptions defined in the text.	riments, 9					
Content	Chart Work Map Work History of Newtown Creek Present Uses of Newtown Creek Boat Driving Basics Water Quality Comparison	Skills	Journal Wri	on/Inference iting Handling Skills			
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	creek – groundwate aquifer – seepage – refinery – plume – SPDES – litigation – remediation grassroots –	<u>1</u> -			
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus  Texts / Resources	Water Qua	mpasses, dividers, parallels, llity Bag, Weights, Historic ewtown Creek			
Unit #: _14	Unit Title: Bronx River						
Course: Harbo	r Class			Duration of Unit: 2 Weeks			
DAY DAY DAIL	LY LEARNING TARGET			DAY DAILY LEARNING TARGET STUDENT WORK PRODUCT			

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	1	I can draw the water cycle I can explain how water moves through a watershed	Water cycle, ppt notes,
HW	2	I can describe the biology of a squid	Reading and diagram
Voc ab	3	I can record and memorize key terms that will be used throughout the year in Harbor Class	Vocabulary work
Pre p	4	I can demonstrate that I am prepared to go out on a day long field experience	Gear check-off
Intro	5		
Stati on 1	6	I can describe one way that Rocking the Boat and other community organizations are restoring the Bronx River to its original state  I can compare the Bronx River to the other industrial waterfronts we have visited	Water quality data sheet, Bronx River Lab
Stati on 2	7	I can I can row a 15 foot gig with a row in each hand	
Stati on 3	8	I can complete water quality testing with my peer group I can explain the importance of nutrient testing I can follow the directions and complete a nutrient test kit	Water Quality Data Sheet
Jour nal	9	I can relate my Harbor Class field experience to past learning experiences	Journal writing
Post	10	I can use the watershed model to demonstrate how different types of pollution move through a watershed I can dissect a squid and describe its external and internal parts (happening in pre for some sections, post for others)	Watershed model activity sheet, squid dissection, squid homework

Unit Overview	Today we will be traveling to the Bronx River. It's a long ride on the subway so we will be doing our independent reading AND reading an article about the Bronx River. When we arrive at the Bronx River we will meet some people that work for an organization called Rocking the Boat. With their help we will continue our investigation of charts and maps and, of course, Water Quality! Finally, we will row out on the Bronx River to see how the industry and restoration compares to Newtown Creek.			
Essential Question(s):				
Common Core / NYS Content Standards	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.			

Content	Rowing Whitehall Gigs Species Identification Restoration Chart Work Water Quality	Skills	Water Quality Testing Observation/Inference Journal Writing Single Oar Rowing Nutrient Testing Chart Work
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	water cycle – watershed – reservoir – effluent – primary productivity – nutrients – limiting nutrient – algal bloom – wading birds – diving birds –
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus  Texts / Resources	MBRP VO  Water Quality Bag Charts, dividers, parallels, compasses PFDs Nutrient Testing Kit

Unit #:	15	Unit Title:	Gowanus Canal		
				Duration o	f
Course:	Harbor Clas	SS		Uni	: 2 Weeks

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	1	I can analyze documents related to the Gowanus Canal and answer questions, write a paragraph, interpret data	4 Stations – Data Interpretation, Paragraph Writing, Short Answer Questions
HW	2	I can explain the historic uses, pollution of, and current uses/pollution of the Gowanus Canal	Reading and questions
Voc	3	I can record and memorize key terms that will be used throughout the	Vocabulary work
ab	3	year in Harbor Class	
Pre	4	I can demonstrate that I am prepared to go out on a day long	Gear check-off
р	4	field experience	
Intro	5		
Stati	6	I can paddle a small skiff	Water Quality Data Sheet, Gowanus

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT	
on 1		I can safely embark and disembark from the shore	Canal Lab	
		I can identify the impact of CSOs on the Gowanus Canal ecosystem		
Stati		I can compare the industrial uses and restoration of the Gowanus Canal	Water Quality Data Sheet, Gowanus	
on 2	7	to other sites we have visited	Canal Lab	
0112		I can label a map of the Gowanus Canal using my powers of observation		
Stati	8	I can complete water quality testing with my peer group	Water Quality Data Sheet	
on 3	0	I can complete nutrient testing with the help of my peers	Water Quality Data Sileet	
Jour	9	I can relate my Harbor Class field experience to past learning	Journal writing	
nal	7	experiences		
Dost	10	I can consolidate and analyze the information that I collected at the	Gowanus Map	
Post	10	Gowanus and consolidate it on a single map, labeling it appropriately	Gowalius iviap	

Unit Overview	Today we will be traveling to the Gowanus Canal. We will start our day on land learning about another type of row boat built by Marine Systems Technology students. In the afternoon we will all go paddling on the canal in small boats, do water quality, and learn about the Clean Water Act.				
Essential Question(s):					
Common Core / NYS Content Standards	Follow precisely a complex multister procedure when carrying out exper taking measurements, or performing technical tasks, attending to specia or exceptions defined in the text.	iments,			
Content	Gowanus Canal Small Skiff Rowing Gowanus History EPA History Superfund Site History Clean Water Act	Skills	Water Quality Testing Observation/Inference Journal Writing Small boat handling EPA, CWA, Superfund knowledge		

Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	urban – canal – bulkhead – CSO – bio-solid / sludge – stench – conservation – stewardship – biotic factors – abiotic factors –
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus	VO MBRP MST
		Texts / Resources	Gowanus Historic Maps Small Boats PFDs Charts Readings – CWA, EPA, Superfund

Unit #:	16	Unit Title:	Schooner Pioneer I		
		_		Duration of	
Course:	Harbor Cla	ISS		Unit:	2 Weeks

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
	_	I can take notes and describe why we test for fecal coliform in the NY	Facal California Natas
Pre	1	Harbor Estuary	Fecal Coliform Notes
HW	2	None	None
Voc	2	I can record and memorize key terms that will be used throughout the	Vocabulary work
ab	3	year in Harbor Class	
Pre	4	I can demonstrate that I am prepared to go out on a day long	Gear check-off
р	4	field experience	
		I can describe where and why mechanical advantage is used on a ship	
Intro	5	I can compare the effectiveness of different hull types in terms of	
		carrying heavy loads	
Stati		I can tie standard boating knots	Square knot, figure 8 knot, bowline
on 1	6	I can use past nautical chart knowledge to plot a course	knot, Pioneer lab, wq data sheet,
OIII			raise sails
		I can stand bow watch	и
Stati	7	I can steer the boat with the help of the captain	
on 2	/	I can listen to the commands of the crew and be part of a team to raise	
		sails	
Stati	8	I can complete water quality testing with my peer group	Water Quality Data Sheet
on 3			vvater Quality Data Silect

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Jour nal	9	I can relate my Harbor Class field experience to past learning experiences	Journal writing
Post	10	I can write a formal thank you letter to one of our partners	Formal thank you letter

Unit Overview	Sailing season is upon us! This trip you will be sailing aboard the Pioneer, a very special historic ship that was built in 1885. Today you will learn the basics of how to sail the Pioneer. We will also focus on topics that are related to the Vessel Operations CTE Program. Always be attentive and listen to instructions from the crew!					
Essential Question(s):						
Common Core / NYS Content Standards	Follow precisely a complex multister procedure when carrying out exper taking measurements, or performing technical tasks, attending to special or exceptions defined in the text.	iments, 3				
Content	Advanced Knots Advanced Charts Advanced Navigation Raising Sails Bow Watch Steering the Ship	Skills	Water Quality Testing Observation/Inference Journal Writing Large boat handling skills Knots Charts Bow Watch Sail raising			
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	forward – aft – sail – mast – main mast – foremast – mainsail – foresail – staysails – boom – gaff – schooner – lines – halyard – sheet –			

Summative	Lab	Modifications	VO
Assessment	Journal Writing	/	MST
		Extensions	MBRP
		/	
		CTE Focus	
		Texts /	Charts
		Resources	Line

Jnit #:	_17	Unit Title:	Schooner Pioneer II		
				Duration of	
Course:	Harbor Clas	33		Unit <sup>.</sup>	2 Weeks

DAY	DAY	DAILY LEARNING TARGET	STUDENT WORK PRODUCT
Pre	1	I can be attentive to and take notes on CTE presentations	CTE presentations
HW	2	None	None
Voc ab	3	I can record and memorize key terms that will be used throughout the year in Harbor Class	Vocabulary work
Pre p	4	I can demonstrate that I am prepared to go out on a day long field experience	Gear check-off
Intro	5	I can compare the water quality parameters of surface and bottom water	
Stati on 1	6	I can work as a team to deploy a trawl net I can use a dichotomous key to identify fish of the NY Harbor	Pioneer Lab, WQ data sheet, trawling net and fish identification, raise sails, fecal coliform test
Stati on 2	7	I can listen to the commands of the crew and be part of a team to raise sails I can use past knowledge to identify phyto and zooplankton	и
Stati on 3	8	I can complete water quality testing with my peer group I can test for fecal coliform	Water Quality Data Sheet
Jour nal	9	I can relate my Harbor Class field experience to past learning experiences	Journal writing
Post	10	I can explain my top CTE choice in writing	CTE preference form

Unit	Good Morning, Crew! We are back sailing and you are almost finished with your freshman year.
Overview	Today we are going to do our last round of water quality, go fishing with a trawl net and practice
	some more advanced knots. All station questions are four points each. Work hard and enjoy your
	last Harbor Class field experience. Anchors Away!!

Essential Question(s):  Common Core / NYS Content Standards	Follow precisely a complex multister procedure when carrying out exper taking measurements, or performing technical tasks, attending to specia or exceptions defined in the text.	iments,	
Content	Fish Identification Fish Trawl Water Quality Testing Plankton ID Sail Raising	Skills	Water Quality Testing Observation/Inference Journal Writing Plankton ID Raising Sails Trawl Net Fishing Harbor Species ID
Formative Assessments	Daily Check Off Vocabulary Check Subway Reading Check Do Now Check Off	Key Vocabulary	Leave a lane! — No Hands — Five Minutes!! — Water Quality bag — Favorite place to "Muster!" — Favorite school lunch item — Layers — Jacket — Drop the Line — Haul Away —
Summative Assessment	Lab Journal Writing	Modifications / Extensions / CTE Focus	VO MBRP MST Aquaculture
		Texts / Resources	Trawl Net Tanks Foul Weather Gear Water Quality Bag

## Grade 10 – Fall Term – INTRODUCTORY MARINE RESEARCH I

Wk-Dy (lesson)	Topics	Learning Targets	Activities	Student Work Products + HW	NYS CDOS Learning Standards	NYS Standards for Mathematics, Science, and Technology	Standards Standards W=Writing Standards for Literacy in Histony/Social Studies, Science, and Technical subjects 6–12 E-Reading Standards for Literacy in Science and Technical Subjects 6–12
01-001 (a)	Intro. to Marine Biology	I can understand the importance and benefits of the MBRP.	Theory + Q&A	Program materials. Create professional e-mail and obtain course materials by Monday	Standard 1: Career Development Standard 3b: Career Majors		W2a. Introduce a topic and organize ideas, concepts, and impormation to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
01-002 (b)	Intro. to Marine Biology	I can distinguish Marine Biology from the science of Biology.	Comparison of Marine Biology and Biology	Venn diagram comparing biology and marine biology	Standard 1: Career Development Standard 3b: Career Majors	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	W2a. Introduce a topic and organize ideas, concepts, and information to make connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
02-003 (a)	Project Management	I can list and describe the 4 main types of research projects.	Theory + Journal entries	List and description of the 4 main types of research projects.	Standard 3a: Universal Foundation Skills		W2d. Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely reader.  W4. Produce clear and cohernt writing in which the development, organization, and style are appropriate to task, purpose, and audience.
02-004 (b)	Project Management	I can describe the main lab and school safety procedures.	Lab safety	Matching of safety symbols with lab scenarios.	Standard 3a: Universal Foundation Skills		W4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

						Standard 4: Students will understand and apply criantific concepts principles	W7. Conduct short as well as more sustained research
		3,7			Standard 3a: Universal	such the concepts, principles, and theories pertaining to the physical setting and living	(including a self-generated question) or solve a problem;
	Scientific Methods	i can use the scientific method to solve a problem. Part l	Scientific Methods Exercise	Hypotnesis formulation scientific method stick (SMS).	Foundation Skills	environment and recognize	narrow or broaden the inquiry
						the historical development of ideas in science.	when appropriate; synthesize multiple sources on the
							subject, demonstrating
							understanding of the subject
-							under investigation.
						Standard 4: Students will	W7. Conduct short as well as
						understand and apply	more sustained research
						scientific concepts, principles,	projects to answer a question
_						and theories pertaining to the	(including a self-generated
		I can use the scientific method to solve a		,	Standard 3a: Universal	physical setting and living	question) or solve a problem;
	Scientific Methods	Il Had Maldona	Scientific Methods Exercise	Inquiry questions for SMS.	Foundation Skills	environment and recognize	narrow or broaden the inquiry
		Diodelli, raici				the historical development of	when appropriate; synthesize
						ideas in science.	multiple sources on the
							subject, demonstrating
							understanding of the subject
							under investigation.
						Standard 4: Students will	W8. Gather relevant
						understand and apply	information from multiple
						scientific concepts, principles,	authoritative print and digital
						and theories pertaining to the	sources, using advanced
				lab report for SMS that includes		physical setting and living	searches effectively; assess
02-007		I can describe the stens to writing a lab		locality man generated using web	Standard 3a: Universal	environment and recognize	the usefulness of each source
	Scientific Methods + GIS	renort	Scientific Methods Exercise	hased GIS technology (i.e. Google	Foundation Skills	the historical development of	in answering the research
				Mans/Farth)		ideas in science.	question; integrate
				(adb2) carri).			information into the text
							selectively to maintain the
							flow of ideas, avoiding
							plagiarism and following a
							standard format for citation.
							R3. Follow precisely a complex
					Standard 2: Integrated		multistep procedure when
	Project, Career, and	I can use career and financial	Apply career and management		Leaming		carrying out experiments,
	Figure 1 Management	management skills to build a wind racer	skills learned earlier to building a	[Wind racer budget]	Standard 3a: Universal		taking measurements, or
	rillalicial ivialiagellielit		wind racer.		Foundation Skills		performing technical tasks,
							attending to special cases or
							exceptions defined in the text.
							R3. Follow precisely a complex
					Charles of the Charles		multistep procedure when
	Droject Career and		Apply career and management	Application of business function and	Standard 2: Integrated		carrying out experiments,
	ייסיכני, כמוככיי, מיומ	can use career and imancial	skills learned earlier to building a	financial and human resources to	Ctondard 20. Universal		taking measurements, or
	Financial Management	management skills to build a Willa I acel.	wind racer.	building a wind racer	Standard Sa: Utiliversal		performing technical tasks,
					Calidation Skills		attending to special cases or
	1						exceptions defined in the text.
	100000		Apply career and management		Standard 2: Integrated		R3. Follow precisely a complex
	Project, career, and	I can use career and financial	skills learned earlier to building a	Windracer	Learning		multistep procedure when
	Financial Management	management skills to build a wind racer.	wind racer.		Standard 3b: Career Majors		carrying out experiments,
- 1							taking measurements, or

						perform attendii exceptic	performing technical tasks, attending to special cases or exceptions defined in the text.
Alt.	Project, Career, and Financial Management	I can use career and financial management skills to build a <b>wind</b> racer.	Apply career and management skills learned earlier to building a wind racer.	Wind racer	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R3. Foll multist carying taking in perking in perking in attendir	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Alt.	Project, Career, and Financial Management	l can race a wind racer.	Race the wind racers	Wind racer velocity and position data	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R3. Foll multistr carrying taking in perform perform attending	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Alt.	Project, Career, and Financial Management	I can trouble shoot and explain the limitations of a wind racer.	Trouble shoot and present limitations of the wind racers	Wind racer modifications	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		
03-008 (a)	Project Management	l can correctly format my research journal.	Procedures Lecture	Correctly formatted research journal.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R3. Foll multist when c; experim measur technics special i special i	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
(q)	Technology	l can manage my digital information. Part I	Computer Information Technology	Properly created and named digital files.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R3. Foll multist who is who is who is who is who is who is the is special special defined	R3. Follow precisely a complex multitise procedure when carrying out weperiments, taking measurements, or performing rechnical tasks, attending to special cases or exceptions defined in the text.
03-010 (c)	Technology	I can manage my digital information. Part II	Computer Information Technology	Navigate through Windows Explorer.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R3. Foll multist when cs when cs when cs when cs experim measur technics special special defined	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing rechnical tasks, attending to special cases or exceptions opedined in the text.
03-011 (d)	Technology	I can describe the importance of and create a professional e-mail address.	Computer Information Technology	Creation of a professional e-mail address.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R3. Foll multistr when cx experim resperim technics special (	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions

							defined in the text.
03-012 (e)	Lab Techniques	I can describe the difference between disinfecting and sterilizing.	Procedures Lecture	Journal entry contrasting sterilization and disinfection.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special case or exceptions defined in the text.
04-013 (a)	Lab Techniques	I can disinfect research equipment. Part	Disinfecting and Lab Techniques	Disinfecting Aquatic Ecosystem Model (AEM) parts.	Standard 3a: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
04-014 (b)	Lab Techniques	l can disinfect research equipment. Part	Disinfecting and Lab Techniques	Removing chlorine from AEMs.	Standard 3a: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, strending to special cases or exceptions defined in the text.
04-015 (c)	Lab Techniques	I can disinfect research equipment. Part	Disinfecting and Lab Techniques	Removing vinegar from AEMs.	Standard 3a: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
05-016 (a)	Introductory Science	I can describe the origin and attributes of the Universe.	Theory + Pattems Recognition	Development of a creation myth of the Universe.	Standard 1: Career Development Standard 2: Integrated Learning Standard 33: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	W2b. Develop the topic with well-cheen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
05-017 (b)	Introductory Science	I can describe how patterns are found through the levels of organization.	Theory + Patterns Recognition	Relation of the levels of organization to careers in science.	Standard 1: Career Development Standard 2: Integrated Learning Standard 33: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	W2a. Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

Col	-							R3. Follow precisely a complex
Loan germinate seeds hydroponically, hydroponics   Preparation of lydroponic   Sandard 3: Universal   Sandard 4: Sandard 3: Universal   Sandard 4: Sandard 5: Sandard 4: Sandard 5: Sandard 4: Sandard 5: Sandard 4: Sandard 5: Sandard 5: Sandard 4: Sandard 6: Sandard 4: Sandard 6: Sandard 4: Sandard 8: Sand	_					Standard 1: Career Development		multistep procedure when carrying out
Laming eminate sacid hydroponically.  I can germinate sacid hydroponically.  I can describe what i need to do in high recepted in treading and small strategies or note from stocker.  I can explain how sparterns inhabit.  I can explain how sparterns inhabit.  I can explain how writer makes  I can explain how mater makes  I can explain how m		30iaca capy.H	I can germinate seeds hydroponically.	Signocorport	Preparation of germinating	Standard 2: Integrated		experiments, taking
Lam germinate seeds hidroponically.   Preparation of Ivid roponic   Standard 1: Career		nyai opoliics	Part I	nydi opoliics	substrates.	Learning		measurements, or performing
Front productory Science   Lan equilin bow symmetry aliables   Theory Lecture   Theory Le						Standard 3a: Universal		technical tasks, attending to
Hydroponics I can germinate seeds hydroponically, hydroponics (College Awareness Louis and Proposition of hydroponic ground and and provided to graduate from college.  College Awareness Louis describe what i need to do in high regional and any and the college and any						Foundation Skills		special cases or exceptions defined in the text.
Hydroponics Hydroponically Part II can germinate seeds hydroponically.  College Awareness College Awareness  Comments College Awareness  I can explain how patterns inhabit Introductory Science I can explain how matter makes I can explain how writter makes I can explain how make the manual of the progression of the pr								R3. Follow precisely a complex
Hydroponics I can germinate seeds hydroponically.  College Awareness Learning Standard 2 to the grant of the properties						Standard 1: Career		multistep procedure
Hydroponics I can germinate seeds hydroponically hydroponics regardination tray. Standard 2: Integrated seeds hydroponically hydroponics and the control of part of the control of the control of part of the control of						Development		when carrying out
THOROPOTICS part II Theory Lecture  College Awareness I can excible what I need to do in high recommendation how parterns inhabit Introductory Science  I can explain how matter makes I can be correctly and mattern and recognize of the progression of th			I can germinate seeds hydroponically.		Preparation of hydroponic	Standard 2: Integrated		experiments, taking
College Awareness Ican describe what i need to do in high school to graduate from college.  College Awareness Ican describe what i need to do in high school to graduate from college.  Ican describe what i need to do in high school to graduate from college.  Ican describe what i need to do in high school to graduate from college.  Ican describe what i need to do in high reading and small school to graduate from college.  Ican describe what i need to do in high reading and small school to graduate from college.  Ican explain how patterns inhabit need to do in high reading and small school to graduate from college.  Ican explain how symmetry inhabits Theory Lecture Theory Lecture organism.  Introductory Science Ican explain how matter makes in the progression introductory Science Ican explain how matter makes patterns to create living things.  Ican explain how matter makes patterns the college of symmetrical predeption of the progression for crease living things.  Ican explain how matter makes patterns the college of symmetrical predeption of the progression for deas in science.  Ican explain how matter makes patterns the college of symmetrical predeption of the progression for the progression for the progression for deas in science.  Ican explain how matter makes patterns the college of symmetrical predeption of the progression for the progression for the progression for the progression for the progression states and living things.  Ican explain how matter makes pattern makes pattern makes are recognition of the progression for deas in science ican development of deas in science formatting and how production of deas in science ican development of deas in scien		Hydroponics	PartII	Hydroponics	germination tray.	Learning		measurements, or performing
College Awareness school to graduate from college.  Comments and describe what I need to do in high ridependent randing and small strengthers to receive the comments and to graduate from college.  Introductory Science I can explain how matter makes roughlish how waster makes battern to create living things.  Introductory Science I can explain how matter makes a mattern short settings and wing patterns to create living things.  Introductory Science I can explain how matter makes a mattern short settings and wing permitten and recognise patterns to create living things.  Foundation Skills Standard 2: Integrated and apply science corrects, principles, standard 2: Integrated and apply science.  Creation of a pattern model. Creation of a pattern model. I can explain how matter makes a mattern sheep special patterns to create living things.  Introductory Science   I can explain how matter makes   Theory Lecture   Description of the progression   Learning process permitting to the progression   Learning patterns to create living things. Theory Lecture   Description of the progression   Learning patterns to create living things. Theory Lecture   Description of the progression   Standard 2: Integrated   Standar						Standard 3a: Universal		technical tasks, attending to
College Awareness (com describe what I need to do in high independent reading and small strategies + notes from student strained as the searche what I need to do in high independent reading and small strategies + notes from student strained as the search of a pattern student strained in the patterns i						Foundation Skills		special cases or exceptions defined in the text.
College Awareness I can excribe what meet to do in high strategies and small strategies and straining strategies and straining and small strategies and straining and small strategies and small strategies and small small strategies and small small strategies and small small strategies and small						Standard 1: Career		R9. Draw evidence from
College Awareness I can describe what I need to do in high independent reading and small strategies in right from student strategies in right from student (Comments and and any purplement of a comment) strategies in right from student (Comments and any purplement of a comment) strategies in right from copialin how partierns inhabit introductory Science I can explain how matter makes in the or texture inhabit introductory Science introductory Science in the progression introductory interprogression interprogre					H	Development		informational texts to support
School to graduate from college.  Standard 3s. Universal standard standard and apply scientific concepts, principles, and theories pertaining to the Introductory Science  I can explain how matter makes  I can explain a deporter particular deporter of the progression of the progression of the progression and matter matter matter matter matter matter matter matter ma			I can describe what I need to do in high	Independent reading and small	Suffilliary using Active Note Laking	Standard 2: Integrated		analysis, reflection, and
Introductory Science  Lean explain how patterns inhabit  Introductory Science  Lean explain how matter makes  Lean explain how principles, something to the progression  Lean explain to create living things.  Sandard 4: Students will how principles and the progression of		College Awalelless	school to graduate from college.	group share	su ategies + Hotes Holl studellt	Learning		research.
Introductory Science Ican explain how patterns inhabit Introductory Science Ican explain how patterns inhabit Introductory Science Ican explain how matter makes Introductory Science Ican explain how mattern makes Introductory Science Ican explain how mattern makes Introductory Ican explain how mattern makes Introductory Ican explain how mattern makes Ican explain the material material and proper particular particular development of idea in science in the inspect of the material material material material materi						Standard 3a: Universal		
Introductory Science  Ican explain how patterns inhabit Introductory Science Ican explain how matter makes Interoductory Science Ican explain how matter makes Interoductory Science Ican explain how matter makes Introductory Science Ican explain how matter makes Introductory Science Ican explain how matter makes Interoductory Science Ican explain and apply interoductory interoductory interoductory interoductory interoductory interoductory interoduct							Standard 4: Students will	W2a. Introduce a topic and
Introductory Science Introduct							understand and apply	organize ideas, concepts, and
Introductory Science I can explain how patterns inhabit Introductory Science I can explain how matter makes Introductory Science I can explain how matter makes I can explain and the progression I can explain and the progression I can explain the progression I can explain the progression I can explain and the progression I can explain the progre							scientific concents principles	information to make
Introductory Science I can explain how patterns inhabit nature.  I can explain how symmetry inhabits nature.  I can explain how symmetry inhabits nature.  I can explain how symmetry inhabits nature.  I can explain how matter makes I create living things.  I can explain how matter makes and patterns in create living things.  I can explain how matter makes and patterns in create living things.  I can explain how matter makes and patterns in create living things.  I can explain how matter makes and patterns in create living things.  I can explain how matter makes and patterns in create living things.  I can explain how matter makes and patterns in create living things.  I can explain how matter makes and patterns in create living things.  I can explain how matter makes and patterns in create living things.  I can explain how matter makes and patterns in create living things.  I can explain how matter makes and patterns in create living things.  I can explain how matter makes and patterns in create living things.  I can explain how matter makes are patterns in create living things.  I can explain how matter makes are patterns in create living things.  I can explain how matter makes are patterns in create living things.  I can explain how matter makes are patterns in create living things.  I can explain how matter makes are patterns in create living things.  I can explain how matter makes are patterns in create living things.  I can explain how matter makes are patterns in create living things.  I can explain how matterns in the patterns in create living things.  I can explain how matterns in the patterns in						Standard 2: Integrated	and theories pertaining to the	important
Introductory Science Introduct	1		I can explain how patterns inhabit			leaming	nhysical setting and living	connections and distinctions:
Introductory Science	1	Introductory Science	real explaining parterns illiabit	Theory + Patterns Recognition	Creation of a pattern model.	Standard 3a: Hniversal	physical securing and invitig	include formatting (e.g.
Introductory Science    Can explain how matter makes   Theory Lecture   Creation of the progression   Creation of the progress						Foundation Skills	the historical development of	headings) granhics (e.g.,
Introductory Science I can explain how symmetry inhabits nature.  Introductory Science I can explain how matter makes Introductory Science  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science Introductory Science patterns to create living things.  Introductory Science patterns to create living things patterns to create living things.  Introductory Science patterns to create living things patterns t							ideas in science	figures, tables), and
Introductory Science    Can explain how symmetry inhabits   Theory Lecture   Creation of a model of symmetrical								multimedia when useful to
Introductory Science Introductory Introd								aiding comprehension.
Introductory Science I can explain how symmetry inhabits Introductory Science I can explain how matter makes I can explain how physical esting and living to the progression I can explain how matter makes I can explain and apply science.  I can explain and apply science in the progression and any physical esting and living to the progression and the progression and the progression and the progression							Standard 4: Students will	W2a. Introduce a topic and
Introductory Science I can explain how matter makes Introductory Science Introductory Science I can explain how matter makes I can explain a description of a model of symmetrical general principles, partering to the programment and recognize pertaining to the programment and recognize							understand and apply	organize ideas, concepts, and
Introductory Science Introductory I							scientific concepts, principles,	information to make
Introductory Science I can explain how symmetry inhabits ature.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how matter makes patterns to create living things.  Introductory Science I can explain how mattern and recognize patterns to create living things.  Introductory Science I can explain how mattern and recognize patterns and living things.  Introductory Science I can explain the historical development of the programmant and recognize patterns are patterns.  Introductory Science I can explain the historical development of the programmant and recognize patterns.  Introductory Science I can explain the historical development of the historical development of the historical development of the historical development of the historical developm						Standard 2: Integrated	and theories pertaining to the	important
Introductory Science  Ican explain how matter makes patterns to create living things.  Introductory Science  Introductory Science  Integrated and inving things.  Integrated pettween elements and living things.  Integrated pettween elements and living things.  Integrated pettween elements and living things.  Integrated physical setting and living things.		Introductory Science	I can explain how symmetry inhabits	Theory Lecture	Creation of a model of symmetrical	Learning	physical setting and living	connections and distinctions;
Introductory Science  Ican explain how matter makes patterns to create living things.  Introductory Science  Introductory Science    Foundation Skills   The historical development of lideas in science.		וונו ממתכנסו ל אכובווכב	nature.	יייכסו א דברימוב	organism.	Standard 3a: Universal	environment and recognize	include formatting (e.g.,
Introductory Science  Introductory Science  Introductory Science  Introductory Science  Introductory Science  Integrated   Ican explain how matter makes   Theory Lecture   Description of the progression   Standard 3: Universal   physical setting and living things.   Theory Lecture   Description of the progression   Standard 3: Universal   physical setting and living the progression   Description of the progression   Learning   physical setting and living the progression   Description of the progression   Learning   physical setting and living the progression   Description of the progression   Learning   physical setting and living the progression   Description of the progression   Learning   Description of the progression   Description of the progre						Foundation Skills	the historical development of	headings), graphics (e.g.,
Introductory Science  I can explain how matter makes patterns to create living things.  I can explain how matter makes patterns to create living things.  I can explain how matter makes patterns to create living things.  I can explain how matter makes petraining to the progression patterns to create living things.  I can explain how matter makes petraining to the progression between elements and living things.  I can explain how matter makes pretaining to the progression between elements and living things.  I can explain how matter makes pretaining to the progression between elements and living things.  I can explain how matter makes pretaining to the progression between elements and living things.  I can explain how matter makes pretaining to the progression between elements and living things.  I can explain how matter makes pretaining to the progression between elements and living things.  I can explain how matter makes pretaining to the progression between elements and living things.  I can explain how matter makes pretaining to the progression between elements and living things.  I can explain how matter makes pretain and progression between elements and living things.							ideas in science.	figures, tables), and
Introductory Science  I can explain how matter makes patterns to create living things.  Introductory Science								multimedia when useful to
Introductory Science    Can explain how matter makes patterns to create living things.   Description of the progression patterns to create living things.   Description of the progression patterns to create living things.   Description of the progression patterns to create living things.   Description of the progression patterns to create living things.   Description of the progression patterns to create living things.   Description of the progression patterns to create living things.   Description of the progression patterns to create living things.   Description of the progression patterns to create living things.   Description of the progression patterns to create living things.   Description of the progression patterns and living things   Description of the progression patterns and living things   Description of the progression patterns and living the progression patterns and living things   Description of the progression patterns and living things   Description of the progression patterns a								aiding comprehension.
Introductory Science patterns to create living things.  Introductory Science  Introductory Science  Introductory Science  Interpretation of the progression create living things.  Introductory Science  Interpretation of the progression create living things.  Interpretation of the progression create living things.  Interpretation of the progression create living things.  Introductory Science  Introductory Science  Interpretation of the progression create living things.  Introductory Science  Interpretation of the progression create living things.							Standard 4: Students will	W2a. Introduce a topic and
Introductory Science    Ican explain how matter makes pertaining to the progression patterns to create living things.   Theory Lecture petween elements and living things.   Theory Lecture petween elements are petween elements and living things.   Theory Lecture petween elements are petween elements and living things.   Theory Lecture petween elements are petween elements and living things.   Theory Lecture petween elements are petween							understand and apply	organize ideas, concepts, and
I can explain how matter makes patterns to create living things.  Introductory Science patterns to create living things.  Introductory Science lements and living things.  Introductory Science patterns to create living things.  Interpretation of the progression control of the progression con							scientific concepts, principles,	information to make
Introductory Science later makes Interpreted and living things. Icenture patterns to create living things. Interpreted and living things. Interpreted and living things. Interpreted and living things. In the historical development of the progression Learning physical setting and living phings in science.						Standard 2: Integrated	and theories pertaining to the	important
patterns to create living things.		000000000000000000000000000000000000000	I can explain how matter makes	Thomas	Description of the progression	Learning	physical setting and living	connections and distinctions;
the historical development of ideas in science.		ווווו ממתכנמו ל אכובווכב	patterns to create living things.	וופסוא רפרומו פ	between elements and living things.	Standard 3a: Universal	environment and recognize	include formatting (e.g.,
						Foundation Skills	the historical development of	headings), graphics (e.g.,
multimedia when useful to							ideas in science.	figures, tables), and
								multimedia when useful to

							aiding comprehension.
(a)	Aquatic Chemistry	I can explain how electrical conductivity relates to plant nutrition.	Theory Lecture	Journal entry explaining relationship between EC and nutrient salts.	Standard 2: Integrated Learning	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R9. Draw evidence from informational texts to support analysis, reflection, and research.
08-031 (b)	College Awareness	I can prepare for college reading literature on college readiness.	Reading, Summarizing using Active Note Taking	Article summary using Active Note Taking strategies.	Standard 1: Career Development		R9. Draw evidence from informational texts to support analysis, reflection, and research.
08-032 (c)	Aquatic Chemistry	I can process pH data using averages, tables, and graphs.	Data Processing	Analysis of data.	Standard 1: Career Development Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R9. Draw evidence from informational texts to support analysis, reflection, and research.
(p)	Instrumentation	I can measure the electrical conductivity of a solution.	Instrumentation techniques	Correct use of Hama Combo Sensor for EC.	Standard 1. Career Development Standard 2. Integrated Learning Standard 33. Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
08-034 (e)	Instrumentation	I can adjust the nutrient content of a solution.	Instrumentation techniques	Adjusted nutrient solution for hydroponic seed germination.	Standard 1: Career Development Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
09-035 (a)	Ecosystem Ecology	I can explain how nutrients affect aquatic ecosystems.	Theory Lecture	Description of effects and solutions to excess nutrients in aquatic ecosystems.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R9. Draw evidence from informational texts to support analysis, reflection, and research.
(q) 9E0-60	Ecosystem Ecology	I can trace how nitrogen cycles through the environment.	Draw the path of N in an ecosystem.	Drawn path of N in an ecosystem.	Standard 2: integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R9. Draw evidence from informational texts to support analysis, reflection, and research.

							R3. Follow precisely a complex
							multistep procedure
0	:				Standard 2: Integrated	_	when carrying out
09-037	Aquatic Ecosystem	I can begin building the foundation of an	Jah Tachnianas	Regin accembling AFM - cubstrates	Learning		experiments, taking
<u>(</u> )	Modeling	AEM.			Standard 3a: Universal		measurements, or performing
					Foundation Skills		technical tasks, attending to
							special cases or exceptions
							W6. Use technology, including
							the Internet, to produce,
							publish, and update individual
000					Standard 2: Integrated		or shared writing products,
050-60	Project Management	I can create a data table using Microsoft	Software Technology	Data table.	Leaming		taking advantage of
(g		Word. Part I			Standard 3a: Universal		technology's capacity to link to
					Foundation Skills		other information and to
						_	display information flexibly
							and dynamically.
							W6. Use technology, including
						_	the Internet, to produce,
					Standard 2 Integrated		publish, and update individual
09-039		I can create a data table using Microsoft			leaming		or shared writing products,
(0)	Project Management	Word Part II	Software Technology	Data table.	Standard 3a: Universal		taking advantage of
(a)					Foundation Skills		technology's capacity to link to
							other information and to
							display information flexibly
							and dynamically.
						Standard 4: Students will	R3. Follow precisely a complex
						understand and apply	multistep procedure
0			Nutrient Measurements and	Measure Buffering Capacity,	Standard 2: Integrated	scientific concepts, principles,	when carrying out
10-040	Aguatic Chemistry	I can compare the nutrient content of	comparison between ammonia	Nitrites, Nitrates, and pH of AEM +	Leaming	and theories pertaining to the	experiments, taking
(a)	Addanc Chemistry	filtered, HRE, and AEM water.	and nitrate levels in an Aquatic	preparation of a lab report written	Standard 3a: Universal	physical setting and living	measurements, or performing
			Ecosystem Model	backwards.	Foundation Skills	environment and recognize	technical tasks, attending to
						the historical development of	special cases or exceptions
						ideas in science.	defined in the text.
						Standard 4: Students will	R3. Follow precisely a complex
						understand and apply	multistep procedure
77.0			Nutrient Measurements and		Standard 2: Integrated	scientific concepts, principles,	when carrying out
10-041	Aguatic Chemistry	I can compare the ammonia levels of	comparison between ammonia	Measure and record the ammonia	Learning	and theories pertaining to the	experiments, taking
(Q)		filtered, HRE, and AEM water.	and nitrate levels in an Aquatic	levels of various solutions.	Standard 3a: Universal	physical setting and living	measurements, or performing
			Ecosystem Model		Foundation Skills	environment and recognize	technical tasks, attending to
						the historical development or	special cases or exceptions
						ideas in science.	defined in the text.
							R3. Follow precisely a complex
							multistep procedure
,			Nutrient Measurements and		Standard 2: Integrated		when carrying out
TO-047	Aguatic Chemistry	I can monitor the relationship between	comparison between ammonia	Add ammonia + Nitrifying bacteria	Learning		experiments, taking
(C)		ammonia and nitrates in an AEM. Part l	and nitrate levels in an Aquatic	to AEM	Standard 3a: Universal		measurements, or performing
			Ecosystem Model		Foundation Skills		technical tasks, attending to
							special cases or exceptions
		a contract and an other contracts			Chambert Chambert		dellied ill tile text.
11-043	Aquatic Chemistry	ammonia and nitrates in an AEM. Part II	Nitrogen monitoring in AEM with	Nitrogen curve in AEM.	Standard 2. Integrated Leaming		ns. Follow precisely a complex multistep procedure
(a)	1	(MLP 02: graph ammonia vs. nitrite vs.	Colorimetric Test Strips	(Assign MLP 02)	Standard 3a: Universal	_	when carrying out

		nitrate levels in the AEM).			Foundation Skills		experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
11-044 (b)	Aquatic Chemistry	I can trace the path of Carbon in an ecosystem.	Theory Lecture	Model path of C in an ecosystem.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	W2a. Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
11-045 (c)	Aquatic Chemistry	I can explain how some nutrients are limiting factors for marine organisms.	Theory Lecture	List different nutrients in ecosystems.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	W2a. Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
11-046 (d)	Aquatic Chemistry + Instrumentation	I can describe how phosphate cycles through an ecosystem.	Phosphate monitoring in AEM with Colorimetric Test Strips	Monitor and record the phosphate levels of various solutions.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	W2a. Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
11-047 (e)	Aquatic Chemistry + Instrumentation	I can monitor and adjust the Buffering Capacity of an AEM?	Add sodium bicarbonate to AEMs to increase buffering capacity and raise pH	Journal, monitor and adjust physical chemical properties.	Standard 2: integrated Learning Standard 3a: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
12-048 (a)	Project Management	I can begin to search for a research topic. Step 01 (MLP 03 – Search for 2 media sources for each of your 3 main topics, summarize them, and submit them in order of interest) – due week 17	Research Topic Search	Complete Step 01 of research process. (MLP 03 – Search for 2 media sources for each of your 3 main topics, summarize them, and submit them in order of interest) – due week 17	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		
12-049 (b)	Aquatic Chemistry	I can describe the origin of the hydrosphere.	Ecosystem Theory	Describe the origin of the hydrosphere.	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 4: Students will understand and apply scientific concepts, principles,	W10. Write routinely over extended time frames (time for reflection and revision) and

						and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	shorter time frames (a single sitting or a day or two) for a range of discipline-specific task, purposes, and audiences.
12-050 (c)	Aquatic Chemistry	I can monitor the AEM.	Monitor AEM	Journal, monitor and adjust physical chemical properties.	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		W2a. Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables) and multimedia when useful to aiding comprehension.
13-051 (a)	Project Management	I can begin the project literature review. Step 02	Literature Review	Complete search query and find 6 sources, two for each of the three topics chosen in Step 01.	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		R10. By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently.
13-052 (b)	GIS	l can tour different marine ecosystems on Google Earth.	Ecosystem Theory and search using GE (discuss point, line, polygon attributes)	Venn diagram with different ecosystems (discussion of point, line, + polygon attributes).	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
13-053 (c)	Aquatic Ecology	I can trace the flow of matter and energy in an ecosystem.	Ecosystem Theory	Food web of marine organisms.	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
13-054 (d)	Aquatic Chemistry	l can relate alkalinity and hardness to pH.	Lab Techniques with Colorimetric Test Strips	Alkalinity and hardness measurements of AEM.	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks attending to special cases or exceptions defined in the text.
13-055 (e)	Aquatic Chemistry	I can monitor the AEM.	Monitor AEM	Journal, monitor and adjust physical chemical properties.	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to

							special cases or exceptions defined in the text.
14-056 (a)	Technical Reading and Writing	I can describe the advantages of active technical reading.	Literature Review	Step 03 completion using ANT and APA style.	Standard 3a: Universal Foundation Skills		R2. Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.
14-057 (b)	Aquatic Chemistry	I can compare the salinity of filtered, HRE, and AEM water.	Comparison of salinity between different solutions	Monitor, record, and graph the salinities of various solutions.	Standard 3a: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
14-058 (c)	Instrumentation	I can relate the concepts of accuracy and precision to measurement.	Measure temperature of boiling and freezing water and relate concepts of accuracy and precision	Calibrate pH/EC Hanna Combo Meters.	Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks attending to special cases or exceptions defined in the text.
14-059 (d)	Instrumentation	I can explain the concept of calibration with standards for repeatability in measurement.	Use standards to calibrate pH sensor	Working definitions of accuracy, precision, calibration, and repeatability.	Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.
14-060 (e)	Aquatic Chemistry	I can monitor and add a primary producer to the AEM.	Monitor AEM	Journal, monitor and adjust physical chemical properties; add algae.	Standard 3a: Universal Foundation Skills		R7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
15-061 (a)	Technical Reading and Writing	l can summarize sources of my literature review. Step 03	Summarizing using Active Note Taking	Step 03 completion using ANT and APA style.	Standard 3a: Universal Foundation Skills		W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
15-062 (b)	Aquatic Ecology	I can describe the role of primary producers in an ecosystem	Ecosystem Theory	Journal entry explaining the role of algae in AEMs.	Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles,	W2a. Introduce a topic and organize ideas, concepts, and information to make

						and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
15-063 (c)	Instrumentation	I can create standards for pH.	Prepare pH standards	pH standard preparation.	Standard 3a: Universal Foundation Skills	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
15-064 (d)	Instrumentation	I can calibrate a pH meter and test for instrument error.	Calibrate pH sensors	pH sensor calibration and instrument error testing graph.	Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, raking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
15-065 (e)	Aquatic Chemistry	I can monitor and add primary consumers to the AEM.	Monitor AEM	Journal, monitor and adjust physical chemical properties; add invertebrates (snails + shrimp).	Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	RY. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
16-066 (a)	Data Management	l can graph my data using excel.	Graph data on MS Excel	Excel graphs of AEM physical/chemical parameters.	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 3: Students will understand mathematics and become mathematics and confident by communicating and reasoning mathematically, by applying mathematics in real-world estings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability, and trigonometry.	
16-067 (b)	Data Management	l can graph my data using excel.	Continue graphing and add graphs to a slide show	Excel graphs of AEM physical/chemical parameters.	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 3: Students will understand mathematics and become mathematically confident by communicating and reasoning mathematically, by applying mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability, and	

	Λ .	Α .	R7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.				R7. Translate quantitative or technical information expressed in words in a text into Visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.	NR7. Translate quantitative or technical information expressed in words in a text into Visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an mathematically (e.g., in an
trigonometry.	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.		Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.
	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3b: Career Majors	Standard 2: Integrated Leaming Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3b: Career Majors	Standard 3a: Universal Foundation Skills
	Figures of the AEM data.	Digital presentation of aspect of AEM.	Journal, monitor and adjust physical chemical properties.	Digital presentation of an aspect of the AEM.	Digital presentation of an aspect of the AEM.	Literature review and topic definition.	Journal, monitor and adjust physical chemical properties (MLP 04)	Journal, monitor and adjust physical chemical properties.
	Data Analysis	Data Analysis	Monitor AEM	Digital Presentations MLP 02: Analyze the relationship between ammonia, nitrite, and nitrate levels of an AEM	Digital Presentations MLP 02: Analyze the relationship between ammonia, nitrite, and nitrate levels of an AEM	Step 02 – Literature review defense	Monitor AEM	Lab Techniques
	I can connect my data to the health of the AEM.	I can connect my data to the health of the AEM.	I can monitor and describe maintenance procedures for the AEM.	I can present the state of the health of my AEM and I can explain the role of primary consumers in an ecosystem.	I can present the state of the health of my AEM and I can explain the role of primary consumers in an ecosystem.	I can present my top 3 media sources that relate to my topic of interest.	I can monitor the AEM and prepare a schedule for maintenance during Regents week (MLP 04 – Prepare a diagnosis presentation of your AEM – due 1** week of semester 2)	I can monitor the AEM.
	Data Analysis	Data Analysis	Aquatic Chemistry	Presentation Skills	Presentation Skills	Project Management	Aquatic Chemistry	Aquatic Chemistry (Regents Week)
	16-068 (c)	16-069 (d)	16-070 (e)	17-071 (a)	17-072 (b)	17-073 (c)	17-074 (d)	18

equation) into words.	

## Grade 10 – Spring Term – INTRODUCTORY MARINE RESEARCH II

Wk-Dy (lesson)	Topics	Learning Targets	Activities	Student Work Products	NYS CDOS Learning Standards	NYS Standards	Common Core Standards
01-075 (a)	Presentation Skills	Present a diagnosis of your AEM	Peer presentations	Slide show of diagnosis of AEM	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		
01-076 (b)	Aquatic Chemistry	I can identify the role of DO and BOD in an ecosystem.	Mime the procedures of measuring DO using the Winkler Method of the AEM	Journal entry explaining role of DO and BOD in an ecosystem.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skilis Standard 3b: Career Majors	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	
01-077 (c)	Aquatic Chemistry	I can practice the procedures for measuring DO.	Mime the procedures of measuring DO using the Winkler Method of the AEM	DO procedure practice.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skils Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design. Construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
01-078 (d)	Aquatic Chemistry	I can monitor the AEM.	Monitor DO in AEM	AEM monitored	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
02-079 (a)	Aquatic Chemistry	I can monitor the DO in my AEM.	Monitor DO in AEM	DO monitored in AEM	Standard 2: Integrated Learning Standard 3a: Universal Foundation SKills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
02-080 (b)	Aquatic Chemistry	I can monitor the DO in my AEM.	Monitor DO in AEM	DO monitored in AEM	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking

measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	WB. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the stengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overrellance on any one source and citation.	WB. Gather relevant information from multiple authoritative print and digital sources, using advanced searchese effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for following a standard format for following as standard for following as sta	R3. Follow precisely a complex multistep procedure when carrying out when carrying out measurements, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	WB. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text seelectively to maintain the flow of ideas, avoiding plagiatism and overrelience on any one source and
systems to satisfy human and environmental needs.	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.
	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skils Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skils Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skils Standard 3b: Career Majors
	Journal entry explaining what a peer reviewed journal article is.	One PRJA found using a search engine.	Journal, monitor and adjust physical chemical properties; vertebrates and assassin snalls added.	One journal article found using a search engine.
	Tech. Read + Write Theory using Michael Judge 's article on Perwinkles	Search for journal articles using internet search engines	Add ecosystem components to AEM and monitor	Search for journal articles using internet search engines
	I can identify what a peer reviewed journal article (PRJA) is.	I can effectively search for a journal article. Part I	I can monitor and add secondary consumers to the AEM.	l can effectively search for a journal article. Part II (due week 7)
	Technical Reading and Writing	Technical Reading and Writing	Aquatic Chemistry	Technical Reading and Writing
	02-081	02-082 (d)	02-083 (e)	03-084 (a)

							following a standard format for citation.
(a)	Technical Reading and Writing	I can write the bibliography of a peer reviewed journal article.	Bibliography Preparation Using APA Style	Bibliography APA style of 3 PRJAs.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	
(c)	Technical Reading and Writing	I can write the bibliography of a peer reviewed journal article.	Bibliography Preparation Using APA Style	Bibliography APA style of 3 PRJAs.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	
03-087 (d)	Aquatic Chemistry	I can identify the nutritional needs of terrestrial plants in an AEM.	Plant nutrition theory	Joumal entry identifying the nutritional needs of plants.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize environment and development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize as unmarizes or information presented in a text by paraphrasing them in simpler but still accurate terms.
(e)	Aquatic Chemistry	I can monitor the AEM and add magnesium sulfate for photosynthetic pigments. (Assign MLP 03. NYCSEF).	Monitor AEM and add magnesium sulfate	Joumal, monitor and adjust physical chemical properties of AEM.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		R7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
04-089 (a)	Technical Reading and Writing	l can identify Active Note Taking (ANT) Skills.	Active Note Taking Skills Theory	Journal entry Identifying different active note taking skills.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		
04-090 (b)	Technical Reading and Writing	I can read the abstract and introduction of a PRJA.	Read the introduction to a PRJA (peer reviewed journal article)	ANT of abstract and introduction.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		W.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
04-091 (c)	Technical Reading and Writing	I can identify the project purpose of a PRJA.	Identify scientific problem of a PRJA	ANT of project purpose.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
04-092 (d)	Technical Reading and Writing	I can interpret journal article figures and captions. Part I	Analyze the results of a PRJA	Mark up of journal article figures.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		W.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

							R3. Follow precisely a complex multistep procedure
04-093	Aquatic Chemistry	;	:	Journal, monitor and adjust physical	Standard 2: Integrated Learning		when carrying out experiments, taking
(e)	(NYCSEF weekend)	I can monitor the AEM.	Monitor AEM	chemical properties of AEM.	Standard 3a: Universal		measurements, or performing
					Foundation Skills		technical tasks, attending to special cases or exceptions
							defined in the text.
05-094 (a)	Presentation Skills	I can identify key strategic presentation skills demonstrated in NYCSEF.	Discuss NYCSEF projects and presentation skills	Class discussion of NYCSEF project and presentation strategies.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		
							W2. Write
00000	Tochairal Boading		PRJA figures and captions are to		Standard 2: Integrated		informative/explanatory texts,
03-033	recillical headilig allu	l can interpret journal article figures and	be marked up and translated to	Mark up of journal article captions.	Learning Standard 3a: Universal		including the narration of historical events scientific
(a)	Writing	captions: rain	simpler language		Foundation Skills		procedures/ experiments, or
							technical processes.
960-50	Technical Reading and	I can relate the results and conclusions	Venn diagram to be completed relating the results and	Journal entry explaining the	Standard 2: Integrated Learning		
(c)	Writing	OT a PKJA.	conclusions of a PRJA	amerent settings of the scope.	Standard 3a: Universal Foundation Skills		
							W2. Write
05-097		I can prepare a slide show for the AEM.	AEM 2" slide show presentation	Journal entry on slide show	Standard 2: Integrated		informative/explanatory texts,
5 5	Presentation Skills	(MLP 04: Create a presentation of the	presentation of the state of the	(MLP 04: Create a presentation of	Learning Standard 3a: Universal		nicidang the narration of historical events, scientific
3		state of the AEM)	AEM)	the state of the AEM)	Foundation Skills		procedures/ experiments, or
							technical processes.
							R3. Follow precisely a complex
							multistep procedure
05-098					Standard 2: Integrated		when carrying out
500-00	Aquatic Chemistry	I can monitor the AEM.	Monitor AEM	Journal, monitor and adjust pnysical	Learning Standard 3a: Universal		experiments, taking
(e)				cieilical piopeines.	Standard 3a. Offiversal		technical tacks attending to
					rodiidation skiiis		recillical tasks, attending to
							defined in the text.
							W2. Write
					Standard 2: Integrated		informative/explanatory texts,
660-90	lechnical Reading and	I can summarize my project PBJA.	Summarize Project PRIA	Summary using ANT of PRIA.	Learning		including the narration of
(a)	Writing				Standard 3a: Universal		historical events, scientific
	,				Foundation Skills		procedures/ experiments, or
							technical processes.
							R3. Follow precisely a complex
							multistep procedure
06-100					Standard 2: Integrated		when carrying out
2 7 7	Microscopy	I can maintain a microscope.	incroscope mannenance and	Creatied Hilcoscopes + parts	C+22dard 22:   Injure		moscuromonts, takinig
(a)				worksheet illed.	Standard 3a. Offiversal Foundation Skills		technical tasks attending to
							special cases or exceptions
							defined in the text.
06-101	Microscopy	I can describe the history of the microscope and identify its parts.	ID Microscope parts	Journal entry of history and parts of microscope.	Standard 2: Integrated Learning	Standard 4: Students will understand and apply	W2. Write informative/explanatory texts,
(2)							

including the narration of historical events, scientific procedures/ experiments, or technical processes.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	R7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.	W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	R7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.	R7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of tideas in science.						
Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills
	Drawings of letters in field of vision.	Journal, monitor and adjust physical chemical properties.	Summary using ANT of PRJA. (MLP 05)	Wet and dry slides prepared.	Microorganisms recorded on microscopy data sheets.	Microorganisms recorded on microscopy data sheets.
	Letter "e" lab	View microorganisms of AEM	Summarize Project PRJA	Prepare wet and dry slides	Microscope observations of AEM algae and recorded on microscopy paper	Microscope observations of AEM algae and recorded on microscopy paper
	I can correctly use the different settings of amicroscope.	I can view microorganisms in the AEM.	I can summarize my project PRJA. (MLP 05 - I can find 4 up-to-date articles on my topic of interest and summarize them in my research journal – due week 16)	I can prepare dry and wet microscope samples.	I can record results of microorganisms of the AEM using a microscope.	I can record results of microorganisms of the AEM using a microscope.
	Microscopy	Microscopy	Technical Reading and Writing	Microscopy	Microscopy	Microscopy
	06-102 (d)	06-103 (e)	07-104 (a)	07-105 (b)	07-106 (c)	07-107 (d)

						D7 Integrate and evaluate
						multiple sources of
07-108		I can view microorganisms in the AEM.		Drawing of organisms in field of	Staffdard 2: Integrated	information presented in
(0)	Microscopy	(MLP 04 due: Create a presentation of	View microorganisms of AEM	vision + ID if possible	Standard 3a: Hniversal	diverse lorrifats and media
(a)		the state of the AEM).			Foundation Skills	multimedia) in order to
						address a question or solve a
						W2 Write
					Standard 2: Integrated	informative/explanatory texts.
08-109	:	I can review my AEM (MLP 04) slide	Review and practice AEM	AEM 2 <sup>nd</sup> presentation review and	Learning	including the narration of
(6)	Presentation Skills	show for deficiencies and practice my	presentation (MLP 04) using	practice.	Standard 3a: Universal	historical events. scientific
(a)	_	presentation.	small group rotations		Foundation Skills	procedures/experiments or
						technical processes.
						W2. Write
					Standard 2: Integrated	informative/explanatory texts,
08-110	:	I can review my AEM (MLP 04) slide	Review and practice AEM	AEM 2 <sup>nd</sup> presentation review and	Learning	including the narration of
(h)	Presentation Skills	show for deficiencies and practice my	presentation (MLP 04) using	practice.	Standard 3a: Universal	historical events, scientific
2		presentation.	small group rotations		Foundation Skills	procedures/ experiments, or
						technical processes.
						W2. Write
,		cap review my AFM (MID 04) slide	Beview and practice AFM		Standard 2: Integrated	informative/explanatory texts,
08-111	JI:70 20:+0+00000	chamfer deficiencies and amotion and	neview allu plactice Arivi	AEM 2 <sup>nd</sup> presentation review and	Learning	including the narration of
(2)	Presentation Skins	Show for deficiencies and practice my	presentation (INLP 04) using	practice.	Standard 3a: Universal	historical events, scientific
)	_	טופאפוונמנוסוו.	Siliali gioup rotations		Foundation Skills	procedures/ experiments, or
						technical processes.
						W2. Write
	:					informative/explanatory texts,
08-112	Technical Reading and	May out to accept the May All	# # # # # # # # # # # # # # # # # # #	tono de Marie	Standard 3a: Universal	including the narration of
(p)	Writing	can prepare a aboreso une Acivi.	ALIM ISD IEDOIL WILLIES.	טרוא ומס ובססור מומור:	Foundation Skills	historical events, scientific
						procedures/ experiments, or
						technical processes.
						W2. Write
	:					informative/explanatory texts,
08-113	Technical Reading and	10 C C C C C C C C C C C C C C C C C C C		401 1401 401 401 401 401 401 401 401 401	Standard 3a: Universal	including the narration of
(e)	Writing	i cali prepare a lab reportior ure Acivi:	ALINI IAD TEPOT WITHING.	Acivi lab lepoi t diait.	Foundation Skills	historical events, scientific
						procedures/ experiments, or
						technical processes.
						W2. Write
7117	Tochnical Pooling and					informative/explanatory texts,
03-TT4	ו ברוווורמו ואבמחווו מיווח	I can prepare a lab report for the AEM.	AEM lab report writing.	AEM lab report draft.	Standard 3a: Universal	including the narration of
(a)	Writing				Foundation Skills	historical events, scientific
	)					procedures/ experiments, or
						technical processes.
						W2. Write
777	T					informative/explanatory texts,
CTT-60	וברוווונמן אבמחווצ מווח	I can prepare a lab report for the AEM.	AEM lab report writing.	AEM lab report draft.	Standard 3a: Universal	including the narration of
(q)	Writing	-		-	Foundation Skills	historical events, scientific
						procedures/ experiments, or
						technical processes.
09-116	Technical Reading and	I can prepare a lab report for the AEM.	AEM lab report writing.	AEM lab report draft.	Standard 3a: Universal Foundation Skills	W2. Write informative/explanatory texts,
(1)	WILLING					including the narration of

							historical events, scientific procedures/ experiments, or technical processes.
09-117	Technical Reading and Writing	I can identify the required components of a PRJA slide show presentation.	Review PRJA slide show requirements; Place organisms into larger	Journal entry for PRJA slide show requirements.	Standard 2: Integrated Learning		
(d)	(Good Friday – no School or day 5)	(After school in preparation of spring Break) I can transfer an AEM to a larger holding tank and harvest basil.	holding tanks and disinfect smaller tanks; Harvest basil.	Placement of all AEM organisms and substrates into larger holding tank in preparation for Spring Break.	Standard 3a: Universal Foundation Skills		
10-118 (a)	Presentation Skills (week after Spring Break)	I can present my AEM results to an audience.	Present AEMs – audience uses ANT and judges using scoring sheet	AEM Digital Presentation, students use ANT to take notes, and student score sheets.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		
10-119 (b)	Presentation Skills (week after Spring Break)	I can present my AEM results to an audience.	Present AEMs – audience uses ANT and judges using scoring sheet	AEM Digital Presentation, students use ANT to take notes, and student score sheets.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		
10-120 (c)	Systematics	I can use a dichotomous key to identify filamentous green algae.	Use a dichotomous key to identify the filamentous green algae	Identification of filamentous green algae.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
10-121 (d)	Systematics	I can use a dichotomous key to identify filamentous green algae.	Use a dichotomous key to identify the filamentous green algae	Identification of filamentous green algae.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
10-122 (e)	Zoology	I can explain aspects of the biology and ecology of a squid.	Students who hand in a first draft of PRJA slide show summary dissect squid	Dissection of a squid.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
11-123 (a)	Presentation Skills	I can present and use constructive criticism to update a digital presentation of a PRJA.	Round robin presentations and group critique	Digital presentation of a PRJA.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		W.B. Cather relevant information from multiple authoritative print and digital sources, using advanced searches effectively, assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the fillow of ideas, avoiding plagiarism and overnellance

on any one source and following a standard format for citation. We. Use technology, including the Internet, to produce, publish, and update individual or shared witting products in response to orgoing feedback, including new arguments or information.	WB. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively, assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagatism and overreliance on any one source and following a standard format for citation.  WG. Use technology, including the Internet, to produce individual or shared writing products in response to ongoing feedback, including new arguments or information, arguments or information.	WB. Cather relevant information from multiple authoritative print and digital sources, using advanced searches effectively, assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.  WB. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new, arguments or information, arguments or information.	WZ. Write informative/explanatory texts, including the narration of
	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal
	Digital presentation of a PRJA.	Digital presentation of a PRJA.	Completed flow diagram comparing relationship between methods, results, and conclusions.
	Round robin presentations and group critique	Round robin presentations and group critique	Flow diagram
	I can present and use constructive criticism to update a digital presentation of a PRJA.	I can present and use constructive criticism to update a digital presentation of a PRJA.	I can relate the methods of a PRJA to the results and conclusions.
	Presentation Skills	Presentation Skills	Technical Reading + Writing
	11-124 (b)	11-125 (c)	11-126 (d)

historical events, scientific procedures/experiments, or technical processes.	W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.	W2. Write informative/explanatory texts,
Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning
	Venn Diagram comparing Analysis and literature review of a PRJA. (MLP 05: Create a simple marine food web of the AEW).	Digital presentation of a PRJA.	Poster board presentation of a PRJA.	Poster board presentation of a PRJA.				
	Review the relationship between the literature review and the analysis of a journal article (MLP 05: Create a simple marine food web of the AEM)	Round robin presentations and group critique	Poster board preparation	Poster board preparation				
	I can describe how the analysis is related to the literature review of a PRIA.  - (MLP O5: Create a simple marine food web of the AEM)  - (Lab tech - organize and maintain an inventory of AEM sampling equipment.)	I can present and use constructive criticism to update a digital presentation of a PRJA.	I can present and use constructive criticism to update a digital presentation of a PRJA.	I can present and use constructive criticism to update a digital presentation of a PRJA.	I can present and use constructive criticism to update a digital presentation of a PRJA.	I can present and use constructive criticism to update a digital presentation of a PRJA.	I can prepare a poster board presentation of a PRJA.	I can prepare a poster board presentation of a PRJA.
	Technical Reading + Writing	Presentation Skills	Presentation Skills	Presentation Skills				
	11-127 (e)	12-128 (a)	12-129 (b)	12-130 (c)	12-131 (d)	12-132 (e)	13-133 (a)	13-134 (b)

					Standard 3a: Universal Foundation Skills	inc his pro	including the narration of historical events, scientific procedures/ experiments, or technical processes.
13-135 (c)	Presentation Skills	I can prepare a poster board presentation of a PRJA.	Poster board preparation	Poster board presentation of a PRJA.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	WZ info inc inc inc inc inc inc inc	W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
13-136 (d)	Presentation Skills	I can prepare a poster board presentation of a PRJA.	Poster board preparation	Poster board presentation of a PRJA.	Standard 2: integrated Learning Standard 3a: Universal Foundation Skills	WZ info	W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
13-137 (e)	Presentation Skills	I can prepare a poster board presentation of a PRJA.	Poster board preparation and presentation (present in hallway)	Poster board presentation of a PRJA.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	WZ	W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
14-138 (a)	Presentation Skills	I can present a poster board presentation of a PRJA. (film presentations)	Poster board preparation and presentation (present in hallway)	Poster board presentation of a PRJA.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	We the pull	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
14-139 (b)	Presentation Skills	I can present a poster board presentation of a PRJA. (film presentations)	Poster board preparation and presentation (present in hallway)	Poster board presentation of a PRJA.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	We the purification of the	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
14-140 (c)	Presentation Skills	I can present a poster board presentation of a PRJA. (film presentations)	Poster board preparation and presentation (present in hallway)	Poster board presentation of a PRJA.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	We the the thick	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
14-141 (d)	Presentation Skills	I can present a poster board presentation of a PRJA. (film presentations)	Poster board preparation and presentation (present in hallway)	Poster board presentation of a PRJA.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	the pull pull pull pull pull pull pull pul	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
14-142 (e)	Presentation Skills	I can present a poster board presentation of a PRJA.	Poster board preparation and presentation (present in hallway)	Poster board presentation of a PRJA.	Standard 2: Integrated Learning	W6	W6. Use technology, including the Internet, to produce,

board presentation and present in hallway)  board presentation (present in hallway)  board presentation (present in hallway)  board presentation (present in hallway)  board presentation of a presentation of a presentation of a presentation (present in hallway)  board presentation (present in hallway)  board presentation of a Standa PRUA.  Boster board presentation of a Standa PRUA.  Boster board presentation of a Standa PRUA.  Beview Score sheets reviews, journaling and video documentation.  Branda presentation of a Standa and video documentation.  Branda Achievement of 100% Removal of a plant brandle design matrix filled and coll from Feathers  Capter board presentation and presentation of a plant branda in the petal.  Capter board presentation of a plant brandle design matrix filled and coll from Feathers  Capter board presentation of a plant brandle out for plant brandary for Journal brandary			(IIIIII presentations)			Standard 3a: Universal	halish,	publish, and update individual
Presentation Skills   Lan preentation of 194A   Presentation and Presentation of 194A   Presentation of 194A						Foundation Skills	or share	red writing products in
Presentation Skills prevents poster board prevention green; in halvey) Presentation Skills preventation green; in halvey) Presentation Skills preventation green; in halvey) presentation of a propertation of a phys. Project Management I can prevent a poster board preventation green; in halvey) Project Management I can prevent a poster board preventation green; in halvey) Project Management I can prevent a poster board preventation green; in halvey) Project Management I can prevent a poster board preventation green; in halvey) Project Management I can prevent a poster board preventation green; in halvey) Project Management I can prevent a poster board preventation green; in halvey) Project Management I can prevent a poster board preventation green; in halvey) Project Management I can prevent a poster board preventation green; in halvey) Project Management I can prevent a poster board preventation green; in halvey) Project Management I can prevent a poster board prevent in halvey) Project Management I can prevent a poster board prevent in halvey) Project Management I can prevent board prevent in halvey) Project Management I can prevent in halvey) I there was a poster board prevent in halvey) Project Management I can prevent board prevent board prevent in halvey) I there was a poster board prevent in halvey) I there was a poster board prevent in halvey) I there was a poster board prevent in halvey) I there was a poster board prevent in halvey) I there was a poster board prevent in halvey) I there was a poster board prevent in halvey) I there was a poster board prevent in halvey) I there was a poster board prevent in halvey) I there was a poster board prevent in halvey) I there was a poster board prevent in halvey) I there was a poster board prevent in halvey) I there was a poster board prevent in halvey in responsively in the poster prevent in halvey in the project Management I can prevent a poster board prevent in halvey in the prevent in h							respons	ise to ongoing feedback,
Presentation Skills (mit presentation of PRA) precentation of PRA.  NYHS Science and presentation of PRA Science and Science and PRA Science and Science and Science and Science and PRA Science and S							includii informa	ing new arguments or lation.
Presentation Skills presentation of a Management presentation of a							W6. Us	se technology, including
Presentation Skills   Team present a poser board present in hallway)   Presentation Skills   Team presentation of a Plan, at a high school secure that a presentation of a Plan, at a high school secure that a presentation of a Plan, at a high school secure that a presentation of a Plan, at a high school secure that and a school presentation of a Plan, at a high school secure that and a presentation of a Plan, at a high school secure that and a presentation of a Plan, at a high school secure that and a presentation of a Plan, at a high school secure that and a presentation of a Plan, at a high school secure that a presentation of a Plan, at a high school secure that a presentation of a Plan, at a high school secure that a presentation of a Plan, at a high school secure that a presentation of a Plan, at a high school secure that a presentation of a Plan, at a high school secure that a presentation of a Plan, at a high school secure that a plan at a high school secure that a presentation of a Plan, at a high school secure that a plan, at a high school secure that a presentation of a Plan, at a high school secure that a plan at a pla						Standard 3: Integrated	the Inte	ernet, to produce,
Presentation Skills presentation of a PRAA presentation of preparation and presentation Skills presentation of a PRAA presentation of a PRAA project Management I can noview the experimental design matrix.  Project Management I can noview the operational of Project Management I can noview the operational design received to the project Management I can noview the operational design received to the project Management I can noview the operational design received to the project Management I can noview the operational design received to the project Management I can noview the operational design received to the project Management I can noview the operational design received to the project Management I can noview the operational design received to the project Management I can noview the operational design received to the project Management I can noview the operational design received to the project Management I can noview the operational design received to the project Management I can noview to debt and of the project Management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to debt and of the project management I can noview to depth and of the project management I can noview to depth and of the project management I can noview to depth and of the project management I can noview to depth and of the project management I can noview to depth and of the project management I can noview to depth and of the project management I can noview to depth and of the p			I can present a poster board	Doctor house bread restain	Doctor boson bread action	Jeannaid 2: micglated	hoblish	n, and update individual
Presentation Skills   Total present all one presents and presentations of a presentation of a state of the presentation (a state of the presentation)   Protect board presentation (a state of the presentation of a presentation of a presentation of a presentation of a presentation (a state of the presentation of a presentation of a presentation of a presentation of a presentation (a presentation of a presentation of a presentation of a presentation (a presentation)   Protect board presentation of a		Presentation Skills	presentation of a PRJA.	proceptation (procept in hallyce)	roster board presentation of a	Ctandard 25:   Inivorcal	orshare	red writing products in
Presentation Skills presented poster board preparation and presentation of a present			(film presentations)	presentation (present in nailway)	TKDA.	Standard Sa. Offiversal	respons	ise to ongoing feedback,
Presentation Skills presentations of a PUA. Poster board greparation and presentation of a PUA presentation of a PUA. Project Management of a market to a PUA. A market to a market to a PUA. A management of a market to a PUA. A						Podilidation Shiils	includir	ing new arguments or
Presentation Skills   Transpresents poster board preparation and presentation of a RNA   Project Management   Transpression of Adherenter and Project Management   Transpression   Transpression of Adherenter and Project Management   Tra							informa	ation.
Presentation Skills   I can presentations of a PRIA.   Project board presentation of a Project board presentation of a PRIA.   Project Management   I can review to project and presentations of a PRIA.   Project Management   I can review to project and presentations of a PRIA.   Project Management   I can review to project and a presentations of a PRIA.   Project Management   I can review to project and a presentations of a PRIA.   Project Management   I can review to project and a presentations of a PRIA.   Project Management   I can review to project and a presentations of a PRIA.   Project Management   I can review to project and a presentations of a PRIA.   Project Management   I can review to project and a presentations of a PRIA.   Project Management   I can review to project and a presentations of a PRIA.   Project Management   I can review to project and a presentations of a PRIA.   Project Management   I can review to project and a presentations of a priate poard presentation of a p							we. us	se technology, including
Presentation Skills (I'm presentation) of a Pays.  NYHS Science and presentation of a Pays.  I can presentation of a Pays.  NYHS Science and presentation of a Pays.  I can debrief from a high school science and film presentation of a Pays.  Project Management I can review the experimental design of Topic though an experimental d						C+000401 -C   D40040040	the Inte	ernet, to produce,
Presentation Skills presentation of a PBA, presentation for a peak from a poster board presentation of a Face and from a high school of peaks at a sign school of peaks at a s			I can present a poster board		200 C C C C C C C C C C C C C C C C C C	Standard 2: Illtegrated	publish,	n, and update individual
NYHS Science and presentations   Presentation (Present in naway)   Presentation (Present in naway)   Presentation (Present in naway)   Presentation (Present in naway)   Presentation (Presentation		Presentation Skills	presentation of a PRJA.	Poster board preparation and	Poster board presentation of a	Learning	orshare	red writing products in
NYHS Science and requirement a poster board presentation in presentation of a science and sequencing fair ingrement and engineering fair and educid from a high school science and engineering fair experimental design matrix to a PRIA.  Project Management I can nevlew the experimental design matrix to a PRIA.  Project Management I can nevlew the experimental design matrix to a PRIA.  Apply the Experimental design and filed out for plant feeling standard 2: Integrated and fair and the fair and the engineering fair and engine			(film presentations)	presentation (present in nailway)	PKJA.	Standard 3a: Universal	respons	ise to ongoing feedback,
NYHS Science and present a poster board presentation in Foster board presentation of a Engineering Fair science and regimence are regimence and regimence and regimence are regimenced as regimences.						FOURIDACION SKIIIS	includir	ing new arguments or
NYHS Science and presentation of a PALA at a high school green action of a PALA at a high school sclence and engineering fair.  NYHS Science and commentations of a PALA at a high school sclence and engineering fair.  Review score sheets  Project Management  I can review the experimental design matrix to a pRIA.  Project Management  I can review de duplocate articles on my internet search quark for journaling matrix to a pRIA.  Project Management  I can review de duplocate articles on my internet search quark for journaling science and engineering fair.  Project Management  I can review duplocate articles on my internet search quark for journaling standard 2: integrated standard 3: universal contraction skills standard 3: uni							informa	ation.
NVHS Science and presentations are related to an element from a high school science and expresentations are designeering from a high school science and expresentations and expresentations of a plant to a PRIA.  NVHS Science and expresent grain science and expresent grain from a high school science and expresent grain.  Review Score sheets reviews, journaling and video documentation.  Review Score sheets							W6. Us	se technology, including
Figureering Fair science and presentations of a Rival at high school science and engineering fair science and fair science and engineering and engineering fair science and engineering and engine			I can present a poster board			Standard 2: Integrated	the Inte	ernet, to produce,
Engineering Fair science and engineering fair. hallway PRDA. Standard 3a: Universal Foundation Stalls  NYHS Science and engineering fair. (film presentations)  Engineering Fair (film presentations)  Review Experimental Design Project Management  Project Management  I can apply an experimental design antrix.  Project Management  I can review 4 up-to-date articles on my Internet search query for Journal Management  Project Management  Project Management  Project Management  Project Management  I can review 4 up-to-date articles on my Internet search query for Journal Management  Project Management  Project Management  I can review 4 up-to-date articles on my Internet search query for Journal Management  Project Management  Project Management  I can review 4 up-to-date articles on my Internet search query for Journal Management  Project Management  Project Management  I can review 4 up-to-date articles on my Internet search query for Journal Management  Project Management  P	^	NYHS Science and	presentation of a PRIA at a high school	Poster board presentation in	Poster board presentation of a	Learning	publish,	ر، and update individual
NYHS Science and largement from a high school science and dengineering fair.  Foundation Skills from a high school science and and engineering fair.  Foundation Skills from a high school science from a high school science from a high school science and dengineering fair.  Foundation Skills from a high school science from a high school school science from a high school s		Frairocaira	science and engineering fair.	hallway	PRIA.	Standard 3a: Universal	orshare	red writing products in
NYHS Science and lean debrief from a high school science and engineering Fair (film reactions)  Engineering Fair (film reactions)  Engineering Fair (film reactions)  Froject Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles for project Management I can review 1 in		רוופווובבוווופר	(film presentations)	Ì		Foundation Skills	respons	use to ongoing feedback,
NYHS Science and and eligineering fair from a high school science  Review score sheets  Project Management  I can review 4 up-to-date articles on my  Project Management  Project Management  Project Management  I can review 4 up-to-date articles on my  I can review 6 up-to-date articles on my  I can review 7 up-to-date articles on my  I can review 7 up-to-date articles on my  I can review 6 up-to-date articles on my  I can review 7 up-to-date articles on my  I can review 6 up-to-date articles on my  I can review 6 up-to-date articles on my  I can review 6 up-to-date articles on my  I can review 7 up-to-date arti							includir	ing new arguments or
Horject Management I can review 4 up-to-date articles on my Project Management Project Management I can review 4 up-to-date articles on my Project Management I can review 4 up-to-date articles on my Project Management I can review 4 up-to-date articles on my I mirror september I can review 4 up-to-date articles on my I mirror september I can review 4 up-to-date articles on my I mirror september I can review 4 up-to-date articles on my I mirror september I can review 4 up-to-date articles on my I mirror september I can review 4 up-to-date articles on my I mirror september I can review 4 up-to-date articles on my I mirror september I can review 4 up-to-date articles on my I mirror september I can review 4 up-to-date articles on my I mirror september I can review 4 up-to-date articles on my I mirror september I can review 5 can review 5 can review 5 can review 5 can review 6 can review 7 can review 7 can review 6 can review 7 can review 7 can review 7 can review 7 can review 6 can review 7 can							informa	lation.
Horject Management I can review 4 up-to-date articles on my Project Management I can review 4 up-to-date articles on my Project Management I can review 4 up-to-date articles on my Internet search articles or my Internet search articles on my Internet search articles or my Internet search articles are review. Internet search articles are reviews articles are reviewed and the review articles are reviewed and the review articles are reviewed and the review article							R7. Inte	egrate and evaluate
Froject Management I can review 4 Up-10 date articles on my I rear dening and engineering Fair (film reactions)  Frogect Management I can review 4 Up-10 date articles on my Project Management I can review 4 Up-10 date articles on my I mternet search query for journal of Project Management I can review 4 Up-10 date articles on my I mternet search query for journal of Project Management I can review 4 Up-10 date articles on my Internet search query for journal of Project Management I can review 4 Up-10 date articles on my Internet search query for journal of Project Management I can review 4 Up-10 date articles on my Internet search query for journal of Project Management I can review 4 Up-10 date articles on my Internet search query for journal of Internature review. Standard 2: Integrated Learning Standard 2: Integrated Standard 2: Integrated Learning Standard 3: Universal Standard 3							multiple	le sources of
Froject Management  Froject Management  Froject Management  Froil Stindard 3: Userning  Froject Management  Froil Stindard 3: Userning  Froject Management  Froil Stindard 3: Universal  Froil Standard 3: Universal  Froil	9	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	I can debrief from a high school science			Standard 2: Integrated	informa	ation presented in
Engineering Fair (film reactions)  Project Management I can review 4 up-to-date articles on my project Management  Figure Engineering Fair  (film reactions)  Foundation Skills  Experimental Design Matrix with examples of a plant everyment of 100% Removal of matrix to a PRJA.  Project Management  From device documentation. Standard 2: Universal stranger and video documentation. Standard 2: Universal review to a PRJA.  Apply the Experimental Design Matrix to the PRJA.  Achievement of 100% Removal of Oil from Feathers  Oil from Feathers  Project Management  I can review 4 up-to-date articles on my Internet search query for journal Literature review.  Standard 2: Integrated Learning Standard 2: Integrated Standard 2: Integrated Learning Learning Learning Learning Learning Standard 2: Integrated Learning Learn	,	NYHS Science and	and engineering fair.	Review score sheets	Score sheet reviews, journaling,	Learning	diverse	e formats and media
Project Management I can review the experimental design matrix to a PRIA.  Project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal internet review.  Review Experimental Design Review Experimental Design Review Experimental Design Reviewed and filled out for plant Review Reviewed and filled out for plant Review Reviewed and filled out for plant Review Learning Standard 2: Integrated Rearring Standard 2: Integrated Reviewed and filled out for PRIA.  Standard 2: Integrated Learning Literature review.		Engineering Fair	(film reactions)		and video documentation.	Standard 3a: Universal	(e.g., q.	quantitative data, video,
Project Management    Can review the experimental design matrix matrix.   Can review the experimental design matrix to apply an experimental design matrix to a PRIA.   Can apply an experimental design matrix to a PRIA.   Can review 4 up-to-date articles on my internet search query for journal project Management   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles on my internet search query for journal   Can review 4 up-to-date articles of a plant articles of a plant articles of a pla		)	(0.0000)			Foundation Skills	multim	nedia) in order to
Project Management I can review the experimental design Project Management I can review 4 up-to-date articles on my Project Management I can review 4 up-to-date articles on my Project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management project Management I can review 4 up-to-date articles of a plant							address	ss a question or solve a
Project Management    Can review the experimental design matrix matrix and project Management   Ican review the up-to-date articles on my	T						problen	m.
Project Management  Projec							R7. Inte	egrate and evaluate
Project Management   Ican review the experimental design   Project Management   Ican review 4 up-to-date articles on my   Ican review 4 up-to-date articles							multiple	le sources of
Project Management I can review the experimental design matrix.  Project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Project Management I can review 4 up-to-date articles on my Project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal can be project Management I can review 4 up-to-date articles on my Internet search query for journal can be project Management I can review 4 up-to-date articles on my Internet search query for journal can be project Management				Review Experimental Design	Experimental design matrix	Standard 2: Integrated	informa	ation presented in
Project Management I can review 4 up-to-date articles on my Internet search query for journal Project Management I can review 4 up-to-date articles on my Internet search query for journal Project Management I can review 4 up-to-date articles on my Internet search query for journal Project Management I can review 4 up-to-date articles on my Internet search query for journal Project Management I can review 4 up-to-date articles on my Internet search query for journal Canada C		Droioct Management	I can review the experimental design	Matrix with example of a plant	reviewed and filled out for plant	Learning	diverse	e formats and media
Project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal project Management I can review 4 up-to-date articles on my Internet search query for journal capture review.		ri oject ivialiagement	matrix.	Matilix With Examples Of a piant	reviewed and illied out for plant	Standard 3a: Universal	) (e.g., qu	quantitative data, video,
Project Management    Can apply an experimental design matrix to a PRJA.   Apply the Experimental Design matrix filled matrix to a PRJA.   Apply the Experimental Design matrix filled matrix to a PRJA.   Achievement of 100% Removal of out for PRJA.   Standard 3a: Universal oli from Feathers   Foundation Skills				a positive contract of the con	experiments.	Foundation Skills	multim	nedia) in order to
Project Management    can review 4 up-to-date articles on my   Project Management   Ican review 4 up-to-date articles on my   Project Management   Ican review 4 up-to-date articles on my   Ican revi							address	ss a question or solve a
Project Management    Can apply an experimental design matrix to a PRJA, matrix to a							problen	m.
Project Management   I can review 4 up-to-date articles on my   Internet search query for journal   I can review 4 up-to-date articles on my   Internet search query for journal   Literature review.   Standard 2: Integrated   Literature review.   Standard 2: Integrated   Literature review.   Standard 3: Untegrated   Literature review.   Lit							R7. Inte	egrate and evaluate
Project Management    Can apply an experimental design   Can review 4 up-to-date articles on my   Ican review 4 up-to-date articles on my   Ican review 4 up-to-date articles on my   Ican review 4 up-to-date articles on my   Internet search query for journal      Project Management   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Internet search query for journal   Ican review 4 up-to-date articles on my   Ican review 4 up-to-date art							multiple	le sources of
I can apply an experimental design				Apply the Experimental Design		Standard 2: Integrated	informa	ation presented in
matrix to a PRJA. Achievement of 100% Removal of out for PRJA. Standard 3a: Universal Oil from Feathers  Oil from Feathers  I can review 4 up-to-date articles on my Internet search query for journal Iterature review. Standard 2: Integrated articles on my Internet search query for journal Literature review.		+ 0000000000000000000000000000000000000	I can apply an experimental design	Matrix to the PRJA –	Experimental design matrix filled	Learning	diverse	e formats and media
Contraction of the process of the		FI UJECL IVIALIABEILIEILL	matrix to a PRJA.	Achievement of 100% Removal of	out for PRJA.	Standard 3a: Universal	(e.g., q.	quantitative data, video,
Project Management I can review 4 up-to-date articles on my Internet search query for journal Literature review. Standard 2: Integrated articles on my Internet search query for journal Literature review.				Oil from Feathers		Foundation Skills	multim	nedia) in order to
Project Management I can review 4 up-to-date articles on my Internet search query for journal Literature review. Standard 2: Integrated articles articles articles on my Internet search query for journal Literature review.							address	ss a question or solve a
Project Management I can review 4 up-to-date articles on my Internet search query for journal Literature review. Standard 2: Integrated articles on my articles	Τ.						2 to 1 to 2	ogratio and oxistinato
		Project Management	I can review 4 up-to-date articles on my tonic of interest.	Internet search query for journal articles	Literature review.	Standard 2: Integrated	K7. Inte	egrate and evaluate le sources of

				Standard 3a: Universal Foundation Skills	information presented in diverse formats and media	ed in media
					(e.g., quantitative data, video, multimedia) in order to address a question or solve a	ita, video, · to ir solve a
Project Management date articles on my topic of interest.		Review summaries for journal articles in journal notebooks	Literature review.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	R7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video multimedia) in order to address a question or solve a problem.	aluate ed in media ita, video, to
Project Management I can describe the project formulation hierarchy.		Project formulation theory - Step 04	Fill out Step 04.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	RS. Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.	text on or ideas erarchies, rstanding
Project Management I can describe the project formulation hierarchy.		Project formulation theory - Step 04	Fill out Step 04.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R5. Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.	text on or ideas erarchies, rstanding
I can list potential project advisors and mentors for my project of interest – STEP 03a.		Create a list of topic experts – Step 05	Fill out Step 05	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	s well as arch question erated problem; he inquiry ynthesize the inguiry synthesize the inguirg subject salphical as subject salphical architectures.
Project Management l can create a proper e-mail to contact project advisors.		E-mail creation for advisors	Contact with advisors to answer project questions.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	s well as arch question erated problem; he inquiry ynthesize the ing ing
I can contact advisors regarding my topic of interest.		Contact advisors	Contact with advisors to answer project questions.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize	s well as arch question erated problem; he inquiry ynthesize

multiple sources on the subject, demonstrating understanding of the subject under investigation.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	
	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors
	Contact with advisors to answer project questions.	Contact with advisors to answer project questions.	Contact with advisors to answer project questions.	Research lab prepared for summer research.
	Contact advisors	Contact advisors	Contact advisors	Lab/Field procedures
	I can contact advisors regarding my topic of interest.	I can contact advisors regarding my topic of interest.	I can contact advisors regarding my topic of interest.	I can inventory and organize my water quality supplies.  (Set ISLs in Pier 101. Ropes to be left over the summer for succession studies and zoology during 11" grade)
	Project Management	Project Management	Project Management	Lab/Field Procedures
	17-154 (d)	17-155 (e)	18-156 (a)	18-157 (b-d)

## Grade 10 - 11 – Summer Marine Biology Research Program - Intermediate Research Methods\*

Week	Topics	Learning Targets	Activities	Student Work Products	NYS CDOS Learning	NYS Standards	Common Core
					Standards		Standards
1	Project Management	I can design a data storage system. I can collect and process project data.	Design, collect and process project data.	Designed, collected and processed project data.	Standard 1: Career Development Standard 3b: Career Majors		W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated

ne subject	e e	A complex e complex seriorming conding to eptions	r a complex e when ments, its, or al tasks, cases or in the text.	r a complex e when ments, its, or al tasks, cases or in the text.	
nation of to be determined when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	
	Standard 1: Career Development Standard 3b: Career Majors	Present project data.			
	Collected and processed project data.	Collected and processed project data.	Collected and processed project data.	Collected and processed project data.	Present project data.
	Collect and process project data.	Present project data.			
	I can collect and process project data.	Present project data.			
	Project Management	Project Management	Project Management	Project Management	Project Management
	2	3	4	5	9

\*10" graders will get theory in the morning and then work with 11" and 12" graders on research projects for the rest of the day.

Grade 11 – Fall Term – Intermediate Marine Research I

Wk-Dy	Wk-Dy Topics	Learning Targets	Activities	Student Work Products	NYS CDOS Learning	NYS Standards	Common Core
(lesson)					Standards		Standards
01-01 (a)	Intro to Research	I can review the value and expectations of the MBRP	Give out materials list MLP 01 due next week.	Class materials; review class syllabus	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		
01-01	Presentation Skills	I can present my summer research/internship experience.	Project/intemship presentations	Project/internship (slide show) presentations.	Standard 3a: Universal Foundation Skills	Standard 2: Students will access, generate, process, and	

(q)					Standard 3b: Career Majors	transfer information using appropriate technologies.	
01-01 (c-d)	Intro to Research	I can present my summer research/internship experience.	Project/internship presentations; Step 3a due week 3	Project/internship (slide show) presentations.	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	
02-02 (a-b)	Technical Reading + Writing	I can describe in 2 sentences each PRJA I summarized over the summer.	PRJA class presentations	PRJA presentations	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		R7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
02-02 (c)	Lab/Field Safety (OSHA)	I can describe lab and field safety procedures.	Safety chart and safety symbol comparison; safety training; create and review an MBRP emergency action plan	Emergency Action Plan; Safety chart	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
02-02 (d)	Lab/Field Safety (OSHA)	I can practice lab and field safety procedures.	Practice safety training, communication, and an emergency situation	Emergency scenario completion	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
02-03 (a)	SHN	I can describe the UHS program, materials needed, and determine my eligibility to apply for college credit. (MLP 06 - Literature review slide show and 1 <sup>xr</sup> research report draft due weeks 5 + 6) (Step 03a due next week)	UHS and course syllabus slide show presentation; Give out UHS course syllabus; Have students prepare a data sheet for next week (MLP 06 - Literature review slide show and 1° research report draft due weeks 5 + 6) (Step 03a due next week)	Journal entry (MLP 06 - Literature review slide show and 1 <sup>st</sup> research report draft due weeks 5 + 6) (Step 03a due next week)	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		
02-03 (b)	Project Management	I can describe the project management STEPS. (MLP 06 - Literatur review slide show due weeks 5 + 6) (Step 03a due next week)	Project management chronogram and STEPS slide show (MLP 06 - Literature review slide show due weeks 5 + 6) (Step 03a due next week)	Journal entry (MLP 06 - Literature review slide show due weeks 5 + 6) (Step 03a due next week)	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
02-03 (c)	Project Management	I can properly keep a calendar, theory notebook, research journal, + portfolio. (MLP 06 - Literature review slide show due week; 5 + 6) (Step 03a due next week)	Calendar, theory notebook, research journal, and portfolio slide show (MLP 06 - Literature review slide show due weeks 5 + 6) (Step 03a due next week)	Journal entry (MLP 06 - Literature review slide show due weeks 5 + 6) (Step 03a due next week)	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

02-03 (d)	Water Quality	I can sample water from the HRE and take basic water quality measurements.	-Sample HRE water and measure temperature and salinity from west side	Temperature and salinity measurements of HRE-GI, west side	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowbedge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
03-04 (a)	Project Management	I can define a list of potential mentors for my project – STEP 05.	Fill out Advisor/Mentor lists – STEP 5; Advanced students fill out flow charts and materials lists	Advisor/Mentor lists – STEP 05	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and tetchnology to address real-life problems and make informed decisions.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject demonstrating understanding of the subject under investigation.
03-04 (b)	Project Management	I can define a project design chart – STEP 06.	Begin developing a project design chart	Project design chart – STEP 06	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
03-04	Project Management	I can describe the importance and requirements of the Project Conferences (review Project Conference form). Project Conferences	Fill out Project Conference form Project Conferences	Project Conference form filled out Project Conferences	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
03-04 (d)	Water Quality	I can sample basic water quality measurements and survey benthic organisms.	Sample HRE water for temperature and salinity and check on Invertebrate Sampling Lines (ISL) from Pier 101	Temperature and salinity measurements of HRE-GI	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address rea-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
03-05 (a)	Project Management	I can describe the importance of using a chronogram for a project.	Creating a chronogram	Project chronogram as table or Gantt chart	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry

							when appropriate, synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
(a)	Project Management	I can create a research plan and chronogram for my project – STEP 00	Creating a research plan + chronogram – STEP 00	Project chronogram as table or Gantt chart – STEP 00	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
03-05 (c-d)	Project Management	I can manage my project during independent study. Project Conferences	Independent study Project Conferences	Start Project Research Plan draft Project Conferences	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
04-06 (a-b)	Project Management	01. I can define procedures and materials needed for my project – STEPS 07-08.	Prepare flow chart + materials - STEPS 07-08	Flow charts and materials lists started - STEPS 07-08	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
04-06 (c-d)	GIS	I can create a rangeland assessment for Governor's Island and my project Iocality – STEP 03f.	Locate GI, define coordinates, calculate area, measure perimeter of NWHS, and export a map of GI using GE; Prepare a map of the research location using Google Earth	GI + study area map	Standard 2: Integrated Learning Standard 3a: Universal Foundation SKIIIs		
04-07 (a)	Career and Financial Management	I can create a budget for project materials.	Prepare project materials budget	Project materials budget Project Research Plan draft	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
04-07 (b)	Project Management	I can create a data table.	Prepare a data table	Data table filled	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	W2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
04-07 (c-d)	Water Quality	I can compare samples of basic physical- chemical parameters for quality control.	Sample HRE water and measure temperature, salinity, and full gamma of nutrients of Pier 101 by two different groups to compare data and control for quality	Physical-chemical measurements of HRE-GI at Pier 101	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
05-08 (a-b)	Technical Reading and Writing	I can write the justification and the introduction of my project.	Write the justification and introduction	Project justification and introduction completed Project Research Plan draft	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address	W2. Write informative/explanatory texts, including the narration of historical events, scientific

						real-life problems and make informed decisions.	procedures/ experiments, or technical processes.
i	Marine Botany	I can describe the main types of marine algae and explain their ecological role.	Marine Algae theory	Journal entry	Standard 2: Integrated Learning	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
	Marine Botany	I can identify marine algae growing around GI.	Observe macroscopic algae growing on ISL and benthic rocks around Gi beach	Marine algae identification	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	
	Presentation Skills	I can present a draft of my project literature review.	Literature slide show	Literature slide show	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	
	Plankton + GIS	I can explain how plankton is the basis of marine food webs around the world.	Fill in map of major upwelling centers around the world and worksheet with different plankton	Upwelling map and major forms of plankton	Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
	Water Quality + Plankton	l can sample for water physical-chemical parameters and plankton.	Sample physical-chemical parameters, enterococcus, and phytoplankton at Pier 101	Samples of different types of plankton	Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
	Plankton	l can identify plankton samples.	Observe plankton samples under the microscope and incubate enterococcus samples (take pictures of quantitrays)	Field of view drawings and tally of plankton	Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	
	Systematics	l can explain why organisms are identified?	Create an ID key for cyanobacteria	Journal entry explaining difference between classification and identification.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

						ideas in science.	
Alt.	Systematics	I can create a dichotomous key to identify aquatic organisms.	Create an ID key for Cyanobacteria	ID key for cyanobacteria.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Alt.	Systematics	I can create a dichotomous key to identify aquatic organisms.	Finish up identification keys	ID key for cyanobacteria.	Standard 2: Integrated Learning Standard 3a: Universal Foundation SKills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Alt.	Systematics	I can create a dichotomous key to identify aquatic organisms.	Finish up identification keys	ID key for cyanobacteria.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Alt.	Systematics	I can use a dichotomous key to identify filamentous green algae in an AEM	Use a dichotomous key for species identification	Identification of 6 marine organisms.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply socientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
06-10 (a)	Water Quality	I can describe the role of biological indicators (Enterococcus) of water quality.	Water quality theory and analysis of quantitrays for MPN (CSOs, swimming, rain, etc.)	Journal entry	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
06-10 (b)	Zooplankton	I can distinguish the main zooplanktonic components.	Observe micrographs of zooplanktonic larvae and dinoflagellate anatomy worksheet	Dinoflagellate anatomy worksheet	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summare or conclusions of a text; summare, or information presented in a text by paraphrasing them in simpler but still accurate terms.
06-10	Presentation Skills	I can present a draft of my project literature review.	Literature slide show (MLP 07 – 2 <sup>nd</sup> research report	Literature slide show (MLP 07 – 2 <sup>nd</sup> research report draft	Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking	W7. Conduct short as well as more sustained research

(c-d)			draft due week 9)	due week 9)	Standard 3b: Career Majors	skills of mathematics, science, and technology to address real-life problems and make informed decisions.	projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
06-11 (a)	GIS	l can read a bathometric chart.	Create a color-coded bathymetric chart for Gl	1st draft of written report due (Title page, table of contents, introduction, and background information); Color-coded bathymetric chart of GI	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	
06-11 (b-c)	GIS	I can create a bathometric chart off of Pier 101.	Create a color-coded bathymetric chart off of Pier 101	Color-coded bathymetric chart off of Pier 101	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		
06-11 (d)	Water Quality	I can sample for water physical-chemical and biological parameters.	Sample physical-chemical parameters enterococcus at east vs. west sides of Gl	Samples of water quality parameters	Standard 3a: Universal Foundation Skills		
07-12 (a-b)	Project Management	I can manage my project during independent study. Project Conferences	Independent study (students evaluate 1 <sup>st</sup> drafts) Project Conferences	Project formulation (student evaluations of 1" drafts) Project Research Plan draft Project Conferences	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
07-12 (c-d)	GIS	I can compare the relationship between contour lines and landscape features.	Add topographic overlays over maps of Fort Tryon Park and Tayrona National Park (Colombia) to compare with actual landscape	Maps of Fort Tryon Park and Tayrona National Park with topographic information, point feature with lat/lon, and elevation data	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	
07-13 (a-d)	GIS (Day Trip)	I can ground proof geographical features of a map with GPS and create way points.	Visit/hike Fort Tryon park and ground proof map features	Ground proofed maps produced in class	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		
08-14 (a)	Invertebrate Zoology	I can describe the anatomy, physiology, and ecological significance of the phylum Porifera.	Poriferan theory	Completed species fiche of poriferans	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and liwing	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by

						environment and recognize the historical development of ideas in science.	paraphrasing them in simpler but still accurate terms.
08-14 (b)	Invertebrate Zoology	I can describe the anatomy, physiology, and ecology of organisms in the phylum Cnidaria + Ctenophora.	Cnidarian and ctenophoran ecological theory	Journal entry contrasting the ecological roles of cnidarians, ctenophores, and poriferans	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
08-14 (c-d)	Invertebrate Zoology	I can monitor larval recruitment on an Invertebrate Sampling Line.	Monitor ISLs	ISLs monitored	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
08-15 (a)	Project Management	I can write the materials and procedures chapters of my research project.	Write a materials list and procedures for research projects	Materials lists + procedures for project; 2"d	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
08-15 (b)	Project Management	I can manage my project during independent study. Project Conferences	Independent study Project Conferences	Project formulation Project Conferences	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject understanding of the subject under investigation.
08-15 (c-d)	Water Quality	I can sample for water physical-chemical and biological parameters.	Sample physical-chemical parameters enterococcus at east vs. west sides of Gi (Set crab trap at Pier 101 or buy crabs from fish market.)	Samples of water quality parameters	Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
09-16 (a)	Invertebrate Zoology	I can identify a mollusk using an online dichotomous key.	Use an online dichotomous key to identify P. comeus	Journal entry describing use of key to identify species	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or taking meterming technical tasks, attending to special cases or

						the historical development of ideas in science.	exceptions defined in the text.
09-16 (b)	Invertebrate Zoology	I can describe the anatomy and physiology, and behavior of the phylum Molluska.	Study the anatomy, physiology, and behavior of Planorbarius commus (MBB) (MLP 08 – 3" research report and 1" poster board draft due week 12)	Completed species fiche of mollusks (MLP 08 – 3 <sup>rd</sup> research report and 1 <sup>rt</sup> poster board draft due week 12)	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
09-16 (c)	Invertebrate Zoology	I can use a cladogram to describe the evolutionary relationship between the phylum Arthropoda and Molluska.	Read cladograms of mollusks and arthropods	Journal entry describing the evolutionary relationship between arthropods and mollusks	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
09-16 (d)	Invertebrate Zoology	I can study the behavior of hermit crabs (phylum Arthropoda).	Study the behavior of exposed hermit crabs (MBB)	Behavioral chart of hermit crabs	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
09-17 (a-b)	Project Management	I can organize and picture data (tables, graphs, captions, labels, and titles).	Create possible scenarios of data tables to use for student projects along with hypothetical graphs.	Project data tables and stats	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generadd question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
09-17 (c-d)	Water Quality	I can sample for water physical-chemical and biological parameters.	Sample physical-chemical parameters enterococcus at east vs. west sides of Gi	Samples of water quality parameters	Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
10-18 (a-b)	Invertebrate Zoology	I can describe the anatomy, physiology, and ecology of the phylum Echinodermata.	Present a digital presentation; Read cladograms of echinoderms;	Project Research Plan draft (edits included, locality map, project design chart, vocabulary section); Completed species fiche of Echinodermata	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

10-18 (c-d)	Invertebrate Zoology	I can describe the evolutionary relationships between the phylum Echinodermata and other invertebrates.	Read cladograms of echinoderms and other invertebrates	Diagrams of specimens of Echinodermata.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
11-19 (a-b)	Invertebrate Zoology	I can describe the anatomy, physiology, and ecology of the phylum Urochordata.	Present a digital presentation; Read cladograms of echinoderms;	Diagrams of specimens of Urochordata.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
11-19 (c-d)	Quantitative Ecology	I can sample ISLs for benthic organisms.	Sample ISLs from Pier 101 (Set fish traps)	ISL sample data	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
12-20 (a-d)	Project Management	I can manage my project during independent study. (Students with data organize results and work on analysis chapter) Project Conferences	Independent study (Results and analysis preparation) Project Conferences	Project formulation (Data results - written paragraphs and graphs) Project Research Plan draft Project Conferences	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
12-21 (a)	Ichthyology	I can describe the anatomy, physiology, and ecology of the class Agnatha.	Read cladograms of Agnatha	Species fiche for the typical agnathan	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
12-21 (b)	Ichthyology	I can describe the anatomy of the class chondricthyes.	Read cladogram of chondrichthyes	Species fiche for the typical chondrichthian.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
12-21 (c)	Ichthyology	I can describe the anatomy, physiology, and ecology of bony fishes (nekton).	Theory of bony fishes [MLP 09 – 4 <sup>th</sup> (final) research report and 2 <sup>rd</sup> poster board draft	[MLP 09 – 4 <sup>th</sup> (final) research report and 2 <sup>nd</sup> poster board draft due week 15]	Standard 2: Integrated Learning Standard 3a: Universal	Standard 4: Students will understand and apply scientific concepts, principles,	R2. Determine the central ideas or conclusions of a text; summarize complex concepts,

			due week 15]		Foundation Skills Standard 3b: Career Majors	and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
12-21 (d)	Ichthyology	I can describe the phylogeny of bony fishes.	Phylogeny of bony fishes	3rd draft of written report due (results, analysis, conclusions, bibliography, suggestions for improvement, suggestions for future research, abstract, figures); 1st Poster board draft due Journal entry for bony fishes	Standard 2: Integrated Learning Standard 3a. Universal Foundation Skills Standard 3b: Career Majors	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
13-22 (a-b)	Statistics	I can describe the terms probability and statistics (Add Magnussen, 1996, 1997).	[Describe different scenarios that require probability and statistics]	[Journal entry describing the relationship between probability and statistics]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 3: Students will understand mathematics and become mathematically confident by communicating and reasoning mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability, and trigonometry.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
13-22 (c-d)	Statistics	I can define the statistical outcomes of my project.	define the statistical outcomes and statistical tests you will use to create and support your data	Lab journal and portfolio formatted; Project design chart filled	Standard 2: Integrated Leaning Standard 3a: Universal Foundation Skills	Standard 3: Students will understand mathematics and become mathematics and confident by communicating and reasoning mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability, and trigonometry.	W7. Conduct short as well as more sustained research projects to answer a question finduding a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
13-23 (a)	Statistics	I can compare the use of measures of central tendency with the normal distribution and dispersion graphs to describe data.	Measure students leg lengths and apply measures of central tendency; Compare heights of oils vs. boys in class with average bar graphs and dispersion graphs on excel	Measures of central tendency calculated to class leg lengths; Bar and dispersion graphs of class boy vs. girl heights	Standard 2: Integrated Leaning Standard 3a: Universal Foundation Skills	Standard 3: Students will understand mathematics and become mathematics and confident by communicating and reasoning mathematics in real-world settings, and by solving problems through the integrated study of number systems; geometry, algebra, data analysis, probability, and trigonometry.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
13-23 (b-c)	Statistics	I can analyze data using Measures of Central Tendency, whiskers and quartiles, box plots using excel.	Use Microsoft Excel to calculate MCT, whiskers and quartiles, and box plots of data sets; Mentor search	MCT, whiskers and quartiles, and box plots creation of data sets.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 3: Students will understand mathematics and become mathematically confident by communicating	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated

						and reasoning mathematically, by applying mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability, and rigonometry.	question) or solve a problem; narrow or broaden the inquiry when appropriate; ynthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
13-23 (d)	Water Quality	I can sample for water physical-chemical and biological parameters.	Sample physical-chemical parameters enterococcus at east vs. west sides of Gl	Samples of water quality parameters	Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, or taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
14-24 (a)	Statistics	I can define and estimate the probability of a sampling space.	Define the probability of the project sample space	Application of statistical theory to projects	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 3: Students will understand mathematics and become mathematically confident by communicating and reasoning mathematics in real-world settings, and by solving problems through the integrated study of number systems; geometry, algebra, data analysis, probability, and trigonometry.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
14-24 (b)	Statistics	I can analyze data using linear regression.	Apply lineal regression to student leg length vs. height and dissolved oxygen and temperature	linear regression of example data	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 3: Students will understand mathematics and become mathematically confident by communicating and reasoning mathematics in real-world settings, and by solving problems through the integrated study of number systems; geometry, algebra, data analysis, probability, and trigonometry.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
14-24 (c-d)	Project Management	I can manage my project during independent study. Project Conferences	Independent study (Students work on research paper drafts) Project Conferences	FINAL Project Research Plan draft; Project formulation (Students work on research paper drafts) Project Conferences	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
14-25 (a)	Statistics	I can describe the relationship between a probability distribution, standard deviation, uncertainty, and variance.	calculate bell curve based on student heights; calculate variance of student heights	Creation of bell curve based on student leg length data; calculation of variance with student height data	Standard 2: Integrated Learning Standard 3a: Universal	Standard 3: Students will understand mathematics and become mathematically	W7. Conduct short as well as more sustained research projects to answer a question

Foundation Skills confident by communicating and reasoning mathematically, by applying mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability, and tignonmetry transported to the confidence of the confi	Can analyze data using a t-test and a test and a classroom with + w/out students completed at a project.   Can analyze data using a t-test and a classroom with + w/out students	tesearch paper.  1d I can write the analysis of results of my research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of research paper.  1d I can write the analysis of results of write a analysis of research paper.  1d I can write the analysis of results of the from the founders of the form	Id I can write the conclusions and finish formatting my research project.  Ican write the conclusions and finish formatting my research project.
	Statistics	Technical Reading and Writing	Technical Reading and Writing
	14-25 (b)	14-25 (c)	14-25 (d)

15-26 (a-d)	Presentation Skills	I can prepare a basic poster presentation	Prepare poster board; Practice presentations	Poster board presentation	Standard 2: Integrated Learning Standard 3a: Universal Foundartion Skills Standard 3b: Career Majors	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	
15-27 (a-c)	Presentation Skills	I can prepare a basic poster presentation	Prepare poster board; Practice presentations 4 <sup>th</sup> (final) draft of written report due	Poster board presentation; Final research paper due;	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Maljors	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	
15-27 (d)	Water Quality	I can sample for water physical-chemical and biological parameters.	Sample physical-chemical parameters enterococcus at east vs. west sides of GI	Samples of water quality parameters	Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
16	Presentation Skills (Christmas Break)	I can prepare a basic poster presentation	Prepare poster board	Poster board presentation	Standard 2: Integrated Learning Standard 3a: Universal Foundartion Skills Standard 3b: Career Wajors	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	
17-28 (a)	Project Management	I can prepare a basic poster presentation.	Prepare poster board; Mentor search	Project preparation; Poster draft due	Standard 2: Integrated Learning Standard 3a: Universal Foundartion Skills Standard 3b: Career Wajors	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	
17-28 (b-d)	Project Management	I can present a basic poster presentation. (Will count as midterm.)	Present poster board; Mentor search	Project presentations; Poster draft due	Standard 2: Integrated Learning Standard 3a: Universal Foundartion Skills Standard 3b: Career Majors		
17-29 (a-b)	Project Management	I can prepare a resume and personal statement.	Prepare resume and personal statement	Poster draft due; Resumes and personal statements completed	Standard 2: Integrated Learning Standard 3a: Universal Foundartion Skills Standard 3b: Career Majors		
17-29 (c-d)	Water Quality	I can sample for water physical-chemical and biological parameters.	Sample physical-chemical parameters enterococcus at east vs. west sides of Gi	Samples of water quality parameters	Standard 3a: Universal Foundation Skills	Standard 7. Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	
18	(Regents Week)	(Regents Week)	(Regents Week)	(Regents Week)	(Regents Week)		

## Grade 11 – Spring Term – Intermediate Marine Research II

Wk-Dy	Topics	Learning Targets	Activities	Student Work Products	NYS CDOS Learning	NYS Standards	Common Core
(lesson)					Standards		Standards

			R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	
Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.					
Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3b: Career Majors				
Formatted research journal and portfolio	Updated chronograms	Project design chart	(Journal entry describing the basic features of economic systems and major features of the U. S. economic system]	[Journal entry describing the basic features of economic systems and major features of the U. S. economic system]	[Venn diagram of different business structures]	[Venn diagram comparing and contrasting elements of time and materials in business activity]	
Format Research Journal	Update chronogram and revise sampling activities	Project design definition and review of sampling methods	Questions to be answered by every economic System     Production and distribution decisions (circular flow) in a market-oriented Economy     Choices	- Factors affecting economic systems and employment - Sociological, economic, and technological is successed to the conomy and the conomy and the economy	How business is organized – Discuss the advantages and disadvantages of each type of Organization	How business functions – Discuss the functioning within the formal and informal codes of Organizations; How business apply financel and human resources – Compare and contrasts the elements of time and materials to carry out business activities	
I can properly keep a lab journal + portfolio	l can manage my project.	I can define an experimental and observational design – Step 06.	I can identify basic features of economic systems and analyze major features of the U. S. economic system. Part I	I can identify basic features of economic systems and analyze major features of the U. S. economic system. Part II	I can compare and contrast the operation of different business structures on business organization, business functions, and resource management. Part I	I can compare and contrast the operation of different business structures on business organization, business functions, and resource management. Part II	
Project Management	Project Management	Project Management	Career and Financial Management	Career and Financial Management	Career and Financial Management	Career and Financial Management	
01-30 (a)	01-30 (b)	01-30 (c-d)	01-31 (a)	01-31 (b)	02-32 (a)	02-32 (b)	

R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.		R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.				R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information
		Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.			Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.			
Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3b: Career Majors	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills
[Career and personality indicator assessment]	[Career Plan]	Samples of water quality parameters	[Career skills and job search lists]	Cover letter, resume, and job application	Project presentations	[Job interview pointers]	[Mock interviews]	[Journal entry on labor market trends]
Complete career interest and personality indicator assessments. Align personal branacterists and bearning styles with the requirements of different career clusters	Career plan – create and implement a plan including the required steps to transition from education/training to a career	Sample physical-chemical parameters enterococcus at east vs. west sides of GI	- Research employment opportunities  - Gather information about skills assessed by  state finational forwate testing to certify  competencies to enter the workforce  Maintain an organized record of your job  search information/resources	- Complete a resume, cover letter, and job application	Present poster board	- Job interview preparation - Follow-up – use appropriate forms of communication	- Participate in mock or actual interviews - Job selection – deciding on the job	Relate current labor market information to employment opportunites, sakries, and work characteristics     Study radional and normal claner oppions for men and women     Recognize the trend towards a more
I can assess and analyze personal talents, values, and interests as they relate to a future career. Part I	I can assess and analyze personal talents, values, and interests as they relate to a future career. Part II	I can sample for water physical-chemical and biological parameters.	I can locate current information to direct the search for a career.	I can prepare materials to demonstrate individual qualifications in the career search/acquisition process	I can present a basic poster presentation. (Before NYCSEF.)	I can develop skills in presentation and procedures to secure a position	I can develop skills in presentation and procedures to secure a position	I can recognize the relationships between job search, selection, and the current state of the economy. Part I
Career and Financial Management	Career and Financial Management	Water Quality	Career and Financial Management	Career and Financial Management	Project Management	Career and Financial Management	Career and Financial Management	Career and Financial Management
02-33 (a)	02-33 (b-c)	02-33 (d)	03-34 (a-c)	03-35 (a-c)	(d)	04-36 (a-b)	04-36 (c-d)	05-37 (a-b)

			diverse population and workforce			presented in a text by paraphrasing them in simpler but still accurate terms.
05-38 (a-c)	Career and Financial Management	I can recognize the relationships between job search, selection, and the current state of the economy. Part II	- Analyze rising entrepreneurship opportunities - Study alternative types of employment	[Journal entry on alternative employment opportunities]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
(p)	Water Quality	I can sample for water physical-chemical and biological parameters.	Sample physical-chemical parameters enterococcus at east vs. west sides of GI	Samples of water quality parameters	Standard 3a: Universal Foundation Skills	
06-39 (a-b)	Career and Financial Management	I can assess and analyze personal talents, values, and interests as they relate to a future career. Part III	Career plan – create and implement a plan including the required steps to transition from education/training to a career	Life goals sketched	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
07-40 (a-c)	Career and Financial Management	I can assess and analyze personal talents, values, and interests as they relate to a future career. Part IV	Career plan – create and implement a plan including the required steps to transition from education/training to a career	Career plan created	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
08-041 (a-b)	Career and Financial Management	I can recognize skills needed for success in a chosen career and how it relates to work performance to achieve individual success in the workplace.	- Personal qualities - Interpersonal skills	[Journal entry on personal qualities and interpersonal skills]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
08-41 (c-d)	Career and Financial Management	I can appreciate how a good beginning is needed for success on the job.	- Complete required forms - Become familiar with working conditions	[Employment form filled]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
08-42 (a-b)	Career and Financial Management	I can describe shared responsibility between businesses and employees.	- Physical and mental health - Interdependent relationships	[Journal entry on interdependent relationships]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information

						presented in a text by paraphrasing them in simpler but still accurate terms.
	Water Quality	I can sample for water physical-chemical and biological parameters.	Sample physical-chemical parameters enterococcus at east vs. west sides of GI	Samples of water quality parameters	Standard 3a: Universal Foundation Skills	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
	Career and Financial Management	I can determine the importance of time management to success on the job.	- Practice determining the elements of time to successfully carry out a planned activity - Compane and contrast the effects of efficient and nefficient time management on the completion of fife tasks and workplace activities - Implement an effective schedule for organizing activities	[Organizational schedule for activities]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
09-43 (c-d)	Career and Financial Management	I can define Workplace laws and regulations.	- Review standard labor laws and regulations - Explore hiring and employment termination practices	[Journal entry for hiring and employment termination practices]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
10-44 (a-b)	Career and Financial Management	I can describe Role of labor unions and/or professional organizations.	- Overview of labor unions - Overview of professional organizations	[Joumal entry regarding labor unions]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
10-44 (c-d)	Project, Career, and Financial Management	I can use project, career, and financial management skils to solve a water contamination mystery problem.	Apply career and management skills learned earlier to solve a water contamination mystery problem.	[Solution for water contamination exercise]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
10-45 (a-b)	Career and Financial Management	I can compare, contrast, and evaluate services provided by financial Institutions. Part I	- Checking Account - Savings Plan	[Journal entry regarding checking accounts]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
10-45 (c-d)	Water Quality	l can sample for water physical-chemical and biological parameters.	Sample physical-chemical parameters enterococcus at east vs. west sides of GI	Samples of water quality parameters	Standard 3a: Universal Foundation Skills	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to

						special cases or exceptions defined in the text.
11-46 (a-b)	Career and Financial Management	I can compare, contrast, and evaluate services provided by financial Institutions. Part II	- Investigate and evaluate various forms of investments - Developing a personal budget	[Personal budget]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
11-46 (c-d)	Project, Career, and Financial Management	I can use project, career, and financial management skills to solve a water contamination mystery problem.	Apply career and management skills learned earlier to solve a water contamination mystery problem.	[Solution for water contamination exercise]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
11-47 (a-b)	Career and Financial Management	I can explain the role of government taxation and its effect on consumers and producers. Part I	- Provide examples of how individuals pay for public goods and services through taxes and fees - Analyze how taxes and tax policy affect individuals and institutions	[Journal entry regarding taxes and tax policy]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
11-47 (c-d)	Project, Career, and Financial Management	I can use project, career, and financial management skills to solve a water contamination mystery problem.	Apply career and management skills learned earlier to solve a water contamination mystery problem.	[Solution for water contamination exercise]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
12-48 (a-b)	Career and Financial Management	I can explain the role of government taxation and its effect on consumers and producers. Part II	Tax reporting	[Journal entry regarding taxes and tax policy]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
12-48 (c-d)	Project, Career, and Financial Management	I can use project, career, and financial management skills to solve a water contamination mystery problem.	Apply career and management skills learned earlier to solve a water contamination mystery problem.	[Solution for water contamination exercise]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
12-49 (a-b)	Career and Financial Management	I can understand the necessity of establishing and maintaining credit in today's society	- Sources and types of credit - Establishing credit	[Journal entry on types of credit]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

12-49 (c-d)	Water Quality	I can sample for water physical-chemical and biological parameters.	Sample physical-chemical parameters enterococcus at east vs. west sides of GI	Samples of water quality parameters	Standard 3a: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
13-50 (a-b)	Career and Financial Management	I can understand the necessity of establishing and maintaining credit in today's society	- Cost of credit - Legal aspects of different forms of credit	[Journal entry on maintaining credit]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them is simpler but still accurate terms.
13-50 (c-d)	Presentation Skills	I can prepare a poster board presentation of my project.	Poster board preparation and presentation (present)	Poster board presentation	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	
13-51 (a-b)	Career and Financial Management	I can describe Credit Purchasing	- Product information - Alternative methods of financing a purchase using credit	[Journal entry on credit purchasing]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
13-51 (c-d)	Presentation Skills	I can prepare a poster board presentation of my project.	Poster board preparation and presentation (present	Poster board presentation	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	
14-52 (a-b)	Career and Financial Management	I can define the function and role of Insurance	Determine risk, risk tolerance, and loss prevention     Examine types of insurance associated with different types of risk     Understand consequences of not carrying insurance	[Joumal entry on risk and risk tolerance]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
14-52 (c-d)	Presentation Skills	I can prepare a poster board presentation of my project.	Poster board preparation and presentation (present in hallway)	Poster board presentation	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	
14-53 (a-b)	Career and Financial Management	I can describe consumer protection laws and agencies	- Identify legislation that regulates consumer credit and electronic credit transactions - Discuss consumer protection legislation	[Journal entry on legislation that regulates consumer credit]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
14-53 (c-d)	Presentation Skills	I can prepare and present a poster board presentation of my project.	Poster board preparation and presentation (present	Poster board presentation	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.	

R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.				R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.			R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.		Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	
Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills
[Joumal entry on sales fraud]	Poster board presentation	Poster board presentation	STEP 03a	Samples of water quality parameters	Contact with advisors to answer project questions.	Contact with advisors to answer project questions.	ISLs prepared
Investigate sales fraud and identify remodes.     Describe assistance provided by private and public protection agencies.     Compare and contrast consumer protection in e-commerce as provided by the United States.	Poster board preparation and presentation (present in hallway)	Poster board presentation	Create a list of topic experts – STEP 03a	Sample physical-chemical parameters enterococcus at east vs. west sides of GI	E-mail creation for advisors	Contact advisors	Prepare ISLs
I can describe consumer protection laws and agencies	I can prepare and present a poster board presentation of my project.	I can present a poster board presentation of my project at a high school science and engineering fair. (film presentations)	I can list potential project advisors and mentors for my project of interest – STEP 03a.	I can sample for water physical-chemical and biological parameters.	l can create a proper e-mail to contact project advisors.	I can contact advisors regarding my topic of interest.	l can prepare Invertebrate Sampling Lines (ISLs) - Baggywrinkles
Career and Financial Management	Presentation Skills	NYHS Symposium	Project Management	Water Quality	Project Management	Project Management	Marine Ecology
15-54 (a-b)	15-54 (c-d)	15-55 (a-d)	16-56 (a-b)	16-56 (c-d)	16-57 (a-b)	16-57 (c-d)	17-58 (a-b)

17-58 (c-d)	Marine Ecology	I can install ISLs – Baggywrinkles.	Install ISLs	ISLs Installed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
17-59 (a-d)	Project Management	I can contact advisors regarding my topic of interest.	Contact advisors	Contact with advisors to answer project questions.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	
18-60 (a-d)	Lab/Field Procedures	I can inventory and organize my sampling supplies. (Set ISLs in Pier 101. Ropes to be left over the summer for succession studies and zoology during 11 <sup>th</sup> grade)	Lab/Field procedures	Research lab prepared for summer research.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
18	(Regents Week)	(Regents Week)	(Regents Week)	(Regents Week)	(Regents Week)		

Grade 11 - 12 – Summer Marine Biology Research Program - Advanced Research Methods  $^{\ast}$ 

Week	Week Topics	Learning Targets	Activities	Student Work Products	NYS CDOS Learning	NYS Standards	Common Core
					Standards		Standards
1	Project Management	<ul><li>01. I can design a data storage system.</li><li>02. I can collect and process project data.</li></ul>	Design, collect and process project data.	Designed, collected and processed project data.	Standard 1: Career Development Standard 3b: Career Majors		
2	Project Management	I can collect and process project data.	Collect and process project data.	Collected and processed project data.	Standard 1: Career Development Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
3	Project Management	I can collect and process project data.	Collect and process project data.	Collected and processed project data.	Standard 1: Career Development Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
4	Project Management	I can collect and process project data.	Collect and process project data.	Collected and processed project data.	Standard 1: Career Development Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science,	R3. Follow precisely a complex multistep procedure when carrying out experiments,

						and technology to address real-life problems and make informed decisions.	taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
2	Project Management	I can collect and process project data.	Collect and process project data.	Collected and processed project data.	Standard 1: Career Development Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
9	Project Management	Present project data.	Present project data.	Present project data.	Present project data.		

\*11" and 12" graders will work on collecting data for their research projects. This semester will also count for their Internship experience.

Grade 12 – Fall Term – Advanced Marine Research I

Wk-Dy (lesson)	Topics	Learning Targets	Activities	Student Work Products	NYS CDOS Learning Standards	NYS Standards	Common Core Standards
01-01 (a-d)	Presentation Skills	l can present my summer research/internship experience.	Project/internship presentations	Project/internship (slide show) presentations.	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		
02-02 (a-b)	Technical Reading + Writing	I can describe in 2 sentences each PRJA I summarized over the summer.	PRJA class presentations	PRJA presentations	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		
02-02 (c-d)	Project Management	I can update and present my long-term research project status.	Update chronogram and schedule for projects.	Updated research plan, chronograms, and sampling schedules	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		
02-03 (a)	SHO	I can describe the UHS program, materials needed, and determine my eligibility to apply for college credit. (MLP 06 - Literature review slide show and 1 <sup>st</sup> research report draft due weeks 5 + 6)	UHS and course syllabus slide show presentation; (MLP 06 - Literature review slide show and 1* research report draft due weeks 5 + 6)	Journal entry (MIP 06 - Literature review slide show and $1^{st}$ research report draft due weeks $5 + 6$ )	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		
02-03 (b)	Project Management	I can properly keep a calendar, theory notebook, research journal, + portfolio. (MLP 06 - Literature review slide show due weeks 5 + 6) (Step 03a due next week)	Calendar, theory notebook, research journal, and portfolio side show (MLP 06 - Literature review side show down weeks 5 + 6) (Step 03a due next week)	Journal entry (MLP 06 - Literature review slide show due weeks 5 + 6) (Step 03a due next week)	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	
02-03 (c)	STEM GIS - L1 + Career and Financial Management	01a. I can describe what geospatial technology is, its uses in STEM, and career pathways involved.	GIS independent thinking exercise	Independent Thinking Exercise on basic geospatial technology, STEM uses, and careers	Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
02-03 (d)	STEM GIS - L2 +	01b. I can identify geospatial careers in STEM.	Career pathways in alternative energy	Alternative energy career pathways exercise	Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use,	R3. Follow precisely a complex multistep procedure when carrying out experiments,

	Career and Financial Management					and evaluate products and systems to satisfy human and environmental needs.	taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
03-04 (a)	STEM GIS - L3	I can identify which alternative energies are abundant in my area.	Basic ArcGIS skills such as: opening an existing map, navigating data frames, expanding layers, etc.	Data of alternative energy attributes at the national, regional, and local level from existing maps	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
03-04 (b-d)	Marine Ecology	I can practice phytosociological methods of percent cover to measure a model coral reef.	Measure percentage cover of a model coral reef	[Data sheets with percent cover data and analysis of these. Add PRIMER LESSONS to this data]	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
03-05 (a)	STEM GIS - L4	I can determine which green spaces we can preserve in our community.	Basic ArcGIS skills such as: adding and editing data layers, using zooming techniques, selecting tabular data, etc. based on water and wetland resource GIS data of New Paltz, N.Y.	Basic map manipulation for water and wetlands resources of New Paltz, N.Y.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
(a)	STEM GIS - L5	I can identify strategic localities for biodiesel fuel development.	Basic ArcGIS skills such as: Creating an address locator, geocoding addresses, creating reports in ArcMap, etc. based on energy conservation and biofuels	Reports on energy conservation and biofuels using ArcMap	Standard 2: Integrated Learning Standard as: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
03-05 (c)	STEM GIS - L6	I can use geospatial technology for conservation biology.	Basic ArcGiS skills such as: Creating a map, creating shape files, editing symbology, etc. based on conservation biology	Map with a buffer zone for bald eagle and endangered plant protection	Standard 2: Integrated Learning Standard as: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
03-05 (d)	Project Management	I can collect project data. Project Conferences	Collect project data Project Conferences	Project data. Project Conferences	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
04-06 (a)	Ecology	I can describe the distribution of aquatic communities in N.Y.S.	List of NYS communities using NY Natural Heritage Program http://www.acris.nynhp.org/	Tidal River classification	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler

							but still accurate terms.
04-06 (b)	GIS	I can use GIS to define the Hudson River watershed and study fluvial processes of the Hudson River.	Identify tributaries and associated lakes of the HR using GE and ArcGIS	Map of the HR watershed with geographical features	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
04-06	SIĐ	I can use GE to explore shoreline processes.	Use GIS to explore shoreline processes of NYC and Long Island.	Map of the HR watershed with geographical and erosion/deposition features	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R3. Follow precisely a complex multistep procedure when carrying out experiments, raking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
04-06 (d)	Project Management	I can collect project data. Project Conferences	Collect project data Project Conferences	Project data. Project Conferences	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
04-07 (a)	STEM GIS - L7	l can use geospatial data to calculate a biomass potential.	Basic ArcGIS skills such as: Merging shapefiles in ArcMap, clipping shapefiles in ArcToolBox, adjusting a shapefiles transparency, etc based on the assessment of woody biomass potential	Map showing the potential biomass territory of a wooded area	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
04-07 (b)	STEM GIS - L8	I can evaluate funding potential for watersheds using GIS.	Basic ArcGIS skills such as: Creating a map from scratch, exporting a data layer, editing layer properties, etc. based on watershed ecology	Map depicting a segment of a creek that has been polluted in order to use as a tool for its cleanup.	Standard 2: Integrated Learning Standard as: Universal Foundation Skills Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
04-07 (c)	STEM - L9	I can use geospatial data to create, restore, enhance, and preserve a wetland.	Basic ArcGIS skills such as: using bookmarks, arranging layers in ArcMap, adding imagery, etc. based on wetland ecology management and wetland management	Map depicting the best place to build a new facility in a wetland and looking for a specific plot for a company selling wetland credits	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
04-07 (d)	Water Quality	I can prepare materials for sampling physical-chemical and biological parameters across Buttermilk Channel.	Prepare sampling materials	Sampling materials prepared	Standard 2: Integrated Learning Standard 33: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, retaking measurements, or performing technical tasks, attending to special cases or

							exceptions defined in the text.
05-08 (a-d)	Water Quality (With Vessel Ops)	I can sample physical-chemical and biological parameters across Buttermilk Channel.	Sample Buttermilk Channel (various depths physical-chemical sampling; surface sampling of enterococcus; plankton sampling on way back)	Buttermilk Channel sampled	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
05-09 (a)	STEM GIS - L10	I can create a carbon map of the US.	Basic ArcGIS skills such as: editing map layout information, loading an animation file, creating animation in ArcMap based on carbon mapping	Animated map of carbon to be viewed outside of ArcMap	Standard 2: Integrated Learning Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
(q)	Fundamentals of Geospatial Technology - L1	I can explain the basics of ArcGIS.	Use the basic functions of ArcGIS	Basic functionality of ArcGIS reviewed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
(c)	Fundamentals of Geospatial Technology - L2	I can explain the basics of Global Positioning Systems.	Use a GPS to get 3 waypoints, sketch a map of the study area, and answer the analysis questions	Waypoints, map, and analysis of study area	Standard 2: Integrated Learning Standard aa: Universal Foundation Skills Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
(p)	Project Management	l can collect project data.	Collect project data	Project data.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
06-10 (a-b)	Fundamentals of Geospatial Technology - L3	I can explain the basics of remote sensing.	Edit a raster map to practice remote sensing techniques	Polygon map of La Playa Community College	Standard 2: Integrated Learning Standard aa: Universal Foundation Skills Standard 38: Career Majors	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
06-10 (c)	Vertebrate Zoology	I can compare and contrast mammalian body forms and evolutionary relationships.	Marine mammal anatomy and phylogeny theory	Journal entry regarding anatomy of various mammalian body forms	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

						ideas in science.	
06-10 (d)	Vertebrate Zoology	I can describe the various marine birds around GI	Take a tour of GI and ID marine birds	ID marine birds on worksheet	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
06-11 (a-b)	Fundamentals of Geospatial Technology - L4	I can explain the basics of surveying technology.	Create a map of the research lab	Scale and attribute map of the MBRP lab	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
06-11 (c-d)	Fundamentals of Geospatial Technology - L5	I can explain the combination of different geospatial technologies.	Create a map using all the components of geospatial technology on ArcGIS	Exported map project	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
07-12 (a-d)	Vertebrate Zoology (AMNH)	I can explore the evolutionary relationships of marine vertebrates	Visit hall of Marine Life	Phylogeny of marine vertebrates defined on phylogenic tree	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
07-13 (a)	GIS Project Management - L1	l can plan for a GIS project.	Perform a Stakeholder Analysis	Stakeholder analysis list and Lesson Review questions	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
07-13 (b)	GIS Project Management - L2	I can describe the implementation of a GIS project.	Perform a Data Needs Exercise	Data Needs and Possible Sources exercise complete, Lesson Review questions completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
07-13 (c-d)	Project Management	I can collect project data. Project Conferences	Collect project data Project Conferences	Project data. Project Conferences	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

08-14 (a-b)	GIS Project Management - L3	I can explain the presentation of a GIS project.	Project Presentation Community Forum Exercise to communicate findings of a GIS project	Proposed media list to communicate findings of a GIS project; Lesson Review questions completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	
08-14 (c-d)	Marine Ecology	I can describe the ecology of the benthos of the continental shelf and littoral sediments (Barnes, 2004).	Documentary of benthos ecology	Journal entry of theory	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
08-15 (a)	Introduction to GIS Concepts - L1	I can describe the history of mapping.	Map Categorization Exercise; Lesson Review; HW: Cartography Timeline exercise	Categorized maps and Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3B: Career Majors	Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.	
08-15 (b)	Introduction to GIS Concepts - L2	I can explain coordinate systems and their relation to location.	Absolute Location Exercise	Locations converted from DD to DMS and vice versa; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
08-15 (c)	Marine Ecology	I can describe the ecology of salt- marshes, mangroves, and sea-grass beds (Barnes, 2004).	Theory Lesson	ANT of Lesson	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
08-15 (d)	Water Quality	I can prepare materials for sampling physical-chemical and biological parameters across Buttermilk Channel.	Prepare sampling materials	Sampling materials prepared	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
09-16 (a-d)	Water Quality (With Vessel Ops)	I can sample physical-chemical and biological parameters across Buttermilk Channel.	Sample Buttermilk Channel (various depths physical-chemical sampling; surface sampling of enterococcus; plankton sampling on way back)	Buttermilk Channel sampled	Standard 2: Integrated Leaming Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
09-17 (a)	Introduction to GIS Concepts - L3	I can define map projections.	Map Projections Exercise	2D representation of a 3D globe; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal	Standard 5: Students will apply technological knowledge and skills to design, construct, use,	R2. Determine the central ideas or conclusions of a text; summarize complex concepts,

					Foundation Skills Standard 3b: Career Majors	and evaluate products and systems to satisfy human and environmental needs.	processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
09-17 (b)	Introduction to GIS Concepts - L4	I can describe the role of map coordinate systems in GIS.	Map Coordinate Systems Exercise	UTM map read and scale determined using UTM Corner Grid Reader; Lesson Review completed	Standard 2: Integrated Learning Standard as: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
09-17 (extra)	Introduction to GIS Concepts - L5	I can describe the role of scale in GIS.	Map Scale Exercise	Scales of various maps determined; Lesson Review completed	Standard 2: Integrated Learning Standard 33: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
09-17 (c)	Introduction to GIS Concepts - L6	I can define the various map types and other map essentials.	Various map type activity	Various map type characteristics determined; Lesson Review completed	Standard 2: Integrated Learning Standard 33: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
09-17 (d)	Introduction to GIS Concepts - L7	I can review the science of Geographic Information Systems.	GIS Fundamentals & Geographic Relationships activity	Completed GIS fundamentals and relationships questions; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by praraphrasing them in simpler but still accurate terms.
10-18 (a-d)	Marine Ecology (HRP)	I can describe the ecology of rocky shores and kelp forests (Barnes, 2004).	Ecology of rocky shores – Harlem River Park (Dudley et. al., 2012)	Rocky shore characterization	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
11-19 (a)	Introduction to remote sensing concepts in GIS - L1	l can relate remote sensing with aerial photography.	Aerial photo exercise from USGS website	Local image downloaded from USGS and specific information attached	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
11-19 (b)	Introduction to remote sensing concepts in GIS - L2	I can build data layers from aerial photographs.	Build data layers from aerial photography	Map with data layers on a transparency; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, raking measurements, or performing technical tasks, attending to special cases or

							exceptions defined in the text.
11-19 (c)	Introduction to remote sensing concepts in GIS - L3	I can relate remote sensing to satellite imagery.	Classify Remote Sensing & Satellite Imagery	Remote Sensing & Satellite Imagery classified; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 5. Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
11-19 (d)	Introduction to remote sensing concepts in GIS - L4	I can identify geographic features using imagery.	Locate features using 2 different types of grids of Washington, DC	Features of located	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
12-20 (a-b)	Project Management	I can synthesize and analyze project data during independent study. Project Conferences	Analyze project data Project Conferences	Project data analyzed Project Conferences	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	R7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to multimedia) in order so question or solve a problem.
12-20 (c-d)	Marine Ecology	I can describe the ecology of coral reefs (Barnes, 2004) and identify coral reef formations around the world using GIS.	Characterize a coral ecosystem model	Graphs and analysis of percent coral cover of principal benthic components	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
12-21 (a-d)	Water Quality (Vessel Ops)	I can sample physical-chemical and biological parameters across Buttermilk Channel.	Sample Buttermilk Channel (various depths physical-chemical sampling; surface sampling of enterococcus; plankton sampling on way back)	Buttermilk Channel sampled	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
13-22 (a-b)	Introduction to GPS technology in GIS - L1	I can describe and use GPS technology in GIS.	Survey the basic functionality of a GPS receiver	GPS data collection and waypoints; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, relaking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
13-22 (c-d)	Introduction to GPS technology in GIS - L2	I can practice the use of geocaching in GIS.	Geocache with a GPS at GI	Geocaching localities found	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, performing technical tasks, attending to special cases or exceptions defined in the text.

Understanding spatial	ing spatial	I can explain the basics of ArcMAP.	Practice basic ArcMap functionality such as: launching a map_navigating a map display,	Basic ArcMap functionality practiced and completion of ArcMap Lesson	Standard 2: Integrated Learning Standard 3a: Universal	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or
			identifying features, and vector vs. raster data in identifying data	Review	Foundation Skills	systems to satisfy human and environmental needs.	performing technical tasks, attending to special cases or exceptions defined in the text.
Understanding spatial data in GIS - L2		I can navigate through ArcMAP.	Continue practicing basic ArcMap functionality	Navigating ArcMap worksheet completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Understanding spatial data in GIS - L3		I can explain the basics of ArcCatalog.	Practice basic ArcCatalog functionality such as: launching ArcCatalog, viewing data contents, previewing data, and viewing metadata among others	Basic ArcCatalog functionality practiced and completion of ArcCatalog Lesson Review	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Understanding spatial data in GIS - L4		I can navigate through ArCatalog.	Continue practicing basic ArcCatalog functionality	Navigating ArcCatalog worksheet completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
l can manage a data inventory in GIS - L(1)1		l can plan a GIS project.	Complete the Project Planning Exercise	Completed Problem identification Statement, Stakeholder Analysis, Project Objective & Project Title	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	
l can manage a data inventory in GIS - L(1)2		l can display geospatial data.	Create a map display of the community inventory of Atlanta, GA and a layout of this base map	Layout and map display of the community inventory of Atlanta, GA; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
l can manage a data inventory in GIS - L(2)1		l can manage geospatial data.	Manage data from an existing map such as using non-spatial data, selecting features by attribute, selecting features by location, labeling features interactively, among others	Map layout with chosen managed data; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
I can manage a data inventory in GIS - L(2)2		I can present a GIS project (exercise 01).	Present a project in GIS	GIS project presentation	Standard 2: Integrated Learning Standard 3b: Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in

>	the strengths and limitations of each source in terms of the specific task, purpose, and audience, integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.		We. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	We. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	We. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	We. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	W6. Use technology, including the Internet, to produce,
real-life problems and make informed decisions. Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make	informed decisions.						
	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Leaming Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 2: Integrated Learning
	Project data analyzed Project Conferences	GIS introduction midterm	Poster board presentation	Poster board presentation; Final research paper due; 4 <sup>th</sup> (final) draft of written report due	Poster board presentation	Project preparation; Poster draft due	Project presentations; Poster draft due
	Analyze project data Project Conferences	GIS introduction midterm	Prepare poster board; Practice presentations	Prepare poster board; Practice presentations 4 <sup>th</sup> (final) draft of written report due	Prepare poster board	Prepare poster board; Mentor search	Present poster board; Mentor
	I can synthesize and analyze project data during independent study. Project Conferences	MIDTERM (Practice for Final)	I can prepare a basic poster presentation and format the written report	l can prepare a basic poster presentation	I can prepare a basic poster presentation	I can prepare a basic poster presentation.	I can present a basic poster presentation.
	Project Management	GIS	Presentation Skills	Presentation Skills	Presentation Skills (Christmas Break)	Project Management	Project Management
	14-25 (c-d)	15-26 (a-b)	15-26 (c-d)	15-27 (a-d)	16	17-28 (a-d)	17-29

	(Regents Week)	(Regents Week)	(Regents Week)	(Regents Week)	(Regents Week)	18
publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors			(Will count as midterm.)		

Grade 12 – Spring Term – Advanced Marine Research II

Wk-Dy (lesson)	Topics	Learning Targets	Activities	Student Work Products	NYS CDOS Learning Standards	NYS Standards	Common Core Standards
01-30 (a-b)	l can manage a data inventory in GIS - L3	l can create geospatial data.	Create geospatial data	Shapefiles created with feature symbology, Lesson Review completed	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
01-30 (c-d)	l can manage a data inventory in GIS - L(4)1	l can analyze geospatial data.	Explore advanced selection methods by using Select by Attribute and Select by Location using ArcToolbox	Map layout with buffer zone; Lesson Review completed	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
01-31 (a-b)	l can manage a data inventory in GIS - L(4)2	l can present a GIS project (exercise 02).	Present a project in GIS	GIS project presentation	Standard 3a. Universal Foundation Skills Standard 3b. Career Majors	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
01-31 (c-d)	l can manage a data inventory in GIS - L5	l can prepare geospatial data.	Prepare geospatial imagery for use in ArcGIS	Map with prepared geospatial imagery; Lesson Review completed	Standard 3a. Universal Foundation Skills Standard 3b. Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
02-32 (a-b)	Planning and building a local inventory in GIS - L1	I can plan to build a local inventory.	Begin building a data inventory of Lower Manhattan and Gl	Map with local data inventory	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
02-32 (c-d)	Planning and building a local inventory in GIS -	I can create a local data inventory.	Continue building a data inventory of Lower Manhattan and GI	Map with local data inventory	Standard 2: Integrated Learning Standard 3a: Universal	Standard 5: Students will apply technological knowledge and skills to design, construct, use,	R3. Follow precisely a complex multistep procedure when carrying out experiments,

17					Foundation Skills	and evaluate products and systems to satisfy human and environmental needs.	taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. R3 Follow previsely a complex
Planning and building a local inventory in GIS - I can create a geodatabase. Build a file geodatabase L3	l can create a geodatabase.	Build a file geoc	database	File geodatabase of local geospatial data	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	standar u. s. sudenits win appry technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	no. Tronow pleasely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Planning and building a lean present a project (exercise 03).  L4	I can present a project (exercise 03).	Present a pro	ject in GIS	GIS project presentation	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
Demographic & Use advanced tools to implement economic data analysis techniques in GIS - L1	l can display geospatial data.	Use advanced too and display data	ls to implement a using ArcGIS	Map of the manufacturing population in Rankin, MS; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Demographic & con manage geospatial data.  economic data analysis techniques in GIS - L2	l can manage geospatial data.	Use advanced to geospatial data	ols to manage using ArcGIS	Map of population analysis of Rankin, MS; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Demographic & Use advanced tools to query economic data analysis I can query geospatial data. geospatial data using ArcGIS techniques in GIS - L3	l can query geospatial data.	Use advanced i geospatial data	tools to query s using ArcGIS	Map of optimum site locations for a business in Rankin, MS; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Demographic & Explore elevat economic data analysis   Can symbolize geospatial data.   Explore elevat correlation with	l can symbolize geospatial data.	Explore elevat correlation with	Explore elevation data and its correlation with flood zone data	Map of elevation and flood zones of Rankin, MS; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
Demographic & Create a hyper economic data analysis I can create geospatial data. The file from techniques in GIS - L5	l can create geospatial data.	Create a hyper file froi	Create a hyperlink to an image file from a map	Map of business locations in Florence, MS with a hyperlink to a satellite image; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or

							exceptions defined in the text.
04-36 (b)	Demographic & economic data analysis techniques in GIS - L6	I can plan and build a local data inventory.	Create a map of the different types of businesses in Lower Manhattan	Map of the locations of a particular business type in Lower Manhattan; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
04-36 (c-d)	Location-based analysis techniques in GIS - L(1)2	I can prepare a GIS project (exercise 04).	Complete a project plan	Problem identification statement completed, stakeholders identified, project objectives identified	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
05-37 (a)	Location-based analysis techniques in GIS - L(1)2	I can manage geospatial data with location-based analysis techniques.	Explore and analyze Calls for Service (CFS) data	Map of high risk areas for crime in Medford, NJ	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
05-37 (b)	Location-based analysis techniques in GIS - L(1)3	I can present a project (exercise 04).	Present a project in GIS	GIS project presentation; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.	W6. Use technology, including the internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
05-37 (c-d)	Location-based analysis techniques in GIS - L2	I can create and edit geospatial data.	Use advanced tools to create and edit geospatial data using ArcGIS	Map of parcel changes in Medford, NJ; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
05-38 (a-b)	Location-based analysis techniques in GIS - L3	I can model geospatial data.	Create an model of analysis in ArcToolbox	Model and map for high risk areas of Medford, NJ; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
05-38 (c-d)	Location-based analysis techniques in GIS - L4	I can plan and build a local data inventory with location-based analysis techniques.	Plan and build a local data inventory	Map of areas of highest risk of crime or emergency activity	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and esystems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

				1	,		,
R2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.	R3. Follow precisely a complex multistep procedure when carrying out experiments,
	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.		Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	Standard 5: Students will apply technological knowledge and skills to design, construct, use,
Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 2: Integrated Learning Standard 3a: Universal
Coordinate Systems and Projections activity log; Lesson Review completed	Map of a digitized school campus; Lesson Review completed	Map of GPS collected data	GPS point log worksheet; Lesson Review completed	Map of a historical preservation case study	Map of a real estate case study	Map of a community comparison case study	Map of distances using Spatial Analyst
Use advanced tools to study coordinate systems and projections in ArcGIS	Create new geospatial data by digitizing imagery using AcrGIS	Using advanced GIS tools and GPS to collect geospatial data	Continue using advanced GIS tools and GPS to collect geospatial data	Create a map of a historical preservation case study	Create a map of a real estate case study	Create a map of a community comparison case study	Measure map distance using Spatial Analyst in ArcGIS
I can explain advanced coordinate systems and projections concepts.	I can create new data by digitizing imagery.	l can collect geospatial data using GPS.	I can keep a GPS recoding log.	I can study a historical preservation case using GIS.	l can study a real estate case using GIS.	I can study a community comparison case using GIS.	l can map distance.
Data collection methods and techniques in GIS - L1	Data collection methods and techniques in GIS - L2	Data collection methods and techniques in GIS - L(3)1	Data collection methods and techniques in GIS – L(3)2	Experiments in skills applications using GIS - L1	Experiments in skills applications using GIS - L2	Experiments in skills applications using GIS – L3	Application in surface analysis using GIS - L(1)1
(p-e)	07-40 (a)	07-40 (b)	07-40 (c)	08-41 (a-b)	08-41 (c-d)	08-42 (a-d)	09-43 (a-b)

					Foundation Skills	and evaluate products and systems to satisfy human and environmental needs.	taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
09-43 (c-d)	Application in surface analysis using GIS - L(1)2	I can complete an enrichment exercise in mapping distance.	Measure map distance using the Cost Distance Method in ArcGIS	Map of distances using the Cost Distance Method; Lesson Review completed	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
10-44 (a-d)	Application in surface analysis using GIS - L(2)1	l can map density.	Map density using Spatial Analyst in ArcGIS	Map comparing the kernel vs. point density methods	Standard 1: Career Development Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, raking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
10-45 (a-d)	Application in surface analysis using GIS - L(2)2	I can complete an enrichment exercise mapping density.	Continue mapping density using Spatial Analyst in ArcGIS	Map of density of NVS; Lesson Review completed	Standard 1: Career Development Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
11-46 (a-b)	Application in surface analysis using GIS - L(3)1	l can interpolate geospatial data.	Map an elevation surface using different interpolation methods in Spatial Analyst	Map comparing the Inverse Distance Weighted, Spline, and Kriging methods	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
11-46 (c-d)	Application in surface analysis using GIS - L(3)2	I can complete an enrichment exercise in interpolating geospatial data.	Map an elevation surface using different interpolation methods in Spatial Analyst	Map comparing the Inverse Distance Weighted, Spline, and Kriging methods; Lesson Review completed	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
11-47 (a-b)	Application in surface analysis using GIS - L(4)1	l can analyze surface data.	Analyze surfaces using different methods in Spatial Analyst	Map comparing the Aspect, Contour, Curvature, Cut/Fill, Hillshade, Slope, and Viewshed methods	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
11-47 (c-d)	Application in surface analysis using GIS - L(4)2	I can complete an enrichment exercise in analyzing surface geospatial data.	Analyze surfaces using different methods in Spatial Analyst	Map comparing the Aspect, Contour, Curvature, Cut/Fill, Hillshade, Slope, and Viewshed methods; Lesson Review completed	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and eystems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or

							exceptions defined in the text.
12-48 (a-d)	Application in surface analysis using GIS - L(5)1	I can create grid Statistics.	Create grid statistics for raster data	Map comparing cell, neighborhood, and 2 onal statistics	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
12-49 (a-d)	Application in surface analysis using GIS - L(5)2	I can complete an enrichment exercise creating grid statistics.	Create grid statistics for raster data	Map comparing cell, neighborhood, and zonal statistics; Lesson Review completed	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
13-50 (a-b)	Application in surface analysis using GIS - L(6)1	I can apply my GIS skills towards a spatial analysis project (exercise 05).	Complete a project plan	Problem identification statement completed, stakeholders identified, project objectives identified	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
13-50 (c-d)	Application in surface analysis using GIS - L(6)2	I can exercise planning my project.	Use the Raster Calculator to clip data to a defined extent and query land use to determine sensitive areas	Map created using Raster Calculator with land use and sensitive areas	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
13-51 (a-d)	Application in surface analysis using GIS - L(5)2	I can create a professional map to present my GIS project.	Create a professional map to present a project	Professional map created of Land use and sensitive areas; Lesson Review completed	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
14-52 (a-d)	Application in surface analysis using GIS - L(5)2	I can create a professional map to present my GIS project.	Create a professional map to present a project	Professional map created of Land use and sensitive areas; Lesson Review completed	Standard 3a: Universal Foundation Skills Standard 3b: Career Majors	Standard S: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.	R3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
14-53 (a-d)	GIS	FINAL EXAM	FINAL EXAM	FINALEXAM	FINAL EXAM		
15-54 (a-d)	Presentation Skills	I can prepare and present a poster board presentation of my project.	Poster board preparation and presentation (present)	Poster board presentation	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills	Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make	W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback,

						informed decisions.	including new arguments or information.
15-55 (a-d)	NYHS Science and Engineering Fair	I can present a poster board presentation of my project at a high school science and engineering fair. (film presentations)	Poster board presentation	Poster board presentation	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
16-56 (a-d)	Technical Reading + Writing	I can format a research report into a journal article format.	Format research monograph using journal article parameters.	Formatted articles	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		We. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
16-57 (a-d)	Technical Reading + Writing	I can format a research report into a journal article format.	Format research monograph using journal article parameters.	Formatted articles	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		We. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
17-58 (a-d)	Technical Reading + Writing	I can proof read and edit journal articles.	Proof read other students' journal articles.	Articles proof read	Standard 2: Integrated Learning Standard 33: Universal Foundation Skills		R7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
17-59 (a-d)	SUBMIT ARTICLE	Submit final journal articles.	Final Journal articles.	Final Journal articles	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills		R7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
18-60 (a-d)	Lab/Field Procedures	I can inventory and organize my research supplies.	Lab/Field procedures	Research lab prepared for summer research.	Standard 2: Integrated Learning Standard 3a: Universal Foundation Skills Standard 3b: Career Majors		
18	(Regents Week)	(Regents Week)	(Regents Week)	(Regents Week)	(Regents Week)		

# Rubric to Evaluate Student Progress at Internship

Internehin	Exemplary	Maate Proficiancy	Relow	Score	Weighting	Total
	5-4	3-2	Proficiency 1-0		n n	Score
Performance						
Introduction	Meets and/or	Articulates the relevance of own academic study and choices that have led	Fails to meet			
	exceeds all criteria	to a specific area of inquiry; explains in what way the internship experience	proficiency			
	for proficiency	was expected to extend and refine the student's undergraduate education and personal development	criteria			
Setting		Describes the internship setting, role, and responsibilities; provides evidence of internship experience				
Integrative		Shows evidence of applying diverse skills and knowledge areas across				
Learning		diverse real-world situations				
Self Knowledge		Describes personal identity, values, and ethics and how the self has shifted				
and Growth		as a result of the internship experience; indicates tolerance for ambiguity;				
		and identifies the link between one's self development and the area being				
		studied (subject, issue, etc.)				
Civic identity						
and		and how these learning experiences have influenced the sense of civic				
Commitment		identity and commitment				
Writing Quality						
Logical		Paper is formatted properly; includes all required sections; connections				
Organization		between sections, paragraphs, and sentences are consistently fluid and clear				
Writing quality:		Writer demonstrates a sense of "writer's identity" that promotes reader				
awareness of						
self as a writer		sense of the readers' needs and expectations and attempts to engage				
and needs of		readers on those terms				
audience						
References		Sources are disparate (from self; courses, readings, interviews) but identified				
		accurately				
Mechanics		Accurate punctuation and spelling are used throughout the paper				



Capstone Criteria and Assessment Resource Created by Kay M. Sagmiller Contributors: David Carter, Anne Chambers, Anne Connors, Andy Dungen, David Oline, Dee Perez, Dan Rubenson

http://leap.aacu.org/toolkit/wp-content/files\_mf/internshiprubric.pdf



# Work Site Learning Plan

Student Intern: Date:	
The following work site learning plan provides a description of each component of the experience:	work
Tasks student will perform: Student will: Read peer review journal articles; pe	
scientific field work; collect ecological data on the	Asian
Shore Crab; enter data into database; process data u Microsoft Excel.	sing
Skills required: Field Safety; technical Reading; Microsoft Offic basic computer skills; water anality monitoring - sa	e;
basic computer skills, water anality Monitoring - sa	linity,
temperature and tide.	
Work environment (schedule of rotation through major departments):  Field work twice a week at various localities; laborathree times through December 2013 at Manhattan C	ollege.
Work processes, technology, and equipment student will use or observe:  Project Management skills; teamwork; Microsoft Exe  Refractometer; Caliper; Metric System Measurem	cel; ents.

Safety precautions:	when entering water deeper than
	dling crabs and other sharp
marine are an again or shiest	s; buddy system at all times
deed conduction Gold mile	some in land in a to
including rinsing in filteralway	care in handling instruments, ter and wiping with lens paper after use
Dress code and behavior:	
	may be damaged, watershoes/boots,
protective gloves, hat; Insec-	t Repellant and sunscreen
as heeded	
Behavior: appropriate, profe	ssional conduct; care inhandling
instruments and marine organ	isms; focused and productive use of tun
Additional comments:	
Be punctual to field site an	id meetings; carry emergency
contact information: it is r	commended to have water-proof
Donches for cell-phone, walle	et keys 8tc. Carm a bottle of
water beverage and snack	when conducting field work.
	TOTAL STREET,
Student Name (print):	
Student Signature:	Date:
Mentor Name (print):	P*
Mentor Signature:	Date:
Employer Name (print):	
Employer Signature:	Date:
Parent Name (print):	
Parent Signature:	Date:



Name Class of
---------------



# Marine Biology Research Program WSEP: Work Skills Employability Profile

### **Program Description**

The Marine Biology Research Program is a 3 yr. program that will jump start high school students in core marine science topics employing hands-on, problem-based learning strategies. Students will begin by building and studying simple aquatic ecosystems; formulate experiments with these systems; learn the biology, chemistry, physics, and ecology behind them; and apply basic instrumentation techniques to monitor them. Once these sets of "in house" skills have been mastered, the program will then shift students' attention to the natural ecosystems around Governor's Island through the formulation of projects around 3 main topics: oyster restoration, habitat characterization, and water/air quality monitoring with a student built and maintained network around the Hudson River Estuary. Students will learn how to formulate projects, submit professional reports, present at national and international research fairs (e.g. Intel Science and Engineering Fair), and, ultimately, use their own data to propose resource management solutions to local government agencies. Upon satisfactory completion of this program students will also be eligible for 12 college credits through SUNY Albany and 6 from Manhattan College, a Geographic Information System credential, and the NOCTI Natural Resources Systems credential. All together, Marine Research scholars will have a strong foundation for competitive colleges and the STEM Career Cluster (i.e. environmental and marine science, water and waste water management, geographic information systems, and natural resources management.)

### **Program Objectives**

- 01. Prepare students for resource management and conservation.
- 02. Give students a strong foundation in marine science.
- 03. Expose students to professional settings and careers in marine science.
- 04. Prepare students for college with rigorous research projects and college credit bearing courses.
- 05. Train students to build and maintain a remote sensing water quality monitoring network.
- 06. Characterize Governor's Island marine environment.
- 07. Monitor the oyster restoration project.

Skills Overview	Certifications & College Credit
Personal Characteristics	SPACE Geographic Information Systems
Job Seeking Skills	Certification
Job Keeping Skills	NOCTI Natural Resources Systems Certification
Universal Foundation Skills	NYCSEF Certification
Basic Science	SUNY Albany College Credit
Field Sampling	Manhattan College Credit
Instrumentation	
Data Acquisition & Management	
Physical-Chemical Analysis	
Information Technology + Statistics	
Project Management	
Independent Project Skills	

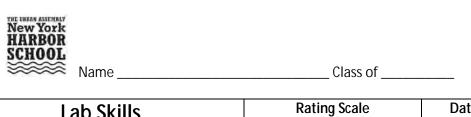






Interpersonal and Job Readiness Skills	Rating Scale 3 Above Average 2 Average 1 Below Average			Date Evaluated	Instructors Initials
D 101 1 11	3	2	1		
Personal Characteristics:					
Relations with others (effectiveness in working with students, instructors, and others; cooperation; shows respect)					
Dependability (attendance, punctuality, adherence to schedules and deadlines; consistency and results; perseverance)					
Work Attitudes (willingness to learn; willingness to accept and profit from evaluation; enthusiasm;					
initiative; commitment; excel in work)  Communication (listening, speaking, and nonverbal skills; effectiveness in communicating with students; teachers, and others)					
Personal Hygiene/Grooming (personal health care and cleanliness; dresses and maintains self appropriately)					
Job Seeking Skills:					
Visit career sites ( <i>i.e.</i> Careerzone.com, Monster.com, etc.)			1		
Create a Career Plan					
Fill out this Skills Employability Competencies List					
Write a resume					
Prepare a job application form					
Write letters of application and acceptance					
Arrange for personal references					
Apply job search techniques (online job search)					
Arrange a job interview					
Apply job interview techniques					
Evaluate job offers (actual or simulated)					
Job Keeping Skills:					
Knowledge of Workplace (Policy and Ethics)					
Response to Supervisor (Accepts direction, feedback and constructive criticism with positive attitude and uses information to improve work performance. Demonstrates flexibility when nature of work changes.)					
Communication Skills (Gives full attention to what other people are saying, asks questions as appropriate and understands what was heard. Communicates concerns clearly and asks for assistance when needed.)					
Solves Problems and Makes Decisions (Identifies the nature of the problem, evaluates various ways of solving the problem and selects the best alternative.)					
Cooperates with Others (Interacts and communicates with others in a friendly and courteous way. Shows respect for others' ideas, opinions and racial and cultural diversity. Effectively works as a member of a team.)					
Resolves Conflicts (Identifies the source of conflict, suggests options to resolve it and helps parties reach a mutually satisfactory agreement.)					
Observes Critically (Carefully attends to visual sources of information.  Evaluates the information for accuracy, bias and usefulness. Develops a clear understanding of the information.)					
Takes Responsibility for Learning (Identifies own strengths and weaknesses. Sets goals for learning. Identifies and pursues opportunities for learning. Monitors own progress toward achieving these goals.)					
Complies with Health and Safety Guidelines					

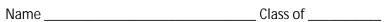






Lab Skills	3 2	Rating Sca Above Avera Average Below Avera	age	Date Evaluated	Instructors Initials
	3	2	1		
Basic					
Using correct Personal Protective Equipment (PPE)		1			
Measuring Length with at least 3 different tools					
Measuring Volume with at least 3 different tools					
Measuring Mass with at least 2 different tools					
Germinating seeds hydroponically					
Substrate establishing ( <i>i.e.</i> flourite, gravel, and/or sand)					
Aeration applications in biology experiments					
Building and maintaining a fresh water non-re-circulating aquatic ecosystem model					
Intermediate					
Understands requirements for Biological Safety Level I					
Disinfecting with chlorine					
Initiating nitrification with ammonia and nitrifying bacteria					
Calculating simple solution concentrations (chemical + biological)					
Building a freshwater re-circulating aquatic ecosystem model					
Maintaining a freshwater re-circulating aquatic ecosystem model					
Neutralizing pH for waste water solutions					
Using an R/O DI filter system					
Advanced					
Understands Biological Safety Levels II and above					
Sterilizing with pressure pot					
Calculating energy flow					
Building and installing manifold					
Building and maintaining a brackish and/or salt water aquatic ecosystem model					
Building or maintaining an R/O DI filter system					







	Т г	Class of						
Field Sampling Skills	3 / 2 /	Rating Scal Above Average Average Below Average	ge	Date Evaluated	Instructors Initials			
Basic	3	2	ı					
240.0								
Water quality sampling with bucket								
Water quality sampling with dipper								
Crab traps								
Minnow traps								
Slide preparation								
Using a manual depth sounder								
Intermediate								
Water quality sampling with Beta Bottle								
Small manual plankton nets  Benthic grab manual sampler								
Epiphyton sampler								
Transept sampling Using a seine net								
Using a seme net								
Advanced								
Auvanceu								
Water quality sampling with Niskin Bottle								
Large tow plankton nets onboard vessel			-					
Benthic sampler onboard vessel								
Quadrat/transept sampling								
Digital transepts								
J								







Instrumentation Skills	3 2 1	Rating Sca Above Avera Average Below Avera	ige ge	Date Evaluated	Instructors Initials
	3	2	1		
Basic					
Maintaining Test Strips					
Using a calibrated stop watch					
Using a calibrated stop water					
Using magnifying glasses					
Using a manual depth sounder					
Using a manual hanging scale					
Using a manual nanging scale					
Intermediate					
Preparing pH standards					
Calibrating pH sensor					
Using a micropipette					
Folsom Plankton Splitter					
Maintaining an Electrical Conductivity probe					
Measuring mass with a digital balance					
Using a light microscope without immersion objective lens					
Using a light stereoscope					
Using a sonar depth sonde					
Using a flow meter					
Using a digital scale					
Using light and/or temperature sensors					
Keeping an instrument calibration log					
Keeping an instrument maintenance log					
Advanced					
Using a digital microscope with immersion oil					
Using a digital stereoscope					
Maintaining optical probes (e.g. dissolved oxygen, chlorophyll)					
RS232 Communication protocol with sensor					
Replacing probes on meters (Hanna Combo and YSI)					
Replacing filters for CO2 detection					
Calibrating a LICOR CO2 sensor			1		
Running a MetOne Particulates sensor					
Running a Magee Scientific Aetholometer Black Carbon sensor					

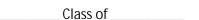






Data Acquisition & Management Skills	agement Skills  2 Average 1 Below Average				
	3	2	1		
Basic					
Creating a data table with metadata section using a word processor or digital spread sheet					
Using a picture key to identify organisms					
Using a data table to collect qualitative data					
Using a data table to collect quantitative data - counts					
Intermediate					
Creating a dichotomous key to identify organisms					
Using a dichotomous key to identify organisms					
Creating digital images with digital microscope/stereoscopes					
Inputting and managing data in a spread sheet					
Log of missing data					
Log of data entry and transcription errors					
Log of protocol errors					
Advanced					
71013111000					
Creating identification fiches for organisms					
Determining data precision					
Determining data bias					
Determining data representativeness					
Determining data comparability					
Determining data completeness					
Determining instrument sensitivity					
Managing a website with project data.					







THE URBAN ASSEMBLY New York HARBOR SCHOOL Name		Clas	s of	Ne M.F BIO	w York ARINE DLOGY
Physical-Chemical Analysis Skills Ra 3 Abo 2 Avo 1 Bel			age age	Date Evaluated	Instructors Initials
	3	2	1		
Basic					
Measuring ammonia concentration using Aquacheck colorimetric test  Measuring pH using Aquacheck colorimetric test					
Measuring nitrite concentration using Aquacheck colorimetric test					
Measuring nitrate concentration using Aquacheck colorimetric test					
Measuring buffering capacity using Aquacheck colorimetric test					
Measuring phosphate concentration using Aquacheck colorimetric test					
Measuring hardness using Hach colorimetric test					
Measuring alkalinity using Aquacheck colorimetric test					
Measuring temperature with a calibrated thermometer					
Intermediate					
Measuring salinity with a refractometer					
Measuring pH with a conductivity probe					
Measuring electrical conductivity with a conductivity probe					
Measuring turbidity with a turbidity tube or Secchi disk					
Measuring current with meter tape, floating device, and chronometer					
Adjusting pH levels of a solution					
Measuring nutrients using photometer					
Adjusting nutrient levels (hydroponics germination)					
Advanced					
Advanced					
Measuring dissolved oxygen using the Azide modified Winkler Method					
Measuring enterococcus using Enterolert					
Measuring nutrients using a spectrophotometer					
Measuring dissolved oxygen using optical probe					
Measuring chlorophyll a using optical probe					

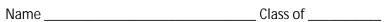






Information Technology and Statistics Skills	3 / 2 /	Rating Sca Above Avera Average Below Avera	ge	Date Evaluated	Instructors Initials
Basic	3		1		
Dasic					
Turning on and shutting down a computer correctly					
Naming digital files					
Creating and naming digital folders					
Organizing a USB thumb drive					
Data table creation					
Basic statistics (digitizing data on to Microsoft Excel, central tendency)					
Digitizing data on to Microsoft Word					
Search queries on the internet					
Google Earth – Basic functionality					
Intermediate					
Graphing in Microsoft Excel					
Experimental design (problem definition, hypothesis/null hypothesis formulation, objective definition, variable definition, controls, constants, assumptions, limitations, replicating, pseudoreplicating, task definition, materials definition, protocol definition)					
Intermediate statistics (probability, regression analysis, correlations)					
Boolian logic for internet search engines					
Google Earth – Intermediate functionality*					
ArcGIS – Basic and Intermediate functionality					
Bluetooth technology for remote data transfer - telemetry					
Parametric Statistics - error types					
Parametric Statistics - t-test, and/or Chi square test					
Advanced					
Parametric Statistics – ANOVA and or ANCOVA					
ArcGIS software – Advanced functionality for geographic information processing					
Primer + Permanova applications for non-parametric ecological statistics  Phylogenetic Tree software					
Spip4q application for automated instrument data retrieval					
Hyperterminal application for remote instrument communication					
Radio technology for remote data transfer - telemetry					
Cell phone technology for remote data transfer - telemetry					







New York HARBOR SCHOOL  Name	Class of						
Project Management Skills	3 A 2 A	Rating Sca Above Avera Average Below Averag	ge	Date Evaluated	Instructors Initials		
Basic		_					
Science report writing							
Keeping a basic research journal							
Organizing a research portfolio							
Literature review							
Basic bibliography writing skills							
Active note taking (i.e. style and unknown word definition)							
Presentation skills in front of class audience							
Creating a procedures flow chart							
Creating a materials list							
Intermediate							
Active note taking strategies (i.e. inquiry questions, reading conditions)							
Keeping a professional science journal							
Keeping an updated research portfolio							
Cornell and Harvard style notation							
Writing a Research Plan							
Obtaining and keeping open communication with a professional scientist as an advisor or mentor  Technical reading and summarizing of peer reviewed journal							
articles							
Technical writing (Introduction, Background, Materials, Procedures, Results)  APA style bibliography writing							
Application process for science enrichment programs							
Presentation skills in front of school wide audience							
Preparing a digital presentation							
Creating a digital presentation							
Ordering project materials							
Advanced							
Auvanceu							
Technical writing (Analysis and Conclusions)							
Writing a journal article style paper							
Research Fair application							
Travel preparations							
Presentation skills in front of regional wide audience							
Preparing a poster board							







Independent Research Project Skills  Rating S 3 Above a 2 Average 1 Below A		Above Ave Average Below Ave	le rage	Date Evaluated	Instructors/Mentors Initials
-	3	2	1		
Basic			•		
Dusio					
Intermediate					
Advanced					
Advanced					







New York HARBOR SCHOOL  Name		Class	s of	Nes M.F B.I	w York ARINE DLOGY
Miscellaneous Skills	3 . 2 .	Rating Scal Above Avera Average Below Averag	ge	Date Evaluated	Instructors Initials
	3	2	1		
Financial Management:					
Identify positive/negative money habits					
Difference between needs and wants					
Defining SMART goals					
Making DECISIONS					
Defining income and expenses (graphs)					
Creating a spending plan or budget					
Creating and keeping a money management action plan					
Other:					

Work-Based Learning Experience, Certifications &	Rating Scale 3 Above Average 2 Average 1 Below Average		Date Evaluated	Instructors Initials	
College Credit	3	2	1		
Total # of CTE Coursework Hours					
Total # of WBL Experience Hours					
Final Total # of Hours					
Total # of SUNY Albany College Credit					
NOCTI Natural Resource Systems Certification					
SPACE Geographic Information Systems Certification					
NYCSEF Certification (or other regional accredited Science & Engineering Fair Certifications)					



lame	Class of



## To whom it may concern,

The purpose of this letter is to confirm that the above named student has been evaluated for the skills outlined in this document. Next to each competency skill you'll find the proficiency level that said student achieved during their course in the Marine Biology Research Program, academic classes at the Urban Assembly New York Harbor School, other enrichment opportunities, and Work-Based Learning Experiences. Below you will find the names and contact information of those persons that have evaluated the holder of this document.

Print Name: Company: Title: Contact:	Print Name: Company: Title: Contact:
Print Name: Company:	Print Name: Company:
Title:	Title:
Contact:	Contact:
Print Name:	Print Name:
Company:	Company:
Title:	Title:
Contact:	Contact:
Print Name:	Print Name:
Company:	Company:
Title:	Title:
Contact:	Contact:

Skill	Rating Scale 3 Above Average 2 Average 1 Below Average			Date Evaluated	Instructors Initials
	3	2	1		
Basic Information Technology + Statistics Skills:					
Turning on and shutting down a computer correctly	1			Sept 15'11	are
Naming digital files	V			Sept 30 111	Cur
Creating and naming digital folders	~			OCT 5 '11	-
Organizing a USB thumb drive					an
Data table creation	<b>V</b>	1		Oct 5 11	^
Basic statistics (digitizing data on to Microsoft Excel, central		V	-	Nov 30 '11	mp
tendency)		V		Jan 20 12	On
Digitizing data on to Microsoft Word		/		Fcb 18 12	Our
Search queries on the internet	V			Apr 05 12	ms
Google Earth – Basic functionality*	/			May 12 112	m
Intermediate Information Technology + Statistics Skills:					,
Graphing in Microsoft Excel		1		oct 01 '12	\ non \
Experimental design (problem definition, hypothesis/null hypothesis formulation, objective definition, variable definition, controls, constants, assumptions, limitations, replicating, pseudoreplicating, task definition, materials definition, protocol definition)		/		Nov 15 '12	gue
Intermediate statistics (probability, regression analysis, correlations)		V		Dec 12 112	Au
Boolian logic for internet search engines			/	Jan 30 '13	an
Google Earth – Intermediate functionality*	1			Feb 21 '13	mo v
ArcGIS – Basic and Intermediate functionality		1		Mar 18 13	and
Phylogenetic Tree software			1	April 20 13	an
Bluetooth technology for remote data transfer - telemetry		/		May 30'13	Cin
Advanced Information Technology +					one
Statistics Skills:					
Parametric Statistics (error types, t-test, Chi square test, ANOVA, ANCOVA)					
ArcGIS software – Advanced functionality for geographic information processing					
Primer + Permanova applications for non-parametric ecological statistics					
Spip4q application for automated instrument data retrieval					
Hyperterminal application for remote instrument communication					
Radio technology for remote data transfer - telemetry					
Cell phone technology for remote data transfer - telemetry					

Skill	Rating Scale 3 Above Average 2 Average 1 Below Average			Date Evaluated	Instructors Initials
	3	2	1		
Basic Instrumentation Skills:					0
	/			Nov 15 '11	Gun
Maintaining Test Strips	V			Jan 20 1/1	an
Using a calibrated stop watch	V			May 12 '12	(me
Using a calibrated thermometer				7.2	7
Intermediate Instrumentation Skills:	J				
Preparing pH standards	×			oct 05 12	an
Calibrating pH sensor	./			Dec 14 12	- N
Maintaining an Electrical Conductivity probe	./			Feb 20 13	Com
Measuring mass with a digital balance	V			Mar 15 13	Om
Advanced Instrumentation Skills:					\
Maintaining optical probes (e.g. dissolved oxygen, chlorophyll)					
RS232 Communication protocol with sensor					
Replacing probes on meters					
Replacing filters for CO2 detection					
Calibrating a LICOR CO2 sensor					
Running a MetOne Particulates sensor					
Running a Magee Scientific Aetholometer Black Carbon sensor					

Skill	Rating Scale 3 Above Average 2 Average 1 Below Average			Date Evaluated	Instructors Initials
	3	2	1		
Basic Chemical Analysis Skills:					
Measuring ammonia concentration using Aquacheck colorimetric test	/			oct 1. '11	An.
Measuring pH using Aquacheck colorimetric test	V			Oct 20 11	Chr.
Measuring nitrite concentration using Aquacheck colorimetric test	1			Dec 15 11	Cun
Measuring nitrate concentration using Aquacheck colorimetric test	V			Dec 15 11	cm
Measuring buffering capacity using Aquacheck colorimetric test	V			Mar 10 12	Que
Measuring phosphate concentration using Aquacheck colorimetric test	1			Mar 10 12	In
Measuring hardness using Hach colorimetric test	V			April 5/12	ym
Measuring alkalinity using Aquacheck colorimetric test	V			June 5 12	an
Measuring temperature with a calibrated thermometer	V			June 5 12	you
Intermediate Chemical Analysis Skills  Measuring salinity with a refractometer	J			oct 5 112	1,000
Measuring pH with a conductivity probe	V			Na 15 12	Chi
Measuring electrical conductivity with a conductivity probe	/			Jan 10 13	an
Measuring turbidity with a turbidity tube or Secchi disk	V			Jan 10 113	an
Measuring current with meter tape, floating device, and chronometer	J			Mar 1 '13	Que
Adjusting pH levels of a solution	V			Mar 15 13	Cm
Adjusting nutrient levels (hydroponics germination)	/			May 10 113	du
Advanced Chemical Analysis Skills					, , , , ,
Measuring dissolved oxygen using the Azide modified Winkler Method					
Measuring enterococcus using Enterolert					
Measuring nutrients using photometer					
Measuring nutrients using a spectrophotometer					
Measuring dissolved oxygen using optical probe					
The state of the s					

3	2	1		
,				
,				
V			Sept 20 '11	Our
1			Sept 20 11	New
				ann.
			100	Que
,				m
1				an
V			May 5 12	an
1			6ct 5 112	202
V				the
	1		Dec 10 12	/ an
/			Feb 15'13	en
/			Mar 30 13	Sh
V			April 20 '13	Om
				,
			1	
		\frac{\frac}}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}		Dec 5 '11  Dec 5 '11  Dec 5 '11  V Feb 15 12  V May 5 '12  V Dec 10 '12  V Dec 10 '12  V Feb 15 '13  V May 30 '13

Skill	3 .	Rating Scal Above Averag Average Below Averag	ge	Date Evaluated	Instructors Initials
	3	2	1		
Personal Characteristics:					
Relations with others (effectiveness in working with students, instructors, and others; cooperation; shows respect)	/			04 30 11	Qu
Dependability (attendance, punctuality, adherence to schedules and deadlines; consistency and results; perseverance)		V		Jan 15 12	qu
Work Attitudes (willingness to learn; willingness to accept and profit from evaluation; enthusiasm; initiative; commitment; pride in work)		~		Jan 15 12	an
Communication (listening, speaking, and nonverbal skills; effectiveness in communicating with students; teachers, and others)	<b>V</b>			Mar 30 12	" Pre
Personal Hygiene/Grooming (personal health care and cleanliness; dresses and maintains self appropriately)	V			Mar 30 12	an
Job Seeking Techniques:					
Apply information about self and job opportunities in career decision making		/		Nov 15'12	Que
Write a resume		V		Nov 15:12	n
Prepare a job application form	/			Nov 15 12	an
Write letters of application and acceptance	,	1		Jan 20'13	an
Arrange for personal references		1		Feb 10 '13	Chr
Apply job search techniques (online job search)	./			Mar 30 13	an
Arrange a job interview	V/			Mar 30 13	Own
Apply job interview techniques	V	V		Apr 20 13	2 Cross
Evaluate job offers (actual or simulated)	<b>V</b>	V		May 20 13	Olu
Entrepreneurship Awareness:					1
Describe five characteristics of a free enterprise economic system (ownership of property, profit motive, risk taking, competition, supply and demand)					
Describe five characteristics of a planned economic system (communal ownership, basic human services provided, communal decision-making, requirements-based, rational resource distribution)					
Name four forms of business ownership (sole proprietorship, partnership, corporation, cooperative)					
Describe advantages and disadvantages of small business ownership Identify steps necessary to start a business (evaluate need,					
site selection, marketing plan, financial plan, management plan)					
Identify personal traits of the entrepreneur (versatility, aspirations, energy, integrity, adaptability, etc.)					



lame	Class of



# Marine Biology Research Program CFM: Career and Financial Management

#### **Program Description**

The Marine Biology Research Program is a 3 yr. program that will jump start high school students in core marine science topics employing hands-on, problem-based learning strategies. Students will begin by building and studying simple aquatic ecosystems; formulate experiments with these systems; learn the biology, chemistry, physics, and ecology behind them; and apply basic instrumentation techniques to monitor them. Once these sets of "in house" skills have been mastered, the program will then shift students' attention to the natural ecosystems around Governor's Island through the formulation of projects around 3 main topics: oyster restoration, habitat characterization, and water/air quality monitoring with a student built and maintained network around the Hudson River Estuary. Students will learn how to formulate projects, submit professional reports, present at national and international research fairs (e.g. Intel Science and Engineering Fair), and, ultimately, use their own data to propose resource management solutions to local government agencies. Upon satisfactory completion of this program students will also be eligible for 12 college credits through SUNY Albany and 6 from Manhattan College, a Geographic Information System credential, and the NOCTI Natural Resources Systems credential. All together, Marine Research scholars will have a strong foundation for competitive colleges and the STEM Career Cluster (i.e. environmental and marine science, water and waste water management, geographic information systems, and natural resources management.)

#### **Program Objectives**

- 01. Prepare students for resource management and conservation.
- 02. Give students a strong foundation in marine science.
- 03. Expose students to professional settings and careers in marine science.
- 04. Prepare students for college with rigorous research projects and college credit bearing courses.
- 05. Train students to build and maintain a remote sensing water quality monitoring network.
- 06. Characterize Governor's Island marine environment.
- 07. Monitor the oyster restoration project.

Career Management Overview	Financial Management Overview
Self-Assessment	Money Habits
Foundation Courses	Needs and Wants
Career Exploration	SMART Goals
Career Plan & Portfolio	Making DECISIONS
Preparing for the Interview	Income and Expense Graphs
Applying for the Job	Spending Budget
Transferrable and Transitional Skills	Money Management Action Plan
General Related Health and Safety	Payroll and Taxes
Employment Relationships	Deductions
Performance Evaluations	Fringe Benefits
Training Plan	Savings
Child Labor Laws	Checking Accounts
Hours of Employment	Credit Cards







### **CAREER MANAGEMENT: GENERAL INSTRUCTION**

I. Career Planning- Phase 1	Rating Scale 3 Above Average 2 Average			Date Evaluated	Instructors Initials
	1 E	1 Below Average			
(10 weeks)	3	2	1		
Self-Assessment					
Holland Interest Inventory					
2. People/data/things					
3. Personality					
4. Abilities/skills/aptitudes					
5. Values					
6. Working environment					
7. Multiple intelligences					
8. Learning styles					
9. Career/industry preferences					
Foundation Courses					
10. Theory – academic courses					
11. Application - career and technical education					
Career Exploration					
12. Shadowing					
13. Informational interview					
14. Guest speakers, etc.					
Career Plan & Portfolio					
15. Developing a career plan					
16. Creating and maintaining a career portfolio					







II. Pre-Employment Skills	Rating Scale 3 Above Average 2 Average 1 Below Average			Date Evaluated	Instructors Initials
(10 weeks)	3	2	1		
Preparing for the Interview					
17. Cold canvassing for a job					
18. Reading a map ( <i>e.g.</i> , business location)					
19. Documents needed for employment.					
20. Calling for the interview					
21. Leaving a message in a voice mailbox					
Applying for the Job					
22. Resume and cover letter					
23. Introducing oneself					
24. Dressing appropriately					
25. Job application					
26. Employment testing					
27. Interview questions					
Follow-up					
28. Thank-you letter					
29. Follow-up telephone call					
30. Evaluating the job offer					
50. Evaluating the job one.					

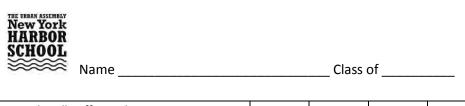






III. Job Success Skills	Rating Scale 3 Above Average 2 Average 1 Below Average			Date Evaluated	Instructors Initials
(10 weeks)	3	2	1		
Transferrable Skills					
24. First day on the int					
<ul><li>31. First day on the job</li><li>32. Requesting assistance</li></ul>					
33. How to request an absence					
34. That's not my job					
35. Handling errors/mistakes you make					
36. Being blamed for something you did not do					
37. Office politics and gossip					
38. How to resign from your job properly					
39. How to handle being fired					
You and your Job					
40. Your rights as an employee, including					
reasonable accommodations for a disability					
41. Developing a work ethic					
42. Your first three months on the job					
43. Sexual harassment and bullying on the job					
44. Diversity awareness – working in a					
multicultural society					
45. Compliance with the Health Insurance					
Portability and Accountability Act (HIPPA)					
Regulations					
Becoming a Professional					
46. Developing good communication skills					
47. Developing good listening skills					
48. Developing critical thinking skills					
49. Developing problem-solving skills					
50. Developing your presentation skills					
General Related Health and Safety					
51. Identifying occupational hazards					
52. The Child Labor Laws					
53. The Prohibitive Occupations					
54. Slips and falls					
55. Hazardous materials and chemicals					
56. Threats – terrorists, criminal acts					
57. Violence in the workplace					
58. Workers' Compensation Insurance					
Employment Relationships					
59. What employers expect					
60. Why attitude matters					
61. Getting along with your boss and co-workers					







62.	How to handle office politics			
	Performance Evaluations			
63.	What to expect			
	How to ask for a raise			
65.	Upward mobility and career ladders			
	Unions			
66.	Who must join			
	Benefits of unions			
	Entrepreneurship			
	•			
67.	How to start a business			
68.	How to market your business			
	How to create a business plan			
	·			







IV. Career Planning – Phase 2	3 A 2 A	ating Scal bove Averago verage Selow Averago	ge	Date Evaluated	Instructors Initials
(10 weeks)	3	2	1		
Transitional/Employability Skills					
<ul> <li>70. Validation of necessary skills – The Training Plan</li> <li>71. Keeping skills up-to-date (ongoing</li> </ul>					
training/learning)					
Strategies for Changing Jobs/Careers					
<ul> <li>72. Identifying employers</li> <li>73. Using the Internet to research employers and career opportunities</li> <li>74. Reading and responding to the Help Wanted Ads</li> </ul>					
75. Utilizing the services of the Department of Labor One Stop Centers					
76. Choosing an industry					
<ul> <li>77. Skills for the 21<sup>st</sup> century</li> <li>78. How to survive the telephone or video</li> </ul>					
conference interview					
Postsecondary Training					
, ,					
79. Choosing an appropriate path (e.g., trade school, apprenticeship, two-year college, four-year college/university)					
80. Developing your career plan for the next 10 years					
Career Plan/Portfolio					
81. Continual updating of the career plan and portfolio					







#### **CAREER MANAGEMENT: TRAINING SITE INSTRUCTION**

	I. Prior to Placement at a Work Site	Rating Scale 3 Above Average 2 Average 1 Below Average			Date Evaluated	Instructors Initials
		3	2	1		
	Essential Documents					
1.	Student enrollment application					
2.	Working papers					
3.	Parent Permission Form					
4.	Risk management documents					
	4.1. Insurance					
	4.2. Transportation					
	4.3. Emergency contact					
	4.4. Health					
	Training Plan					
5.	Training plan					
6.	Memorandum of agreement with employer					
	Child Labor Laws					
7.	Hours and days of work.					
8.	Prohibitive occupations					
	Safety					
9.	Specific training related to occupation					
	validation statement					







II. First 10 Weeks of Placement	Rating Scale 3 Above Average 2 Average 1 Below Average			Date Evaluated	Instructors Initials
	3	2	1		
Basic Workplace Orientation					
10. Who do you work for?					
11. Job description:					
1.1. What basic skills will you use at the					
workplace?					
1.2. What machines will you operate?					
Hours of Employment					
12. Record of hours					
Performance Appraisal					
13. First evaluation					

III. Second 10 Weeks of Training	Rating Scale 3 Above Average 2 Average 1 Below Average			Date Evaluated	Instructors Initials
	3	2	1		
Workplace Journal					
14. Journalizing experiences.					
Performance Appraisal					
15. Second evaluation					
Hours of Employment					
16. Record of hours					
_					







IV. Third 10 Weeks of Training	3 / 2 / 1	Rating Sca Above Avera Average Below Averag	ge ge	Date Evaluated	Instructors Initials			
	3	2	1					
All Aspects of Industry								
17. Corporate organizational chart.								
18. Career ladder								
19. Profit or non-profit corporation.								
20. How does this company make a profit?								
21. Products and services								
22. Marketing and advertising								
23. Floor plan								
24. Competitors								
25. Famous person/founder								
26. History of corporation								
27. Quality								
28. Professional associations								
Performance Appraisal								
29. Third evaluation								
Hours of Employment								
30. Record of hours								
Career Preparation								
31. Letter of recommendation.								

v. Fourth 10 Weeks of Training	3 A 2 A	Rating Scal Above Averaç Average Below Averaç	ge	Date Evaluated	Instructors Initials
	3	2	1		
Advanced Working Relations					
32. State of the industry					
33. Job outlook					
34. Identifying similar employers for future					
employment.					
35. Supervising others					
36. Career portfolio					
37. Record of total training hours					
Performance Appraisal					
38. Final evaluation.					



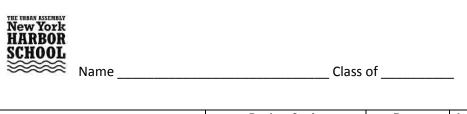




#### FINANCIAL MANAGEMENT

	3 / 2 / 1 E	Rating Sca Above Avera Average Below Averag	ge	Date Evaluated	Instructors Initials
	3	2	1		
Part I					
Identify positive/negative money habits					
Difference between needs and wants					
Defining SMART goals					
Making DECISIONS					
Defining income and expenses (graphs)					
Creating a spending plan or budget					
Creating and keeping a money management					
action plan					
Part II					
Payroll and taxes: your paycheck					
Deductions					
Fringe benefits (e.g., health insurance)					
Savings/investments					
Checking accounts					
Credit cards					
Completing income tax form 1040EZ					







Other Career and Financial Management Skills	R 3 2 1	Above Ave Average Below Ave	rage	Date Evaluated	Instructors/Mentors Initials				
B :	3	2	1						
Basic									
Intermediate									
intermediate									
Advanced									
Advanced									
			1						
			-						
			-						
				]	1				



		MARINE BIOLOGY
Name	Class of	

#### To whom it may concern,

The purpose of this letter is to confirm that the above named student has been evaluated for the career and financial management skills outlined in this document. Next to each skill you'll find the proficiency level that said student achieved during their course in the Marine Biology Research Program, academic classes at the Urban Assembly New York Harbor School, other enrichment opportunities, and Work-Based Learning Experiences. Below you will find the names and contact information of those persons that have evaluated the holder of this document.

Print Name: Company: Title:	Print Name: Company: Title:	
Contact:	Contact:	
Print Name:	Print Name:	
Company:	Company:	
Title:	Title:	
Contact:	Contact:	
Print Name:	Print Name:	
Company:	Company:	
Title:	Title:	
Contact:	Contact:	
Print Name:	Print Name:	
Company:	Company:	
Title:	Title:	
Contact:	Contact:	



Mauricio Gonzalez UA New York Harbor School Battery Maritime Building 10 South Street Slip 7 New York, NY 10004

Dear Mauricio Gonzalez,

I have reviewed and endorse the use of the NOCTI instrument for assessment in the area of Natural Resources and the Digital Quest instrument for assessment in the STARS Geospatial Technician Certification. These instruments align themselves with the Marine Biology Research program of study at the Urban Assembly New York Harbor School.

Sincerely,

James Lodge



Mauricio Gonzalez UA New York Harbor School Battery Maritime Building 10 South Street Slip 7 New York, NY 10004

Dear Mauricio Gonzalez,

I have reviewed and endorse the use of the NOCTI instrument for assessment in the area of Natural Resources and the Digital Quest instrument for assessment in the STARS Geospatial Technician Certification. These instruments align themselves with the Marine Biology Research program of study at the Urban Assembly New York Harbor School.

Sincerely,

Barrett Gaylord Northeast Representative

72 Neperan Rd Ste 1S Tarrytown, NY 10591

O: +1 914.909.2921 M: +1 914.260.6085

bgaylord@ysi.com

April 12, 2012

Mauricio Gonzalez UA New York Harbor School Battery Maritime Building 10 South Street Slip 7 New York, NY 10004

Dear Mauricio,

I have reviewed and endorse the use of the NOCTI instrument for assessment in the area of Natural Resources and the Digital Quest instrument for assessment in the STARS Geospatial Technician Certification. These instruments align themselves with the Marine Biology Research program of study at the Urban Assembly New York Harbor School.

Sincerely

Dr. Philip Orton

Post-Doctoral Research Associate Stevens Institute of Technology Castle Point on Hudson 613 Babbio Center Hoboken, NJ 07030



1 Castle Point on Hudson, Hoboken, New Jersey 07030 www.stevens.edu/CSR



Tuesday, April 24, 2012

Mauricio Gonzalez UA New York Harbor School Battery Maritime Building 10 South Street Slip 7 New York, NY 10004

Dear Mauricio Gonzalez,

I have reviewed and endorse the use of the NOCTI instrument for assessment in the area of Natural Resources and the Digital Quest instrument for assessment in the STARS Geospatial Technician Certification. These instruments seem to align with the Marine Biology Research program of study at the Urban Assembly New York Harbor School. Getting in high school such a focused orientation to the ways of thinking in a discipline and important concepts and skills on which practitioners rely is extremely useful in building a career track and getting a job interview with a similarly focused organization.

Sincerely,



a

Charlie Fitzpatrick Esri Education Manager 2001 15th St N #1403 Arlington, VA 22201 USA v: 651-994-0823 x.8349

c: 651-323-7280 f: 909-793-5953

e: cfitzpatrick@esri.com http://edcommunity.esri.com

## PORTUS OPTIMUS, INC.

April 10, 2012

Mauricio Gonzalez UA New York Harbor School Battery Maritime Building 10 South Street Slip 7 New York, NY 10004

Dear Mauricio Gonzalez,

I have reviewed and endorse the use of the NOCTI instrument for assessment in the area of Natural Resources and the Digital Quest instrument for assessment in the STARS Geospatial Technician Certification. These instruments align themselves with the Marine Biology Research program of study at the Urban Assembly New York Harbor School.

Sincerely,

Matthew Leahey, CEO

Portus Optimus, Inc.



November 28, 2011

Ms. Holly Carson Florida Department of Economic Opportunity

Re: Digital Quest SPACE Certification and EIGS

The Enterprise for Innovative Geospatial Solutions is a partnership of over 50 nationally-known geospatial companies and research organizations. EIGS is a successful 12-year program of the Magnolia Business Alliance and is the highest rated of ten business clusters in the nation funded by the 2011-2012 US Small Business Administration Regional Innovative Clusters initiative.

One of our member companies, Digital Quest, has developed the SPACE certification that receives our full backing and sponsorship. The SPACE certification verifies the entry-level geospatial user skills that our companies regard as essential. As our member company, we support Digital Quest's testing instrument, administering, and review of examinations as a member and representative of the EIGS. The resulting certification is signed and authenticated by Digital Quest and backed by the EIGS.

Our members consider this certification a critical, emerging industry standard and hope to see it continue to grow nationwide. If you have any questions about our organization please do not hesitate to contact me directly.

Sincerely,

Craig A Harvey, GISP

President/CEO, Magnolia Business Alliance

13131 Highway 603, Suite 208,

Bay Saint Louis, MS 39520

(228) 242-0015 Office

(228) 342-8395 Cell

(228) 242-0013 Fax charvey@magnolia-ba.biz

http://www.magnolia-ba.biz







One Old Ferry Road, Bristol, Rhode Island 02809-2921 401.253.1040 \* 800.458.7144 \* www.rwu.edu

# MEMORANDUM OF UNDERSTANDING between ROGER WILLIAMS UNIVERSITY Bristol, Rhode Island and THE URBAN ASSEMBLY NEW YORK HARBOR SCHOOL Governors Island, New York

This document defines the mutually agreed upon terms through which students enrolled in the Aquaculture and Marine Biology Research Programs of Study at The Urban Assembly New York Harbor School (NYHS) can transition to the Roger Williams University (RWU) Marine and Natural Sciences Program.

- Faculty of RWU's Marine and Natural Science Program agree to provide on-going scientific expertise and support to the NYHS Faculty in the form of periodic NYHS program reviews, membership on the NYHS Professional Advisory Committee, and/or other avenues of exchange as mutually agreed upon.
- The following applies to NYHS students enrolled in the three-year NYHS Aquaculture or Marine Biology Research Programs of Study:
  - a) Annually, two senior-level NYHS students in the Aquaculture Program of Study and two senior-level NYHS students in the Marine Biology Research Program of Study will be invited to formally present their senior projects to students and faculty in the RWU Aquaculture and Marine Biology Programs. This will provide NYHS students with a forum to discuss their research efforts and to exchange ideas with RWU faculty and students. Unless otherwise stipulated, these presentations will be web-based and scheduled to coincide with RWU undergraduate research presentations that are held on a regular basis. The NYHS students will be selected by representatives from both NYHS and RWU.
  - b) Annually, one outstanding junior-level NYHS student in the Aquaculture or Marine Biology Research Program of Study will be invited to participate in RWU's Marine Biology camp held each summer at the RWU Bristol campus. The NYHS student will be selected by representatives from both NYHS and RWU. The fee to attend the summer camp program will be waived for the selected participant. This provision is subject to RWU conducting the Marine Biology camp in any given summer.
  - c) NYHS students attending RWU and enrolled in RWU's Marine and Natural Science Program that have successfully completed the three year NYHS Aquaculture Program of Study will be eligible to challenge select RWU Aquaculture and Aquarium Science courses (BIO 345 Aquaculture; AQS 262 Aquarium System Design) via a RWU challenge exam and receive the corresponding college credits for that course upon satisfactory completion of the exam. The challenge exam will include a portfolio presentation and the exam fee will be waived for NYHS students.
  - d) NYHS students attending RWU and enrolled in RWU's Marine and Natural Science Program that have successfully completed the three year NYHS Marine Biology Research Program of Study will be eligible to challenge select RWU Environmental Science and Marine Biology courses (NATSC 204 Principles of Oceanography; BIO 204 Introduction to Marine Biology) via a RWU challenge exam and receive the corresponding college credits for that course upon satisfactory completion of the exam. The challenge exam will include a portfolio presentation and the exam fee will be waived for NYHS students.
  - e) Outstanding students completing the NYHS Aquaculture or Marine Biology Research Program of Study who have been admitted to RWU will be considered for a number of RWU scholarships.

This Memorandum will be periodically evaluated and reviewed by RWU and NYHS for the purpose of making any necessary refinements and modifications.

RWU's and NYHS's relationship to each other shall be that of independent contractors. Nothing contained in this Memorandum shall make the employees of one party the employees of the other. Each party shall be responsible for managing the affairs of its own respective entity, and in the conduct of their business and in the performance of their respective obligations under this Memorandum each party shall comply with all applicable statutes, ordinances, rules, regulations and licensing requirements of any and all federal, state, and municipal authorities. In addition, each party shall maintain customary, appropriate and, if necessary by law, required levels of insurance (general liability; property & automobile; workers' compensation) during the term of this Memorandum.

The parties shall perform their respective obligations hereunder without regard to the race, color, religion, national or ethnic origin, age, sex, sexual orientation, gender expression or identity, disability, veteran status, or any other legally protected basis of any employee, student or representative.

This Memorandum shall become effective October 1, 2012 and shall be applicable to the NYHS graduating class of 2013 and subsequent classes. This Memorandum may be terminated at any time: a) upon the mutual agreement of both parties; or, b) by either party upon sixty (60) days prior written notice to the other party. Unless otherwise agreed upon, and if notice of termination is provided during either the Fall or Spring RWU academic semesters, the effective date of the termination shall be the last day of such Fall or Spring RWU academic semester.

**IN WITNESS WHEREOF,** both parties have caused this Memorandum of Understanding to be executed by their respective, duly authorized representatives.

	JRBAN ASSEMBLY NEW YORK SOR SCHOOL	ROGE	CR WILLIAMS UNIVERSITY
By:	Edward Icham	By:	Arp M
Name:	Edward Biedermann	Name:	Andrew A. Workman, Ph.D.
Title:	Principal	Title:	Provost and Senior Vice President
Date:	9/21/2012	Date:	10/2/12
Ву:	Fledb	Ву:	In J July
Name:	Peter Malinowski	Name:	Lonnie J. Guralnick
Title:	Aquaculture Program Director	Title:	Interim Dean
Date:	9/21/12	Date:	10/2/12
By:	Jen	Ву:	Kyn M Fanthons
Name:	Mauricio Gonzalez	Name:	Lynn M. Fawthrop
Title:	Marine Biology Research Program Director	Title:	SVP of Enrollment Management & Retention
			10 16 1 2 /

Date:



#### ARTICULATION AGREEMENT



Between

# Manhattan College

And

# Urban Assembly New York Harbor School (NYHS) Marine Biology Research Program (MBRP)

We have entered into this Agreement of intent to work together to enhance educational and career opportunities in order to promote seamless, non-duplicative instruction that benefits students, schools, and the community at large.

Developed through secondary and postsecondary school administrative and instructor course review and collaboration, this Agreement gives 6 college credits towards a college degree for the following courses of study to students fulfilling the criteria as stipulated per programs:

# BIOL 310 <u>OR</u> BIOL 311 - Research in Biology (3 credits) <u>AND</u> 3 Free Elective Credits

EDWARD BIEDERMANN &	Edward Bulage
Secondary School Official's Name	
PRINCIPAL, LA. 12/18/20	012
Title/Date	
Gonstautine E. Theodosi	ou
Postsecondary School Official's Name	
Dean of Science	12/5/12
Title/Date	

This agreement is effective as of December 5th, 2012 until either party decides to dissolve it according to established guidelines as determined by the Marine Biology Research Program and Manhattan College.

See Appendix A: Course List – for the list of courses available for college credit under terms of agreement within each program of study and the list of competencies required for each.

See Appendix B: Articulation Agreement Competencies – for the courses and competencies the student must complete satisfactorily.

See Appendix C: Application/Verification Form – for the secondary school verification of successful competency attainment.

See Appendix D: Responsibilities

Note: This agreement is between these two schools and is valid for these two institutions only. Courses awarded college credit, through this agreement, are unique to these institutions. No assurance is given that college credit awarded through this agreement will transfer to any other postsecondary institution.

DOE Official's Initials: Manhattan College Official's Init

#### **Appendix A: Course List**

For a student to obtain 6 college credits for courses articulated within this program, the student must meet the following criteria:

S/he completes at least 6 college credits in the UHS-SUNY Albany Science Research classes offered at the NYHS in the MBRP.

S/he enrolls at Manhattan College and takes a second class in research (e.g., BIOL 310, 311, 410,411).

S/he transfers the 6 SUNY Albany Science Research Credits awarded in the MBRP to Manhattan College.

The student and the student's program instructor submit the required forms and applications to Manhattan College within the deadlines as determined in the University's Policy and Procedure Manual.

Each student meeting the above criteria can be awarded up to 6 college credit hours of which includes one free elective course and 3 additional credits at Manhattan College for the following articulated courses within this program of study:

Course Number	Course Title	Credits
BIOL 310 / 311	Research in Biology	3
	Elective Course	3

To know each party's responsibilities under terms of this agreement, please see Appendix D: Responsibilities.

Important: In order that the college maintains quality and can assure that quality, it is the college's right to waive courses (or not) as it sees fit. The Office of the Dean is responsible to certify Research in Biology credit after the completion of a second class in research

Please note that all agreements, college credit granted, student promotion, and other decisions are subordinate to the master agreement:

Articulation Agreement between Manhattan College and UA New York Harbor School

Note: This agreement is between these two schools and is valid for these two institutions only. Courses awarded college credit, through this agreement, are unique to these institutions. No assurance is given that college credit awarded through this agreement will transfer to any other postsecondary institution.

NYHS/NYCDOE Official's Initial

#### **Appendix B: Articulation Agreement Competencies**

In order for the student to receive credit for this course/these courses at Manhattan College, the following additional competencies are expected:

#### The requirements of this course as stipulated by Manhattan College are as follows:

- 1. Attend all regularly scheduled classes.
- Participate at a level appropriate to present year of course, in the school's annual symposium.
- Commit to 240 or more hours per school year (September to June) for their research work (this includes class time, assessment meetings, and all out of class time spent on the research).
- Maintain a laboratory notebook/journal of all research related work starting at beginning of entry into research course.
- 5. Maintain a comprehensive portfolio of all research work.
- 6. Present research at all stages of the work, at all available venues and competitions.
- 7. Maintain regular, demonstrable contact with a mentor once one is obtained.
- Develop quarterly chronograms, an end of year abstract, an annual reflection and an assessment of goals.

It is mandatory for all students to attend the NYHS research symposium/fair/exposition and present a poster of an article read, their work to date, and their findings. In addition to the posters, all research students will present a PowerPoint talk on their research findings.

#### Specific course requirements and Projected Dates

The requirements of this course include a minimum of ten hours of outside independent research in every two week cycle during the school year as well as a commitment to a minimum of 90 hours during the sophomore and junior summers. These hours must be documented in a Research Journal, which must be brought to class for each independent session. In addition, other requirements include: at least 4 research paper drafts, the developing of quarterly chronograms, 3 poster board drafts, and 2 Power Point presentations for eligible students. Students will be required to present their work both in class and at third party competitions. Each year it is required to enter 3 or more competitions including the school's Research Fair. It is expected that students will have begun to explore a topic of interest and pursued a mentor during the Prerequisite class Introductory Marine Research in the 10<sup>th</sup> grade in accordance to a fixed chronogram (figure 1a).

Research Journals are due every two weeks at the individual student-teacher conference; drafts are due according to a fixed schedule (figure 01b); competition deadlines are posted as they become available, chronograms are due at the beginning and midpoint of each semester, the final research paper drafts are due either in January and June; and the end of year abstract, reflections and assessment of goals are due on the last day of class.

NYHS/NYCDOE Official's Initials

Figure 01a. Detailed chronogram of major due dates - 10<sup>th</sup> grade Prerequisite Course

Item	F	February			March				April					M		June			
WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 article presentation			X	X	X	Х	Х												
Poster board drafts														X		X			
Mentor Search	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Final presentation																		X	

Figure 01b. Detailed chronogram of major due dates for College Credit Research Classes

Item	S	epte	emb	er		October				November				Dece	Ja	anua	ry		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Mentor Search	X	X	X	X	X	0	0	0	0	0	0	0							
Formulation	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRB - Results	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 article presentation			X	X	X	X	X												
Analysis of results or Literature Review	Х	X	X	X	X	X	X	X	Х	X	X	X	X	X	X	X	X	X	X
Written/Slide Show Draft						X													
Written/Slide Show Draft									X										
Written/Slide Show Draft												Х							
Final drafts															X				
Poster board drafts												X		X		X			
Final presentation																		X	

Figure 01c. Detailed chronogram of major due dates - continued (o = prolonged schedule)

Item			March				A	pril			M	ay	June						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Mentor Search	X	X	X	X	X	X	X												
Formulation	X	X	X	X	X	X	X	X	X	X	X	X							
IRB - Results								X	X	X	X	X	X	X	X	X	X	X	X
Analysis of results													X	X	X	X	X	X	X
Written/Slide Show Draft					X														
Written/Slide Show Draft									X										
Written/Slide Show Draft												X							
Final draft															X				
Poster board drafts							X			X		X		X					
Final presentation															X				

#### **Grading Scheme**

Grading will be based on the following components: Research Project (i.e. research plan, final drafts, grading sheet), Tech. Read + Write (i.e. journal, drafts), Lab/Field Work, Applied Statistics, Conferences and Applications, and Presentations (i.e. articles, research fairs). Full participation in the local symposium will account for 20 percent (figure 03) of the final grade, in lieu of a final exam as follows:

Sophomores will participate in the full symposium and each will produce and present a poster based on a previous peer reviewed article in his/her field.

Juniors will participate in the full symposium and each will produce and present a poster based on her/his own review of pertinent literature and any work done to date under the aegis of a mentor.

Seniors will present both a poster of their research findings and a slide show with a talk of their research findings.

Figure 02. Grading Scheme

<b>Grade Scale</b>	Grade Conversion	Grade Scale	Grade Conversion				
93-100	A	73-76	С				
90-92	A-	70-72	C-				
87-89	B+	67-69	D+				
83-86	В	63-66	D				
80-82	B-	60-62	D-				
77-79	C+	Grade < 60	E				

Figure 03. Grading Components

Research Project (i.e. research plan, steps, + drafts)	30 %
Tech. Read + Write (i.e. PRJ article summaries, other summaries)	05 %
Research Journal + Portfolio	10 %
Lab + Field Work (i.e. theory + practice exercises, data collection)	10 %
Applied Statistics	05 %
Project Conferences	05 %
Applications + Forms (i.e. college, fair, summer programs, etc.)	05 %
Practice presentations (i.e. articles, drafts, judging sheets)	10 %
Final Presentation at local symposium	20 %

#### **Attendance policy**

Attendance is required at all sessions, unless the student is at their specific research site conducting their work IN WHICH CASE THEY MUST KEEP A DETAILED LOG SHEET WITH DATES, TIMES, AND MENTOR SIGNATURES. No more than 10 absences from the group sessions are allowed in the full year classes. Unexcused absences that occur on the day students are

NYHS/NYCDOE Official's Initials:



assigned to present results will result in failure for that day. An unexcused absence from an individual research meeting results in reduction of points on your biweekly grading sheet.

#### Safety policy

Working in laboratories carries the potential for accidents. All students are expected to behave in a safe manner to prevent mishaps.

#### Standards of Academic Integrity

Manhattan College and MBRP expects all members of its community to conduct themselves in a manner befitting its tradition of honor and integrity. Members are expected to assist the College and MBRP by reporting suspected violations of academic integrity to appropriate faculty and/or administrative offices. Behavior that is detrimental to the College's and MBRP's role as educational institutions is unacceptable. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity.

The following are <u>examples</u> of the types of behaviors that are defined as academic dishonesty and are therefore unacceptable:

Plagiarism: Presenting as one's own work the work of another person. Plagiarism includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, the purchase of prepared research or completed papers or projects, and the unacknowledged use of research sources gathered by someone else; Cheating on Examinations: Giving or receiving unauthorized help before, during, or after an examination; Multiple Submission: Submitting substantial portions of the same work for credit more than once; Sabotage: Destroying, damaging, or stealing of another's work or working materials; Unauthorized Collaboration: Collaborating on projects, papers, or other academic exercises that is regarded as inappropriate by the instructor(s); Falsification: Misrepresenting material or fabricating information in an academic exercise or assignment; and Bribery: Offering or giving any article of value or service to an instructor in an attempt to receive a grade or other benefits not legitimately earned or not available to other students in the class. Circumventing Security: Users are prohibited from attempting to circumvent or subvert any system's security measures. Users are prohibited from using any computer program or device to intercept or decode passwords or similar access control information.

The violations listed above should be reported to the MBRP Director immediately. All parties involved will be directed accordingly.

NYHS/NYCDOE Official's Initials:



## Appendix C: Application/Verification Form For College Credit

To be completed by the student and the secondary school teacher for the student who has met the secondary school course and/or competency requirements.

Part 1-To be filled out by student:			
Student's Name		Progra	m
Student's Address			
City		Zip C	ode
Teacher's Name		Date	
•	Course Title		Credits
Manhattan College Course Number			Credits
Part 2-To be filled out by instructor:	ew York Harbor		
Academic Grade		Lab Grad	le (if applicable)
Industry/Post-secondary standard(s) me	et? YES NO	Date	Not applicable
If YES, what standard(s)?			
Comments			
Verified by	nol Instructor's	Signature / F	Pata

NYHS/NYCDOE Official's Initials

# **Appendix D: Responsibilities**

WHO	RESPONSIBILITIES							
Secondary and Post-Secondary Administration	<ol> <li>Complete and sign the Program/Course Articulation Agreement Form,</li> </ol>							
Secondary School Instructor	<ol> <li>Identifies the course comparable to a college course,</li> <li>Participates in Articulation Agreement development,</li> <li>Explains the Articulated Program and various options to the student,</li> <li>Verifies if the student has completed one or more articulated courses in the Program of Study and has achieved the necessary course competencies and performance levels,</li> <li>Completes the Application/Verification Form and submits it to the college</li> </ol>							
	granting articulated credit by the required date,  7. Inform students of fee due dates for the college courses being taken,  8. Gives a copy of the Application/Verification Form to the student and files a copy with the high school counselor or identified "go-to" person for the student's permanent record,  9. Clearly advises students on all options and ramifications of withdrawing from the course,							
High School Counselor or Designee	<ol> <li>Notifies instructors of the Articulation Agreements and Programs,</li> <li>Helps with students getting on board,</li> <li>Assists instructors and students with the process by getting and supplying materials to enable and support the instructor in doing his/her part,</li> <li>Talks with parents as needed,</li> <li>Maintains a copy of each Application/Verification Form in the student's permanent file,</li> <li>Maintains file with all articulation agreements,</li> <li>Collects data on all students at the school site,</li> </ol>							

NYHS/NYCDOE Official's Initials:

High School Student	<ol> <li>Notifies the appropriate person at the secondary school of his/her intent,</li> </ol>
	18. Fills out all required hard copy/web forms, including Part 1, the Application/Verification Form,
	<ol> <li>Demonstrates course competency at the approved proficiency level,</li> </ol>
	20. Applies to the college for admittance in a timely fashion and submits transcripts along with the application,
	21. Has the instructor complete Part 2 of the Application/Verification Form and submit it to the college granting articulated credit,
	22. Matriculates at the college within the time frame delineated within the Articulation Agreement,
College Instructor	23. Collaborates with the high school instructor on curriculum-level review,
	<ol> <li>Signs approval for articulation credit as needed,</li> </ol>
College Advisor	25. Maintains a copy of the Application/Verification Form in the student's academic advising file,
College Registrar	26. Review and records the articulated credit on the student's transcript upon notification that all criteria have been met.





#### ARTICULATION AGREEMENT

Between



# State University of New York at Albany

# Urban Assembly New York Harbor School Science Research Program

We have entered into this Agreement of intent to work together to enhance educational and career opportunities in order to promote seamless, non-duplicative instruction that benefits students, schools, and the community at large.

Developed through secondary and postsecondary school administrative and instructor course review and collaboration, this Agreement gives college credit towards a college degree for the following courses of study to students fulfilling the criteria as stipulated per programs:

ACAS 109	' - Intermediate Science I	Research (2 credits, Ju	ly - August) - Juniors
ACAS 110	Intermediate Methods	of Dosparch IA cradite	Contombor lunch

ACAS 110 - Intermediate Methods of Research (4 credits, September - June) - Juniors

ACAS 209\* - Advanced Science Research (2 credits, July - August) - Seniors

ACAS 210 - Advanced Methods of Research (4 credits, September - June) - Seniors

\* Please note that ACAS 109 and ACAS 209 are offered only during the summer.

Nathan Dudley Mathan Onder Secondary School Official's Printed Name + Signature

Principal 1/31/12

DEBERNEE J. PRIVOTT

Ja Emdet

Postsecondary School Official's Printed Name + Signature

STOCIATE DIRECTOR FOR ADMINISTRATION

2/6/12

Title/Date

This agreement is effective as of June 06<sup>th</sup>, 2012 until either party decides to dissolve it according to established guidelines as stipulated in the Science Research Program's Curriculum and the University in the High School Program's Policy and Procedures Manual.

See Appendix A: Course List – for the list of courses available for college credit under terms of agreement within each program of study and the list of competencies required for each.

See Appendix B: Articulation Agreement Competencies – for the courses and competencies the student must complete satisfactorily.

See Appendix C: Application/Verification Form – for the secondary school verification of successful competency attainment.

See Appendix D: Responsibilities

See Appendix E: Program and Course Description

Note: This agreement is between these two schools and is valid for these two institutions only. Courses awarded college credit, through this agreement, are unique to these institutions. No assurance is given that college credit awarded through this agreement will transfer to any other postsecondary institution.

#### Appendix A: Course List

For a student to obtain college credit for courses articulated within this program, the student must meet the following criteria:

S/he completes the high school articulated courses with a grade of  $\underline{60}$  or better and meets all required competencies.

S/he passes required written and/or performance evaluations as noted in Appendix B: Articulation Agreement Competencies.

The student and the student's program instructor submit the required forms and applications to SUNY Albany within the deadlines as determined in the University in the High School Program Policy and Procedure Manual.

Each student meeting the above criteria can be awarded 2 or 4 college credit hours at the State University of New York at Albany for the following articulated courses within this program of study:

Course Number	Course Title	Credits	Grade
ACAS 109*	Intermediate Science Research	2	Juniors
ACAS 110	Intermediate Methods of Research	4	Juniors
ACAS 209*	Advanced Science Research	2	Seniors
ACAS 210	Advanced Methods of Research	4	Seniors

<sup>\*</sup> Please note that ACAS 109 and ACAS 209 are offered only during the summer.

To know each party's responsibilities under terms of this agreement, please see Appendix D: Responsibilities.

Important: In order that the college maintains quality and can assure that quality, it is the college's right to waive courses (or not) as it sees fit.

Please note that all agreements, college credit granted, student promotion, and other decisions are subordinate to the master agreement:

Articulation Agreement between State University of New York Albany and Urban Assembly
New York Harbor School (NYHS)

Note: This agreement is between these two schools and is valid for these two institutions only. Courses awarded college credit, through this agreement, are unique to these institutions. No assurance is given that college credit awarded through this agreement will transfer to any other postsecondary institution.

#### **Appendix B: Articulation Agreement Competencies**

In order for the student to receive credit for this course/these courses at State University of New York Albany, the following additional competencies are expected:

# The requirements of this course as stipulated by the Science Research Program at the University at Albany are as follows:

- 1. Attend all regularly scheduled classes (See attendance policy below).
- Participate at a level appropriate to present year of course, in the school's annual symposium.
- Commit to 240 or more hours per school year (September to June) for their research work (this includes class time, assessment meetings, and all out of class time spent on the research).
- 4. Summer research carries a commitment of a minimum 90 hours plus assessment time. These hours include full attendance at your local school symposium for each year that you are in the research course.
- 5. Maintain a laboratory notebook/journal of all research related work starting at beginning of entry into research course.
- 6. Maintain a comprehensive portfolio of all research work.
- 7. Present research at all stages of the work, at all available venues and competitions.
- 8. Maintain regular, demonstrable contact with a mentor once one is obtained.
- Develop quarterly chronograms, an end of year abstract, an annual reflection and an assessment of goals.

It is mandatory for all students to attend our annual research symposium and present a poster of an article read, their work to date, and their findings. In addition to the posters, all research students will present a PowerPoint talk on their research findings.

#### Specific course requirements and Projected Dates

The requirements of this course include a minimum of 10 hours of outside independent research in every 2 week cycle during the school year as well as a commitment to a minimum of 90 hours during the rising junior and senior summers. These hours must be documented in a Research Journal, which must be brought to class for each independent session. In addition, other requirements include: 4 research paper drafts, the developing of quarterly chronograms, 3 poster board drafts, and 2 Power Point presentations for eligible students. Students will be required to present their work both in class and at competitions. Each year it is required to enter 3 or more competitions including the school's Research Fair. It is expected that students will have begun to explore a topic of interest and pursued a mentor during the prerequisite class Introductory Marine Research in the 10<sup>th</sup> grade in accordance to a fixed chronogram (figure 1a). Research Journals are due every 2 weeks at the individual student-teacher conference; drafts are due according to a fixed schedule (figure 01b); competition deadlines are posted as they become available, chronograms are due at the beginning and midpoint of each semester, the final research paper drafts are due either in January and June; and the end of year abstract, reflections and assessment of goals are due on the last day of class.

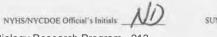


Figure 01a. Detailed chronogram of major due dates – 10<sup>th</sup> grade Prerequisite Course

Item	1	Febru	uary		March					April				M	ay	June			
WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Mentor Search	>X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0
Formulation	>X	X	X	X	X	X	X												
5 article presentation			X	X	X	X	X												
IRB - Results				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Analysis of results													X	X	X	X	X	X	X
1 <sup>st</sup> draft									X										
2 <sup>nd</sup> draft													X						
Final draft																	X		
Poster board drafts														X		X			
Final presentation																		X	

Figure 01b. Detailed chronogram of major due dates - A CAS 110 + 210

Item	September			er		October Novem					mber Dec				mbe	r	January		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Mentor Search	X	X	X	X	X	0	0	0	0	0	0	0							
Formulation	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRB - Results	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 <sub>+</sub> article presentation			X	X	X	X	X						14						
Analysis of results	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1 <sup>st</sup> draft						X													
2 <sup>nd</sup> draft									X										
3 <sup>rd</sup> draft												X							
Final draft															X				
Poster board drafts												X		X					
Final presentation																		X	

Figure 01c. Detailed chronogram of major due dates - CAS 110 + 210 (o = prolonged schedule)

Item	-	ebr	uar	1		March				A	pril			M	ay		June		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Mentor Search	>0	0	0	0	0	0	0												
Formulation	>0	0	0	0	0	0	0												
5 article presentation			X	X	X	X	X												
IRB - Results	>0	0	0	0	0	0	0	X	X	X	X	X	X	X	X	X	X	X	X
Analysis of results													X	X	X	X	X	X	X
1 <sup>st</sup> draft					X	1													
2 <sup>nd</sup> draft									X										
Final draft													X						
Poster board drafts												X		X					
Final presentation															X				

#### **Grading Scheme**

Grades are on an A-E scale and there are no S/U (pass/fail) options (figure 02). Grading will be based on the following components: Research Project (i.e. research plan, final drafts, grading sheet), Tech. Read + Write (i.e. journal, drafts), Lab/Field Work, Applied Statistics, Conferences and Applications, and Presentations (i.e. articles, research fairs). Full participation in the local symposium will account for 20 percent (figure 03) of the final grade, in lieu of a final exam as follows:

Sophomores will participate in the full symposium and each will produce and present a poster/slide show based on a previous peer reviewed article in his/her field.

Juniors will participate in the full symposium and each will produce and present a poster/slide show based on her/his own review of pertinent literature and any work done to date under the aegis of a mentor.

Seniors will present both a poster of their research findings and slide show with a talk of their research findings.

Grade Scale **Grade Conversion Grade Conversion** Grade Scale 93-100 A 73-76 C 90-92 C-A-70-72 87-89 B+ 67-69 D+ 83-86 B D 63-66 80-82 B-60-62 D-77-79 Grade < 60 C+ E

Figure 02. Grading Scheme

Figure 03. Grading Components

Research Project (i.e. research plan, final drafts, grading sheet)	30 %
Tech. Read + Write (i.e. journal, drafts)	10 %
Lab/Field Work	10 %
Applied Statistics	10 %
Student-Teacher Conferences and Applications	10 %
Practice presentations (i.e. articles + drafts)	10 %
Final Presentation at local symposium	20 %

#### Attendance policy

Attendance is required at all sessions, unless the student is at their specific research site conducting their work IN WHICH CASE THEY MUST KEEP A DETAILED LOG SHEET WITH DATES, TIMES, AND MENTOR SIGNATURES. No more than 10 absences from the group sessions are allowed in the full year classes. Unexcused absences that occur on the day students are assigned to present results will result in failure for that day. An unexcused absence from an individual research meeting results in reduction of points on your biweekly grading sheet.

NYHS/NYCDOE Official's Initials:

SUNY Albany UHS Official's Initials:

#### Safety policy

Working in laboratories carries the potential for accidents. All students are expected to behave in a safe manner to prevent mishaps.

#### Standards of Academic Integrity

The University at Albany expects all members of its community to conduct themselves in a manner befitting its tradition of honor and integrity. Members are expected to assist the University by reporting suspected violations of academic integrity to appropriate faculty and/or administrative offices. Behavior that is detrimental to the University's role as an educational institution is unacceptable. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity.

The following are <u>examples</u> of the types of behaviors that are defined as academic dishonesty and are therefore unacceptable:

Plagiarism: Presenting as one's own work the work of another person. Plagiarism includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, the purchase of prepared research or completed papers or projects, and the unacknowledged use of research sources gathered by someone else; Cheating on Examinations: Giving or receiving unauthorized help before, during, or after an examination; Multiple Submission: Submitting substantial portions of the same work for credit more than once; Sabotage: Destroying, damaging, or stealing of another's work or working materials; Unauthorized Collaboration: Collaborating on projects, papers, or other academic exercises that is regarded as inappropriate by the instructor(s); Falsification: Misrepresenting material or fabricating information in an academic exercise or assignment; and Bribery: Offering or giving any article of value or service to an instructor in an attempt to receive a grade or other benefits not legitimately earned or not available to other students in the class. Circumventing Security: Users are prohibited from attempting to circumvent or subvert any system's security measures. Users are prohibited from using any computer program or device to intercept or decode passwords or similar access control information.

The violations listed above should be reported to the SUNY Albany University in the High School Program Office immediately. All parties involved will be directed accordingly.





#### Appendix C: Application/Verification Form For College Credit

NOTE: This section can be overridden by SUNY Albany – UHS's WEB Registration Application and mailed Application sent via mail according to SUNY Albany – UHS's Policy and Procedures Manual.

To be completed by the student and the secondary school teacher for the student who has met the secondary school course and/or competency requirements.

Part 1-To be filled out by stu Student's Name			_ Progran	1
Student's Address				
City			Zip Co	de
Teacher's Name			Date _	
Course Number	Course Title	2		Credits
Part 2-To be filled out by ins				
	UA New York	Harbor Sch	ool	
Academic Grade	-		Lab Grade	e (if applicable)
Industry/Post-secondary st	andard(s) met? YES	NO [	Date	Not applicable
If YES, what standard(s)?				
Verified by				
Sec	condary School Instru	ictor's Sign	ature / D	ate

#### Appendix D: Responsibilities

WHO	RESPONSIBILITIES
Secondary and Post-Secondary Administration	Complete and sign the Program/Course     Articulation Agreement Form,
Secondary School Instructor	Identifies the course comparable to a college course,     Participates in Articulation Agreement
	development,
	Explains the Articulated Program and various options to the student,
	<ol> <li>Verifies if the student has completed one or more articulated courses in the Program of Study and has achieved the necessary course competencies and performance levels,</li> </ol>
	6. Completes the Application/Verification Form and submits it to the college granting articulated credit by the required date or Informs students of the Web Registration Application due dates and Application/Registration form due dates
	<ul><li>that are mailed from SUNY Albany - UHS,</li><li>Inform students of fee due dates for the college courses being taken,</li></ul>
	8. Gives a copy of the  Application/Verification Form to the student and files a copy with the high school counselor or identified "go-to" person for the student's permanent record or require that student prints out two copies of Web Registration Application Confirmation Pages for student's own files and High school permanent record file,  9. Clearly advises students on all options and ramifications of withdrawing from the course and other course details,
High School Counselor or Designee	Notifies instructors of the Articulation     Agreements and Programs,     Helps with students getting on board,
	12. Assists instructors and students with the process by getting and supplying materials to enable and support the instructor in doing his/her part,
	13. Talks with parents as needed,
	14. Maintains a copy of each Application/Verification Form or Web Registration Application Confirmation page in the student's permanent file,

	15. Maintains file with all articulation agreements,
	<ol> <li>Sends letter to student, if required, stating terms and conditions of articulated credit award,</li> </ol>
	<ul><li>17. Monitor's student progress, as appropriate, to ascertain meeting criteria,</li><li>18. Collects data on all students at the school</li></ul>
High School Student	site,  19. Notifies the appropriate person at the
This serious student	secondary school of his/her intent,
	20. Fills out all required hard copy/web forms, including Part 1, the Application/Verification Form or on-line
	Web Registration Application,
	21. Demonstrates course competency at the approved proficiency level,
	22. Applies to the college for admittance in a timely fashion and submits transcripts along with the application,
	23. Has the instructor complete Part 2 of the Application/Verification Form or Web Registration Application and submit it to the college granting articulated credit,
College Instructor/Liaison	24. Collaborates with the high school instructor on curriculum-level review,
University in the High School (UHS) Personnel	25. No additional procedures other than those already established and in practice by UHS will be required. Some of these procedures may be:
	26. Notifies Registrar, if required, when credit is to be awarded,
College Registrar	27. No additional procedures other than those already established and in practice by UHS will be required. Some of these procedures may be:
	28. Review and record the articulated credit on the student's transcript upon notification that all criteria have been met.



#### Appendix E: Program and Course Description

Introduction. The University in the High School Program offered by the State University of New York at Albany and fully articulated with the Urban Assembly New York Harbor School provides courses to students with the academic challenges of college-level curricula during their final year(s) of high school. As a "bridging" experience to college, UHS courses can help students begin to develop the skills and experience necessary for academic success in higher education. Enrollment in UHS courses may provide future opportunities to students, such as the ability to enroll in higher-level college courses or to complete a four-year degree in a shorter amount of time.

Upon successful completion of UHS course requirements, students will receive credit from the University at Albany for the courses in which they have enrolled and for which they have paid. These credits will form the basis of a permanent post-secondary academic record at the University at Albany. Credits obtained through the University at Albany may be eligible for transfer to colleges and universities throughout the country.

Specifically the Science Research Program is based on hands-on, problem-based learning strategies. Students will formulate and execute advanced research projects to address realworld problems (e.g. resource management, ecology, medicine, etc). In order to be successful students must be ambitious, be able to think outside the box, build their own knowledge base, and be able to work in a team.

#### **Course Descriptions**

#### A CAS 109 Intermediate Science Research (2 college credits)

Students will be introduced to research methods in the natural and social sciences by accessing scientific databases, by using on-line bibliographic search techniques, consulting doctoral-level research scholars, developing hypotheses and performing experiments to test them, and by writing research papers and making presentations at scientific symposia. It is expected that the students will have done many of these activities in the prerequisite high school course, and in this course emphasis is placed upon the formulation of hypotheses and initiation of experiments in consultation with mentors. Prerequisite(s): completion of the 10th grade Marine Biology Research class at the high-school level; permission of instructor. Offered summer session only.

#### A CAS 110 Intermediate Methods of Research (4 college credits)

Students will learn research methods by formulating projects in the natural and social sciences. Authentic data will be generated or accessed from on-line databases. Students will also perform exhaustive bibliographic searches, consult doctoral-level research scholars, develop hypotheses, and execute projects to test them. This course requires the submission of at least 4 research paper drafts, 3 poster board drafts, and 2 slide show presentation drafts. Students must submit their completed projects to 3 or more research fairs throughout the NYC region. It is also expected that prospective students will have done many of these activities in the prerequisite high school course, and in this course emphasis is placed upon obtaining meaningful results in consultation with mentors. Students are expected to invest at least five NYHS/NYCDOE Official's Initials:

(5) hours per week outside of class on their research work and must be enrolled throughout an entire academic year to obtain credit. Prerequisite: completion of the 10<sup>th</sup> grade Marine Biology Research course.

#### A CAS 209 Advanced Science Research (2 college credits)

Continuation of work undertaken in A CAS 109 or equivalent with emphasis placed upon the completion of experiments in consultation with mentors. Students will consult with their teachers as necessary, but will not meet in a formal classroom period. Prerequisite(s): satisfactory completion of A CAS 109 or completion of two years of an approved science research course at the high school level; permission of instructor; offered summer session only.

#### A CAS 210 Advanced Methods of Research (4 college credits)

Continuation of work undertaken in A CAS 110 or equivalent with emphasis placed upon the communication of results. This course requires the submission of at least 4 research paper drafts, 3 poster board drafts, and 2 power point presentation drafts. Students must submit their completed projects to 3 or more research fairs throughout the NYC region. Students are expected to spend at least three hours per week outside of class. Prerequisite(s): satisfactory completion of A CAS 110 or completion of two years of an approved science research course at the high school level; permission of instructor; students must be enrolled throughout an entire academic year to obtain credit.

#### **Location and Meetings**

A CAS 210 will meet Mondays and Wednesdays from 6<sup>th</sup> through 8<sup>th</sup> periods in room 320 unless previously warned. A CAS 110 will meet Tuesdays and Thursdays from 6<sup>th</sup> through 8<sup>th</sup> periods in room 320 unless previously warned. The class structure will be broken down into 3 components: Technical Reading and Writing, Applied Statistics, and Seminars of Project Formulation (figure 04). Every other week each student meets one on one in a conference with the instructor, where the student's progress in developing a research plan and carrying out a project is discussed and evaluated. In addition, new goals are formulated for the next session. In the seminar, students will be required to present their findings to their fellow classmates. In this environment they are critiqued on the content of their research, as well as their presentation skills. Project Formulation theory will be given during the Seminar class.

Figure 04. Class activity schedule for A CAS 110 + 210

Period	Monday	Tuesday	Wednesday	Thursday	Friday
6 <sup>th</sup>	A CAS 210 Conferences/ Ind. Study	A CAS 110 Conferences/ Ind. Study	A CAS 210 Conferences/ Ind. Study	A CAS 110 Conferences/ Ind. Study	
7 <sup>th</sup>	A CAS 210 Applied Statistics	A CAS 110 Applied Statistics	A CAS 210 Tech. Read + Write	A CAS 110 Tech. Read + Write	*Note: field work can override schedule.
8 <sup>th</sup>	A CAS 210 Proj. Form.	A CAS 110 Proj. Form.	A CAS 210 Proj. Form.	A CAS 110 Proj. Form.	

#### COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

LAMONT-DOHERTY EARTH OBSERVATORY

August 25, 2013

Mauricio Gonzalez Marine Biology Research Program Urban Assembly New York Harbor School Battery Maritime Building 10 South Street Slip 7 New York City, NY 10004

Dear Mr. Gonzalez,

I am a Research Scientist at the Lamont-Doherty Earth Observatory and the Program Director of our Secondary School Field Research Program. I have been working with the UA NY Harbor School since 2008; I sit on the school's CTE Advisory Committee, and am familiar with the CTE program generally and your Marine Biology Research Program in particular.

Since 2008 the Lamont-Doherty Earth Observatory has provided internship opportunities for Harbor School students. We have provided paid internships in the summer and unpaid, afterschool positions during the school year. We have found that Harbor School students display strong interest in Earth and Environmental Science, Marine Biology, and in crossover issues between science and its social context. We expect that your Marine Biology Research Program will serve to increase the preparedness and enthusiasm of Harbor School students; we are happy to continue providing both paid and unpaid internships to your students.

Sincerely,

Dr. Robert Newton

Bal Newton



Economic Development Research Group Rutgers, The State University of New Jersey, Campus at Newark 111 Washington Street Room 135 Newark, NJ 07102-1801 Dr. Deborah E. Ward Associate Research Professor and Director email: deward@rci.rutgers.edu

phone: 973-353-3881 cell: 917-224-2153

January 17, 2012

Mr. Mauricio Gonzalez Marine Biology Research Program Urban Assembly New York Harbor School Battery Maritime Building 10 South Street, Slip 7 New York, NY 10004

Dear Mr. Gonzalez:

As the Director of the Economic Development Research Group (EDRG) at Rutgers University in Newark, NJ, I am pleased to provide internships to Harbor School students in support of your Marine Biology Research Program. I have worked with the NY Harbor School since 2009 and recently joined the school's CTE Professional Advisory Committee. I welcome the opportunity to partner on this project and to expand my collaboration with the Harbor School by working directly with your students.

As interns at EDRG, your students will have the opportunity to expand their research and critical writing skills as well as gain a broader knowledge about urban education. The internships will involve working with researchers on campus as well as participating in visits to Newark Public Schools sites. While after-school internships are unpaid, travel and meal allowances will be provided.

Sincerely,

Dr. Deborah E. Ward

5 lul



January 30, 2012

Mauricio Gonzalez
Marine Biology Research Program
Urban Assembly New York Harbor School
Battery Maritime Building
10 South Street
Slip 7
New York, NY 10004

Dear Mauricio Gonzalez and UA New York Harbor School,

We are pleased to announce internship positions as *secondary-education summer research assistant* with the Biology Department, Manhattan College, 4513 Manhattan College Parkway, Riverdale, NY 10471 (www.manhattan.edu).

The qualifications for the position are:

Successful completion of ACAS 109 & ACAS 110
Ability to conduct field sampling under a range of weather conditions
Must be able to accept flexible work schedule dependent upon tidal cycles

Duties and responsibilities may include:

Maintain notebook of all observations
Data collection and entry into spreadsheets
Perform basic data calculations and graphical analyses

The period of this internship is June – August 2012. This is an unpaid position and requires 15-30 hours per week.

Sincerely,

Michael L. Judge, Ph.D. Professor and Chairperson



#### Department of Biology and Health Promotion

Kathleen A. Nolan, Ph.D.
Chair, Biology, Health Promotion, and
Health Care Management Dept.
718-489-5439
<a href="mailto:knolan@sfc.edu">knolan@sfc.edu</a>
October 21, 2013

To Whom it May Concern,

I am pleased to write a letter of recommendation for the Marine Biology Research Program's (MBRP) curriculum as molded by Mr. Mauricio Gonzalez. Mr. Gonzalez has provided the students with a rigorous academic curriculum, as well as many outside opportunities. Mr. Gonzalez has sent students to us to attend both our After-school Program that we co-host with the Brooklyn Bridge Park, and our Summer Science Academy for High School students. I have visited the school twice and found the students to be very engaged in learning. Many actively participated in discussions we held of various careers. Students in the field component tested water quality and explained what they were doing with ease. We also participated in discussions in December 2012 with other advisors on the best practices for conducting research projects with students.

Both Mr. Gonzalez and I have been involved with a program at Rutgers University in which students were able to examine and analyze sonar images of fish. Mr. Gonzalez also attended and made a presentation at the first Youth Education Seining or YES Symposium in March, 2013 at St. Francis College. I feel that the partnership that we have with the Harbor School has been invaluable to both our schools. Mr. Gonzalez, through his care and attention to detail, has really helped the students at Harbor School achieve through the Marine Biology Research Program.

Sincerely yours,

Kathleen A. Nolan, Ph.D.

Kathleen G. Molan Ph.D.

180 Remsen Street, Brooklyn Heights, New York 11201 (718) 489-5439 • Fax (718) 522-1274

E-Mail: knolan@stfranciscollege.edu



January 24, 2012

Mauricio Gonzalez Marine Biology Research Program Urban Assembly New York Harbor School Battery Maritime Building 10 South Street, Slip 7 New York City, NY 10004

Dear Mr. Gonzalez,

It was a pleasure meeting you at the NY Harbor School Professional Advisory Committee (PAC) meeting last month, and to learn of the proposed NY State certification of the Marine Biology Research Program as a Career and Technical Education (CTE) Program.

In my capacity as a Professor of Marine Biology, I've thoroughly reviewed the scope and sequence of the proposed curriculum for the Marine Biology Research Program and can confirm that the curriculum aligns itself with the expectations of a college level course in the area of Natural Resources and Ecology. As a result, I am happy to endorse and support its use in the UA New York Harbor School's Marine Biology Research Program.

Sincerely,

Timothy M. Scott, Ph.D.

**Professor of Marine Biology** 

Director, Center for Economic and Environmental Development



January 20, 2012

Mauricio Gonzalez Marine Biology Research Program Urban Assembly New York Harbor School Battery Maritime Building 10 South Street Slip 7 New York, NY 10004

Dear Mr Gonzalez,

As you know, I am a project scientist at the Hudson River Foundation and I have been working with UA NY Harbor School staff and students for the last several years. This year I was asked to sit on the school's CTE Advisory Committee and have reviewed your proposed curriculum for the Marine Biology Research Program. I am writing to express my opinion that the curriculum is closely aligned with college-level coursework in Natural Resources, Ecology, and/or Field Research. I am happy to endorse the scope, sequence, and methods you have proposed for the Program.

Sincerely,

Jim Lodge Hudson River Foundation



January 30, 2012

Mauricio Gonzalez
Marine Biology Research Program
Urban Assembly New York Harbor School
Battery Maritime Building
10 South Street
Slip 7
New York, NY 10004

Dear Mauricio Gonzalez and UA New York Harbor School,

I have reviewed your proposed curriculum scope and sequence for the Marine Biology Research Program currently looking for NY State certification approval as a Career and Technical Education Program. I confirm that the curriculum aligns itself with the goals of college level courses in the area of Ecology and Marine Biology. I therefore endorse and support its use in the UA New York Harbor School's Marine Biology Research Program.

Sincerely,

Michael L. Judge, Ph.D. Professor and Chairperson

### Sea Savers, Inc.

A NJ nonprofit Corporation

January 31, 2012

Mauricio Gonzalez
Marine Biology Research Program
Urban Assembly New York Harbor School
Battery Maritime Building
10 South Street
Slip 7
New York, NY 10004

Dear Mauricio Gonzalez and UA New York Harbor School,

I have reviewed your proposed curriculum scope and sequence for the Marine Biology Research Program currently looking for NY State certification approval as a Career and Technical Education Program. I confirm that the curriculum and the SPACE Certification assessment aligns with the expectations of a college level course in the area of Natural Resources, Ecology, and Geospatial Technology. I therefore endorse and support the curriculum and assessment's use its use in the UA New York Harbor School's Marine Biology Research Program.

Very truly yours,

Matthew Leahey, President

Master 100 Tons

Adapting entitletes and accompany of a second mental of precoding in all parameters and an incident

#### COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

LAMONT-DOHERTY EARTH OBSERVATORY

August 25, 2013

Mauricio Gonzalez Marine Biology Research Program Urban Assembly New York Harbor School Battery Maritime Building 10 South Street Slip 7 New York City, NY 10004

Dear Mr. Gonzalez,

I am a Research Scientist at the Lamont-Doherty Earth Observatory and the Program Director of our Secondary School Field Research Program. I have been working with the UA NY Harbor School since about 2007; I sit on the school's CTE Advisory Committee, and am familiar with the CTE program generally and your Marine Biology Research Program in particular. I have reviewed your scope and sequence, and have also worked closely with several of your students over the past couple of years. I am writing to confirm that the curriculum is closely aligned with college-level coursework in Natural Resources, Ecology, and/or Field Research. I am happy to endorse the scope, sequencing, and methods you have proposed for the Program.

Sincerely,

Dr. Robert Newton



11.13.11

Mauricio Gonzalez
Marine Biology Research Program
Urban Assembly New York Harbor School
Battery Maritime Building
10 South Street
Slip 7
New York, NY 10004

Dear Mauricio Gonzalez and UA New York Harbor School,

I have reviewed your proposed curriculum scope and sequence for the Marine Biology Research Program currently looking for NY State certification approval as a Career and Technical Education Program. I confirm that the curriculum aligns itself with the expectations of a college level course in the area of Natural Resources and Ecology. I therefore endorse and support its use in the UA New York Harbor School's Marine Biology Research Program.

Sincerely,

Barrett Gaylord

YSI, Inc.

Northeast Representative



#### Ecological marine consulting



March 13, 2014

Greetings,

As the co-founder and CEO of SeArc-Ecological Marine Consulting, I am pleased to submit this letter in support of the NY Harbor school GIS educational program, headed by Mr. Mauricio González.

SeArc-Ecological Marine Consulting is a multi-disciplinary marine environmental consulting firm operating internationally in a wide variety of marine ecosystems. The company provides ecological consulting in designing and retrofitting coastal/marine infrastructures in order to increase their ecological value and biological productivity, while minimizing their negative impacts on the natural surroundings. SeArc scientists have extensive experience in the areas of ecology, marine biology, coastal ecosystems, submerged aquatic vegetation, invertebrate/vertebrate zoology, benthic fauna, environmental impact assessments, hydrodynamics and monitoring.

Our team, led by Dr. Shimrit Perkol-Finkel, the company co-founder and Chief scientist, has vast experience in field work in both tropical and temperate marine ecosystems, including the Red Sea, the Indian Ocean, the Pacific Ocean, the Atlantic Ocean the Mediterranean and the Adriatic seas.

In light of nearly 3 years of close collaborative work with the NY Harbor School and with Mr. González in particular, we strongly support the School's mission to develop leadership and academic excellence in New York City youth through maritime education. Mauricio's devotion to developing innovative teaching strategies has greatly impressed us, and his students receive top notch ecological education, impressive at both local and international standards. We believe that by providing students with a high quality academic set of skills, the school is paving the road for their career success. The GIS educational program can provide a great opportunity for students to acquire a toolkit that will certainly be an advantage in the Biology/Ecology field, especially nowadays, when GIS provides one of the best platforms available for integrating biological data into decision making process.

Sincerely,

Dr. Ido Sella



## Science Research Project Conference Report Bring a copy of the relevant Checkpoint List and your Project Data Book to all conferences.

<ul> <li>conference.</li> <li>*List additional completed tasks beyond those assigned. Provide evidence have completed these additional tasks.</li> <li>*Which items on the Checkpoint List do you feel you have accomplished</li> <li>What problems did you encounter with completing the assigned tasks? you seek solutions to these problems?</li> <li>What problems do you still need help with? What questions do you have</li> </ul>	
* Be prepared to explain or answer questions about this worl  1. *Evidence that you have completed each of the tasks assigned during the conference.  2. *List additional completed tasks beyond those assigned. Provide evidence have completed these additional tasks.  3. *Which items on the Checkpoint List do you feel you have accomplished 4. What problems did you encounter with completing the assigned tasks? you seek solutions to these problems?  5. What problems do you still need help with? What questions do you have	
<ol> <li>*List additional completed tasks beyond those assigned. Provide evidence have completed these additional tasks.</li> <li>*Which items on the Checkpoint List do you feel you have accomplished</li> <li>What problems did you encounter with completing the assigned tasks? you seek solutions to these problems?</li> <li>What problems do you still need help with? What questions do you have</li> </ol>	
<ul> <li>have completed these additional tasks.</li> <li>*Which items on the Checkpoint List do you feel you have accomplished</li> <li>What problems did you encounter with completing the assigned tasks? you seek solutions to these problems?</li> <li>What problems do you still need help with? What questions do you have</li> </ul>	last
<ul><li>4. What problems did you encounter with completing the assigned tasks? you seek solutions to these problems?</li><li>5. What problems do you still need help with? What questions do you have</li></ul>	e that you
you seek solutions to these problems?  5. What problems do you still need help with? What questions do you have	?
	How did
	??
6. What would you like to discuss during this conference?	
7. What tasks do you feel would be the most appropriate next steps to be ac before the next meeting?	complished



# Science Research Project Conference Report <u>To Be Completed During Conference</u>

1. What advice or feedback	k did you rec	eive durii	ng this confer	rence?	
2. What tasks do you plan	on completin	ng before	the next conf	erence?	
Preparation for conference: _	_Excellent _	Good	Average _	Poor _	Unacceptable
Participation in conference:	Excellent	Good	Average	Poor	Unacceptable
Student signate	ure		Teache	er signatu	ıre
Next conference date	day _		time_		



#### BIWEEKLY ASSESSMENT OF STUDENT PERFORMANCE

ST	<b>UDENT NAME:</b>				DATE:	
	ne of the best les illiam A. Irwin	sons that any	one can learn	in life is how	to use time wisely	y <b>.</b> ''
"If	there is no strug	gle, there is 1	no progress." F	rederick Dou	ıglas	
SC	CORING KEY:	B = to an ac C = to a les D = to a dis F = not at a	utstanding leven dequate level () s than adequat smal level (num all (numerical v plicable to this	numerical leve te level (nume nerical value value is 0)	vel is 85) erical value is 75)	
	+ and – m	ay also be us	ed to show the	student's ach	ievement level	
Du	ring this cycle di	d the student	:			
1.	do an appropriate and/or people, wh				les and/or informa	tion
A	В	C	D	F	NA	
2.		ournal articles	, or is reading m		e. progress from guired types) that a	
A	В	C	D	F	NA	
3.		s (this include	s personal neatr	ness/organizat	behaviors in and to	
A	В	C	D	F	NA	
4.	use time effective research and/or o	•		demonstrating	a clear focus on h	is/her
A	В	C	D	F	NA	
5.	give a PowerPoir assignment in a p				omplete some othe emonstrated?	er SR
A	В	C	D	F	NA	



6.	keep track of their and by keeping the professionally com	ir portfolio	current and upda		=	tebook
A	В	C	D	F	NA	
7.	communicate with professional manne		- · ·		a timely, respon	sible, and
A	В	C	D	F	NA	
8.	meet established de committee work, co		-		_	
A	В	C	D	F	NA	
9.	demonstrate indeperent enthusiasm to furth	,	· 1		,	
A	В	C	D	F	NA	
		•••••				
ab	ilure to make an as sence. If an assessi sponsibility to rescl	ment is mis	sed with a legal		_	legal
the	s the student's respectations assessment grade.	Failure to 1				
no	an assessment mus t foresee or control vance. Last minute	the studen	nt must reschedu	ıle at the ve		
Ov	verall Student Asse	ssment:		Date	:	
Stı	ıdent's Signature			cher's Signa	ture	

	Marine Biology Research Program - Marking Period - SELF ASSES	SME	NT					
NAME								
SCHOOL								
SUBJECT			-	7	က	4	2	9
OVERALL	SCORE	1	ΜP	MP	MP	МР	МР	MP
	each marking period, assess your efforts to learn new concepts, communicate opinions, apply critical thinking , use technology and demonstrate a positive spirit. Fill in the approprite boxes, save the spreadsheet and							
attach it to a	n e-mail that you send to me. You will use this template for all marking periods. Your goal is to have an overall							
score 4.0 and	d higher.							
ZEST								
1	Actively participates at least 4 times a week.	1	1	<u> </u>				
2	Shows enthusiasm towards program theory.	1		_				
3 4	Shows enthusiasm towards program field work.  Invigorates others in discussions, assignments, independent study, & research.	1	_	+				
GRIT	Invigorates others in discussions, assignments, independent study, & research.	<u>'</u>			<u> </u>			
5	Finishes each assignment in a timely manner.	1	1	Т				
				1				
6	Tries very hard even after experiencing difficult challenges in subject matter or technology.	1		_				
7 8	Works with focus and determination to learn new concepts and technology.  Is not deterred by set backs or even possible failure.	1		+				
	SCIPLINE/OPTIMISM	<u> </u>						
9	Checks the Project STEPS/SUNY Checkpoints regularly.	1	1	T	Π			
10	Tends not to procrastinate.	1		_				
11	Believes that effort will improve his or her future	1	1					
12	Seeks to complete as many of the STEPS/SUNY Checkpoints as possible.	1	1					
GRATITU		ı			1			
13	Recognizes and shows appreciation for others and their contributions.	1	1	+				
14 CURIOSI	Recognizes and shows appreciation for his/her opportunities	1	1	_	<u> </u>			_
15	Is eager to explore new concepts and technology.	1	1	T	<u> </u>			
16	Asks and answers questions to deepen understanding	1	<del>-</del>	+				
17	Actively listens and responds to others in discussions.	1	1	1				
<b>ACADEM</b>	IIC PERFORMANCE							
18	Completes all assignments with quality and timeliness	1	1	<u> </u>				
19	Uses technology to advance learning.	1	1		<u> </u>			
	SHIP AND TEAM WORK	1 4		_	ı			
20	Takes the initiative when others are idle.  Delegates tasks in a respectful yet convincing manner.	1		_				
22	Knows how to take and give orders.	1	_	+				
23	Keeps a work group focused using various strategies (i.e. defining clear objectives)	1	1	1				
<b>RESEAR</b>	CH							
24	Does an appropriate amount of bibliographic research supported by documentation.	1	1					
25	Achieves appropriate advancements (summaries) in the journal readings	1	1	+				
26	Uses time effectively - both in and out of class (i.e. keeping and updating chronodgram).	1		+				
27	Demonstrates a clear focus on his/her research and/or other SR related work.	1	1	┼				
28	Gives a PowerPoint or poster presentation, writes a paper or completes some other SR assignment in a professional manner with improved skills demonstrated.	1	1					
29	Keeps track of research progress by documentation in their research journal & portfolio.	1	1	†				
30	Communicates with mentor/advisor in a timely, responsible, and professional manner.	1	1					
31	Meets established deadlines in a professional manner (i.e. assessments, goals, etc.).	1	1	<u> </u>				
32	Demonstrates independence, self-motivation, professionalism, & timeliness.	1	1	+				
33 COMMIT	Demonstrates enthusiasm to further the progress of their research project.	1	1	Ь				
34	Focuses on completing course to the best of ability.	1	1	$\overline{}$	l			
34	Demonstrates loyalty and appreciation to classmates and instructor by meeting deadlines and	<u>'</u>	'	1				
35	sharing new materials with others.	1	1	<u> </u>				
1 = Very	much unlike the student. 2 = Unlike the student. 3 = Somewhat like the student. 4 = Like the	e studei	nt. 5	= Ve	ry m	uch li	ike th	е
What conce	student.  below about the impact of this module on your work-based learning skills and intelligence! What diept will you use immediately? In this module did you possess (1) Zest and were faster than a spee or (3) Commitment - able to leap tall buildings?							
MOD 1								
WOD 1								
MOD 2								
MOD 3								
MOD 4								
MOD 5								
MOD 6								

#### **Modifications for Students with Special Needs**

11. List modifications to the program to accommodate students with special needs.

Common Student Needs	Modifications
Extra time	Tutorial sessions will be scheduled
	Rosters will not exceed 20 students per class;
Small group instruction	detailed progress reports will be given; one-on-
Small group instruction	one meetings to go over progress reports will be
	scheduled on a biweekly basis
	Grades will be based primarily on alternative
Test anxiety	assessments such as written reports, lab work,
	presentation skills, interviews, etc.
Planning	Students will be required to create and update
Fidililing	chronograms of project activities quaterly.
	Parents will be required to sign a contract
	together with the research student promising to
Home support	lend support at home. Mandatory parent
	meetings will be held to present program
	requirements.
	Students will be provided with some basic
Lack of materials	research materials such as lab notebooks and
	lab gear.
	Students will be required to search for mentors
Mentors	outside the program to help them with the
	completion of their projects.
English Language Learners	Materials will be translated to other languages

#### **Curriculum Review**

Industry or postsecondary partners must review course curriculum and attest to its alignment with industry expectations for skilled workers.

12. List the partner organizations who have signed letters of support, validating their approval of the program's content.

#	Partner Organization	Representative	Date
1	Lamont-Doherty Earth Observatory	Dr. Robert Newton	04.14.2012
2	Roger Williams University	Dr. Timothy Scott	01.24.2012
3	Yellow Springs Instruments	Mr. Barrett Gaylord	11.13.2011
4	Manhattan College	Dr. Michael Judge	01.30.2012
5	NYC Department of Education	Mr. James Hall	01.18.2012
6	Sea Savers Inc.	Mr. Matt Leahey	01.31.2012
7	Hudson River Foundation	Mr. Jim Lodge	01.20.2012
8			

#### **End-of-Program Examination**

- 13. Identify the end-of program examination.
  - The end of year evaluation will take various forms:
  - 01) research report, 02) journal style article, 03) research portfolio, 04) project defense at science fair, 05) NOCTI exam on natural resource management, and 06) GIS SPACE certification exam.
- 14. How will the program prepare students for the end-of-program examination?

  The Marine Biology Research Program will prepare students for the different forms of evaluation by:
  - 01) Research Report Students will receive step-by-step guidance to complete a research project and communicate the various stages of this work orally and written throughout the three years of the program's duration,
  - 02) Journal style article Students will learn technical reading and writing skills and the American Psychological Association style throughout the 3 years in the program to format a journal article of their research,
  - 03) Research portfolio Students will be required to keep a portfolio of their research progress and exemplary work including drafts and literature summaries which will be evaluated 3 times during the academic year,
  - 04) Project defense Students will be required to present their research work at various stages of development in order to gain the confidence required to present their project results in front of a professional audience,
  - 05) NOCTI exam Students will be required to complete theory workshops, field work, and lab work that will convey the information required for the NOCTI exam on resource management,
  - 06) GIS SPACE certification Students will be required to complete theory workshops, field work, and lab work that will convey the information required for the SPACE GIS STEM certification.

#### Postsecondary Pathways

- 15. How will the program prepare students for postsecondary pathways in education or industry? The failure of our urban public schools to produce scientifically literate college bound teenagers reflecting city demographics is well known. Equally disturbing is the lack of representation and participation in STEM (Science, Technology, Engineering and Math) of ethnic groups who are overrepresented below the poverty line. Our nations research institutions and private engineering firms increasingly look outside our borders to recruit and hire competent scientists. This program will focus on changing these trends and connect our youth to the skills and knowledge necessary to be competitive in college and enter the STEM fields. The vehicle for this transformation will be student-formulated, problem-based projects that aim to restore NYC's marine resources.
  - The Marine Biology Research Program is a 3 yr. program that will jump start high school students in core marine science topics employing hands-on, problem-based learning strategies. Students will begin by building and studying simple aquatic ecosystems; formulate experiments with these

systems; learn the biology, chemistry, physics, and ecology behind them; and apply basic instrumentation techniques to monitor them. Once these sets of "in house" skills have been mastered, the program will then shift students' attention to the natural ecosystems around Governor's Island through the formulation of projects around 3 main topics: oyster restoration, habitat characterization, and water quality monitoring with a student built and maintained network around the Hudson River Estuary. Students will learn how to formulate projects, submit professional reports, present at national and international research fairs (e.g. Intel Talent Search), and, ultimately, use their own data to propose resource management solutions to local government agencies. Upon satisfactory completion of this program students will also be eligible for 12 college credits and various certifications that will give them a competitive advantage when applying to college.

# Work-Based Learning

16. To demonstrate alignment between classroom-based instruction and internship activities, list all work-based learning activities by course.

Grade	Term	Course	Knowledge	Skills	WBL Internships	Partner Organizations
c	Fall					
ח	Spring					
	Fall	Introductory Marine Research I	Instrumentation; Invertebrate zoology Vertebrate zoology; Algae; Aquatic Biology, Chemistry, Physics, and Ecology	Designing, building, and maintaining model ecosystems; basic computing and search engine skills; ecological principles;	Professional visits from higher education	Manhattan College, Rutgers University, Columbia University, Dept. of Environmental Protection, Sea Savers Inc., Hudson River Foundation
10	Spring	Introductory Marine Research II	Marine Biomes, population, community, and ecosystem ecology. Evolution.	Lab technology skills (i.e. dissection, bacteria culture, microphotography, cell staining,	Visits to industry and higher education events such as Open Houses, Science Society meetings, regional science fairs, etc.	New York Marine Sciences Consortium, New York City Science and Engineering Fair, Manhattan College, Rutgers University, Columbia University, Dept. of Environmental Protection, Sea Savers Inc., Hudson River Foundation
11	Fall	Intermediate Marine Research I	Project Management, Instrumentation	Technical reading and writing	Lab work at localities of higher education and industry with professional mentors.  Presentations to industry and higher education events such as Open Houses, Science Society meetings, regional science fairs, etc.	Manhattan College, Rutgers University, Columbia University, Dept. of Environmental Protection, Sea Savers Inc., Hudson River Foundation, Stevens Institute of Technology, Roger Williams University
	Spring	Intermediate Marine Research II	Project Management, Instrumentation, data processing	Applied statistics and statistics software (i.e. R); project formulation, execution, and presentation;	Professional research directed by Industry/College professionals	Manhattan College, Rutgers University, Columbia University, Dept. of Environmental Protection, Sea Savers Inc., Hudson River Foundation, Stevens Institute of Technology, Roger Williams University
12	Fall	Advanced Marine Research I	Project Management, Instrumentation	Benthos sampling techniques	Professional research directed by Industry/College professionals	Manhattan College, Rutgers University, Columbia University, Dept. of Environmental Protection, Sea Savers Inc., Hudson River Foundation, Stevens Institute of Technology, Roger Williams University

	Advanced Marine Research II	Project Management,	Research conservation strategies	Research conservation strategies   Professional research directed by   Manhattan College, Rutgers	Manhattan College, Rutgers
		Instrumentation	and advocacy; Running and	Industry/College professionals	University, Columbia University,
			maintaining high tech physical-		Dept. of Environmental
Spring			chemical data retrieval devices		Protection, Sea Savers Inc.,
-			and telemetry.		Hudson River Foundation,
					Stevens Institute of Technology,
					Roger Williams University

# Work-Based Learning Coordinator

<u>-</u> :
ည
ij
≔
2
ర
d)
₹
ţ,
S
<u>.s</u>
_
요
σi
.⊆
b
٦
$\simeq$
$^{\circ}$
8
ರ
ing co
ing
ing
ing
learning
learning
learning
learning
ing
learning
learning
work based learning
work based learning
learning
work based learning
work based learning
work based learning

Certification:	
Date of WBL Coordinator C	
Coordinator:	

#### Non-Internship, Work-Based Learning Activities

Work-based learning activities, other than internships, should be offered to students so that they can explore career options and develop job-readiness skills.

18. List all non-internship, work-based learning activities offered in each grade.

Grade	Term	WBL Activities
9	Fall	
	Spring	
10	Fall	Students will be exposed to professional role models from various higher education institutions and industry related to resource management that will visit the high school as guest lecturers. Students will be exposed to different career options in the sciences through career and college fairs. Students will be exposed to state-of-the-art technologies used in today's ever advancing world in the program.
10	Spring	Students will visit the various higher education institutions and industry related to resource management to get a sense of the professional work environment. Students will visit regional science fairs to get a sense of exemplary academic work being done in the POS. Students will be exposed to different career options in the Sciences by going to conferences related to resource management.
	Summer	Students will be given the opportunity to participate in a WBL internship at a post secondary Institution or Industry partner.
11	Fall	Student will seek and find professional mentors to help them complete their long-term research projects; participate in open houses, conferences, and career fairs; be exposed to state-of-the-art technologies.
	Spring	Student will seek and find professional mentors to help them complete their long-term research projects; shadow mentors for work experience; be required to prepare a resume and update it accordingly.

	Summer	Students will be given the opportunity to participate in a WBL internship at a post secondary Institution or Industry partner;
12	Fall	Students will punch in and out of class; keep track of a check off list with tasks for the day, week, and month; fill out forms related to college and internship requirement; include a service learning component in their projects; and present project results in front of a panel of peers;
	Spring	Students will receive classes on tips and pointers of work ethic and other soft skills like punctuality, communication, and personal presentation. Students who have not taken the previous summer opportunities to be a part of an internship will be required to participate in one at a post secondary Institution or Industry partner.

#### **WBL Advising**

All students must be informed of the following aspects of work-based learning internships:

- 1. Participation requirements
- 2. Opportunities to learn about and apply for WBL internships
- 3. Orientation trainings
- 4. Work tasks and expectations
- 5. Performance evaluations
- 19. How will students be informed of aspects of the WBL internship program?

  Participation Requirements: Special workshops during class hours will be held to inform students of the requisite of participating in an internship in order to receive CTE certification.

These requisites will also be announced in flyers and brochures along with letters sent home.

Internship Opportunities: There will be an internship open house held by the school and the instructor will also announce internship opportunities as they develop and become available throughout the year.

Orientation Trainings: Students will be trained on professional soft skills

Work Tasks and Expectations: A list of skills obtained in the program will be made available to Internship sites who will check-off the specifics required for their program. Internship sites will also generate a list of expectations. Both lists will be made available to the student who will apply.

Performance Evaluations: Students will be given a rubric based on the skills mentioned above before they begin work that will be used to evaluate their performance by the high school program director and the internship site director.

#### **Site Visits Evaluations**

		dinator is responsible for conducting site visits to evaluate student progress, observe the monitor the host employer. Create standardized rubrics to use for each evaluation.
	[] [] []	Rubric to evaluate student progress Rubric to evaluate work site Rubric to evaluate host employer
<u>Host</u>	<u>Employer</u>	<u>s</u>
In co	nsultation	with host employers, the school should develop materials to support host employers.
	[] [] []	Create a training plan for students  Develop a guidance packet about working with student interns  Organize an orientation session for host employers  Create an evaluation rubric of student performance for host employers
<u>Culm</u>	inating In	ternship Project
		ould complete a culminating internship project or other evaluation mechanism to assess ship experiences.
20.	01) l	the culminating internship project. Internship project themes will be site specific or a continuation of the long term project the student is working on as part of their regular CTE course. Internship projects will require the following items:

- a. formulation of a problem,
- b. literature review and submission of journal article summaries,
- c. project design formulation,
- d. acquisition of quantitative and qualitative data,
- e. data analysis,
- f. submission of a written report,
- g. presentation of results to an appropriate audience (i.e. science fairs, student body, community organizations, etc.)
- 03) Contingency plan for passing project along to another student.

#### **Internship Modifications for Students with Special Needs**

21. List modifications to the internship to accommodate students with special needs.

Common Student Needs	Modifications
Filling out applications	Help will be provided on a case by case basis by program director during soft skills workshops.
Social and interpersonal skills for interview	Help will be provided on a case by case basis by program director during soft skills workshops.
Understanding Job skills + articulating own attributes	Help will be provided on a case by case basis by program director during soft skills workshops.
Communicating effectively with co-workers and/or clients	Help will be provided on a case by case basis by program director during soft skills workshops.
Managing time	Create a daily or weekly schedule or chronogram
Keeping track of tasks	Write tasks on notepad and prioritize
Punctuality	Help will be provided on a case by case basis

#### **Communication with Host Employers**

Formal channels of communications must be in place for the host employer to collaborate with or give feedback to the school on the WBL activities.

- 22. Describe the formal channels of communication.
  - 01) Letters of articulation will be generated by the CTE program and signed by all participating parties.
  - 02) A point of contact person will be identified in the host employer organization.
  - 03) E-mails will be the main avenue of communication.
  - 04) Forms for evaluations of student progress will be provided to employer.
  - 05) List of personalized student skills will be provided to host employer.
  - 06) Routine visit to employer by program director will be scheduled to review worksite conditions.
  - 07) An orientation session will be set up for host employers and prospective interns.
  - 08) End of program surveys will be distributed to host employers on-line to evaluate the program overall.

#### **Measuring Effectiveness**

Both CTE-specific and school wide data must be used to determine program effectiveness.

Describe the metrics used to determine program effectiveness.  Students can summarize journal articles and write a literature review report using APA style.
Students can summarize journal articles and write a interacture review report using Ar A style.
Students can design a research project and write a research plan
Students can obtain data in the field or lab
Students can support results using statistical analyses
Students can present results in a written report, slide show presentation, and/or poster board session
Students can pass the end-of-program content specific exams
Students can use their work products to successfully interview and apply for college.
Students can be accepted to present at the New York City Science and Engineering Fair and the International Science and Engineering Fair.
Students can receive at least 2 college credits
Students can pass the SPACE examination for certification in Geographic Information Systems

#### **Assigning CIP Codes**

All CTE programs in New York are assigned CIP codes as well as s	students participating in those programs
--	--

[]	Verify all courses with the program sequence were assigned CIP codes in HSST/STARS.
[]	Verify all students participating in the program were assigned CIP codes in HSST/STARS.

#### <u>Assessments</u>

27. Identify the formative and summative assessments used in each course.

Grade	Term	Course	Formative Assessments	Summative Assessments
9	Fall			
9	Spring			
10	Fall	Introductory Marine Research I	Literature Review summaries, lab journal evaluations; portfolio evaluations; theory written quizzes; verbal quizzes;	lab reports
10	Spring	Introductory Marine Research II	Literature Review summaries, lab journal evaluations; portfolio evaluations; ecology lab challenges	Final presentation on Journal article at science fair
11	Fall	Intermediate Marine Research I	Draft research papers; draft project presentations; project formulation benchmarks submitted (e.g. chronograms, literature review summaries, sampling schedules, etc.); ecology lab challenges	Final research paper
	Spring	Intermediate Marine Research II	Project formulation benchmarks submitted (e.g. chronograms, literature review summaries, sampling schedules, etc.); GIS lab challenges	Final project slide show presentation at science fair
12	Fall	Advanced Marine Research I	GIS lab challenges	Final research paper;
12	Spring	Advanced Marine Research II	GIS project challenges	Final project slide show presentation at science fair; Internship project presentation; NOCTI exam; SPACE GIS exam

#### **Industry-Approved Technical Assessments**

An industry-approved technical assessment must be used to test student knowledge and technical skills at the end of the program. The exam must include written, performance-based, and project-based components.

28. Identify the industry-approved technical assessment used at the end of the program.		lustry-approved technical assessment used at the end of the program.
		Natural Resources Systems
	Assessment:	
		NOCTI
	Organization:	
<u>Indu</u>	<u>stry-Recognized</u>	<u>  Certification</u>
C1 -1		
	ents wno succes fication, license,	sfully pass the technical assessment must receive an industry-recognized
certi	ilcation, license,	or credential.
29.	Identify the inc	lustry-recognized certification awarded at the end of the program.
	raionen, en e me	SPACE STEM
	Certification:	517162572
		Digital Quest
	Organization:	Digital Quest
	Organization.	

#### <u>Alternative Testing Strategies for Students with Special Needs</u>

30. List modifications to testing used to accommodate students with special needs.

Common Student Needs	Modifications	
Regulated Time	Extended Time	
Student self reads exam	Exam read to student	
Regular print	Enlarged print	
Exam in English	Student uses dictionary and list of key words that are translated	

#### **Meetings with Partner Organizations**

The school and its external partners meet annually or frequently to discuss and update the curriculum content based on industry trends and expectations.

#	Date	Meeting Topic	Participants
1	03.16.11	PAC meeting, internships, projects, agency contacts	Carter Craft, Don Chesley, Nina Zaine
2	06.03.11	Water quality, plankton (Mike Lavandowsky) Castle Point buoy coordinates	Don Chesley
3	07.06.11	Projects, water sampling, materials (Niskin Bottles)	Bob Newton
4	11.11.11	Specific lessons on calibration and repeatability issues with instruments. Calibrating a flow meter. Captain's license.	Matt Leahey, Philip Orton, and Don Chesley
5	12.14.11	PAC Meeting.	Matt Leahey, Mike Judge, Bob Newton, Tim Scott, Jim Hall, Jim Lodge, Barrett Gaylord, Deborah Ward, Beau Ranheim, Carter Craft, Philip Orton,
6	01.10.12	GIS curriculum edits and suggestions (sent over mail).	Jim Hall
7	01.24.12	Nutrient and Bacteria Sampling	Bob Newton, Kali McKee
8	03.15.12	Oyster Restoration, Econcrete, Water quality transects	Matt Leahey + Philip Orton
9	12.05.12	PAC meeting, internships, projects, agency contacts	Matt Leahey, Mike Judge, Tim Scott, Jim Hall, Jim Lodge, Ido Sella, Shimrit Perkol-Finkel, Bart Chezar, Thomas Lunke, Kathy Nolan,
10	02.10.13	Plastic vs. Plankton Project + Coast Guard training	Matt Leahey
11	02.20.13	Hudson River water quality monitoring network HRECOS	Philip Orton
12	04.05.13	Post Sandy and potential student research	Philip Orton
13	11.23.13	GIS equipment and resource start-up advice, internship possibilities, etc.	Jim Hall

#### **Professional Visits to school**

The school and its external partners meet frequently to present to the students as part of the WBL experience.

#	Date	Meeting Topic	Participants
1	12/20/2012	Measurement limitations.	Matt Leahey, Sea Savers Inc.
2	01/24/2012	Enterolert and Spectrophotometer training	Dr. Robert Newton, Columbia U.
3	02/10/2012	Econcrete method for increased larval recruitment in HRE.	Dr. Shimrit Perkol-Finkel, SeaArc Inc.
4	02/16/2012	Oyster Restoration and Education	Murray Fisher, NY Harbor Foundation
5	02/27/2012	Osprey Platforms	Bart Chezar,
6	04/24/2012	Using Radar to detect bird migration in NYC.	Dr. Alan Clark, Rutgers U.
7	03/06/2013	Econcrete – Benthic Invertebrate Sampling	Dr. Shimrit Perkol-Finkel, SeaArc Inc.
8	03/14/2013	Using Primer and Permanova for ecological statistics analysis	Dr. Shimrit Perkol-Finkel, SeaArc Inc.
9	04/04/2013	Water Pollution and water resources (school professional visit)	Matt Leahey and Coast Guard Auxiliary
10	04/10/2013	Marine Research and College Preparedness (professional school visit)	Mike Judge, Manhattan College
11	10/03/2013	Careers in STEM	Con Edison Team
12	10/23/2013	Careers and advantages in GIS	Jim Hall, DOE GIS Analyst
13	12/11/13	PAC Meeting, Review WSEP, Evaluate facilities and choose between remodeling options, Institutional Review Board to review student Project Proposals	Beau Ranheim, Kathleen Nolan, Catherine Jacques, Amy Potemski, Michael Judge, Bart Chezar, Barrett Gaylord, Reed Bohne, Richard Toussaint, Margaret Flanagan
14	04/02/14	Water Resources and Ocean Plastics	Matt Leahey and Coast Guard Auxiliary
15	04/04/14	Recirculating Aquaponics Systems	Ashley King from Sunworks
16	04/09/14	Tech Support	Angel Pineiro, Sari David, Tom Pendleton

# **Professional Visits to school**

The school and its external partners meet frequently to present to the students as part of the WBL experience.

#	Date	Meeting Topic	Participants	
1	12/20/2012	Measurement limitations.	Matt Leahey, Sea Savers Inc.	
2	01/24/2012	Enterolert and Spectrophotometer training	Dr. Robert Newton, Columbia U.	
3	02/10/2012	Econcrete method for increased larval recruitment in HRE.	Dr. Shimrit Perkol-Finkel, SeaArc Inc.	
4	02/16/2012	Oyster Restoration and Education	Murray Fisher, NY Harbor Foundation	
5	02/27/2012	Osprey Platforms	Bart Chezar,	
6	04/24/2012	Using Radar to detect bird migration in NYC.	Dr. Alan Clark, Rutgers U.	
7	03/06/2013	Econcrete – Benthic Invertebrate Sampling	Dr. Shimrit Perkol-Finkel, SeaArc Inc.	
8	03/14/2013	Using Primer and Permanova for ecological statistics analysis	Dr. Shimrit Perkol-Finkel, SeaArc Inc.	
9	04/04/2013	Water Pollution and water resources (school professional visit)	Matt Leahey and Coast Guard Auxiliary	
10	04/10/2013	Marine Research and College Preparedness (professional school visit)	Mike Judge, Manhattan College	
11	10/03/2013	Careers in STEM	Con Edison Team	
12	10/23/2013	Careers and advantages in GIS	Jim Hall, DOE GIS Analyst	

# Conferences, College Open houses, Work Fairs

The school and its external partners meet annually or frequently to discuss and update the curriculum content based on industry trends and expectations.

#	Date	Meeting Topic	Participants	
1	10/01/2011	Lamont-Doherty Open House	Columbia university	
2	11/19/2011	Conference on Fish around HRE	College of St. Francis	
3	02/29/2012	NYHS Internship Fair	Various	
4	03/04/2012	High School Science and Engineering Fair	NYCSEF	
5	04/27/2012	Sharks Conference	Kingsborough Community College	
6	10/18/2012	40 <sup>th</sup> Anniversary Clean Water Act	EPA	
7	11/07/2012	Green Careers Fair	The Nature Conservancy	
8	03/01- 02/2013	Virtual Lab training	Black Rock Forest	
9	03/10/13	Open House	American Museum of Natural History	
10	03/15/2013	Seining in the HRE	St. Francis College	
11	04/20- 21/2013	Mammalian resource management	Black Rock Forest	
12	04/25/2013	Water/Energy Nexus	ConEd	
13	11/05/2013	2nd Annual STEM Career Day	Department of Education - Office of School Programs and Partnerships. Students	
14	11/09/2013	2013 LEAF Green College and Career Fair	The Nature Conservancy	

# **Articulation Agreements**

Schools should create articulation agreements with a post-secondary institution that offers students a smooth transition from high school to advanced study. A copy is available for submission.

Institution	Terms of Agreement	Value-Added Benefit (e.g., college credit, waived tuition)	Date
Manhattan College	See attached Articulation Agreement.	College Credit	

# **Roles of Institutions**

The school and the postsecondary institution have respective roles to clarify and carry out terms of student eligibility and processes so that qualified students may attain articulation agreements.

Institution	Institution's Roles	Harbor's Roles
Manhattan College	See attached articulation	
	agreements.	

# **Record of Professional Development**

The school and its external partners have engaged the instructors in professional development.

#	Date	Conference Topic	Sponsoring Organization	
1	11/07/2011	University in the High School	SUNY Albany	
	professional development			
2	11/19/2011	11/19/2011 Science Expo with topics in heavy St. Francis College		
	metals.			
3	01/30/2012	Data driven instruction	NOAA	
4	06/14 –	OSHA training	UFT – National Labor College	
	06/19/12			
5	06/28/12	Sea level rise – Surface Elevation Tables	Lamont-Doherty Earth Observatory	
6	03/01-	Virtual Lab training	Black Rock Forest	
	02/2013			
7	03/14/2013	Using Primer and Permanova for	Dr. Shimrit Perkol-Finkel, SeaArc Inc.	
		ecological statistics analysis		
8	04/09/2013	MWA 2013 Waterfront Conference	Metropolitan Waterfront Alliance	
9	04/16/13	Running a Citizen Science Program –	EPA	
		Writing a Quality Assurance Project		
		Plan		
10	11/02/13	Genetic Barcoding	Cold Spring Harbor – Urban Barcode	
			Project	

# Validating Technical Assessment

Industry partners/experts must validate that the technical assessment is an appropriate instrument to evaluate student mastery of skills and competencies in the given CTE industry area. Letters of support should be available.

31. List the partner organizations who have signed letters of support, validating their approval of the program's technical assessment.

#	Partner Organization	Representative	Date
1	Jim Lodge	Hudson River Foundation	04.09.2012
2	Matt Leahey	Sea Savers Inc.	04.11.2012
3	Barrett Gaylord	YSI Inc.	04.09.2012
4	Philip Orton	Stevens Institute	04.12.2012
5	Charlie Fitzpatrick	ESRI	04.24.2012
6	Craig Harvey	EIGS	11.28.2011

The school and its industry and postsecondary partners have a process to confirm annually that the technical assessment is a valid instrument to use to test students completing the CTE program.

32. Describe the process to confirm test validity.

Test data will be made available to PAC members yearly to determine the success of the evaluation. Data will be broken up into the following categories:

- 01) Percentage that sat for exam from total in roster
- 02) Percentage that passed the exam from those that sat for it
- 03) Attendance percentage and pass percentage
- 04) Percentage of questions successfully answered by topic

PAC members and CTE staff will determine if the test needs to be modified completely or in part.



# CTE Department (Self Assessment Team) Meeting 09.16.11

# Period 5 (12:11-12:58) - Room 106

- -Weekly Meeting Time (Liv & Joe out some Fridays)
- -NOAA Vessel SRVx
- -CTE Class rosters last day for changes
- -On Island and Off Island Protocols (suggestions/questions)
- -Spring Schedule & Internship questions/suggestions (to be covered in more depth next week)
- -Budget

CTE Dept Meeting Self Study Meeting 09/30/2013

Marine Biology Research

Agenda for tomorrows Meeting:

Budget/Purchasing update (if Ernest can make it)
Date for Professional Advisory Comittee Meeting
WHether or not we host an internship fair and if so when it should be.
Standard Operating Procedures for the Waterfront ( using SUNY Maritime and US MErchant MArine Academy Watefront procedures as models)

Sign In

Cividilla

for Mahanki The

Joseph Casses

Maurocio bonzalez

Bredon Malore

Ride here Donum



# CTE Department (Self Assessment Team) Meeting 10.07.11 Period 5 (12:11-12:58) – Room 106

## Notes from 9/23/11

#### Internships:

- 54 hours (9 weeks at 6 hours per week) in a workplace environment related to CTE program
- students who do not want/not ready for an internship will be dealt with on a case-by-case basis
- internships in related workplaces will be allowed (e.g. architecture firm internship as long as student's final project relates experience to marine architecture)
- individual internships to be followed up by CTE teachers (2 site visits per student)
- 6<sup>th</sup> period will be a check-in. Students will leave for internship on 2pm ferry. Internships at other times to be worked out on a case-by-case basis.
- Internship Fair and initial paperwork will be handled by one person (TBA)
- Murray and Sofie can help with new partnerships

#### Agenda:

- PAC Meeting Wednesday, December 14<sup>th</sup> (10am-12pm ish)
- NOAA SRVx Update
- Go over Internship Site List
- Bluebook Calendar Update
- · Other Questions/Issues Items for next meeting

#### To Do:

- PAC Invite letter (Ann, Edward, Murray)
- List of CTE skills (what internship sites can expect) (CTE Teachers)

AGENDA TOR: CTE MASTLE STUDY MEZTING 10/08/2013 OCEAN ENGINEERING

Morry Fisher Many Ernest Joan Baptiske SEPB? Brendon Malnes Lis Diller States

100/100 W

**IMBR** 

Agenda for next meeting Wednesday Oct 9  $3^{\rm rd}$  period MAST Center UFT CTE Delegation

**Budget Purchasing Update Murray and Ernest** 

**MAST Center Operations** 

Kevs

Simulator/Vessel Maint Lab

AED

**Emergency Communications** 

WBL Update from Edward Full Agenda for PAC Meeting Internship Fair

Joseph Gessot Shedan Malore
Murray Fisher May
Ernest Jean Baptiske 23
AAROJ SVILLE
Show Plenargh
CLAIRE LORENT
LIV DILLON



# CTE Department (Self Assessment Team) Meeting 10.10.12

#### Period 3 (10:29 - 11:16 a.m.) - Room 220

#### Agenda:

- HEP (Harbor Estuary Program) student speakers (10/18 & 12/12)
- Harbor Class & CTE Cycles (Ann & Jeremy)
- PAC Meeting (Wednesday 12/5)
  - 1:15 PAC members catch ferry at BMB
  - 1:25 Ann greets PAC at ferry on GI and walks with them over to the school. Send PAC members to senior level classes
  - 1:45 PAC members arrive in classrooms
  - 2:45 Seniors dismissed (1 period early). Snacks delivered to CTE rooms for PAC members and faculty
  - 3:00 Meet with PAC members in individual CTE rooms
  - 5:00 Meet with whole PAC in Mess Hall
  - 5:45 Break to go to ferry
  - 6:00 ferry
  - 6:15 cocktails in downtown Manhattan
- Internship Update (Ann)
  - o Projected internships for 2012-2013 (names of students & time of year)
- Other items

#### Notes:



#### CTE Department (Self Assessment Team) Meeting 10.21.11

#### Period 5 (12:11-12:58) - Room 106

## Notes from 10/14/11

#### NOAA/SRVx next steps

 Teachers will correspond with Shannon individually. Ann and Shannon will come up with final schedule based on interest of each Program

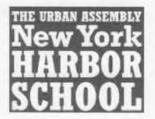
### Coast Guard Visit update

- · Possible JROTC program (Aaron to disseminate info to staff)
- · Possible 2 week camp at Coast Guard Academy

#### Captain's License

School has been paying for folks to get licenses. There is a priority order for which staff members
get trained first. School is slowly getting approved to teach many of these courses ourselves.

- PAC Member meetings with Murray?
- Pier 15 Update
- CTE Program Fellowships
- Parent/Teacher Night
- Other Items?



Marine Biology Research

The Urban Assembly New York Harbor School CTE - Self Study Team Meeting

10/23/2013

Agenda

Mast Equipment Budget (Edward Maybe)

WBL SIF Allocation Internship Nomination Form

Election Day Professional Development

Announcements

Attendance:

Print

Signature

Joseph Gesser

Rode here

Brah Milia

Luis Kelend

Lin Meller



# CTE Department (Self Assessment Team) Meeting 11.04.11 Period 5 (12:11-12:58) - Room 106

## Due Today - November 4th

- List of skills/knowledge Internship Host Sites can expect from our seniors this spring (see Mauricio's example attached that folks asked for last time
- Write and send me a "one-liner" about your CTE Program
- · Write and send me a paragraph about your CTE Program
- · Meet with Murray to go over PAC list for your Program

FYI - SRVx - Dockside the boat can hold about 25-30 somewhat comfortably if spread out throughout the boat. It has the back dive well area, a dry lab, the berthing/galley/engine room areas below, and the captain's cabin up top. You could fit about 10-15 in the dry lab at one time. Not sure about overnights.

- Special Ed Questions/Requests (Meeting on 11/9 1<sup>st</sup> period Room 220)
- EDC/Pier 15 Update (Edward)
- · Parent/Teach CTE Expo Update
- CTE Conferences for Election Day PD?
- CTE Exhibitions (Cate & Aaron)
- By-Laws

CTE Self Study Meeting Agenda 11/14/2013

Marine Biology Research

Go over MBR Self Study Application

**Pressing Business** 

Sign In

Brendan Walone

Joseph Gosset

900

AARON SINGH AZ

Rick her

J D.11.

Peter Malmonshi

DZ

The that



# Marine Biology Research Program (Self Assessment Team) Meeting 11.21.12 Period 3 (10:29 – 11:16 a.m.) – Room 220

# Agenda:

- . College & Guidance Office supporting CTE
- Internship Update
  - o Who will need a non-CTE internship? (Jamilla)
- · Harbor Estuary Program (HEP) Meeting. Wednesday, December 12, 2012
  - o "focus on how Superstorm Sandy has impacted the estuary and its people"
  - o Students to bring?
- UFT "Outstanding CTE Teachers" award. Thursday, February 7, 2013
- · Other items

Sign-In Print Name

Sign Name

CTE Self Study Meeting Agenda 11/21/2013

Marine Biology Research Program

SIF Allotment **PAC Meeting Tasks** MAST Update Self-Study Update

Sign In

Joseph Gessort Rich her Peter Malhough

Stan ARON SWELL

Liv Diller

Mauricio Genzalez



# CTE Department (Self Assessment Team) Meeting 11.23.11

#### Period 1 (8:45-9:32 a.m.) - Room 106

# Agenda:

- Review PAC Member list
- Review Draft Agenda for 12/14 PAC Meeting
- Go over PAC By-Laws & make suggestions for revision
- · Other Items?

Sign-In

**Print Name** 

Sign Name

CTE Self Study Meeting Agenda 12/05/2013

Marine Biology Research

Final PAC Details SIF Allocation

Sign In

Maricio Vonzalez

Rock Lee Peter Malmarch State Joseph Gessot

AARON SINGH

CTE Self Study Meeting Agenda 12/05/2013

Marine Biology Research Program

Internships PAC Meeting MAst

Sign In

CTE Self Study Meeting Agenda 12/12/2013

Marine Biology Research

PAC Debrief SIF Allocation Self Study

Sign In

Morron Consuler

Rock her

Peto Malhanhi Joseph Gessna

AARON SINGHORDS



# **CTE Department**

(Self Assessment Team) Meeting 12.19.12 Period 3 (10:29 – 11:16 a.m.) – Room 220

#### Agenda:

- Safety Team Meeting Wednesday, 1/2/13 2nd Period.
- · Debrief PAC Meeting
  - o PAC Members with students
  - 1.5 2 hours of meeting time
  - Social hour
    - o December vs. January
- Internships what's the status of each program?
- Other items

for Cate. by Christmas break

sequistered through the year they can be relied our to the summer.

- get sixer rigned up - training plan will be explicit to bane during the school year time to train. - st. fram.

- ownde of school day.

CTE Self Study Meeting Agenda 12/19/2013

Marine Biology Research

PAC Attendance

Internship Fair Yes or No

Internship Updates

Hours

Timesheets

Assignments

Self-Study Updates

Vessel Maintenance Lab Status

Print Name

Brendan MALONE Rich Chee Signature

6

Worn

AARON SINGET

Liv Dlan



# CTE Department (Self Assessment Team) Meeting 01.02.13 Period 3 (10:29 – 11:16 a.m.) – Room 220

#### Agenda:

Upcoming Dates - Mark your calendars!

- Saturday 1/5 & Sunday 1/6 New York Boat Show
- Tuesday 1/8/13 GI Public Hearing about RFP (Spector Hall, 22 Reade Street)
- Wednesday 1/9/13
  - o 8:00 am Faculty Meeting
  - o 9:30 am Safety Team Meeting
  - o Internship Status DUE
- FEMA Documentation
  - Boat Storage Yard (including trailer)
  - o Air Compressor
  - Any equipment/tools that were damaged (visible signs of water, errosion, rust)
  - o Flupsy solar installation
  - o Scuba Equipment, Clothing, etc.
  - o Electric Cargo Van
  - o CC Rental Van
  - o Golf Carts
- Safety Team Meeting Agenda Items
- Other items

CTE Self Study Meeting Agenda 01/08/2014

Marine Biology Research

CTE Award CPR schedule Updates

Print Name

Signature

Bris HOAR MALONE

Joseph Gesset

Rick her

Plan Malina Vi

AARON SINGE



# CTE Department (Self Assessment Team) Meeting 01.09.13 Period 3 (10:29 – 11:16 a.m.) – Room 220

#### Agenda:

- · Upcoming Dates Mark your calendars!
  - o Future meetings CTE Program Overviews Schedule
  - o Monday 2/4 Wednesday 2/5 Tall Ships America Conference
  - o Thursday 2/7 CTE Teacher Award Ceremony
- Internships
  - Minimum wage = \$7.25/hour x 50 students for 54 hours each = \$20,000
- Keith Jones (jones@bnl.gov)
  - Organize video conferencing with LI science teachers and students working on investigations of Great South Bay, Shinnecock Bay that overlap with Harbor School programs in NY/NJ Harbor. Students would describe their projects and exchange questions.
  - 2. Organize a mini-meeting on science with the LI schools to be done at Harbor School or one of the other schools with students doing talks and posters on their science projects.
  - 3. Look at how to use resources at BNL and Stony Brook for student science projects and organize visits to the facilities at each and look at participation in programs for high-sciplol students.
- · Trip Protocols Two week approval, one week notice to teachers
- Success Via Internship Program for Harbor School Graduates
- Harbor Class CTE PowerPoint
- PAC ByLaws
- · Other items

city techn who courses



# CTE Department (Self Assessment Team) Meeting 01.16.13 Period 3 (10:29 – 11:16 a.m.) – Room 220

- Regents Week No CTE Meeting
- Harbor Class CTE PowerPoint any response?
- MAST Center Mini-Campus
- PAC ByLaws
- CTE Program Overviews
  - o Professional Diving 1/16/13
  - o MBRP 1/30
  - o Marine Systems Tech 2/6
  - o Vessel Ops 2/9
  - o Aquaculture 2/23
  - o Ocean Engineering 2/30
- Other items

CTE Self Study Meeting Agenda 01/23/2014

Marine Biology Research

SIF Request Internship Paperwork Self-Study Apps Pressing Concerns

Print Name

Signature

Peter Malinash

Porickhee

Warm Me

AARON SWELL

MAURICIO G

BY PHONE

Joseph Gessert

BRENDAN MALONE

4

Be C



# CTE Department (Self Assessment Team) Meeting 02.03.12 Period 5 (12:11-12:58 p.m.) – Room 106

- · Reminder: Menu of labs/activities
- Reminder: SRVx May 7-May 18 (with the possibility of Saturday May 12)
- Reminder: Internship Fair 2/29. First Day of Internship 3/5
- Restoration Update (Tiffany)
- Seaport Update (Murray)
- Next Meeting: Working on protocol/transparency for future Foundation budget requests

# CTE Self Study Meeting Agenda 02/06/2014

Marine Biology Research

Self Study Status – Edward Senior Schedule - Edward Other Concerns

Print Name

Signature

Brichay Marine

Mauricio Gonzalez . Joseph Gessot

Donoch hee

LIV Dilla

Down

2 -



# CTE Department (Self Assessment Team) Meeting 02.10.12 Period 5 (12:11-12:58 p.m.) – Room 106

- Restoration Update (Tiffany)
- · Foundation Update (Murray)
- Internship Update (Ann)
  - o Bob Newton @ Columbia
    - Commuting up to Rockland
    - John Doswell @ Working Harbor Committee
      - Podcasts: Student will learn how to record & edit audio. The subjects are all maritime people and their stories
      - Harbor Base: Requires research & some writing skills. May also include some web work on Dreamweaver but initially in Word. Student will learn all about the harbor, port, bridges, waterways, facilities, etc etc. End product eventually are virtual Hidden Harbor Tours.
    - o Marisa Dedominicis @ Earth Matter
      - Chickens & Composting
      - Green Thumb Conference
    - March Yaggi @ Waterkeeper Alliance
    - o Roberta St. Bernard Harrison @ GMD Shipyard (maybe)
    - Lauren Donnelly @ Hudson River Park Trust (maybe)
    - Rob Pirani @ Governors Island Alliance (maybe)
- WBL Presentation (Brendan)



# CTE Department (Self Assessment Team) Meeting 02.13.13 Period 3 (10:29 – 11:16 a.m.) – Room 220

- Blue Books Due:
  - o Aquaculture 2/20
  - Marine Biology Research 2/22
  - Marine Systems Tech 2/25
- Internships
  - Aquaculture
  - Marine Biology Research:
  - Marine Systems Tech
- CTE Program Overviews:
  - Marine Systems Tech 2/13
  - o Aquaculture 2/20
  - Ocean Engineering 2/27
  - Vessel Ops 3/6
  - Marine Biology Research 3/13
- Other items

- Ocean Engineering 3/15
- Professional Diving
- Vessel Ops 3/11
- Ocean Engineering
- Professional Diving
- Vessel Ops



# CTE Department (Self Assessment Team) Meeting 02.20.13 Period 3 (10:29 – 11:16 a.m.) – Room 220

- Friday Meeting Canceled due to Secretary visit
   Monday 1<sup>st</sup> period check-in and restoration meeting Room 220
- Middle School outreach (Sam)
- Blue Books Due:
  - Aquaculture 2/20
  - Marine Biology Research 

    ✓
  - o Marine Systems Tech 2/25
- CTE Program Overviews:
  - Marine Systems Tech 2/27
  - o Aquaculture 3/6
  - Ocean Engineering 3/13
- Other items

- Ocean Engineering 3/15
- Professional Diving?
- Vessel Ops 3/11
- Vessel Ops 3/20
- Marine Biology Research 4/3
- o Harbor Class 4/10



# CTE Department (Self Assessment Team) Meeting 02.27.13 Period 3 (10:29 – 11:16 a.m.) – Room 220

#### Agenda:

- Friday 3/1 Meeting 1<sup>st</sup> period
   Monday 3/4 Check-in and Restoration Meeting 1<sup>st</sup> Period; Summer Program Meeting (3:50-4:50)
   Wednesday 3/6 Aquaculture Overview
   Thursday 3/7 Annual Benefit
- Dumpster Pool Update
- SVA Update + +--
- Co-op Students Update
- MST Overview
- Target Middle Schools (Sam)
- Other items

Shotel "Caly techs".



# CTE Department (Self Assessment Team) Meeting 03.06.2013 Period 3 (10:29 – 11:16 a.m.) – Room 220

- Friday 3/\$ Meeting 1<sup>st</sup> period
- Aquaculture Overview
- CTE Implementation Guide Preparing for Program Approval
- · Meeting with Seniors in non-program internships
- Pier 101 Update & Priorities
- Other items



# CTE Department (Self Assessment Team) Meeting 03.13.2013 Period 3 (10:29 – 11:16 a.m.) – Room 220

- Ocean Engineering Curriculum Overview
- Cabinet Update
- CTE & Academic integration
- Other items

Marine Biology Research

9th Grade Intro

Print Name

Signature

Mauricio Gonzalez

Dorick hee

Liv Dillra

Joen Lynd San MALONE B

AARON SING HE

Marine Biology Research Self Study App

Print Name

Signature

BRENDAN MALONE

AAAANSINGH SE Rich her We

# Marine Biology Research Program Annual Consumables Budget

70					
Consumable Items	Catalog Co.	Cat. #/ISBN	Price	Oty.	Total amt.
Genetics					
e-gel agarose gels with sybr safe 2%; 18 gels	http://www.lifetechnologies.com/order/catalog/product/G	G5218-02	196.00	1	196.00
Argos Pestle and 1.5 mL Microtube, 100/pk	http://www.coleparmer.com/Product/Argos Pestle and 1   E   S mL Microtube 100 pk/EW-44468-23	EW-44468-23	120.00	2	240.00
Cole-Parmer StableTemp Economy bath, 10L, 120V, 60Hz	http://www.coleparmer.com/Product/Cole Parmer Stable Temp Economy bath 10L 120V 60Hz/EW-12106-78	EW-12106-78	747.00	2	1494.00
Test tube racks for 1.5 mL tube size; PP	http://www.coleparmer.com/Product/Test tube racks for 1 s mL tube size PP/EW-06703-40	EW-06703-40	15.50	4	62.00
Thermo Scientific Finntip 1000 Pipette Tips, 100 to 1000 µL, 1000/bg	http://www.coleparmer.com/Product/Thermo Scientific Fi   Enrip 1000 Pipette Tips 100 to 1000 L 1000 bg/EW-06247-98	EW-06247-98	56.40	2	112.80
Thermo Scientific Finntip 1000 Ext Pipette Tips, 100 to 1000 μL, 5x96/rack	http://www.coleparmer.com/Product/Thermo Scientific Fi   Enntip 1000 Ext Pipette Tips 100 to 1000 L 5x96 rack/E W-25001-76	EW-25001-76	114.50	2	129.00
Thermo Scientific Finntip 300 Pipette Tips, 5-300 µL, 10x96/rack	http://www.coleparmer.com/Product/Thermo Scientific Fi   Enrip R 300 Pipette Tips 5 300 L 10x96 rack/EW-25001-50	EW-25001-50	73.50	2	147.00
Cole-Parmer Gel-Loading Tips, 0.5 to 10 µL, 5 Racks of 204 Each 1020 total	http://www.coleparmer.com/Product/Cole Parmer Gel Lo EW-25713-28 ading Tips 0 5 to 10 L 5 Racks of 204 Each/EW-25713-28	:W-25713-28	229.00	2	458.00
100 Red, 40" x 47" NovaPlus Biohazard Trash Can Liners	http://www.amazon.com/100-NovaPlus-Biohazard-Trash- Liners/dp/B00AAH9UD6/ref=sr 1 11?s=industrial&ie=UTF <u>8</u> &qid=1383507366&sr=1. 11&keywords=biohazard+trash+ca <u>n</u>		59.99	2	159.98
Sharps Container Biohazard Needle Disposal 5 Quart Size	http://www.amazon.com/Sharps-Container-Biohazard- Needle- Disposal/dp/B001UOQ2XE/ref=sr 1 4?s=industrial&ie=UTE 8&qid=1383507435&sr=1-4&keywords=biohazard+box		10.73	2	21.46
Dynalon 797025 Floor Model Burn-Up Bin Lab	http://www.amazon.com/Dynalon-797025-Burn-Up- BioHazard-		23.57	2	47.14

BioHazard Disposal Box (Case of 6)	Disposal/dp/B004AHL9TK/ref=sr 1 6?8=industrial&ie=UTF8 &qid=1383507491&sr=1-6&keywords=biohazard+box				
Ecology					
Dissolved oxygen test kit	http://www.aquaticeco.com/subcategories/523/LaMotte- Test-Kits-Dissolved-Oxygen	LM7414	45.95	9	275.70
Ethyl alcohol (95%) Case of 6	http://www.fishersci.com/ecomm/servlet/fsproductdetail?s toreld=10652&productld=6662334&catalogId=29104&matc hedCatNo=S73985&endecaSearchQuery=%23store%3DScie ntific%23N%3D0%23rpp%3D15&fromSearch=1&searchKey= AJS73985&highlightProductsItemsFlag=Y	593231	53.40	1	53.40
Nitrile gloves (small) – dozen reuseable.	http://www.aquaticeco.com/subcategories/2953/Gloves- Thick-Nitrile	Crg1	39.43	2	80.00
Nitrile gloves (medium) – dozen reuseable.	http://www.aquaticeco.com/subcategories/2953/Gloves- Thick-Nitrile	Crg2	33.28	2	67.00
Nitrile gloves (large) – dozen reuseable.	http://www.aquaticeco.com/subcategories/2953/Gloves- Thick-Nitrile	Crg3	33.85	2	68.00
Nitrile Gloves – Large disposeable	http://www.aquaticeco.com/subcategories/4764/Gloves- Nitrile	GL702	15.76	4	63.04
Nitrile Gloves – medium disposeable	http://www.aquaticeco.com/subcategories/4764/Gloves- Nitrile	GI701	15.76	4	63.04
Nitrile Gloves – X-Large disposeable	http://www.aquaticeco.com/subcategories/4764/Gloves- Nitrile	GL703	15.76	4	63.04
Rubber gloves	http://www.aquaticeco.com/subcategories/2451/Gloves- Rubber	GL502	13.67	2	68.35
Multi-test strips for pH, Alkalinity, nitrites, and nitrates	http://www.aquaticeco.com/subcategories/502/AquaChek- Pond-Test-Strips	11252	15.65	10	156.50
Ammonia Test strips	http://www.aquaticeco.com/subcategories/502/AquaChek- Pond-Test-Strips	11253	13.68	10	136.80
Phosphate test strips	http://www.aquaticeco.com/subcategories/1822/Hach- Water-Quality-Test-Strips	H27571	19.09	10	190.90
CO2 filters	http://www.licor.com/env/products/gas_analyzers/LI-820/LI-820 software.isp#download	9967-008	19.00	2	38.00
Research Notebook	http://www.amazon.com/National-Laboratory-Notebook- Carbonless- 43649/dp/B000084QUG/ref=sr 1 1?ie=UTF8&qid=1319935 805&sr=8-1		14.99	20	300.00
Transfer pipettes (500pk, 5 ml)	https://www.fishersci.com/ecomm/servlet/itemdetail?catalogld=29104&productId=2701152&distype=0&highlightProductItemsFlag=Y&fromSearch=1&storeId=10652&langId=1	LP5	54.46	1	54.46

Lab Wipes	http://www.aquaticeco.com/subcategories/4233/Lab- Wipes	KW242	6.46	2	32.30
Pipette tips 2 – 10 mL	http://www.coleparmer.com/catalog/product_view.asp?sk u=2501062&pfx=LM	LM - 25010 - 62	25.25	2	50.50
pH calibration solution pellets: PH4, PH7, PH10	http://www.aquaticeco.com/subcategories/544/pH- Calibration-Capsules	РН4, РН7, РН10	6.92	3	20.76
Probe cleaning solution	http://www.aquaticeco.com/subcategories/1863/Electrode -Care-Accessories	CS	7.73	1	7.73
Probe storage solution	http://www.aquaticeco.com/subcategories/4807/Electrode -Care-Accessories	SS	11.86	1	11.86
Membrane kit Y5561	http://www.aquaticeco.com/subcategories/2677/YSI-556- Multiprobe-System	Y5909	52.00	2	104.00
Ammonia reagent (0-1ppm)	http://www.aquaticeco.com/subcategories/4020/YSI- Replacement-Reagents	YPM152	43.00	1	43.00
Nitrate reagent (0-20ppm)	http://www.aquaticeco.com/subcategories/4020/YSI- Replacement-Reagents	YPM163	48.00	1	48.00
Phosphate reagent LR (0-4ppm)	http://www.aquaticeco.com/subcategories/4020/YSI- Replacement-Reagents	YPM177	27.00	1	27.00
Phosphate reagent HR (0-100ppm)	http://www.aquaticeco.com/subcategories/4020/YSI- Replacement-Reagents	YPM114	37.00	1	37.00
Transfer pipettes (500pk, 5 ml)	Aquaticeco.com	LP5	54.46	1	54.46
50mL pp vial w/ grad 500/pk	http://www.coleparmer.com/catalog/product_view.asp?sk u=0612068&pfx=EW	EW-06120-68	177.00	1	177.00
Zebra Fish Diet	Aquaticeco.com	AH271	27.85	2	55.76
Proline Bacteria (16 oz)	Aquaticeco.com	239210	10.25	1	10.25
TetraMin Flakes (4.5 lbs)	Aquaticeco.com	16623	62.75	2	126.00
Color coded adhesive tape	Coleparmer.com	K-08278-26	3.00	2	6.00
Tape – White	Coleparmer.com	K-86209-30	3.00	2	00.9
Tape – Yellow	Coleparmer.com	K-86209-31	3.00	2	00.9
Tape – Orange	Coleparmer.com	K-86209-32	3.00	2	00.9
Tape – Red	Coleparmer.com	K-86209-33	3.00	2	00.9

Tape – Green	Coleparmer.com	K-86209-34	3.00	2	6.00
Tape – Blue	Coleparmer.com	K-86209-35	3.00	2	00.9
Tape – Black	Coleparmer.com	K-86209-37	3.00	2	00.9
Flourite	Aquaticeco.com	F1255	29.00	1	29.00
Arm length disposable gloves	Aquaticeco.com	B61000	10.24	1	10.24
Research Notebook	Amazon.com: http://www.amazon.com/National-Laboratory-Notebook- Carbonless- 43649/dp/B000084QUG/ref=sr 1 1?ie=UTF8&qid=1319935 805&sr=8-1		14.99	50	750.00
AAA Batteries (20/pk)	Staples	846026	15.79	1	15.79
AA Batteries (16/pk.)	Staples	459752-C2	12.65	1	12.65
9 volt batteries (4/pk.)	Staples	503573-C2	12.65	2	25.30
C Batteries (8/pk.)	Staples	503532-C2	12.65	2	25.30
Paper towels (natural multifold)	Staples	491296-C2	49.99	1	49.99
Membrane kit Y5561	AES	Y5909	52.00	2	104.00
Cap Membrane Kit Y85	AES	Y5906	42.00	2	84.00
Clorox	Met food		2.00	3	15.00
рн Up	AES	PHR2	31.30	1	31.30
pH Down	AES	PHL2	31.30	1	31.30
Peplacement pH electrode	AES	HI73127	44	8	352.00
Ethyl alcohol (95%) 4L	Fischer	AJS73985	20.10	2	20.10
CO2 filters	Licor Licor.com	800-2966	19.00	2	38.00

Hardness test strips	Aquaticeco.com	H27452	9:39	2	46.95
Phosphate test strips	Aquaticeco.com	H27571	18.29	2	91.45
Maxi grow	Aquaticeco.com	MG13	102.00	1	102.00
Ammonium Chloride	Aquaticeco.com	239100	13.39	1	13.39
Vinyl Tubing ½"	http://www.aquaticeco.com/subcategories/4912/Black- and-White-Vinyl-Tubing	WTV70	45.94	1	45.94
Vinyl Tubing 3/8"	http://www.aquaticeco.com/subcategories/4912/Black- and-White-Vinyl-Tubing	WTV60	42.05	П	42.05
Vinyl Tubing ¼"	http://www.aquaticeco.com/subcategories/4912/Black- and-White-Vinyl-Tubing	WTV40	29.53	1	29.53
Vinyl Tubing 3/16"	http://www.aquaticeco.com/subcategories/4912/Black- and-White-Vinyl-Tubing	WTP30HD	25.62	1	25.62
Reverse Osmosis Filters	http://aquariumwaterfilters.com/shop-by- product?page=shop.product_details&flypage=flypage.tpl&p roduct_id=119&category_id=36	MM150-2-10	54.99	5	275.00
Chloramine Filters	http://aquariumwaterfilters.com/shop-by- product?page=shop.browse&category_id=34	CFCC	15.00	9	90.00
Carbon Filter 10"	http://aquariumwaterfilters.com/shop-by- product?page=shop.browse&category_id=34	CFB10-2	8.99	9	54.00
1 micron filter	http://aquariumwaterfilters.com/shop-by- product?page=shop.browse&category_id=34	SFB10-2-1	7.00	9	42.00
DI Filter 10"	http://aquariumwaterfilters.com/shop-by- product?page=shop.browse&category_id=34	D110-2	18.50	9	111.00
RO tubing 10′	http://www.aquaticeco.com/subcategories/4891/R-O- Fittings-and-Tubing	14457F	3.50	2	17.50
Aquatic plant micronutrients 8.5 oz.	http://www.nationalpetpharmacy.com/product/15678/Nut rafin-Plant-Gro-Aquatic-Plant-Essential-Micro-Nutrient- Aquarium- Sunplement?utm sourre=amazon&utm medium=rse	805121517	12.19	æ	36.57
Hanna Combo Sensors	http://www.aquaticeco.com/subcategories/1919/Hanna- Combo-Meter	HI98129	149.00	9	894.00
Conferences					
ESRI GIS (yearly)					2,500.00

Primer Permanova (every 2 years)				2,500.00
Excursions				
Staten Island Sampling (gasoline)				500.00
Pier 101 gear maintenance (gasoline)				500.00
Intel Science Competition (transportation, food, lodging) – per 1 student and 2 adults				5000.00
Assessments, College Credits, Credentials				
SPACE Digital Quest		45.00	10	450.00
NOCTI		45.00	20	900.00
SUNY Albany College Credits		140.00	20	2800
SCUBA Diving		009	4	2400
Symposium				
Single Walled Presentation Board	http://www.amazon.com/gp/product/B001A3UG0A/ref=oh o04 s00 i00 details	59.85	3	180.00
Certificate paper	http://www.amazon.com/Southworth-Foil-Enhanced- Certificates-Inches- CT1R/dp/B000CD4OMA/ref=sr 1 cc 3?s=aps&ie=UTF8&qid =1332167764&sr=1-3-catcorr	6:99	4	30.00
Buy Below later after visit to room				

Extension cord 100ft Heavy Duty 15 amp	http://www.amazon.com/Yellow-Jacket-2885-Heavy-Duty- Contractor/dp/B000BQM06U/ref=pd_cp_hi_1	75.09	4	320.00
Extension cord 50ft Heavy Duty 15 amp	http://www.amazon.com/Yellow-Jacket-2884-Heavy-Duty- Contractor/dp/B0009ON12G/ref=pd luc sim 03 01 t lh	36.59	4	160.00
6 Outlet Metal Power Strip	http://www.amazon.com/Yellow-Jacket-5139-6-Foot-6- Outlet/dp/B000KKNFMU/ref=pd luc top sim 02 02 t lh	14.50	4	60.00
Projector screen, portable, with legs	http://www.amazon.com/Epson-80-Inch-Aspect-Projection-Portable/dp/B000HRYV38/ref=sr 1 1?ie=UTF8&qid=13321 67894&sr=8-1	118.67	2	240.00
Pins + design		20	100	2000
Gaffers Tape				100
Journals				
JSTOR archive (yearly subscription)		200	1	200
Gear Maintenance				
PM sensor calibration and maintenance				1330
YSI repair				2176
CO2 sensor repair				1000
Water pump repair				200
Air pump				200
Laptop repair				1000

Insurance (yearly)					200
NOSOIO					
DIDSON rent for week	http://www.oceanmarineinc.com/sonar-systems/didson- diverheld P1017		2,500	2	2,500
Bacteria Monitoring					
ENTEROLERT 200-PACK COMBO	ldexx laboratories	99-27077	1020.00	1	1020.00
WV120PET-200, PET VESSEL	ldexx laboratories	98-18739-00	120.00	Н	120.00
Incubator	http://www.aquaticeco.com/subcategories/2396/Incubator	HC120	610.00	Н	610.00
Autoclave	http://www.coleparmer.com/Product/Electric Steam Sterilizer Capacity 25 Qt 120 VAC 50 60 Hz/EW-10785-30	EW-10785-30	855.00	П	855.00
Sealer	ldexx laboratories	99-10893-01	3400	Н	3400
				Approx	Approx 45,761.20



September 12, 2013

Dear Families,

Welcome to the 2013-2014 school year at Urban Assembly New York Harbor School! As part of Harbor School's commitment to student success after high school, the College Office will continue to offer a menu of services for students at all four grade levels.

Beginning in Grade 9 and continuing through graduation, the College Office staff will introduce students to the many options that await them after graduation, while also raising awareness about opportunities for students outside of the classroom. Although many programs are grade-level specific, they are designed to prepare students for the college application process and to help them make informed decisions about their futures after high school. Our services include:

### Grade 9

College Search College Board Registration Naviance Registration Summer Opportunities

### Grade 11

College Visits
Resumes
SAT Registration
Transcript Review
Summer Opportunities
Scholarship Search

### Grade 10

College Visits
Career Planning
Naviance Registration/Career Inventory
Transcript Review
Summer Opportunities

### Grade 12

SAT Registration
College Applications
Recommendations
Personal Statement & Resumes
Financial Aid Counseling
Scholarship Search

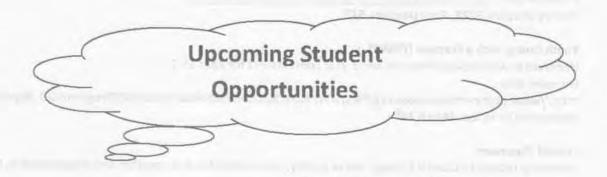
We look forward to meeting and working with you and your student throughout the year. Please do not hesitate to contact us with any questions or concerns.

Sincerely.

Chris Budano
Director of College Placement
(212) 458-0800, x 2162
cbudano@newyorkharborschool.org

Joseph Murphy (Habla Espanol) College Advisor (212) 458-0800, x 2161 jmurphy@newyorkharborschool.org





### School Year

### Sall Academy (9th Grade/ Spring or Fall)

Sail Academy recruits 9th grade students from seven public high schools who need support in math and science and engages them in a year of academic after school programming using sailing and boat building.

Explore both programs here: http://hudsonsailing.org/youth-programs/

### ROOTS

When: Wednesdays, April & May, 4:00 pm - 6:00 pm

What: Students work on ecological restoration projects in the Hallett Nature Sanctuary. Projects might include removal of invasive species, cultivating native plantings, wildlife and plant surveys, debris removal, and trail maintenance.

Who: Students in grades 9-12. Application Deadline: February 28<sup>th</sup>

### "Isitor Experience Apprentice Program (formerly the Spring Visitor Center Internship)

aturdays, late March through early June, 12:00 pm - 3:00 pm

Students work alongside Visitor Experience staff in a visitor center, gift shop, recreation center, or with our Discovery Guides.

Must be at least 16 by June 1.

How to Apply: Interested students must email <a href="mailto:youth@centralparknyc.org">youth@centralparknyc.org</a> to request an application. The deadline is February 15<sup>th</sup>

### American Museum of Natural History

Every year, the After School Program (ASP offers courses to New York City high school students interested in the sciences. There are courses in anthropology, astrophysics, earth science, genetics, biodiversity, and more. Registration Deadline for Session 5 (April 28<sup>th</sup> to June 9<sup>th</sup>) will be posted shortly

For more info: http://www.amnh.org/learn-teach/grades-9-12/after-school-program

### The Opportunity Network

Follows sophomores in high school throughout college and provides weekly after-school sessions of career exploration, networking training and professional etiquette.

Online applications due: Friday, Feb21st

### Summer

### College of the Atlantic Summer Field Institute

Tollege of the Atlantic focuses on human ecology- the relationship between humans and our environments.

For Rising Juniors and Seniors

Competitive scholarships for a limited number of interested students

For more info: http://www.coa.edu/highschoolstudentprograms.htm

Priority Deadline 3/28, Final Deadline 5/5

### Youth Diving with a Purpose (YDWP)

Underwater Archaeology Program and 3 year commitment for ages 15-23

For more info:

http://www.divingwithapurpose.org/files/DWP%201%20Coral%20Restoration%20Program%20\_Repaired\_2014Final.pdf Application Deadline: March 30<sup>th</sup>

### Coastal Classroom

Internship related to Coastal Ecology, water quality, urban waterfront restoration and preservation in Queens and Brooklyn. June-August 2014, salary of \$8.00 an hour.

To apply, please see Janae in the College Office.

### Seacamp Association Inc.

Seacamp offers marine science education and summer camp experiences in Big Pine Key, Florida. Program includes SCUBA, sailing, board sailing, and arts and crafts to students from 12-17.

For more info: http://www.seacamp.org/

### BlueStamp Engineering (BSE)

A hands-on engineering program operating in New York City, Houston, and San Francisco designed by industry professionals to show high school students the world of engineering first hand.

Classes meet for 4 hours per day, 5 days per week for 6 weeks in the summer.

For more info: http://www.bluestampengineering.com/

### Sustainable Ocean Studies - Inspiring a New Generation of Ocean Advocates

A field-based, adventure filled, community-oriented experience open to students entering 10th,11th, or 12th grade. SO. is an inspiring, fun and rigorous 24 day summer program focused on promoting ocean sustainability.

Application Deadline: 5/1/2014 Program Dates: 7/3/2014 - 7/26/2014

Financial Aid Available

For more info: http://www.waynflete.org/podium/default.aspx?t=135153

### Christadora's Manice Education Center

Every year students Just like you join this program in Massachusetts for hiking, canoeing, leadership training, and environmental education adventures.

Admission and Scholarships available

First come, first serve basis, so the sooner you apply, the more we are able to help cover the cost of your trip. Applications will be received on a rolling basis until May 1st

### Cornell Engineering Experience

If you're skilled in math and science and would like to use your talents to improve the world, come to Cornell this summer to explore the diverse and exciting field of engineering. Explore mechanical, aerospace, electrical, and civil engineering – material science, engineering physics, and earth science – chemical, biological, biomedical, and environmental engineering – computer science, operations research, and information engineering.

Three and six week sessions starting June 22<sup>nd</sup> through August 6<sup>th</sup>.

Deadline for programs that start in June March 8, 2013

Deadline for programs that start in July April 5, 2013

### Cornell Architecture Experience

These rigorous six-week classes are open to both high school and college students and require no specialized knowledge or background, just a serious interest in design.

ne cost of supplies for this program is about \$350 (including \$175 for the Supply Kit.) This expense is in addition to the cost of the program. Get 6 college credits.

June 21-August 2, 2014 (6 weeks)

Eligibility: Juniors, seniors Apply by: May 2, 2014

For More info: http://www.sce.cornell.edu/sc/programs/index.php?v=178

### Naval Academy Summer Seminar

The United States Naval Academy Summer Seminar is a fast-paced, six-day experience for high achievers who have completed their junior year in high school.

Deadline: March 31st

For more info: http://www.usna.edu/Admissions/NASS/index.php

### Embry-Riddle Summer Programs (Florida)

Choose from programs ranging from aviation, computer & Electrical Engineering, General Business
General Engineering & Physical Sciences, General Math & Computational Sciences, Marketing, Physics, Robotics, and Statistics.

For More Information: http://daytonabeach.erau.edu/degrees/summer-camps/residential/index.html

### Dive In

A three-day immersion program in Malne designed to give college-bound students a taste of one of the most popular scientific majors; Marine Biology.

Dive In 2014 will take place August 12-14.

applications are due May 1, 2014

For more info: http://www.dmc.maine.edu/divein.html

### Triskeles Program

Provides sustainable direction paid internships and career readiness training to youth ages 15-17.

For More Information: <a href="http://triskelesprograms.org/news/13/56/Summer-Internship-Opportunities">http://triskelesprograms.org/news/13/56/Summer-Internship-Opportunities</a> or see Janae for an application.

Application Due: May 13th

Syracuse University Summer College

College writing and preparedness, competitive scholarships as needed

Application Deadline: Feb 28th

### **Additional Programs**

### Coastal Studies for Girls

16 Weeks, A World Apart - Coastal Studies for Girls is the country's only residential science and leadership semester school for 10th grade girls.

Priority application deadline is March 15, with rolling admissions thereafter.

For more info: http://www.coastalstudiesforgirls.org/

### NOAA Voyage to Discovery

Provides scholarships to students for their essays celebrating the role of African Americans in our nation's maritime history. Essay entries are due by April 4, 2014.

For more info: http://www.voyagetodiscovery.org/

### National Park Service Jobs

Please speak to Janae in the College Office for more information

Deadline: Feb 20th or until filled

There are countless other opportunities in addition to the few listed above. Please spend some time with Janae in the College Office filling out an assessment sheet so that we may better assist you with your opportunities search!

For Questions or Assistance, please contact Janae Cummings in the College Office, Room 216 via journmings@newyorkharborschool.org or call (212) 458-0800, x 2163.

Please see additional resources and websites to consider on your search:

### Internships/Summer Opportunities

www.oceanopportunities.org

www.internships.com

https://bigfuture.collegeboard.org/get-started/outside-the-classroom/how-to-find-an-internship-youll-value

### Scholarships

www.bigfuture.collegeboard.org/scholarship-search

www.fastweb.com/college-scholarships

www.scholarshipexperts.com/

www.finaid.org/scholarships/

www.naviance.com

chool DBN	.02.74331		_	_	Democr		13 Term ID: 1 Sort By: Departme
JXZAW	Retail merchandising w	0.00	0.00	H	Technology	01001	English/language arts i (9th grade)
JXZBW	Retail merchandising p	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZCW	Engineering technology	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZDW	Robotics	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZEW	Pre-engineering/ engineering technology w	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
IXZFW	Pre-engineering/ engineering technology p	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZGW	Aviation maintenance (secondary)	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZHW	Marine service technology	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZIW	Motorcycle service technology	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZJW	Automotive refinishing	0,00	0.00	H	Technology	01001	English/language arts i (9th grade)
JXZKW	Automotive service technology	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
IXZLW	Collision repair technology	0.00	0.00	H	Technology	01001	English/language arts i (9th grade)
IXZMW	Diesel engines & electronic systems	0.00	0.00	H	Technology	01001	English/language arts i (9th grade)
IXZNW	Automotive technician- advanced w	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
IXZOW	Automotive technician- advanced p	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZPW	Automotive technician- core w	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZQW	Automotive technician- core p	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZRW	Collision repair w	0.00	0.00	H	Technology	01001	English/language arts i (9th grade)
IXZSW	Collision repair p	0.00	0.00	H	Technology	01001	English/language arts i (9th grade)
JXZTW	Collision repair and refinishing w	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZUW	Collision repair and refinishing p	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZVW	Diesel technology w	0.00	0.00	H	Technology	01001	English/language arts i (9th grade)
JXZWW	Diesel technology p	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
JXZXW	Heavy equipment maintenance and repair w	0.00	0.00	H	Technology	01001	English/language arts i (9th grade)
XZYW	Heavy equipment maintenance and repair p	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
IXZZW	Small engine technology w	0.00	0.00	Н	Technology	01001	English/language arts i (9th grade)
TBS11U	Intro to maritime tech	1.00	1.10	Н	Technology	20111	Marine mechanics
TBS21TH	Harbor 1	1.00	1.00	H	Technology	20111	Marine mechanics

School DBN	:02M551	NEW YORK	HARBOR	SCHOO		Year: 2013 Term ID: 1 Sort By: Departs
TBS22TH	Harbor 2	1.00	1.00	Н	Technology	20111 Marine mechanics
TBS61TE	Ocean eng 1	1.00	1.00	H	Technology	20111 Marine mechanics
**************************************						20070 22 2 2

TBS22TH	Harbor 2	00.1	1.00	Н	Technology	20111	Marine mechanics	
TBS61TE	Ocean eng 1	1.00	1.00	H	Technology	20111	Marine mechanics	
TBS61TT	Mar sys tech 1	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS61TV	Vessel ops 1	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS62TE	Ocean eng 2	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS62TT	Mar sys tech 2	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS62TV	Vessel ops 2	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS63TE	Ocean eng 3	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS63TRV	Vessel ops 3	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS63TT	Mar sys tech 3	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS63TV	Vessel ops 3	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS64TE	Ocean eng 4	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS64TSV	Vessel ops 4	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS64TT	Mar sys tech 4	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS64TV	Vessel ops 4	1.00	1.00	Н	Technology	20111	Marine mechanics	
TBS65TE	Ocean eng 5	2.00	1.00	Н	Technology	20111	Marine mechanics	
TBS65TT	Mar sys tech 5	2.00	1.00	Н	Technology	20111	Marine mechanics	
TBS65TV	Vessel ops 5	2.00	1.00	Н	Technology	20111	Marine mechanics	
TBS66TE	Ocean eng 6	2.00	1.00	Н	Technology	20111	Marine mechanics	
TBS66TT	Mar sys tech 6	2.00	1.00	Н	Technology	20111	Marine mechanics	
TBS66TV	Vessel ops 6	2.00	1.00	H	Technology	20111	Marine mechanics	

School Year: 2013 Term ID: 1 Sort By: Department

CourseCode	CourseName	Credits	GAF	Course	Department	State	State Code Description
com secone	Course. and	Cicuits	U/II	Level	Department	Code	State Code Description
Department:	7 / Career Developmen	t					
RQS61TA	Aquaculture I	1.00	1.00	H	Career Development	22151	Career exploration
RQS61TD	Prof diving 1	1.00	1.00	Н	Career Development	22151	Career exploration
RQS61TQR	Mar bio rsrch 1	1.00	1.00	Н	Career Development	22151	Career exploration
RQS62TA	Aquaculture 2	1.00	1.00	Н	Career Development	22151	Career exploration
RQS62TD	Prof diving 2	1.00	1.00	Н	Career Development	22151	Career exploration
RQS62TQR	Mar bio rsrch 2	1.00	1.00	Н	Career Development	22151	Career exploration
RQS63TA	Aquaculture 3	1.00	1.00	Н	Career Development	22151	Career exploration
RQS63TD	Prof diving 3	1.00	1.00	Н	Career Development	22151	Career exploration
RQS63TQR	Mar bio rsrch 3	1.00	1.00	н	Career Development	22151	Career exploration
RQS64TA	Aquaculture 4	1.00	1.00	Н	Career Development	22151	Career exploration
RQS64TD	Prof diving 4	1.00	1.00	Н	Career Development	22151	Career exploration
RQS64TQR	Mar bio rsrch 4	1.00	1.00	Н	Career Development	22151	Career exploration
RQS64UQR	Sci research	1.00	1.10	Н	Career Development	22151	Career exploration
RQS65TA	Aquaculture 5	2.00	1.00	Н	Career Development	22151	Career exploration
RQS65TD	Prof diving 5	2.00	1.00	Н	Career Development	22151	Career exploration
RQS65TQR	Mar bio rsrch 5	2.00	1.00	н	Career Development	22151	Career exploration
RQS66TA	Aquaculture 6	2.00	1.00	Н	Career Development	22151	Career exploration
RQS66TD	Prof diving 6	2.00	1.00	H	Career Development	22151	Career exploration
RQS66TQR	Mar bio rsrch 6	2.00	1.00	н	Career Development	22151	Career exploration



### NYC Department Of Education

### Student Permanent Record



URBAN ASSEMBLY NEW YORK HARBOR SCHOOL

verage: 89.29% es / 2	Discharge Date	Actual Mark 85 87 87 87 88 84 83	JOANNA STEPHANIE SONJAH SONJAH MCBAIN MCBAIN SYKES SYKES	0.75/0.78 0.75/0.75 0.75/0.75 0.75/0.75 1.00/1.00 1.00/1.00 1.00/1.00	2010/1 2010/2 2010/3	02M551 02M551 02M551 02M551 rea Average anguage 02M551 02M551	85.86%	CHEM LAB 1H CHEMISTRY 2H CHEM LAB 2H bject Area : Actual Credi	Actual Mark 77	GRIBBIN GRIBBIN GRIBBIN lits Earned Credits Avera	0.00/0.00 1.00/1.00 0.00/0.00 6.00 / 6.00 ged : 6.00
M551 E1GR M551 E1SS M551 E1GR M551 E2MY M551 E3H** M551 E4H** M551 EES86H** M551 EES87X** M551 EES87X**	Graduation Da Counselor:  Grammer Short Story Grammar Mythology ENGLISH 10 H ENGLISH 10 H ENGLISH 5H ENGLISH 5H ENGLISH 5H	Actual Mark 85 87 87 87 88 84 83 87	JOANNA STEPHANIE SONJAH SONJAH MCBAIN MCBAIN SYKES SYKES	0.75/0.75 0.75/0.75 0.75/0.75 1.00/1.00 1.00/1.00 1.00/1.00	2012 / 2 2012 / 2 Subject A Foreign 1 2010 / 1 2010 / 2 2010 / 3	02M551 02M551 rea Average anguage 02M551 02M551	SCS22H** SCS22HL Sul 85.86% // 5	CHEMISTRY 2H CHEM LAB 2H bject Area : Actual Credi	72 p* ts / Cred Actual Mark 77	GRIBBIN GRIBBIN lits Earned Credits Avera	1.00/1.00 0.00/0.00 6.00 / 6.00
M551 E1GR M551 E1SS M551 E1GR M551 E2MY M551 E3H** M551 E4H** M551 EES86H** M551 EES87X** M551 EES87X**	Grammar Short Story Grammar Mythology ENGLISH 10 H ENGLISH 5H ENGLISH 5H ENGLISH 6H AP ENGLISH LIT	Actual Mark 85 87 87 87 87 88 84 83	JOANNA STEPHANIE SONJAH SONJAH MCBAIN MCBAIN SYKES SYKES	0.75/0.75 0.75/0.75 0.75/0.75 1.00/1.00 1.00/1.00 1.00/1.00	2012 / 2 2012 / 2 Subject A Foreign 1 2010 / 1 2010 / 2 2010 / 3	02M551 02M551 rea Average anguage 02M551 02M551	SCS22H** SCS22HL Sul 85.86% // 5	CHEMISTRY 2H CHEM LAB 2H bject Area : Actual Credi	72 p* ts / Cred Actual Mark 77	GRIBBIN GRIBBIN lits Earned Credits Avera	1.00/1.00 0.00/0.00 6.00 / 6.00
M551 E1GR M551 E1SS M551 E1GR M551 E2MY M551 E3H** M551 E4H** M551 EES86H** M551 EES87X** M551 EES87X**	Grammar Short Story Grammar Mythology ENGLISH 10 H ENGLISH 5H ENGLISH 5H ENGLISH 6H AP ENGLISH LIT	Mark 85 87 87 87 88 84 83	JOANNA STEPHANIE SONJAH SONJAH MCBAIN MCBAIN SYKES SYKES	0.75/0.75 0.75/0.75 0.75/0.75 1.00/1.00 1.00/1.00 1.00/1.00	2012 / 2 2012 / 2 Subject A Foreign 1 2010 / 1 2010 / 2 2010 / 3	02M551 02M551 rea Average anguage 02M551 02M551	SCS22H** SCS22HL Sul 85.86% // 5	CHEMISTRY 2H CHEM LAB 2H bject Area : Actual Credi	72 p* ts / Cred Actual Mark 77	GRIBBIN GRIBBIN lits Earned Credits Avera	1,00/1,00 0.00/0.00 6.00 / 6.00
M551 E1GR M551 E1SS M551 E1GR M551 E2MV M551 E3H** M551 E4H** M551 EES86H** M551 EES87X** M551 EES87X**	Grammar Short Story Grammar Mythology ENGLISH 10 H ENGLISH 5H ENGLISH 5H ENGLISH 6H AP ENGLISH LIT	Mark 85 87 87 87 88 84 83	JOANNA STEPHANIE SONJAH SONJAH MCBAIN MCBAIN SYKES SYKES	0.75/0.75 0.75/0.75 0.75/0.75 1.00/1.00 1.00/1.00 1.00/1.00	2012 / 2 2012 / 2 Subject A Foreign 1 2010 / 1 2010 / 2 2010 / 3	02M551 02M551 rea Average anguage 02M551 02M551	SCS22H** SCS22HL Sul 85.86% // 5	CHEMISTRY 2H CHEM LAB 2H bject Area : Actual Credi	72 p* ts / Cred Actual Mark 77	GRIBBIN GRIBBIN lits Earned Credits Avera	1,00/1,00 0.00/0.00 6.00 / 6.00
M551 E1GR M551 E1SS M551 E1GR M551 E2MV M551 E3H** M551 E4H** M551 EES86H** M551 EES87X** M551 EES87X**	Short Story Grammar Mythology ENGLISH 10 H ENGLISH 5H ENGLISH 5H ENGLISH 6H AP ENGLISH LIT	Mark 85 87 87 87 88 84 83	JOANNA STEPHANIE SONJAH SONJAH MCBAIN MCBAIN SYKES SYKES	0.75/0.75 0.75/0.75 0.75/0.75 1.00/1.00 1.00/1.00 1.00/1.00	2012 / 2 2012 / 2 Subject A Foreign 1 2010 / 1 2010 / 2 2010 / 3	02M551 02M551 rea Average anguage 02M551 02M551	SCS22H** SCS22HL Sul 85.86% // 5	CHEMISTRY 2H CHEM LAB 2H bject Area : Actual Credi	72 p* ts / Cred Actual Mark 77	GRIBBIN GRIBBIN lits Earned Credits Avera	1,00/1,00 0.00/0.00 6.00 / 6.00
M551 E188 M551 E1GR M551 E2MY M551 E3H** M551 E4H** M551 EE886H** M551 EES87X** M551 EES87X** M551 EES87X**	Short Story Grammar Mythology ENGLISH 10 H ENGLISH 5H ENGLISH 5H ENGLISH 6H AP ENGLISH LIT	85 87 87 87 87 88 84 83	STEPHANIE SONJAH SONJAH MCBAIN MCBAIN SYKES SYKES	0.75/0.75 0.75/0.75 0.75/0.75 1.00/1.00 1.00/1.00 1.00/1.00	Subject A Foreign 2010 / 1 2010 / 2 2010 / 3	ea Average anguage 02M551 02M551	85.86% Sul	bject Area : Actual Credi	Actual Mark 77	lits Earned Credits Avera	6.00 / 6.00
M551 E188 M551 E1GR M551 E2MY M551 E3H** M551 E4H** M551 EE886H** M551 EES87X** M551 EES87X** M551 EES87X**	Short Story Grammar Mythology ENGLISH 10 H ENGLISH 5H ENGLISH 5H ENGLISH 6H AP ENGLISH LIT	87 87 87 88 84 83 87	STEPHANIE SONJAH SONJAH MCBAIN MCBAIN SYKES SYKES	0.75/0.75 0.75/0.75 0.75/0.75 1.00/1.00 1.00/1.00 1.00/1.00	2010/1 2010/2 2010/3	02M551 02M551	85.86% // 5 FS1	Spanish	Actual Mark 77	Credits Avera	
M551 E1GR M551 E2MY M551 E3H** M551 E4H** M551 EES86H** M551 EES87X** M551 EES87X** Verage: 89.29%	Grammar Mythology ENGLISH 10 H ENGLISH 5H ENGLISH 5H ENGLISH 6H AP ENGLISH LIT	87 87 87 88 84 83	SONJAH SONJAH MCBAIN MCBAIN SYKES SYKES	0.75/0.75 0.75/0.75 1.00/1.00 1.00/1.00 1.00/1.00	2010/1 2010/2 2010/3	02M551 02M551	/ <u>5</u> FS1		Mark 77		ged   6.00
M551 E2MY M551 E3H** M551 E4H** M551 EES86H** M551 EES87X** M551 EES87X** Verage: 89.29%	Mythology ENGLISH 10 H ENGLISH 10 H ENGLISH 5H ENGLISH 6H AP ENGLISH LIT	87 87 88 84 83 87	SONJAH MCBAIN MCBAIN SYKES SYKES	0.75/0.75 1.00/1.00 1.00/1.00 1.00/1.00	2010 / 1 2010 / 2 2010 / 3	02M551 02M551	FS1		Mark 77	AWILDA	
M551 E3H** M551 E4H** M551 EES86H** M551 EES86H** M551 EES87X** Verage: 89.29%	ENGLISH 10 H ENGLISH 10 H ENGLISH 5H ENGLISH 6H AP ENGLISH LIT	87 88 84 83 87	MCBAIN MCBAIN SYKES SYKES	1.00/1.00 1.00/1.00 1.00/1.00	2010 / 2 2010 / 3	02M551			77	AWILDA	
M551 E4H** M551 EES85H** M551 EES86H** M551 EES87X** Verage: 89.29%	ENGLISH 10 H ENGLISH 5H ENGLISH 6H AP ENGLISH LIT	88 84 83 87	MCBAIN SYKES SYKES	1.00/1.00	2010 / 2 2010 / 3	02M551				Landamenta	1.00/1:00
M551 EES85H** M551 EES86H** M551 EES87X**  Verage: 89.29%	ENGLISH 5H ENGLISH 6H AP ENGLISH LIT	84 83 87	SYKES	1.00/1.00	2010/3		0.87	Spanish	85	AWILDA	0.50/0.50
M551 EES86H** M551 EES87X** verage: 89.29%	ENGLISH 6H AP ENGLISH LIT	83 87	SYKES		Control of the Control		FS3	Spanish	83	AWILDA	0.75/0.75
M551 EES87X** Si verage: 89.29% es / 2	AP ENGLISH LIT	87			2010 / 4	02M551	FS4	Spanish	82	AWILDA	0.50/0.50
verage: 89.29% Sizes / 2								oject Area : Actual Credi			2.75 / 2.75
verage: 89.29% es / 2	sbject Area : Actual Grec	HE L'CLE	SYKES	1.00/1.00	Subject A	ea Average				Credits Avera	
and a second			Credits Avera	8.00 / 8.00 ged = 8.00	Career &	Tech Edu	cation / 6		Actual Mark		
Charles Charles		Actual			2011/1	02M551	VS1PS	INTRO MAR RESRC	99	GONZALEZ	1:00/1.00
	GOVERNMENT	Mark	MEN IEEA IE	4 00 H 00	2011/2	02M551	VS2PS	INTRO MAR RESRC	97	GONZALEZ	1.00/1.00
M551 H7M1		98	MELISSA JE	1.00/1.00	2011/7	02M551	VS2PSJ	INTERNSHIP	p.	GONZALEZ	0.00/0,00
200					2012/1	02M551	RQS63TQR	MAR BIO RSRCH 3	92		1.00/1.00
					2012/2	02M551	RQS64TQR	MAR BIO RSRCH 4	100	GONZALEZ	1.00/1.00
					2013/1	02M551	RQS65TQR	MAR BIO RSRCH 5	93	GONZALEZ	2.00/2.00
					10000			oject Area : Actual Credi	ts / Cred	its Earned :	6.00 / 6.00
					Subject A	ea Average	95.67%			Credits Avera	ged : 6.00
					The Arts	17			Actual		
					004074	0014554		4.44		ADDIE	4 00 k 00
verage: 96.21%	adect result remain disc	max r series			10000 P. A.						1.00/1.00
13		Actual			200000						0.25/0.25
		Mark			Divini Colonia						0.25/0.25
	Geometry	75	LILY JOANN		P2000000000000000000000000000000000000						0.50/0.50
	Geometry				220V-722						1.00/1.00
	Geometry				2010/11	VERNOOT					3.50 / 3.50
	Control of the Contro				Subject A	es Average		quar pe est a reciniar arroan	10 / 0100		
					Health/P	vsical Ed	ucation / 8		Actual		
					L.						
					2010 / 2	02M551		PE	200	JOHNNY	0.29/0.29
								Ball sports			0.58/0.58
					Acres on			HEALTH	98	BUTLER	0.50/0.50
					Printer No. 19						0.50/0.50
					1.500						0.50/0.50
verage: 90.69%	abject Area : Actual Crec	illa i Grei			COLUMN TO STATE OF THE PARTY OF						0.50/0.50
		Actual			100 100 100	0.000					0.50/0.50
		Mark			F-7-7-17-1						0.50/0.50
M551 SM1H	HARBOR SCI	83	MELISSA JE	1.00/1.00	100000000000000000000000000000000000000						0.58/0.58
M551 SM2H	HARBOR SCI	93	MELISSA JE	1.00/1.00	2013 / 1	U2M551					0.50/0.50
M551 SL1H**	LIVING ENV 10 H	87	POLITE	1.00/1.00	Subject A	ea Average		oject Area : Actual Cradi	is / Cred		4.95 / 4.95 ged : 1.00
M551 SL1LH**	LIV ENV LAB 10	P*	POLITE	0.00/0.00	Contract of the second				Actual		
M551 SL2H**	LIVING ENV 10 H	86	POLITE	1.00/1.00					Mark		
M551 SL2LH**	LIV ENV 10 LAB	p.	POLITE	0.00/0,00	2010/1	02M551	GATPN	Advisory	P*	EDWARD RE	0.50/0.50
M551 SCS21H**	CHEMISTRY 1H	78	GRIBBIN	1.00/1.00	2010/1	02M551	ZST	Study skills	P.	ANDREW	0.00/0.00
M M M M M M M M M M M M M M M M M M M	551 HGS42HA** 551 HGS43QQI 551 HRSZ1QQR 551 HRSZ1QQR 551 MG219 551 MG219 551 MG429 551 MG439 551 MG449 551 ME21H** 551 MRS21H** 551 MRS21H** 551 MRS22H** 551 MRS42H** 551 MRS43 SI BY B	551 H5H** US HISTORY H 551 H6H** US HISTORY H 551 HGS41HA** GLOBAL HIST 1H 551 HGS42HA** GLOBAL HIST 2H 551 HGS43QOI GLOBAL HIST 2H 551 HGS43QOI GLOBAL ISSUES 1 551 HRS21QOR REVOLUTIONS 1 Subject Area : Actual Crec 66.21%  3  551 MG219 Geometry 551 MG429 Geometry 551 MG439 Geometry 551 MG49 Geometry 551 MG49 Geometry 551 ME21H** ALGEBRA 10 H 551 ME22H** ALGEBRA 10 H 551 MRS21H** ALG 2 & TRIG 1H 551 MRS21HX ALG 2 & TRIG 1H 551 MRS21HX ALG 2 & TRIG 2H 551 MRS43 ALG 2 & TRIG 3 Subject Area : Actual Crec 67 67 67 67 67 67 67 67 67 67 67 67 67	551 H5H** US HISTORY H 96 551 H6H** US HISTORY H 92 551 HGS41HA** GLOBAL HIST 1H 90 551 HGS42HA** GLOBAL HIST 2H 94 551 HGS43QQI GLOBAL HIST 2H 94 551 HRS21QQR REVOLUTIONS 1 92 Subject Area : Actual Credits / Cree 6629 96.21%  3 Actual Mark 551 MG219 Geometry 75 551 MG429 Geometry 89 551 MG439 Geometry 86 551 MG449 Geometry 95 551 ME21H** ALGEBRA 10 H 90 551 MRS21H** ALGEBRA 10 H 98 551 MRS21H** ALGEBRA 10 H 98 551 MRS21HX ALG 2 & TRIG 1H 83 551 MRS21HX ALG 2 & TRIG 1 P* 551 MRS22H** ALG 2 & TRIG 3 93 Subject Area : Actual Credits / Cree 651 MRS43 ALG 2 & TRIG 3 93 Subject Area : Actual Credits / Cree 651 SM2H HARBOR SCI 83 651 SM1H HARBOR SCI 93 651 SL1H** LIVING ENV 10 H 87 651 SL1H** LIVING ENV 10 H 87 651 SL2H** LIVING ENV 10 H 86	Still   Stil	S51   H5H** US HISTORY H   96	2012 / 1 2012 / 2 2012 / 1 2012 / 2 2012 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2012 / 2 2013 / 1 2010 / 2 2013 / 1 2010 / 2 2013 / 1 2010 / 2 2010 / 1 2010 / 2 2010 / 1 2010 / 2 2010 / 1 2010 / 2 2010 / 2 2010 / 3 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 3 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 3 2010 / 3 2010 / 4 2011 / 2 2010 / 3 2010 / 3 2010 / 3 2010 / 4 2010 / 3 201	Second   S	Second   S	Secondary   Seco	Description   Property   Proper	Section   Sect

7.94	W. San A. Co.	MICCE
		100
4	A STATE OF	All market
-/A.U.I.I	poriza	tion.



### NYC Department Of Education

### Student Permanent Record



URBAN ASSEMBLY NEW YORK HARBOR SCHOOL

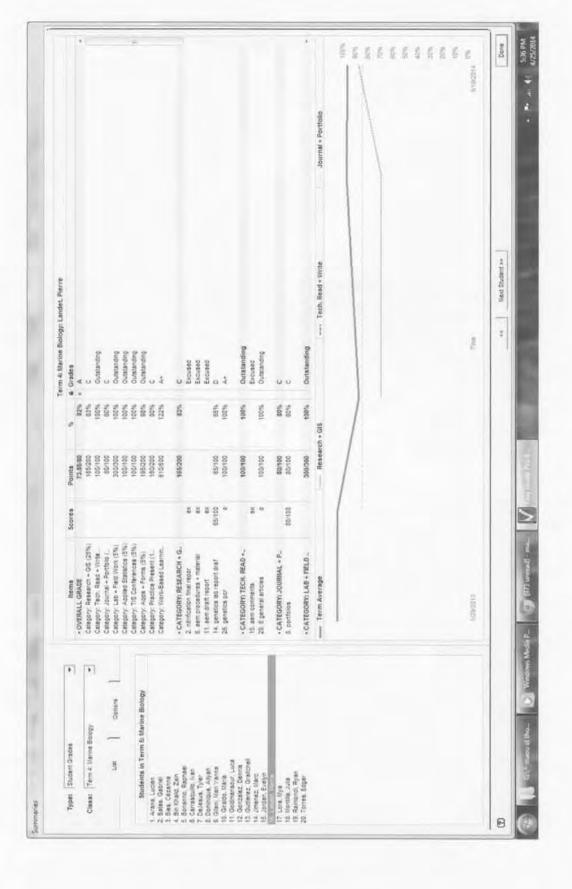
Name / Id Address				-						Message Area			
Ph#:		Ofel : QG	R Grade Level :	11 St	atus : A								
Admit Da	ite:		Discharge Dat	e :									
DOB :		Gender:	Graduation D	ate :									
Parent:			Counselor :										
i direnta		_	Counselor .		_	_					V = Total		
English /	ESL/1			Actual				rea Average Tech Educ	95,00%	ect Area : Actual Credits		Credits Average	2.00 / 2.00 ged : 2.00
2011/1	02M551	EtH**	ENGLISH 9	90	BALASCIO	1.00/1.00		13311333	CHINAL Y		Mark		
2011/2	02M551	E2H**	ENGLISH 9	94	BALASCIO	1.00/1.00	2011/1	02M551	VD1PH	HARBOR 1	93	FRAIOLI LY	1.00/1.00
201271	02M551	EES83H**	ENGLISH 3H	98	VANN	1.00/1.00	2011/2	02M551	VD2PH	HARBOR 2	99	FRAIOLI LY	
2012/2	02M551	EES84H**	ENGLISH 4H	96	VANN	1.00/1.00	2012 / 1	02M551	RQS61TQR	MAR BIO RSRCH 1	96	GONZALEZ	
2013/1	02M551	EES85H**	ENGLISH 5H	91	SYKES	1.00/1.00	2012/2	02M551	RQS61TQR	MAR BIO RSRCH 1	99	GONZALEZ	
2013/1	02M551	EWS21QC	COMPOSITION 1	97	SCHLEY	0.50/0.50	2013/1	02M551	RQS63TQR	MAR BIO RSRCH 3	97	GONZALEZ	
Subject A	rea Average		ect Area : Actual Credit		Eamed : : : Credits Avera	5.50 / 5.50 ged = 5.50	Subject A	rea Average	96.80%	ect Area : Actual Gredits		Cradits Averag	5.00 / 5.00 ged : 5.00
Social St		20.0076		Actual Mark	Cidulis Avera	gec 5,50	Health/P	hysical Edi	ucation / 8		Actual Mark		
2011/1	02M551	HIH	GLOBAL HIST 9	86	CAUFIELD	1.00/1:00	2011/1	02M551	PH1	HEALTH	98	BUTLER	0.50/0.50
2011/2	02M551	H2H**	GLOBAL HIST 9	98	CAUFIELD	1.00/1.00	2011/1	02M551	PP1	PHYS ED	98	TANG	0.50/0.50
2012 / 1	02M551	HGS43H**	GLOBAL HIST 3H	96	WALKER	1.00/1.00	2011/2	02M551	PH2	HEALTH	95	BUTLER	0.50/0.50
2012/2	02M551	HGS44H**	GLOBAL HIST 4H	97	WALKER	1.00/1.00	2011/2	02M551	PP2	PHYS ED	99	TANG	0.50/0.50
2013/1	D2M551	HUS21H**	US HISTORY 1H	97	JONES	1.00/1.00	2012 / 1	02M551	PPS83	PHYS ED 3	p.	TANG	0.50/0.50
0.00			ect Area : Actual Credit			5.00 / 5.00	2012/2	02M551	PPS84	PHYS ED 4	p.	TANG	0.50/0.50
Secret Secret	rea Average	99.54%			Credits Avera	ged : 5.00	2013 / 1	02M551	PPS85	PHYS ED 5	p*	TANG	0.50/0.50
Mathema				Actual Mark			741m	rea Average	97.50%	ect Area : Actual Credits	(	Credits Average	3.50 / 3.50 gad : 2.00
2011/1	D2M551	MG21H**	GEOMETRY 9	85	MOHSEN	1.00/1.00	Miscellar	neous/Guld	lance / 9		Actual Mark		
2011/2	02M551	MG22H**	GEOMETRY 9	85	MOHSEN	1.00/1.00	2012 / 1	02M551	GAS83	ADVISORY 10A	P*	VANN	0.00/0,00
2012/1	02M551	MES21HA**	INT ALGEBRA 1H	86	MOSHOS	1.00/1.00	2012/2	02M551	GAS84	ADVISORY 10B	p+	VANN	0.00/0.00
2012/2	02M551	MES22HA**	INT ALGEBRA 2H	90	MOSHOS	1.00/1.00		24111001		ect Area : Actual Credits			0.00 / 0.00
2013/1	02M551	MRS21H**	ALG 2 & TRIG 1H	89	SALVATO	1.00/1.00	Subject A	rea Average				Credits Averag	
Subject Ar	rea Average	91.35%	ect Area : Actual Credit		Credits Average	5.00 / 5.00 ged   5.00	Exam Su	mmary					
Sciences	14			Actual			2012	Term 2	HXRGE MXRGE	GLOB HIST REG JU	93		
2011/1	02M551	SD1	PHYSICAL SCI	Mark	DOLITE.	4 00/4 00	2012	Term 2	MXREE	ALGEBRA REG JUN	84		
2011/1	02M551	SE1H**	EARTH SCI 9	90	DOWD	1.00/1.00	2011	Term 2	SXRUE	PHSET ES REG JU	88		
2011/1	02M551	SE1LH**	EARTH SCI LAB 9	p+	DOWD	0.00/0.00	2012	Term 2	SXRKE	LIVENVIR R JUNE	88		
2011/2	02M551	SD2	PHYSICAL SCI	93	POLITE	1.00/1.00	2012	Term 2	FXTSE	SPANISH LOTE	87		
2011/2	02M551	SE2H**	EARTH SCI 9	95	DOWD	1.00/1.00				ulative : Actual Credits	Credita I	Earned 33.0	0 /33.00
2011/2	02M551	SE2LH**	EARTH SCI 9 LAB	p*	DOWD	0.00/0.00	Cumulativ	e Average: 1				Credits Avera	
2012/1	02M551	SLS21H**	LIV ENVIR 1H	92	AREZZO	1.00/1.00							
2012/1	02M551	SLS21HL	LE LAB 1H	P*	AREZZO	0,00/0,00							
2012/2	D2M551	SLS22H**	LIV ENVIR 2H	96	AREZZO	1.00/1.00							
2012/2	02M551	SLS22HL	LE LAB 2H	p*	AREZZO	0.00/0.00							
2013/1	02M551	SCS21H**	CHEMISTRY 1H	86	GRIBBIN	1.00/1.00							
2013/1	02M551	SCS21HL	CHEM LAB 1H	P*	GRIBBIN	0.00/0.00							
Subject As	res Average		ect Area : Actual Credit		Earned : Credits Avera								
100000	Language			Actual		,							
		Fano		Mark		4 880 55							
2 1	02M551	FSS81	SPANISH 1	94	MADERA	1.00/1.00							
262	D2M551	FSS62	SPANISH 2	96	MADERA	1,00/1.00							

	~			
	· La			

\* Not Averaged \*\* Weighted Courses

High School

Date:



Case Lamb
Mew York Hether School
16 South St
New York, IVY 10004
clower2@schools you gov
Levet: Secondary
Type: Post-Test

Test Date: 06/12/2012	ı	1	l	Total Control	ı		ı	
	TABLET - STEER NAME OF THE STEER - STEER - STEER	T (B)		100.00				
	Written - Cognitive	-		Septem			in	
in Asm			SHIP	-74	-	-	empty empty empty empty	papalig
2	Duty Description	7		16	10	290		
	Technical Bulls		42.2	50.4	50.4	62.6	Ī	-
3	Academic Foundations		10.0	69.2	69.2	65.6	i	+
*	Systems		75.0	192	79.2	7.87		N
+	Ethics and Legal Responsibilities	7	46.4	543	64.3	67.6	ľ	+
see	Communication		0.60	21.9	71.9	542		4.
9	Information Technology Applications		70.8	56.3	56.3	52.0		-
	Problem Solving Critical Thinking, and Decision-Making		83.3	72.0	72.9	68.30	Y	24
	Leadarship and Teanwork		643	75.0	75.0	74.4		54
8	Safety, Hautin, and Environmental		80.0	68.8	68.8	68.3		-
10	Englisysbilly and Cures Development		20.0	177	82.1	72.8	i	7
H	Natural Resources.		513	56.1	58.1	61.2		٠
	Total	2	64.2	95.8	45.6	583	46.1	-

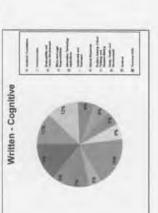
Written - Cognitive				
	ш	ш	П	II.

Clare Lorenz
New York Herbor School
16 South St
New York, NY 10004
clorenz3@schools nyz-gov

Level: Secondary Type: Post-Test

Group Score Report Site: New York Harbor School - 1445 Test Date: 08/12/2012

	Written - Cognitive	400	- 20	10	
# And	Daily Description	drick tolerable	named stated	Roberto Denn	
-	Technical Skills.	50.0	01.3	45.0	100
100	Academic Foundations	92.0	71.4	71.4	=
	Systems	63.3	1.99	66.7	4
*	Ethics and Legal Pespenalbilities	57.1	14.3	57.1	
10	Communication	85.7	60.03	78.6	
10	Infamilian Technology Applications	83.3	66.7	100.0	
1	Problem Solving, Critical Thinking, and Decision-Making	1000	7.50	63.3	
*	Leadership and Tesmagot	85.7	42.8	714	
0	Salety, Health, and Environmental	0.00	70.0	100.0	
10	Employability and Carnet Development	85.7	57.1	65.7	
38	Natural Resources	65.0	40.0	50.0	
	Total	4.70		1	П



Measuring What Matters!



Analysis of Scores site: New York Harbor School - 1445 Test Date: 04/11/2012

	Written - Cognitive								
# Alin			amp	-	me	1000	Calmented Section Co.	ments	med between
0	Duty Description	N.		16	10	280	Ī		
-	Perfectivit Dates	Ī	610	90.4	50.4	02.0		10.1	5.1
19	Academic Foundations	Г	169.7	69.2	89.2	65.6		16.9	10
*	Systems		100.0	79.2	70.2	787		20.7	6.9
4	Ethics and Legal Responsibilities	ı	65.7	64.3	64.3	67.6		18.3	0.1
in	Communication		12.50	21.8	71.0	04.2		16.8	6.3
10	Information Technology Applications		16.7	56.3	56.3	56.3		20.3	8,4
-	Problem School, Critical Trinking, and Decreion-Making	П	100.0	72.9	72.9	8.00	V	23.3	7.4
	Leadership and Trammork.		100.0	75.0	75.0	74.4		23.3	7.4
œ	Safety, Hsuith, and Environmental	Ī	75.0	68.8	66.6	68.3		16.8	5.3
0	Employability and Career Development	Ì	1000	82.1	62.1	72.8		22.0	7.0
=	Natural Residence.	П	0 09	58.1	50.1	61.2		15.8	5.0
П	Total	7	85.0	88.6	46.4	80.00	444.4	0.04	1

County data is excessibled and instituted for every assessment scients, and considers amongs and provised for must had achieve about .
Since rejects for pre-lates, pall state, and nearly instant and now in the Machine energies or consistent data. Amongs are reported at four inner lates and another consistent are reported at four inner about and a set another (Date and reside). Other and reside is a set of consistent and a set of a consistent and a set of consistent and a set of a consistent and a set of consistent and a set of a con

Cases Leseral herw York Herbor School 10 Bouth St New York, NY 10004 street/Schools reg Lavel: Secondary Type: Post-Test

Claim's Lotent New York Helbor School 10 South St New York, NY 10004 closest Classiffs for gard

Level: Secondary Type: Post-Test

	9 PERSON RESIDE	813	85.7	100.0	68.7	85.7	66.7	100.0	190.0	70.0	100.0	80.0	4.00
Group Score Keport Siles New York Habor School - 1445 Test Dale: Oblition 15 (Hatter) Fest Dale: Oblition 1226 yr Written - Cognitive:	Drift Description	Technical Skills	Arademie Foundations	Systems	Effect and Legal Responsibilities	Contranscation	Information Technology Applications	Problem Solving, Critical Therling, and Declaror-Maling	Leadenship and Teamwork.	Safety, Health, and Environmental	Eriplöyability and Career Developirsent	Wateral Responses	Total
Silar: New Test Date:	# Ang	-	Pa.	×	+	119	100	1			10	=	ı

3.4	11111	imi	11
6	5	10	
-	N	3	1
		5	

Measuring What Matters!



Analysis of Scores

Site: New York Harbor School - 1445 Test Date: 06/03/2013

Written - Cognitive		
94		

George data is unachaded and muintained for every lastescenter contact and considere everages are provided to most two enhancements. Soon superhis for provide the most two enhancements of soon superhis and which when the control of the control of

Clasts Lorents
New York Harbor School
10 South 38
Heer York, MY 19004
clarentS@echools ayr, gov

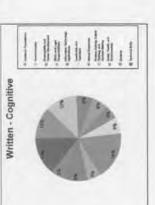
Level: Sacondary Type: Post-Test

Cases Lorent
New Yark Heather Sichool
10 South St
New York, NY 10004
clorent25@schools nyc. gov

Level: Secondary Type: Post-Test

Group Score Report
Sile: New York Harbor School - 1448
Test Date: 08/03/2013

at Astro	Whitten - Cognitive Out-Description	5 land meni-an	is year north	M puttol, savet	2 (step) Kinning	
4			18	813	50.0	
71	Academic Foundations	50.0	92.8	64.3	125	
11	Systems	50	50.0 100.0	10	83.5	
+	Ethics and Legal Responsibilities	100.0		71.4	71.4	
in	Communication	83	U 78.6	78.6	71.4	
10	Vidorinaties Technology Applications	50	50.0 33.3	83.3	9000	
+	Problem Selving, Critical Thirting, and Decision-Malding	60.3	3 687	66.7	633	100
ie	Leadership and Teamwork,	71.4	4 100.0	71.4	71.4	
	Salety, Health, and Environmential	70	0.04 0	50.0	80.0	
10	Employability and Ceram Development	12	714 65.7	57.1	85.7	
=	Natural Resources	55	55.6 70.0	70.0	0.00	
	Total	1 58.4	4 73.5	70.8	85.5	



Measuring What Matters!



Analysis of Scores Site: New York Harbor School - 1445 Test Date: 0522/2013

50 CO 60 CO 12 CO	702 729 668 672 673 673 673 673 673 673 673 673 673 673
200 10 10 10 10 10 10 10 10 10 10 10 10 1	7.2.2 5.2.3 5.2.0
20 00 00 00 00 00 00 00 00 00 00 00 00 0	O'ROUNE  O'R
	aman)
	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

Written - Cognitive
---------------------

Scoring data is exponsible and maintained for every sussessment sources, and considers everyges are provided for most that administrations. Store rejeats for previous, all of their, and ready releases that the form that and the form for a consideration or consequence and Averages are required. Store a region of a consequence are consideratively and object a consequence are consequenced from a region of the produced consequence and consequence and the consequence of the consequence of the consequence of the produced consequence and the consequence of the cons

Clinica Lorenza Palem York Hambor Schools 10 South St Jalem York, NY 1090A chemic 20mothodis vyc. gov

Level: Secondary Type: Post-Test



Came Lorent
New Yark Harbor School
TO South St
Mew York, NY 10004
citerat2@schools ryp., gov

Level: Secondary Type: Post-Test

Group Score Report Site: Naw York Harbor School - 1445 Text Date: 05/22/2013

		7	
- 11		g	
ш		9	
Ш	٩	g	
u	ŝ	9	
Ų	ŝ	9	
Į,	î	í	
,	í	9	
2	í	1	
2	1	2000	
23.3	9	2 1017	
013			
1013		ACTION DE	
2013		34316311340	
(2013			
02013			
2/2013		20100101	
2/2013			
22/25/13		A CONTRACTOR AND AND	
22/25/13		ACCOMPANIES IN	
723/2013		STATE STATE OF	
8/22/25/13		A 16 16 16 16 16 16 16 16 16 16 16 16 16	
5/22/25/13	0.00	A 16 16 16 16 16 16 16 16 16 16 16 16 16	
15/22/25/13	0.00	ACCORDANGED IN	
05/23/2013		ACCOUNTS 10 PM	
05/22/2013		ACCESSES 100	
05/22/2013	CO ALL PARTY OF THE PARTY OF TH	STATE STATE OF	
. 05/22/2013	G 4117 17 17 4	STORY STREET PA	
C. 05/23/2013	C 4	Stranger Park	
8: 05/22/2013	C 4 *** *** **	ACM 101 PM	
BC: 05/22/2013	C 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ACCESSES 100	
TBC: 05/22/2013	C 411111111	STATE STATE OF THE	
HR: 05/22/2013	2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	74.16.14.14.14.14.14.14.14.14.14.14.14.14.14.	
ate: 05/22/2013	C 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	505 EASTERN PA	
Jate: 05/22/2013	C 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	24 (10.3 (13.1 (23.1 PM)	
Date: 05/22/2013	C 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7038 EAST SALE PAGE	
Date: 05/22/2013	C 4	70.0 EUL FOL	
Date: 05/23/2013	C 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5010 SERVICE STATE PAGE	
Libate: 05/22/2013	C district of the Control of the Con	STATE STATE STATE AND AND ADDRESS OF THE PARTY	
d Date: 05/23/2013	C 4117 17 14	74 16 16 16 16 16 16 16 16 16 16 16 16 16	
at Date: 05/23/2013	G 4117 17 14	24 15 15 15 15 15 15 15 15 15 15 15 15 15	

A sneed ness	62.8	71.4	100.0	198.7	78.6	68.7	83.3	100.0	90.0	100.0	75.0	
produpe.							enti Destiton-Making			and the same of th		
Written - Cognility Duty Description	Technical Skills	Academic Foundations	Systems	Ethers and Legal Responsibilities	Communication	Information Technology Applications	Problem Solving Critical Thinking, a	Lpadership and Teremonik	Safery, Health, and Erverstmentin	Employability and Carner Developm	Natural Resources	
a find	-	74	*	*	10		+	10		10	=	l

Measuring What Matters!



Attalysis of Scores Site: New York Harbor School - 1445. Test Date: 05/29/2013

	Material Resources Bysterns - 1228 yr	stems.	1228 y1					
9.630	Written - Cognitive	9400	Hermons	100	***	America Secretarion Charleson	Missing Missing	ted harried by
u	Duly Desirtation	40	16	100	280			
L	Technisk Skills		50.4	50.4	62.6		+ 91	6.1
Po	Academic Foundations	P.10	69.2	69.2	85.6		16.0	5.3
	Systems	73.3		79.2	76.7		20.7	8.8
1	Ethins and Legal Responsibilities.	65.7		543	87.8		(9.2	1.3
in	Committoleabon	70.0	71.8	21.8	842		10.8	6.3
40	Information Technology Applications	1/四		55.3	8 65		20.3	6.4
1	Problem Sobing, Cifical Thinking and Decision-Making	0.00	72.9	72.9	86.8		23.3	7.4
-	Leadership and Teamwork	74.3	75.0	75.0	74.4		23.3	7.4
	Safety, Health, and Environmental	G.8.0		66.8	58.3		16.8	5.3
91	Employability and Career Development	828		121	72.8		22.0	7.0
#	National Resources	57.0	58.1	68.1	61.2		15.8	5.0
	Total	8 63	N. N.	45.8	88.3	48.1	12.0	4.1

				1
				-
tive	1			
ubo			ы	11.
-	ы	ш	ш	1
Written - Cognitive		П	П	ŀ
	П	П	П	ŀ
	П	Н	П	1
Netion	State	Sife	Group	E
2	10	671	0	ш

MOCE

Claire Lorenz Jeer York Herbor Schwil 19 South 28 New York, NY 10004 klarenz Bednesk rec gev

Claire Laterita
New York: Heitber School
10 Seath St
New York: NY 10004
clorers20[actions syc gev

Lavet: Secondary Type: Post-Test

Group Score Report Site: New York Harbor School - 1445 Test Date: 05/29/2013

Level: Secondary Type: Post-Test

649.6	gladhafi	62.5	dons	133	ptraticion	65.7	Information Technology Applications 55.0	Problem Bohling, Critical Thinking, and Decision-Making 86.7		nd Environmentals	Englisymbility and Cateer Development. 100:0	rt. 75.0	Total 743
W	Juty Description	Technical Skills	Academic Founded	sus	Ethics and Lagal Res	Communication	emation Techno	them Sawing, C	maching and Teams	Safety, Health, and Environment	ploysbility and o	Natural Resources	

	-	1	Nii Ni		ļi i	: !
Annual Control of the		4	1	2		

Measuring What Matters!

1/10

h1/50/:)

1/25/2014

Individualized Education Program (IEP) for

DRAFF

# INDIVIDUALIZED EDUCATION PROGRAM (IEP)

DISABILITY CLASSIFICATION: Speech or Language Impairment PROJECTED DATE OF ANNUAL REVIEW:04/29/2015 LOCAL ID #: PROJECTED DATE IEP IS TO BE IMPLEMENTED: STUDENT NAMES DATE OF BIRTH

STUDENT NAME:

NYC ID

# PRESENT LEVELS OF PERFORMANCE AND INDIVIDUAL NEEDS

DOCUMENTATION OF STUDENTS CURRENT PERFORMANCE AND ACADEMIC, DEVELOPMENTAL AND FUNCTIONAL NEEDS

EVALUATION RESULTS (INCLUDING FOR SCHOOL-AGE STUDENTS, PERFORMANCE ON STATE AND DISTRICT-WIDE ASSESSMENTS)

ELA REG JUNE 81

SPAN REG 50 GLOB HIST REG JUN 82

USHIST REG JUN 94

ALGEBRA REG JUN 83

GEOMETRY REG 68

GEOMETRY REG 70

IRIG REG JUNE 46 IV ENVIR REG JUN 83

CHEMISTRY R JUNE 52

ACADEMIC ACHIEVEMENT, FUNCTIONAL PERFORMANCE AND LEARNING CHARACTERISTICS

NTELLECTUAL FUNCTIONING, ADAPTIVE BEHAVIOR, EXPECTED RATE OF PROGRESS IN ACQUIRING SKILLS AND INFORMATION, AND EVELS OF KNOWLEDGE AND DEVELOPMENT IN SUBJECT AND SKILL AREAS INCLUDING ACTIVITIES OF DAILY LIVING, LEVEL OF EARNING STYLE:

evels of Knowledge and Development in Subject and Skills Areas:

has demonstrated the ability to meet all of his grade level will graduate in June 2014 with a Regents Diploma. He has met the college readiness standards in English and Math as per his over 80% continues to function independently. scores on the Regents Examinations. standards in his courses.

Level of Intellectual Functioning:

Ican meet all of his grade level standards in this course. His social difficulties prevent him from believing in his abilities and can hinder his output.

was slower due to his stubbornness. He continues to like to do things his way, even if there is a standard procedure. For example, with biological would bypass a is well poised to be in a science class in college. His foundation skills are strong. He learned a lot of higher levels skills that he can apply as quickly as the average student in some aspects, in other aspects he learned quicker because he could focus better and in other instances it lot of those steps despite the teacher telling him he is running health risks. He was able to control the parameters of his data, he was able to for critical thinking and research. His CTE teacher reports that he has given him a lot of one on one support. With that one on one safety hazard 2 students are required to disinfect their work areas, and then disinfect their materials before and after work. control well.

is an auditory and verbal.

STUDENT STRENG MS, PREFERENCES, INTERESTS:

s strengths are that he is focus oriented and will focus his energy on what he wants to get done. His ability to reason and think logically are more developed in his. He has a more logical way of thinking than most other students. Most other students are more interpersonal and intuitive. has a creative mind that is able to draw connections across media and disciplines. He can work well in pairs but prefers to work alone. He is more analytically and has a mathematical mind.

ACADEMIC, DEVELOPMENTAL AND FUNCTIONAL NEEDS OF THE STUDENT, INCLUDING CONSIDERATION OF STUDENT NEEDS THAT ARE OF CONCERN TO THE PARENT:

His CTE teacher is concerned that he wont get the services and expertise of someone who can deal with his weakness which is his stubbornness, is still struggling with dealing with failure. He needs an for the more chore type procedures in college classes. Another major concern is that environment with a lot of reinforcement and nurture.

### SOCIAL DEVELOPMENT

THE DEGREE (EXTENT) AND QUALITY OF THE STUDENT'S RELATIONSHIPS WITH PEERS AND ADULTS; FEELINGS ABOUT SELF; AND SOCIAL ADJUSTMENT TO SCHOOL AND COMMUNITY ENVIRONMENTS:

Is threshold for frustration is low. He needs to feel confident in his work. Opportunities to revise and specific feedback regarding expectations for his work or his participation are helpful. feels that he needs a nurturing environment that allow his outbursts to blend into the general atmosphere of the room. Often a kind ear is all His English teacher finds that their unique relationship allows him to function and maintain focus, though STUDENT STRENGTHS:

has trouble building from the ideas of others, and spend a great deal of time with him outside of class. We usually talk and share music in the moming and this has allowed so it is imperative that he trusts that he supports his ability to be open to critique. His Advanced Placement Literature and Composition teacher reflects, "Truthfully, I have worked to often affects confidence to mask his own insecurity, assuming a dictatorial misses social cues, but can be directed with gentle prompting. Forming a connection interacts well with a portion of the class. Personal relationships are particularly important to persona that allows him to participate without being subject to the ideas of others. In this way, him to trust in my teaching and seek my approval in his work." will not be judged before reasonable interaction can occur. as he becomes fixated on his own. In general, understand One of

social strengths are that his virtuous memory allows him to joke around a lot. He certainly references the things he has learned and SOCIAL DEVELOPMENT NEEDS OF THE STUDENT, INCLUDING CONSIDERATION OF STUDENT NEEDS THAT ARE OF CONCERN TO THE enjoys in his playfulness,

PHYSICAL DEVELOPMENT

PARENT:

THE DEGREE (EXTENT) AND QUALITY OF THE STUDENT'S MOTOR AND SENSORY DEVELOPMENT, HEALTH, VITALITY AND PHYSICAL

SKILLS OR LIMITATIONS WHICH PERTAIN TO THE LEARNING PROCESS:

Lontinues to go to Occupational Therapy. His adequate sensory and motor skills allow him to fully participate in school activities. STUDENT STRENGTHS:

appears to be in good health.

PLIYSICAL DEVELOPMENT NEEDS OF THE STUBENT, INCLUDING CONSIDERATION OF STUDENT NEEDS THAT ARE OF CONCERN TO

THE PARENT: None identified.

### MANAGEMENT NEEDS

THE NATURE (TYPE) AND DEGREE (EXTENT) TO WHICH ENVIRONMENTAL AND HUMAN OR MATERIAL RESOURCES ARE NEEDED TO ADDRESS NEEDS IDENTIFIED ABOVE:

Icontinues to require minimal intervention during instruction. He continues to be self-motivated and driven to succeed. He continues to need reminders not to speak out of turn and feedback when he says something inappropriate. Being able to relate on an conpathetic level to help build trust.

has a high standard for who he gives time to and being able to have common points of interest outside the classroom (cinema, historical jokes, sharing resources).

EFFECTIOF STUDENT NEEDS ON INVOLVEMENT AND PROGRESS IN THE GENERAL EDUCATION CURRICULUM OR, FOR A is making expected progress with the general education curriculum and will graduate from high school in June 2014. PRESCHOOL STUDENT, EFFECT OF STUDENT NEEDS ON PARTICIPATION IN APPROPRIATE ACTIVITES

STUDENT NAME:

NYC ID

## STUDENT NEEDS RELATING TO SPECIAL FACTORS

BASED ON THE IDENTIFICATION OF THE STUDENTS NEEDS, THE COMMITTEE MUST CONSIDER WHETHER THE STUDENT NEEDS A PARTICULAR DEVICE OR SERVICE TO ADDRESS THE SPECIAL FACTORS AS INDICATED BELOW, AND IF SO, THE APPROPRIATE SECTION OF THE IEP MUST IDENTIFY THE PARTICULAR DEVICE OR SERVICE(S) NEEDED:

Does the student need strategies, including positive behavioral interventions, supports and other strategies to address behaviors that impede the student's learning or that of others? Thes INo

Does the student need a behavioral intervention plan? S No Yes

For a student with limited English proficiency, does he need a special education service to address his language needs as they relate to the IEP? ☐ Yes ☐ No ☑ Not Applicable

language and communication needs, opportunities for direct communications with peers and professional personnel in the student's language and In the case of a student who is deaf or hard of hearing, does the student need a particular device or service in consideration of the student's Not Applicable communication mode, academic level, and full range of needs, including opportunities for direct instruction in the student's language and For a student who is blind or visually impaired, does he need instruction in Braille and the use of Braille? Ves No Does the student need a particular device or service to address his communication needs? 

Yes 
No

identify when periodic reports on the student's progress toward meeting the annual goals will be provided to the student's parents:

REPORTING PROGRESS TO PARENTS

STUDENT NAME:

NYC ID

ENCY  DURATION  VARIERE SERVICE SESSION  VARIERE SERVICE						
RELATED SERVICES:  SUPPLEMENTARY AIDS AND SERVICES/PROGRAM MODIFICATIONS/ACCOMMODATIONS:  SERVICES/PROGRAM MODIFICATIONS/ACCOMMODATIONS:  ASSISTIVE TECHNOLOGY DEVICES AND/OR SERVICES:  SUPPORTS FOR SCHOOL PERSONNEL ON BEHALF OF THE STUDENT:  ON BEHALF OF THE STUDENT:  STUDENT NAME:  T-MONTH SERVICE AND/OR PROGRAM - Student is eligible to receive special education services and/or program during July/August:  STUDENT NAME:  STUDENT NAME:  STUDENT SERVICE AND/OR PROGRAM - Student is eligible to receive special education program/services as recommended above.  STUDENT Will receive the following special education program/services.  STUDENT Will receive the following special education program/services.	SPECIAL EDUCATION PROGRAMISERVICES	SERVICE DELIVERY RECCIMMENDATIONS*		DURATION LENGTH OF SESSION	LOCATION WHERE SERVICE	PROJECTED BEGINNING / SERVICE DATE(S)
RELATED SERVICES:  SUPPLEMENTARY AIDS AND SERVICES/PROGRAM MODIFICATIONS/ACCOMMODATIONS:  ASSISTIVE TECHNOLOGY DEVICES AND/OR SERVICES:  SUPPORT'S FOR SCHOOL PERSONNEL  ON BEHALF OF THE STUDENT:  STUDENT NAME:  12-MONTH SERVICE AND/OR PROGRAM - Student is eligible to receive special education services and/or program during July/August: \[ \begin{array}{c} \text{NCIDENT} \text{Post:} \text{CLIDENT} \text{Post:} \text{CLIDENT} CLIDEN	SPECIAL EDUCATION PROGRAM:					
SUPPLEMENTARY AIDS AND SERVICES/PROGRAM MODIFICATIONS/ACCOMMODATIONS:  ASSISTIVE TECHNOLOGY DEVICES AND/OR SERVICES: SUPPORTS FOR SCHOOL PERSONNEL ON BEHALF OF THE STUDENT: ON BEHALF OF THE STUDENT: STUDENT NAME:  THE STUDENT NAME:  STUDENT NAME:	RELATED SERVICES:					
ASSISTIVE TECHNOLOGY DEVICES  AND/OR SERVICES:  SUPPORTS FOR SCHOOL PERSONNEL  ON BEHALF OF THE STUDENT:  Identify, if applicable, class size (maximum student-to-staff ratio), language if other than English, group or individual services, direct and/or ndirect consultant teacher services or other service delivery recommendations.  STUDENT NAME:  STUDENT NAME:  STUDENT NAME:  STUDENT NAME:  STUDENT NAME:  STUDENT NAME:  ON STUDENT NAME:  STUDENT NAME:  ON STUDENT NAME:  STUDENT NAME:  STUDENT NAME:  ON STUDENT NAME:  STUDENT NAME:  ON STUDENT NAME:  STUDENT NAME:  STUDENT NAME:  ON STUDENT NAME:  ON STUDENT NAME:  STUDENT NAME:  ON STUE	SUPPLEMENTARY AIDS AND SERVICES/PROGRAM MODIFICATIONS/ACCOMMODATIONS:					
SUPPORTS FOR SCHOOL PERSONNEL  ON BEHALF OF THE STUDENT:  Identify, if applicable, class size (maximum student-to-staff ratio), language if other than English, group or individual services, direct and/or ndirect consultant teacher services or other service delivery recommendations.  STUDENT NAME:  **NONTH SERVICE AND/OR PROGRAM - Student is eligible to receive special education services and/or program during July/August: \( \text{No} \) No figure (1) Yes:  \[ \text{Student will receive the same special education program/services} \]  Student will receive the following special education program/services:	ASSISTIVE TECHNOLOGY DEVICES AND/OR SERVICES:					
Identify, if applicable, class size (maximum student-to-staff ratio), language if other than English, group or individual services, direct and/or ndirect consultant teacher services or other service delivery recommendations.  STUDENT NAME:  NYC ID  12-MONTH SERVICE AND/OR PROGRAM - Student is eligible to receive special education services and/or program during July/August: \( \triangle \) No     Yes     Student will receive the same special education program/services as recommended above.  Student will receive the following special education program/services:	SUPPORTS FOR SCHOOL PERSONNEL ON BEHALF OF THE STUDENT:					
NYC ID  12-MONTH SERVICE AND/OR PROGRAM - Student is eligible to receive special education services and/or program during July/August: □ No	* Identify, if applicable, class size (maximun ndirect consultant teacher services or other	m student-to-staff ratio), la r service delivery recomme	nguage if other tha	n English, group or	r individual services, direc	t and/or
12-MONTH SERVICE AND/OR PROGRAM - Student is eligible to receive special education services and/or program during July/August: □ No Yes: □ Student will receive the same special education program/services as recommended above. □ Student will receive the following special education program/services: □ Student will receive the following special education program/services:	STUDENT NAME:				NYO	als
OR  Student will receive the following special education program/services:	12-MONTH SERVICE AND/OR PROGRAM  Yes  Yes:	- Student is eligible to rec	eive special educa	tion services and/o	or program during July/Au	gust: No
	OR Student will receive the following special	education program/servic	es:	DOVE.		Ī

PROJECTED **BEGINNING** / SERVICE DATE(S) LOCATION DURATION FREQUENCY RECOMMENDATIONS SERVICE DELIVERY PROGRAM/SEPVICES SPECIAL EDUCATION

Name of school/agency provider of services during July and August:

For a preschool student, reason(s) the child requires services during July and August;

STUDENT NAME:

NYC ID:

FOR NONDISABLED PRESCHOOL CHILDREN): INDIVIDUAL TESTING ACCOMMODATIONS, SPECIFIC TO THE STUDENT'S DISABILITY STING ACCOMMODATIONS (TO BE COMPLETED FOR PRESCHOOL CHILDREN ONLY IF THERE IS AN ASSESSMENT PROGRAM ADMINISTRATION OF DISTRICT-WIDE ASSESSMENTS OF STUDENT ACHIEVEMENT AND, IN ACCORDANCE WITH DEPARTMENT AND NEEDS, TO BE USED CONSISTENTLY BY THE STUDENT IN THE RECOMMENDED EDUCATIONAL PROGRAM AND IN THE POLICY, STATE ASSESSMENTS OF STUDENT ACHIEVEMENT.

IMPLEMENTATION RECOMMENDATIONS\*\* \*SNOITIGNOS TESTING ACCOMMODATIONS O NONE

\*Conditions — Test Characteristics: Describe the type, length, purpose of the test upon which the use of testing accommodations is conditioned,

\*\*Implementation Recommendations: Identify the amount of extended time, type of setting, etc., specific to the testing accommodations, if

STUDENT NAME:

NYC ID:

BEGINNING NOT LATER THAN THE FIRST IEP TO BE IN EFFECT WHEN THE STUDENT IS AGE 15 (AND AT A YOUNGER AGE, DETERMINED APPROPRIATE).

COORDINATED SET OF TRANSITION ACTIVITIES

NEEDED ACTIVITIES TO FACILITATE THE STUDENT'S MOVEMENT FROM SCHOOL TO

SCHOOL DISTRICT/AGENCY

POST-SCHOOL ACTIVITIES	SERVICE/ACTIVITY	RESPONSIBLE
Instruction		
Related Services		
Community Experiences		
Development of Employment and Other Post- school Adult Living Objectives		
Acquisition of Daily Living Skills (if applicable)		
Functional Vocational Assessment (if applicable)		
STUDENT NAME		NYC ID:
(7) DE COMPLETED FOR TRESCHOOL STUDENTS ONLY IF THERE IS AN ASSESSMENT PROGRAM FOR NONDISABLED PRESCHOOL STUDENTS)	PARTICIPATE IN STATE AND DISTRICT-WIDE ASSESSMENTS OUT STUDENTS ONLY IF THERE IS AN ASSESSMENT PROGRAI STUDENTS)	MENTS ROGRAM FOR NONDISABLED PRESCHOOL
The student will participate in the same State and district-wide assessments of student achievement that are administered to ge education students.  The student will participate in an alternate assessment on a particular State or district-wide assessment of student achievement	State and district-wide assessments of student achievement that are administered to general te assessment on a particular State or district-wide assessment of student orbits and achievement of student orbits and achievement.	evement that are administered to general

Individualized Education Program (IEP) for

# PARTICIPATION WITH STUDENTS WITHOUT DISABILITIES

STUDENT NAME:

NYC ID

REMOVAL FROM THE GENERAL EDUCATION ENVIRONMENT OCCURS ONLY WHEN THE NATURE OR SEVERITY OF THE DISABILITY IS SUCH THAT, EVEN WITH THE USE OF SUPPLEMENTARY AIDS AND SERVICES, EDUCATION CANNOT BE SATISFACTORILY ACHIEVED.

### FOR THE PRESCHOOL STUDENT:

Explain the extent, if any, to which the student will not participate in appropriate activities with age-appropriate nondisabled peers (e.g., percent of the school day and/or specify particular activities);

į,	•
t	=
4	Ę
×	:
٥	1
CTILIDENT	_
u	1
A CE	4
Ċ	2
7	r
	٠.
	٠.
	٠.
	٠.
	٠.
	٠.
COHOU	
COHOU	
COHOU	
THE SCHOOL	100000
COHOU	100000

Equal 19 (1) and 2 any, 20 (10) the standard will not purificate the plant and other nonacudomic activities (e.g., percent of the school day and/or specify particular activities):

If the student is not participating in a regular physical education program, identify the extent to which the student will participate in specially-designed instruction in physical education, including adapted physical education.

EXEMPTION FROM LANGUAGE OTHER THAN ENGLISH DIPLOMA REQUIREMENT:

Two O'Yes - The Committee has determined that the student's disability adversely affects his/her ability to learn a language and recommends the student be exempt from the language other than English requirement.

NYC ID:	TO HIS/HER DISABILITY			
STUDENT NAME:	SPECIAL TRANSPORTATION TRANSPORTATION RECOMMENDATION TO ADDRESS NEEDS OF THE STUDENT RELATING TO HIS/HER DISABILITY	☐ None. ☐ Student needs special transportation accommodations/services as follows:	Student needs transportation to and from special classes or programs at another site:	PLACEMENT RECOMMENDATION

STUDENT INFORMATION SUMMARY

Student Name: NYC ID: DOB:

Gender: Male

Parents Language(s) Spoken/Mode Communication: Spanish

Pate of IEP Meeting: 04/30/2014   IEP Amendment: □ Yes ②No   Reconverse of IEP Meeting: □ Yes ②No   INSTRUCTIONAL/FUNCTIONAL LEVELS   Reading:   SumMARY OF RECOMMENDATIONS   The Student of Digability: Speegl or Language Impairment   SumMARY OF RECOMMENDATIONS   The Student Services:   SumMARY OF RECOMMENDATIONS   Speegl or Language Impairment   Speegl or Language Impairment   Student Services:   Services:   Secondary Services:	IEP INFORMATION
INSTRUCTIONALFUNCTIONAL LEVELS	Date of IEP Meeting: 04/30/2014 IEP Amendment:   Yes  No Reconvene of IEP Meeting:  Yes  No
Classification of Disability: Speegy or Language Impairment  Recommended Services:  12-Month Services:  12-Month Services:  Does	ng:
Classification of Digability: Speegh or Language Impairment  Recommended Services:  12-Month Services:  Doeshave a Behavioral Intervention Plan? No Student needs specialized transportation  Recommended for Specialized Transportation: □ None □ Student needs specialized transportation  Medica! Alert: The student has □ nredical conditions and/or □ physical limitations which affect his □ learning. □ behavior and/or □ participation in school activities.  The student requires □ medical and/or □ health care treatment(s) or procedure(s) during the school day.  PROMOTION CRITERIA  CURRENT YEAR  Standard □  NEXT YEAR  Standard □  Modified  Modified  Parent Concerns:	SUMMARY OF RECOMMENDATIONS
Recommended Services:  12-Month Services:  Does Transportation: Once Ostudent needs specialized transportation  Recommended for Specialized Transportation: Once Ostudent needs specialized transportation  School Type:  Medical Atert: The student has Ornedical conditions and/or Ophysical limitations which affect his Operation activities.  The student requires Omedical and/or Operations and/or Ophysical limitations which affect his Operation and/or Operation activities.  The student requires Omedical and/or Operation care treatment(s) or procedure(s) during the school day.  PROMOTION CRITERIA  OURRENT YEAR  Ostangard Operation Oper	Classification of Digability: Speech or Language Impairment
School Type: Medical Atert: The student has Directical conditions and/or Diphysical limitations which affect his Dieaming, Diebhavior and/or Diphysical Atert: The student has Directical and/or Diphysical Diebhavior and/or Diphysical Diebhavior and/or Diebhavior an	Recommended Services: 12-Month Services:  Does have a Behavioral Intervention Plan? No Recommended for Specialized Transportation:
The student requires \( \triangle \t	School Type:  Medical Atent: The student has   Directical conditions and/or   physical limitations which affect his   learning,   behavior and/or   Directions in school activities
CURRENT YEAR  Standard   Modified  Stangard   Modified  Modified  Modified  Modified  Are nt Concerns:	The student requires \( \text{medical and/or } \equiver \) health care treatment(s) or procedure(s) during the school day.
	CURRENT YEAR
	□ Standard □
	Modified
☐ Standard ☐ Modified Parent Concerns:	
Parent Concerns:	□ Standard □ 🗼 Modified
	Parent Concerns:

Individualized Education Program (IEP) for

Reason(s) for Rejection:

STUDENT NAME:

**DATE OF IEP:** 04/30/2014

NYC ID

### ATTENDANCE PAGE

PLEASE NOTE THAT YOUR SIGNATURE REFLECTS YOUR PARTICIPATION AT THE CONFERENCE AND DOES NOT NECESSARILY INDICATE AGREEMENT WITH THE INDIVIDUALIZED EDUCATION PROGRAM.

ROLE (INDICATE IF BILINGUAL)

NAME

SIGNATURE

### MBRP: Industry and Post Secondary Partners

Partner	Synergy
Manhattan College	Articulation Agreement, PAC
SUNY Albany	12 College Credits for MBRP students
Roger Williams U.	Summer Internships in Marine Biology, PAC
ESRI	GIS Software, PAC
The Nature Conservancy	Internships, PAC
Wildlife Conservation Society	Internships
SeArc Inc	Mentorship, PD, PAC
Sea Savers Inc.	Mentorship, Professioanl Visits, PD, Vessel Access, PAC
NYCSEF	Science Symposia and access to scholarships
St Francis College	PD, equipment donations, PAC
Black Rock Forest Consortium	PD, virtual labs
EPA	Grants, PD
DOE	GIS PD, PAC
Cold Spring Harbor Lab	Molecular Biology Program, PD, Mentorship
Harlem River Park Task Force	Sampling sites, PAC
NYS DEC	PD
Hudson River Foundation	PD, PAC, Grants, Mentorships



Students explore careers at Con-Edison

## Sample Co-Op Opportunities

employ their knowledge and skills in real-world Students in the Cooperative Work Experience unpaid internships, a valuable opportunity to Program can apply for a variety of paid and accepting high school students as interns: careers. Below is a sample of programs

- Columbia University LEEFS Program
- The New York Aquarium
- The Nature Conservancy LEAF Program
- Staten Island Ferry
- South Street Seaport

**GMD** Shipyard

- Roger Williams Marine Bio Summer Camp
- Wildlife Conservation Society

### Contact Us

10 South Street, New York, NY 10004 Battery Maritime Building, Slip 7 New York Harbor School (212) 458-0800

info@newyorkharborschool.org

New York, NY 10004 10 South Street

Battery Maritime Building, Slip 7 York Harbor School

> www.newyorkharborschool.org Visit us on the web:

HEBE **GMATS DFACE** 



### Cooperative Experience -ducation [echnical Career & Program (CO-OP) Work



The Urban Assembly New York Harbor School

# What is Work-Based Learning?

Work-based learning (WBL) is the "umbrella" term used to identify activities which collaboratively engage employers and schools in providing structured learning experiences for students. These experiences focus on assisting students develop broad, transferable skills for postsecondary education and the workplace. A quality WBL program can make school-based learning more relevant by providing students with the opportunity to apply knowledge and skills learned in the classroom to real world situations.

## What is Co-Op?

The Cooperative Career & Technical Education Work Experience Program is a work-based learning program for students age 16 and above, consisting of 150 to 600 hours of paid, school-supervised work experience, supported by related in-school instruction in a specific career & technical discipline. Students may earn ½ to 2 units of credit towards a CTE sequence, depending upon the specific sequence.

# http://www.p12.nysed.gov/cte/wbl/



# Benefits to students

- Connects the knowledge and skills acquired in the classroom with relevant supervised work experience.
- Allows for the exploration of career paths
- Arms students with necessary abilities
  - \* 21st Century Skills
- \* Transferable Skills
- \* Workplace Skills
- Creates a workforce-ready citizen
- Increases computer and financial literacy
- Provides students with job seeking skills (completing job applications, developing a resume, writing cover letters, perform successfully during interviews, etc.)
- Connects the knowledge and skills acquired in the classroom with relevant supervised work experience



Student gains hands-on experience in a DNA lab



Secretary Arne Duncan visits New York Harbor School

# Benefits to the school

- Enriches curriculum
- Provides access to the latest equipment & technology
- Education becomes more relevant
- Promotes interaction with the business community
- Academic & Career and Technical Education curricula is up-to-date
- Increases student retention
- Educational Proficiencies are required by the business community

# Benefit to Employers

- Prepares future employees
- Develops a source of skilled and motivated personnel
- Reduces training costs
- Increases employer visibility
- Improves employee retention
- Communicates job-specific proficiencies

In this challenging college level course, you will begin by creating Aquatic Ecosystem Models (AEMs) to learn the basics. As an intermediate student you'll acquire college level reading, writing, and statistics skills while creating a project. As an advanced student, you will finish your research project in marine biology with the help of scientists and propose solutions to environmental problems. Earn up to 12 college credits and map-making SPACE certification.

# REQUIREMENTS

- \* Have enthusiasm for learning,
- \* Want to go to 4 yr. college,
- \* Want to care for the Earth,
- \* Want to develop team work + leadership,
- \* Have ambition,
- \* Be reliable, kind, + trustworthy.



## Contact:

# Mauricio Gonzalez



mgonzalez@newyorkharborschool.org

212.458.0800 ext. 1201 Room





Welcome to the Marine Biology Research Program. This program will introduce you to the following topics:

01. Zoology

02. Microbiology and Plankton

03. Aquatic Chemistry

04. Marine Ecology

05. Geographic Information Systems

06. Instrumentation

07. Remote Sensing

08. Marine Resource Management

09. Applied Statistics

10. Technical Reading and Writing

11. Environmental Justice



- taking the SPACE GIS certification exam, and the NOCTI Natural Resources Systems \* You can build up your resume and professional credentials by earning up to 12 college credits, exam,
- \* You will learn with hands-on experiential lessons using professional equipment in the lab and field,
- \* You will have access to research institutions and scientists from around the world,
- \* You will be able to participate in city-wide research competitions and compete for scholarships,
- \* You will learn in a safe, orderly, and bully-free environment.

### Instructor t h e A b o u



America for 7 years and specialized Mauricio Gonzalez studied Marine Biology in Colombia, South in coral reef ecology. He wrote a thesis book on coral reefs and fought to protect them along with marine turtles in the Caribbean. He

Last Name

Signature

because he felt he would be able to make more of a difference decided to become a teacher working alongside youth to conserve our planet. He has been teaching High School and Marine Research since 2001.

Information: Congratulations on being invited to apply to the Marine Biology Research Program! Please read the directions below and fill out all Information please give me more information. I am interested in the challenge, I'm not interested, thanks. Female Check One: Guardian the information neatly. Student Advisory/Grade First Name First Name Last Name e-mail Male ( Y B)

Return to Mauricio Gonzalez' mailbox or room 120.

Congratulations on being invited to the Harbor SEALS Program! Please read the directions below and fill out all the information neatly.

### Check all that apply:

- I'm interested in Tuesdays' SEALs Classes.
- [ ] Provinterested in Thursday's SEALs Classes
- A) Student Information:
  First Name
- Last Name ------

e-mail \_\_\_\_\_Advisory/Grade \_\_\_\_\_\_

Male ----- Female -----

B) Guardian Information: First Name

Last Name ......

Signature -----

Telephone

Return to Mauricio Gonzalez' mailbox or room 120.

## Contact:

# Mauricio Gonzalez



mgonzalez@newyorkharborschool.org

212.458.0800 ext. 1201 Room





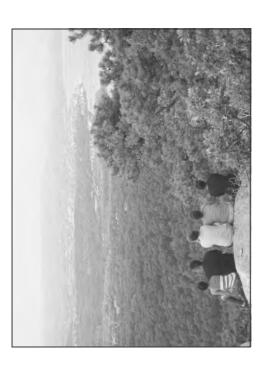




# New York Harbor SEALS

Welcome to the Harbor SEALs program at the NY Harbor School. The Harbor SEALS is an after school program dedicated to the scientific monitoring of the Sea, Air, and Land around the New York Harbor. This program is part of the has been designed for serious students who are physical fitness skills. The program will run on 5:45pm. The purpose of Seals is to give students an opportunity to complement their academic training with real scientific research and rigorously structured physical exercise to further strengthen their body, mind, and spirit. trips throughout the year including ocean fairs. Students can build their resumes and college CTE Marine Biology Research Program and highly interested in furthering their academic and Tuesdays and/or Thursdays from 4:00 to In addition, students will take part in many field sampling aboard school and other sea faring vessels, ecological studies near West Point, and professional development trips to College applications by joining the NY Harbor SEALs. Open Houses and Internship/Job





## REQUIREMENTS

- \* Have enthusiasm for learning
- \* Want to go to 4 yr. college
- \* Want to care for the Earth
- \* Want to develop team work + leadership
- \* Have ambition
- \* Be reliable + trustworthy



# WHYJOIN

- \* You will be recognized as a Citizen Scientist which you can add to your resume.
- \* You will learn with hands-on experiential lessons using professional equipment in the lab and field.
- \* You will embark on various field trips around the Hudson River Estuary.
- \* You will build your college application by being a part of our team. Colleges seriously look at your after school activities.
- \* You will have the option of learning martial arts to complement your academic education.
- \* You will learn in a safe, orderly, and bully-free environment.

# About the Instructor



Mauricio Gonzalez is a Marine Biologist and Research Educator. As an adjunct professor at SUNY Albany, he teaches college level research to students at the New York Harbor School. Mauricio has also studied Japanese Martial Arts since the year 2000. He holds a 3rd degree black belt in Kendo and a 2nd degree black belt in Aikido. He also studies Iaido and Jujutsu.

### Career and Technical Education New York State Education Department Approval Application for CTE Programs

Α	. Program Info	rmation		
School district or BOCES: <b>NEW YORK CITY DEPARTMENT</b>	OF EDUCATION			
Proposed school year start date: 2013 - 2014	Agend	cy code:		
Program name: Marine Biology Research Program		ode: <b>030205</b> www.p12.nysed.gov/cte/	ctepolicy/	
Program site(s): The Urban Assembly New York Harbor	School	· · · · ·		
Contact name: Mauricio Gonzalez	Conta	ct information to be pos	sted on SED's website (	(if different)
Contact address: <b>Battery Maritime Building</b> , <b>10 South St New York</b> , <b>NY 10004</b>		ct name: Edward Bied		
Contact phone: (212) 458-0800 ext. 1201	Conta	ct phone: (212) 458-0	1800	
Contact fax: (212) 458-0801	Conta	ct fax: <b>(212) 458-080</b>	)1	
Contact e-mail address: mgonzalez@nyharborschool.org	Conta	ct e-mail address: ebie	dermann@nyharbors	school.org
ů ,	B. Achievem		·	- J
What is the total projected enrollment?		f this total, what is the pecial education services		
Grade 9 <b>0</b> Grade 11 <b>21</b>	Grade	9 <b>O</b>	Grade 11 <b>2</b>	
Grade 10 <b>20</b> Grade 12 <b>13</b>	Grade	10 4	Grade 12 <b>2</b>	
Cumulative Total 54		lative Total 8		
	C. Conten			
3. List CTE and academic courses included in this program.		2 1.		
<ol> <li>How is the content of Career and Financial Management This one-half unit of instruction remains a required comp</li> </ol>		rams.	☐ Embedded 🖂	Stand-alone
5. Which <b>integrated</b> units of credit are you seeking approval for in this application?	glish Language Arts	Mathematics	Science	Social Studies
6. Which <b>specialized</b> units of credit are you seeking approval for in this application?	glish Language Arts	Mathematics	Science	Social Studies
7. How many units of credit will students earn for completing this program?	Integrated units	Specialized units	CTE units 3.5	Total units 3.5
8. For BOCES applicants: how have you communicated spe	ecialized units of credit	to the component distr	icts? N/A	
9. Has a learning standards curriculum crosswalk been completed for this program?	CDOS (3a and 3b – ☑ Yes □	-	e Academic 'es	National/State Skill  ☑ Yes ☐ No
10. For BOCES applicants: attach the name, school and cert schools who reviewed the academic content for each int				erent component
D. Work-based	Learning and	Employability P	rofile	
11. What types of work-based learning opportunities will be For clarification, see WBL manual at <a href="http://www.p12.ny">http://www.p12.ny</a>				
New York State Registered Programs		Other Work-based	Learning Experiences	
Cooperative CTE Work Experience Program (CO-OP)		te tours	Job sh	nadowing
Career Exploration Internship Program (CEIP)	Youth app	renticeships	On-site	e projects
General Education Work Experience Program (GEWEP)	(Health	d clinical experience Occupations)	Community :	service/learning
Work Experience and Career Exploration Program (WECEP)		mmer internships ☑		ain) Self-assessments, eer pans, etc
12. Has an employability profile model been developed for the	his program?			
⊠ Yes □ No, explain				

### Career and Technical Education New York State Education Department Approval Application for CTE Programs

	E. Tech	nical A	ssessment		
13.	What is the name of the technical assessment used in this prograthat are used. Show test reference numbers where appropriate.				sment, please list those
	What was the rationale for the selection of the above assessmen	its? End	orsed by industry and	post-secondary part	ners
14.	Provide name of vendor, agency or consortium that developed e of the technical assessment?	ach part	Written examination(s) Yes		
	Note: Consortium developed assessments are allowed only when technical examination exists in a particular field; the assessment include written examination(s) student project(s), and student demonstration(s) of technical skills. Students must pass all three	must	Student demonstration( Yes  Project(s) School based project		
	F. Articu	lation A	Agreements		
15.	Is a formal postsecondary articulation agreement in place?		⊠ Yes □ No		
16.	With what two- or four-year postsecondary institution(s) do you	have an a	rticulation agreement? <b>N</b>	lanhattan College	
17.	Attach a copy of the signed and dated articulation agreement(s) approval period. <b>Attached.</b>	showing t	that the agreement(s) is	currently in effect and v	vill be throughout the
18.	What are the benefits to the student?  College of State of the student?	credit	Advanced standing	Reduced tuition	Other, please specify
	G. Faculty and Ex	cternal	<b>Review Commit</b>	tee	
19.	Attach a list of all teachers in this program and a copy of the Newheld by each. See attached Table 2 along with licenses.	w York Sta	ate Education Departmen	t teacher certification(s)	), including extensions,
20.	Are the CTE teachers highly qualified according to NCLB standard	ds in the s	subject(s) for which acade	emic credit may be give	n? <b>N/A</b>
	☐ Yes ☐ No For clarification, see Field Memo NCLB NYS 03	3-2008 (Ju	ne) at www.p12.nysed.g	ov/nclb/guidance/memo	os/home.html.
21.	If no, is there a highly qualified core academic teacher on staff a delivery, and evaluation of content for each subject? <b>N/A</b> Yes No For clarification, see Field Memo NCLB NYS 03				
	res No rol claimcation, see rield weitho NCLB N13 03	5-2006 (JU	ille) at <u>www.p12.llyseu.g</u>	ov/ficib/guidarice/ffieriid	os/nome.num.
22.	What date did the External Review Committee meet? April 28 -	- 29, 201	4		
23.	Have the members of the External Review Committee approved credit listed in this application?  ☐ Yes ☐ No, explain	the acade	mic and CTE content of t	his program for the nur	nber and distribution of
24.	Attach a list showing title, position, affiliation and area of experti	se for eac	h External Review Comm	ittee member. See att	ached.
	H. Chief Administrator's	and Bo	ard President's Ce	ertification	
appl exar	reby certify that all components of the Career and Technical Educication by the State Education Department. I certify that data on minations or approved alternatives, technical assessments, and place available to the State Education Department upon request.	student p	progress and performance	to evaluate student su	ccess on Regents
Nam	ne <b>Edward Beidermann</b> Title Principal			Date	
Ū	ature of Chief Administrative Officer				
Nam	ne <b>Tom Pendleton</b> Title <u>Deputy Executive Director or Deputy Executive Di</u>	of the Off	ice for Post Secondary	<b>Readiness</b> Date	
Sign	ature of Board President:				

Career and Technical Education
2013-14 Application for Supplemental Funding
Carl D. Perkins Career and Technical Education Improvement Act IV (VTEA)

### PROGRAM INFORMATION WORKSHEET

Eligible CTE Program of Study from your school:

CTE Program of Study Name
Program STARS CIP Code
Projected Student Enrollment

Eligible CTE Program of Study from your school:

Water, Wetlands and Marine Resource Management

030205

145

Please follow the 2013-14 VTEA/WBL Application Guidelines for comprehensive instructions to complete the application below. The NYCDOE will use the State Performance Indicators along with the Annual School Quality Review, the Progress Report and compliance with applicable requirements to annually evaluate a school's performance and ongoing eligibility for VTEA funding.

1. Program Objectives: Use the drop down menus to identify up to four CTE program elements you plan to priotize for improvement in this CTE program of study next year. Objectives and activities should be consistent with areas of development you and your team have identified as part of the school's CTE improvement planning - during the self study, as part of the program approval application and/or review proces, etc. They should be consistent with priorities articulated in your program updated submitted this Fall.

Curriculum and Instruction
Significant equipment or facility upgrades
Professional Development
Work-Based Learning

2. Program Activities: Use the drop down menu to Identify up to five Mandated Activities that you will prioritize and engage in to strengthen the CTE program, and that will advance efforts toward the objectives above. Objectives and activities should be aligned with expected outcomes.

Develop, improve, or expand students' use of industry-current technology in CTE.

Provide CTE faculty and staff professional development to stay current with industry standards.

3 Provide students with work-based learning experiences that expose students to all aspects of the an industry.

Strengthen students' academic and CTE skills through curricular integration.

5 Gather and use program data to evaluate you program and assure that it's meeting the needs of special populations.

3. Expected Outcomes: Identify up to five measurable outcomes or deliverables consistent with the objectives and activities above and for which you will be accountable. You should customize and include only as appropriate and relevant to your Program of Study and identify the type of assessment tool that will be used. (See the "VTEA Guidelines" worksheet. Please also refer to the VTEA/WBL Application Guidelines for more information.)

Tip: When writing in the narrative boxes, press "Alt+Enter" simultaneously to make a line break in the cell.

### **Expected Outcomes**

1 95% of program completers will be prepared to take and pass the associated CTE exam.
2 85% of program completers will pass NY state regents necessary to graduate high school.

100% of program participants eligible to graduate will have the opportunity to participate in a WBL internship

85% of program completers will complete all necessary graduation requirements

10% of program completers will receive college credit

**4. Allocation of Funds:** How will you allocate your VTEA funds to undertake the activities above and to strengthen the CTE program elements you have prioritized in the Program Objectives section? Give us a *general sense* of your anticipated plans by selecting from the categories in the first column, projecting a percentage of your funds in column 2 and briefly describing your intent (1 sentence only). The percentages should total 100%. **Note:** Only select categories applicable to your plans for this program, you do not need to project percentages for all categories. You will have to formalize and adjust these projections in the actual budget application in Phase 2 in April in light of the school-wide allocation.

Allocation Categories
Instructional Supplies (including curriculum & assessment items)
Equipment and/or furniture with unit cost <\$5000 (including computers and associated items)
Curriculum/PD Professional Services

Percent of Allocation
60%
15%
10%

Intent
Purchase Geographic Information Systems curriculum and assessment items
Sonde Maintenance
Primer/permanova and ArcGIS Training

Travel for Teachers		5%	ArcGIS conference
Software		5%	Permanova statistics 10 licenses
Student stipends (internships)		5%	Student lab technician
	†		
Percent of Tota	I Allocation	100.00%	



### Marine Biology Research Program

### **Final Assessment Specifics**

The Marine Biology Research Program's technical assessment is broken up into 2 main parts, 01) the theoretical and 02) the practical (Table 01). The theoretical component is evaluated with the NOCTI Natural Resources Systems instrument (<a href="http://www.nocti.org/PDFs/JobReady/1228\_Natural\_Resource\_Systems.pdf">http://www.nocti.org/PDFs/JobReady/1228\_Natural\_Resource\_Systems.pdf</a>) for all students. The practical component is evaluated in two separate ways depending on the path that students take in the program. The first path (Path A) evaluates students who are proficient in map making skills. This path is evaluated with the SPACE instrument developed by Digital Quest (<a href="http://www.digitalquest.com/space.html">http://www.digitalquest.com/space.html</a>). The SPACE assessment requires the student to generate a map for a special project towards the end of the senior year in addition to evaluating map making skills through the software program ArcGIS (ESRI 2014). Students also generate a final report, poster board/digital presentation, and present at the New York Harbor School Symposium.

The second path (Path B) evaluates students who have been working with a scientist mentor for two years on an independent research project. The practical component of this path is evaluated with a series of deliverables including: 01) a professionally written scientific report, 02) a professional poster board, 03) and the professional presentation by the student in at least three venues such as the New York City Science and Engineering Fair, a college poster sessions at post-secondary partner sites (*e.g.* Manhattan College), and research conferences (Table 01). These deliverables are a type of summative assessment of 2 years of compiled work in the program.

In both the SPACE and the Independent Research Project practical assessments, post-secondary level personnel evaluate the instruments and deliverables. The reasoning behind splitting the practical assessment in this fashion is to be able to differentiate between those students who are ready for the college credit from those that are ready for map making by the end of the three year program.



 Table 01. Marine Biology Research Program Final Assessment Specifics

Theoretical Assessment	Practical A	Assessment
NOCTI NATURAL RESOURCES SYSTEMS	Path A) Map Making  01. SPACE Instrument 02. Final GIS Project Research Report 03. Final GIS Project Poster Board/Digital Presentation 04. Presentation of GIS final project at NYHS symposium	Path B) Independent Research  01. Research Report 02. Research Poster Board/Digital Presentation 03. Presentation of final project at NYHS symposium 04. Presentation in two additional professional venues 05. College Credit
All students take this	Only Students completing the map making path	Only students completing the independent research project path with a scientist mentor

### HIGH SCHOOL External Review Visit Date Name of Program(s)

Copies of the following documents will be collected by the review team if they were not submitted prior to the visit.

These documents may be in paper or electronic (disc) form.	<ul> <li>STARS printout of course sequence</li> <li>Crosswalks with NYSED Core Academic and CDOS Standards for each course in the sequence.</li> <li>Samples of school's Work Skills Employability Profile (student ID redacted)</li> <li>Copy of the signed and dated articulation agreement(s) showing that the agreement(s) is currently in effect and will be throughout the 5 year approval period. *</li> <li>Copy of the New York State Education Department teacher certification(s), including extensions, held by all teachers in this program *</li> <li>WBL coordinator's extension certificate. *</li> </ul>
	* If any of these items are not in effect then copies of the written paper trail showing progress toward completion is needed.

The following documents should be available for review by the CTE Team during the visit

	the dvalidable for review by the ore realin during the visit
Curriculum and Instruction	<ul> <li>Curriculum guide or map for each of the courses in the sequence.</li> <li>Letters from industry endorsing this curriculum sequence as meeting industry standards in this career area.</li> <li>Sample(s) of materials used to share program objectives with parents.</li> <li>Some examples of special needs modifications used by instructors. Explanation regarding the support of special needs students</li> </ul>
WBL	<ul> <li>Sample list of class trips and speakers.</li> <li>Samples of several student evaluations from industry or evaluation rubrics used to evaluate students in WBL internships.</li> <li>Samples of Internship Orientation material for students and employers.</li> <li>Sample student training plans</li> </ul>

Assessment and Accountability	<ul> <li>Letter from an industry partner(s) confirming that they have reviewed the technical assessment and recognize it as a valid instrument in evaluating students' technical knowledge and skills in this industry.</li> <li>Data on current student assessments.</li> <li>Sample student portfolios</li> <li>Examples of analysis of patterns and trends in student achievement.</li> <li>Meeting minutes which illustrate the review of by the self-study team to determine the program achievements thus far as evidence of its effectiveness. (bookmark, highlight or underline relevant passages)</li> <li>Examples of the record of each student's progress thru the curriculum as maintained in FAA database.</li> <li>The most recent FAA Norm report as it applies to Aviation HS</li> </ul>
Partnerships	<ul> <li>Sample partnership agreement(s)</li> <li>A list of partners for this program and a brief description of what they provide.</li> <li>Self-study minutes or any documentation (e.g., emails or sign-in sheets) on how the partners have engaged with the school. (bookmark, highlight or underline relevant passages)</li> <li>A copy or appropriate excerpts from the last FAA review of the program.</li> </ul>
School Capacity	<ul> <li>List of Professional Development experience developed with post-secondary and industry partners.</li> <li>Samples of guidance bulletins, presentations and materials used to help keep students informed regarding career opportunities and postsecondary planning.</li> </ul>

New York Harbor School - CTE External Review Schedule, April 28 and 29, 2014 (1404250103v)

			MONDAY - APRIL 28				TUESDAY - APRIL 29
start	end	room	Event	start	end	room	Event
8:45	9:30	120	Opening Comments	8:45	9:30	MAST	Curriculum and Assessments and Documents Review: AQ & VO
9:30	9:50	120	10th Classroom Visits	9:30	10:00	MAST	MAST 10th Classroom Visits
9:50	10:40	114	MST and VO: Students Meeting	10:00	10:40	114	MBRP Students Meeting (SHUTTLE)
10:40	11:30	114	Curriculum and Assessments and Documents Review: MBRP & Conversation with Partners Ed Sherman (MST, Phone: 401-398-0711) Tony Dilemia (MST/VO/OE, phone: 718-368-5525)	10:40	11:30	114	Conversation with Partners: Brigitte Griswold (MBRP & All Programs, phone: 917-620-2006) Michael Judge (MBRP) Jim Hall (MBRP) Dave LaShell (MBRP) Chester Zarnoch (AQ)
11:30	12:00	211 216	Meet with Guidance Staff	11:30	12:15	100	Meeting with CTE Teachers & Steve Conversation with Partners: Steve Malinowski (AQ, phone @ 11:40 631-788-7889) Dale Leavitt (AQ, phone 11:15 - 1:30)
12:00	12:30	106	WBL Conversation (Admin., CTE Dept.)	12:15	12:45	106	Working Lunch
12:30	1:00	MAST	Working Lunch (SHUTTLE)	1:00	1:40	114	AQ Students Meeting
1:00	1:40	MAST 106 120	12 Grade Classroom Visits (SHUTTLE)	1:40	2:20	MAST 106 120	11 Grade Classroom Visits (SHUTTLE) & Conversation with Partners: Jim DeSimone (MST/VO)
1:40	2:20	114	Conversation with Partners: Steve Mitchell (MST) Dave Gerr (MST)	2:20	3:00	MAST 106 Field 120	11 Grade Classroom Visits (SHUTTLE), MBRP students at Pier 101 unless rain, then rm. 120
2:20	3:30	114	Curriculum and Assessments and Documents Review: MST	3:00	3:30	114	Internal DOE CTE meeting
3:30	3:45	106	Initial Feedback (CTE Dept.)	3:30	4:00	114	Exit Meeting and Follow-up Steps



OFFICE OF SCHOOL OPERATIONS
CAREER AND TECHNICAL EDUCATION TEAM
89 WASHINGTON AVENUE, ROOM 315 EB
ALBANY, NEW YORK 12234
(518) 486-1547; FAX: (518) 402-5114
http://www.p12.nysed.gov/cte/

June 24, 2014

Mr. Tom Pendleton
Deputy Executive Director
Career & Work Readiness
Office of Postsecondary Readiness
New York City Department of Education
52 Chambers Street, Room 210
New York, New York 10007

Dear Mr. Pendleton:

The career and technical education (CTE) program approval forms submitted on behalf of the Urban Assembly New York Harbor High School have been approved. Congratulations on the successful completion of the career and technical education program approval process for Marine Biology Research Program, Classification of Instructional Programs (CIP) code, 03.0205. No specialized/integrated academics were requested.

Approval to begin program implementation is granted for the 2013-14 school year. This program approval remains in effect until June 30, 2018. Technical endorsements may be added to the diplomas of students completing this program beginning with the graduating class of 2014.

The Department should be informed of any significant modifications (e.g., changes in technical assessment, teacher, or program content) of this approved program. Staff are available for consultation should you require technical assistance (please refer to your SED program number, 01265). You will be notified if your program is selected for a site visit in the future.

My staff and I hope that the process was a rewarding one for all who participated. We are confident that the program approval process continues to make positive contributions to the value and quality of career and technical education in New York State.

We look forward to sharing information about the achievements of your approved program with others. Best wishes for successful implementation of your program.

Sincerely,

Eric F. Suhr

Evi F. Sulm

Team Leader