MARINE ACADEMY OF TECHNOLOGY AND ENVIRONMENTAL SCIENCE

Guidance Department Handbook
2024-2025

195 CEDAR BRIDGE ROAD
MANAHAWKIN, NJ 08050

OCVTS
OCEAN COUNTY VOCATIONAL TECHNICAL SCHOOL
Life's a Journey...Better Get Good Directions

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MATES STAFF

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Counselors
Kate Beacham
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School Nurse
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Christopher Holland

Spanish
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Ruth Wolf

Art
Melissa Hood

Health/PE
Brian Coen
Melissa Galea

Table of Contents

Affirmative Action

It is the policy of the Board of Education of Ocean County Technical School District not to discriminate in its technical programs, vocational opportunities, activities, employment practices or admission policies and practices on the basis of race, color, creed, religion, sex, ancestry, national origin, affectional and sexual orientation, disability or social or economic status. Lack of English language skills will not be a deterrent to admission to any program at the Ocean County Vocational Technical School District.

The Affirmative Action Policy, Comprehensive Equity Plan, and grievance procedures are located in the main office of the Ocean County Vocational Technical School Board of Education and in the main office of each school within the district.

Affirmative Action Grievance Procedure

Inquiries regarding affirmative action, discrimination (including Federal Title IX requirements), sexual harassment, or equity should be directed to:

Dr. Michael Maschi, Affirmative Action Officer
732-240-6414

Mission Statement

The mission of the Marine Academy of Technology and Environmental Science (MATES) is to provide an opportunity to students in Ocean County to become critical thinkers and problem solvers. Students of this academy will participate in an intimate, integrated, and challenging curriculum with a focus on marine and environmental science. MATES will empower its students with skills important to post-secondary study and employment in a global community.

The mission of the Ocean County Vocational Technical School system is to prepare students for job placement or further education leading to successful employment.

We develop partnerships with affiliated schools, parents, business, industry, and community agencies to create and deliver opportunities for students to participate in quality occupational programs and support services. These programs and services are designed to meet the needs of high school students and adult learners, as well as the requirements of employers, colleges, technical schools and the community. All students will achieve the New Jersey Core Curriculum Content Standards at all grade levels.

Counselor Contact Information

Mrs. Kate Beacham
kbeacham@mail.ocvts.org
609-978-8439 ext. 4013

Mrs. Julia Giglio-Stork
Jgiglio-stork@mail.ocvts.org
609-978-8439 ext. 4019

What is the role of a School Counselor?

As per guidelines set forth by the American School Counselor Association (ASCA):

High school years are full of growth, promise, excitement, frustration, disappointment and hope. It is the time when students begin to discover what the future holds for them. High school counselors have an impact on these years by implementing a comprehensive school counseling program and collaborating with school staff, parents and the community to create a safe and respectful learning environment. High school counselors enhance the learning process and promote academic, career and social/emotional development. High school counseling programs are essential for students to achieve optimal personal growth, acquire positive social skills and values, set informed career goals and realize their full academic potential to become productive, contributing members of the world community.

School counselors do not provide therapy or long-term counseling in schools; however, school counselors are prepared to recognize and respond to student mental health needs and to assist students and families seeking resources.

High school counselors hold a master's degree and required state certification in school counseling. Maintaining certification includes ongoing professional development to stay current with educational reform and challenges facing today's students. Professional association membership enhances the school counselor's knowledge and effectiveness.

School counselors help all students:

- plan for post-secondary options (higher education, military, work force)
- apply academic achievement strategies
- manage emotions and apply interpersonal skills

Appropriate duties include providing:

- individual student academic planning and goal setting
- short-term counseling to students, as needed
- referrals for long-term support
- collaboration with families/teachers/administrators/community for student success
- advocacy for students at individual education plan meetings and other student-focused meetings
- data analysis to identify student issues, needs, and challenges

Some reasons you may want to see your counselor:

- Experiencing academic difficulty
- Personal problems that may impact academic performance
- To obtain assistance with the college search/application/admissions process
- To obtain information on scholarship, financial aid, and volunteer opportunities
- To explore career options
- To discuss post-secondary plans: college, work, military
- To help improve communication skills with teachers and parents

Confidentiality

Everything you tell your counselor will remain confidential **unless**:

- You or someone else is in danger of being hurt.
- There is a medical emergency.
- You have a conflict in a class that can be easily resolved by speaking to the teacher.
- You grant us permission to discuss with someone else.

In summary, details of what is discussed will only be shared if your or someone else's wellbeing is at risk, or you grant us permission to discuss with another person. Your counselors care about earning your trust and are ethically bound to proceed in this manner.

HIB: Harassment, Intimidation, Bullying

A safe and civil environment in school is necessary for students to learn and achieve high academic standards. Harassment, intimidation, or bullying is conduct that disrupts both a student's ability to learn and a school's ability to educate tis students in a safe environment.

No student should feel uncomfortable or unsafe at school. We encourage students and parents to contact their counselors or administration to report possible HIB violations. Students may also utilize the anonymous reporting box located in the counseling wing, next to the copy machine.

Please note that as per state law, an investigation must take place in certain situations. Both MATES counselors fulfill the roles of Anti-Bullying Specialists (ABS) for our school. The role of the ABS is to objectively record the perspectives of all parties involved in an investigation in order to determine if a situation is considered a HIB violation, as defined by state law. Follow up counseling support may be provided to the parties involved, as deemed necessary. The counselors are never involved in disciplinary decisions that may result from an investigation.

College/Career Planning

College/career planning is an integral part of each student's high school experience. It is a collaborative process, involving all MATES staff, that begins in freshman year and continues through senior year, with increased focus on the college process beginning in spring of junior year.

In the spring of junior year, counselors will meet with students individually for their official college meetings. At that time, families will receive a comprehensive college process guide to assist with planning. Traditionally, meetings are on a one-on-one basis between the student and counselor; however, parents may participate via conference call, if requested. Furthermore, follow up questions are welcomed at any time by email or phone.

Services for Students with Disabilities (SSD)

Students who receive accommodations or modifications in accordance with an Individualized Education Program or 504 Plan do not automatically qualify for these services on all standardized tests. If you would like to pursue a request for accommodations on College Board assessments (PSAT, SAT, SAT subject tests, AP exams) or the ACT, please contact MATES SSD Coordinator, Mrs. Beacham. The approval

process may span several weeks, so please plan accordingly. Additionally, you may be required to supply additional documentation at the request of College Board or ACT.

Student Timelines

Freshman Year:

Fall:

- ✓ During your individual meetings with your counselor, discuss your adjustment to MATES, previous summer activities, and any academic or career plans.
- ✓ Get involved in extracurricular, volunteer, and community activities.
- ✓ Freshmen will automatically be registered for the Preliminary Scholastic Aptitude Test (PSAT), which will take place in October at MATES.
- ✓ After your counselor has registered you for the Naviance College Search Program, familiarize yourself with the program.

Spring:

- ✓ Track your grades in order to assess your academic progress. Seek help from teachers, peers, or your counselor, if necessary. Peer tutoring can be arranged by your counselor.
- ✓ Start brainstorming your summer plans, such as summer programs, vacation, volunteer work, Jumpstart, etc.

NOTE: The most important thing you can do in your freshman year is to get involved in the MATES community, begin creating relationships with your peers and the MATES staff, and focus on maintaining your grades.

Sophomore Year:

Fall:

- ✓ Meet with college admissions representatives who will begin visiting MATES this month and continue through the fall. Some visits may be virtual, as determined by the representative.
- ✓ PSAT-NMSQT will be administered in October at MATES. Sophomores will be automatically registered.
- ✓ Once your PSAT score are received in December, note your areas of strength and where you may need improvement.
- ✓ Sign up for clubs at the club fair. Continue extracurricular involvement and seek leadership opportunities.

January – March:

- ✓ Plan a meaningful summer activity by volunteering in a community service agency or hospital, taking a summer course, finding a job, playing a summer sport, or being involved in other meaningful activities.
- ✓ Refer to Mrs. Beacham's Summer Experience list, which is emailed to you in January and updated periodically through the remainder of the school year.

May – August:

- ✓ Continue to familiarize yourself with Naviance and its tools.
- ✓ Talk to your parents about colleges/careers that interest you.
- ✓ Take the career inventory quiz on Naviance if you need help deciding a career path.

- ✓ Start visiting colleges. Schedule a guided tour or attend an open house. Try to gain a general impression of the college including the overall environment of the campus, quality of classrooms, student center, career planning and placement office, residential facilities, etc. Review the student handbook regarding college visit policies.

Junior Year:

Summer:
- ✓ Begin visiting colleges if you have not already done so. Attend an open house or schedule a campus tour.
- ✓ Participate in a meaningful extracurricular activity, volunteer, find a summer job, etc.
- ✓ Begin researching your colleges of interest's current dual enrollment credit policies in order to make informed decisions for the upcoming year.

September:
- ✓ Meet with college admissions representatives who will begin visiting MATES this month and continue through the fall. Some visits will be virtual, at the discretion of the representative.

October:
- ✓ You will automatically be registered for the PSAT-NMSQT, which will take place this month at MATES. This is the year your scores may qualify you for scholarships.
- ✓ Attend a college fair in your area.
- ✓ Begin preliminary college discussions with your parents.
- ✓ Begin familiarizing yourself with Naviance and its features, if you have not already done so.

November:
- ✓ Continue to strive for academic achievement. This is a very important year because it is the last full year of grades colleges will see when making admission decisions.
- ✓ Develop further in-depth extracurricular activities and leadership positions.
- ✓ Begin reviewing college websites and their admission requirements.

December:
- ✓ Your PSAT scores will become available to you.
- ✓ Review your scores and consider an SAT prep course, if appropriate.
- ✓ Consider registering for an SAT administration in the next few months.

January - February:
- ✓ Continue researching colleges and building a preliminary list of prospective colleges. Add these colleges to your "Colleges I'm Thinking About" list on Naviance.
- ✓ Begin looking into a meaningful summer activity (e.g. internship, college course, job).
- ✓ Develop a college finance plan with your parents.
- ✓ Consider signing up for an ACT administration to take over the next few months.

March-April:
- ✓ Continue visiting colleges. Include a variety of schools ranging in size, selectivity, location, and characteristics. Apply how you feel about these environments to schools you may not be able to visit.
- ✓ Continue working hard to maintain your grades.
- ✓ Sign up for an SAT administration to take near the end of this school year.
- ✓ Visit colleges over spring break.

- ✓ Work on your brag sheets that were emailed and prepare a list of questions you may want to ask your counselor at your college meeting this spring.

May:
- ✓ Brainstorm which teachers you may ask for letters of recommendation. Refer to the guidelines in the packet emailed earlier in spring.
- ✓ Research sources of scholarships and procedures for applying, beyond what is offered through MATES and your home school's guidance department.
- ✓ Begin to narrow your college choices while continuing your visits.
- ✓ Begin to move colleges you plan to apply to your "Colleges I'm Applying To" list on Naviance.
- ✓ Sign up for an SAT administration to take at the end of the school year and/or August. It is ideal to try to complete all testing before senior year begins.

June:
- ✓ Once your counselor instructs you to do so, ask two teachers who know you well for letters of recommendation. Have them sign the request forms and return them to your counselor.

July-August:
- ✓ Organize records of grades, extracurricular activities, honors, awards, and standardized test scores.
- ✓ Continue fine-tuning your resume.
- ✓ Continue college visits, especially in late August after students return to campus.
- ✓ Create a Common Application account on commonapp.org AFTER August 1.
- ✓ Work on your college essays and supplemental essays.

Senior Year:

Summer:
- ✓ Consider the August SAT administration.
- ✓ Begin working on your Common Application after August 1.
- ✓ Continue adding colleges to your "Colleges I'm thinking about" section on Naviance.

September:
- ✓ Update your Naviance list of colleges by moving your intended applications from "Colleges I'm thinking about" to "Colleges I'm applying to".
- ✓ Register for fall administrations of college entrance exams, if necessary. Be mindful to leave enough time before admission deadlines to be able to test, receive, and send your scores.
- ✓ Waive your FERPA rights on your Common App.
- ✓ Match your Common App and Naviance account.
- ✓ Request your letters of recommendation on Naviance, if you have not already done so.
- ✓ Email your recommenders to remind them of your college deadlines.
- ✓ Request your transcripts on Naviance AND using a paper request form, located outside the counseling wing.
- ✓ Complete the CSS profile.

October:
- ✓ Begin completing your college applications.
- ✓ Complete the FAFSA by visiting FAFSA.gov.

- ✓ Send your ACT or SAT scores directly from their websites to the colleges to which you are applying. Allow up to 6 weeks for them to be sent during high peak application time. They are not printed on your transcript.
- ✓ Continue meeting with college admission representatives visiting MATES. These are often the same people who are reviewing your applications, so it is very beneficial to meet them in person and introduce yourself. It also helps demonstrate your interest in that college.
- ✓ Check your Naviance account to see if your letters of recommendation were uploaded by your selected teachers. Follow up with your recommenders if your letters have not yet been uploaded.

November:
- ✓ Continue visiting colleges and consider overnight visits at those to which you are seriously considering applying.
- ✓ Maintain your grades and extracurricular activities.

January – March:
- ✓ Continue monitoring the scholarship tab on your Naviance account. At this point in time, new scholarship opportunities are added almost every day.
- ✓ Contact your home school's guidance department to request access to their scholarship offerings for which you may be eligible.

April:
- ✓ Meet with your counselor if you need assistance deciding to which college you should commit.
- ✓ Update your Naviance account by setting your attending school once you make a decision.

May:
- ✓ Notify your counselor of which school you have chosen.
- ✓ It is customary to send thank you notes to teachers who wrote your recommendations.
- ✓ If you are waitlisted at your first-choice school, develop a strategy with your counselor to remain a viable candidate.

June:
- ✓ All students are encouraged to attend Awards Night.
- ✓ Send thank you notes to the scholarship committees that selected you to receive monetary awards.
- ✓ Enjoy your accomplishments by participating in the end-of-the-year activities.

Credit Structure

High schools in New Jersey may meet the state graduation requirements in whole or part in the following ways. District Boards of Education may determine and establish curricular activities/programs used in achieving the Core Curriculum Content Standards (CCCS) for promotion and graduation purposes. Curricular activities and programs may involve in-depth experiences linked to the CCCS, and interdisciplinary or theme-based programs, independent study, co-curricular or extra-curricular activities, student exchange programs, distance learning opportunities, internships, community service, or other structural learning experiences. District Boards of Education may utilize performance or assessment to approve student completion of progress and meeting /exceeding the CCCS, including those occurring all or in part, prior to a student's high school enrollment. Boards of Education may also recognize successful completion of an accredited college course that assures achievement of knowledge and skills that builds on and goes beyond the standards. This way of meeting the state graduation requirements in part is the Option II portion of graduation methods.
The purpose of Option II is to provide educational experiences that are meaningful and relevant, and to provide students with opportunities to explore and achieve at high levels. Option II allows local school districts to design and implement curricular programs that meet the needs of all students and get credit for learning experiences outside the classroom. Some of these experiences may provide real-world connections not available in the school setting. Other learning experiences may go beyond what the traditional high school can provide. Option II is designed to allow schools to provide or facilitate flexible educational experiences that maximize student achievement and success.

MATES offers Option II to students to fulfill some of the requirements for graduation in the State of New Jersey.

According to the Ocean County Vocational Technical School Board of Education policy on the Marine Academy of Technology and Environmental Science graduation requirements, students must successfully complete 161.25 high school credit hours or their college equivalent to graduate.

Marine Academy of Technology and Environmental Science
Graduation Requirements

According to the Ocean County Vocational Technical School Board of Education policy on the Marine Academy of Technology and Environmental Science graduation requirements, students must successfully complete 161.25 high school credit hours or their college equivalent to graduate.

Credits Required	**161.25**
Yearly Credits Required	**40**
English	**4 Years/20 Credits**
Social Studies	**3 Years** **5 Credits World History** **10 Credits United States History**
Mathematics	**4 Years/35 Credits**
Science	**4 Years/40 Credits**
Health, Physical Education[1]	**4 Years** **18.75 Credits in Physical Education/Health** **2.5 Credits in Financial Literacy**
World Language	**Up to Level III** **(10 credits)**
Visual/Performing Arts	**5 Credits**
Career Education/Practical Arts	**5 Credits**
Elective	**10 Credits**

[1] **One year for each year in attendance**

STATE TESTING REQUIREMENTS

On May 3, 2023, the New Jersey State Board of Education approved the proficiency level cut score for the ELA and mathematics components of the NJGPA, as well as the menu of alternative assessments and aligned cut scores.

First Pathway – NJGPA

ELA	Mathematics
New Jersey Graduation Proficiency Assessment—ELA ≥ 725 (Graduation Ready)	New Jersey Graduation Proficiency Assessment—Mathematics ≥ 725 (Graduation Ready)

Approval of Alternate Graduation Assessment Menu and Cut Scores:

Second Pathway – Menu of Substitute Competency Tests

ELA	Mathematics
One of the following: • ACT Reading ≥ 17 • Accuplacer WritePlacer ≥ 5 • Accuplacer WritePlacer English Second Language ≥ 4 • PSAT10 Evidence Based Reading and Writing (EBRW) ≥ 420 • PSAT10 Reading ≥ 21 • PSAT/NMSQT EBRW ≥ 420 • PSAT/NMSQT Reading ≥ 21 • SAT EBRW ≥ 450 • SAT Reading ≥ 23	One of the following: • ACT Math ≥ 17 • Accuplacer Elementary Algebra ≥ 49 • Accuplacer Next-Generation QAS ≥ 250 • PSAT10 Math Section or PSAT/NMSQT Math Section ≥ 420 • PSAT10 Math or PSAT/NMSQT Math ≥ 21 • SAT Math Section ≥ 440 • SAT Math Test ≥ 22

Portfolio Appeals (Third Pathway)

The Portfolio Appeals process will continue to be available for students in the classes of 2024 and 2025.

Additional graduation requirement as of January 2024:

Beginning with the class of 2025 and extending to the next two classes after that, students or their guardians must complete and submit either the Free Application for Federal Student Aid (FAFSA) or the New Jersey Alternative Financial Aid Application to get a diploma — unless they are granted an exemption after submitting a waiver or speaking to a guidance counselor.

Grading System

The following range of grades has been approved by the Ocean County Vocational Technical School Board of Education:

Grade	Numerical Equivalent
A+	95-100
A	90-94
B+	85-89
B	80-84
C+	75-79
C	70-74
D	66-69
F	65 and below

I = Incomplete
M = Medical Exempt NC = No Credit

Numerical grades will appear on transcripts; NOT letter grades. A final grade for each semester will be based on the following percentages: Marking Period 1 – 37.5%; Marking Period 2 – 37.5%; Mid-Term – 10%; Final Exam – 15%. See your counselor if you have to convert your GPA to a 4.0 scale for any reason.

Grade Reporting

Student proficiency is measured by report card grades issued each semester and progress reports issued midway between each semester. Additional student progress updates are available at any time during the school year. Parents should contact their child's teacher and/or guidance counselor for such updates.
If parents/guardians have questions concerning the academic progress of their child or questions concerning their child's overall adjustment to the school they have several options:

1. Contact the classroom teacher via email, phone, or letter.
2. Contact the student's guidance counselor.
3. Contact a school administrator

Only the final grade for each course appears on the student's permanent transcript.

MATES does not distinguish the level of courses within the school. **Grades are not weighted. Class rank is not computed**. Because of our selective admissions policy and demanding honors-level and college curriculum, the specific ranking of students requires making distinctions based on too fine of a margin. GPAs are calculated as follows: each final grade is multiplied by the number of credits for that course. These calculations are then added together and divided by the total number of earned credits.

Exams

Midterm and Final Exams
Examinations will be given in all core courses. Exams may be written, oral, or project-based. Courses averages are based on each quarter grade, the mid-term, and the final exam.

COURSE OF STUDY

All courses are instructed utilizing a block scheduling format ~ Classes are 80 minutes.
All students are accepted via a competitive application process and follow the same rigorous course of study. Students must successfully complete 161.25 high school credits or their college equivalent to graduate. All high school courses are taught at an honors level.

Freshman Year	**Credit(s)**
English I	5
Algebra I/Data Analysis	5
Geometry	5
Chemistry I *	5
Biology I *	5
PE I/Health I	5
World History	5
Spanish II	5
Independent Research Study* *part of science course requirement*	
Total:	**40**

Sophomore Year	**Credit(s)**
English II	5
Introduction to Computer Science	5
Algebra II/Trigonometry	5
Chemistry II	5
Aquatic Ecology or Research Methods/Field Ecology	5
Spanish III	5
Spanish IV (SU LANG 2142) or Introduction to Art	5
Health II/Driver's Education	1.25
PE II	3.75
Total:	**40**

Junior Year	**Credit(s)**
English III	5
Pre-Calculus	5
Biotechnology (SU BIOL 1200/1205)	5
Physics (SU PHYS 2110/2120)	5
US History I	5
Fall Elective – Students may choose from Geographic Information Systems (SU GNM 1242), Geo/Astrophysics (SU GEOL 2120), Art History (SU GAH 2243)/Basic Drawing (SU GAH 1261), Public Speaking (SU GEN 2105), Statistics (SU CIST 1206), or Introduction to Engineering	5
Spring Elective – Students may choose from Introduction to Art, Spanish IV (SU LANG 2142), Spanish V (SU LANG 2143), Anatomy and Physiology (SU BIOL 1260), or Data Visualization with Python	5
PE III/Health III	3.75
Financial Literacy	2.5
Total:	**41.25**

**Option II available as a P/F course in fulfillment of NJDOE requirements*

Senior Year	**Credit(s)**
AP Literature and Composition (SU LITT 1100/1110)	5
Calculus (SU MATH 2215)	5
US History II	5
Oceanography (SU MARS 1300) or Advanced Oceanographic Research (SU MARS 1300)	5
Environmental Science (SU ENVL 1100) or Computer Science Capstone	5
Data Visualization with Python or Data Science	5
Elective – Students may choose from Geographic Information Systems (SU GNM 1242), Geo/Astrophysics (SU GEOL 2120), Art History (SU GAH 2243)/Basic Drawing (SU GAH 1261), Public Speaking (SU GEN 2105), Statistics (SU CIST 1206), or Principles of Engineering	5
PE/Health IV	5
Total:	**40**

**********ALL COURSES SUBJECT TO CHANGE**********

Course Guide

English I
Course Description: Classic literature is the textual focus. Emphasis is placed on literary analysis, and literature instruction is coordinated with the course's textbook, as well as selected novels. Student writing is aligned with established portfolio guidelines: process writing and final product quality are stressed. Grammar comprehension is reinforced through direct instruction. A classical vocabulary program is utilized for test-preparation, and research skills are reinforced via project work.

English II
Course Description: The study of Contemporary literature is the textual focus. Emphasis is placed on literary analysis, and literature instruction is coordinated with the course's textbook, as well as selected novels. Student writing is aligned with established portfolio guidelines: process writing and final product quality are stressed. Grammar comprehension is reinforced through direct instruction. A classical vocabulary program is utilized for test-preparation, and research skills are reinforced via project work.

English III
Course Description: American literature is the textual focus. Emphasis is placed on literary analysis, and text-based instruction is coordinated with classical and contemporary selections. Student writing is aligned with established portfolio guidelines: process writing and final product quality are stressed. Research skills are reinforced via project work.

Advanced Placement Literature and Composition (SU LITT 1100/1110)
Course Description: LITT 1100/1110 is a rigorous course designed to provide students with the intellectual challenges and workload consistent with a typical undergraduate university English literature course. The syllabus and works of literature chosen are in accordance with the recommendation of the College Board; therefore, reading assignments may include mature events, themes, and language. This course will prepare students to enter college and take the AP English Literature and Composition exam in May. Through close reading of the texts listed in this syllabus, students will deepen their understanding of the ways writers use language to provide both meaning and pleasure for their readers. As they read, students will consider a work's structure, style, and themes, as well as the author's use of figurative language, imagery, symbolism, and tone. ***Students successfully completing this course will be eligible to receive 4 credits for LITT 1100 and 4 credits for LITT 1110 through Stockton University, totaling 8 credits.***

Public Speaking (SU GEN 2105)
Course Description: Students will learn the skills and strategies necessary to prepare and deliver special occasion, informative, and persuasive speeches using several different presentational styles (e.g., extemporaneous, impromptu, manuscript). The primary emphasis in this course are: (a) selecting, researching (including evaluation of source materials), and supporting speech topics; (b) constructing and organizing speeches; (c) incorporating PowerPoint technology in speeches; (d) nonverbal and paralinguistic speech delivery skills; and (e) critiquing others' speeches. Although this is a skills-based course, students need to understand the theory and concepts/constructs integral to public speaking and be able to apply and discuss these components creatively and intelligently. The ultimate goal is for students to gain more confidence communicating in diverse public contexts. This course may be offered in sections with a W2 designation. ***Students successfully completing this course will be eligible to receive 4 credits for GEN 2105 through Stockton University.***

Algebra I/Data Analysis
Course Description: Data Analysis and Algebra will be a unique course combining mathematical and scientific topics. Students will use various in class activities to learn how to use mathematical modeling to interpret and extrapolate data. Students will be taught the basics of collecting, analyzing, and writing about data through both group and individual research projects. Data analysis techniques will be covered, including how to use technology to analyze data. Time will also be spent on how to properly Throughout the course, skills from the MATES Algebra 1 curriculum will also be reviewed and assessed to ensure students are ready to proceed with the mathematical courses ahead of them.

Geometry
Course Description: Students will explore Euclidean geometry, basic trigonometry and other areas of enrichment. In order to promote higher level and self-directed learning, independent and cooperative projects will frequently be assigned throughout the course.

Algebra II/Trigonometry
Course Description: Topics in the Algebra II/Trig course include: linear functions; systems of linear equations and inequalities; non-linear systems of equations; quadratic functions including complex solutions; polynomial functions; exponential and logarithmic functions; rational functions; trigonometric functions and identities. Each function type is explored algebraically and graphically.

Introduction to Computer Science
Course Description: Introduction to Computer Science will introduce students to the fundamentals of computer programming using the Java programming language. The course aims to show students how a well-designed program can use logic and computation to solve a problem. Exercises and projects will be designed to be linked to the statistics/research/mathematics curriculums. Efficiency of design and proper commenting of programs will be stressed. Major topics include: control structures, selection structures, iteration structures (loops), input/output statements, data types, functions, files, arrays, inheritance, and object-oriented programming. History of computers/technology along with current events in technology will be discussed. Proper file management; use of Word, Excel, PowerPoint (and the google counterparts); and responsible use of technology will also be addressed.

Pre-Calculus
Course Description: This is a comprehensive analysis course which focuses on algebraic and transcendental functions. Out of class preparation is a vital component of this course along with the ability to apply his/her level critical thinking skills. In addition to function analysis, topics include vectors, parametric equations, and computer algebra systems. There are several cooperative laboratory projects in which students model real-world data with relations and functions as well as solve rigorous problems that require the use of technology. The last quarter is devoted to a study of introductory calculus topics such as limits, continuity, and the concept of a derivative.

Calculus (SU MATH 2215)
Course Description: Students enrolled in this college course will cover a study of limits and continuity; differentiation formulas for algebraic, trigonometric, inverse trigonometric, exponential and logarithmic functions; higher order derivatives; mean value theorem; applications of the derivative including related rates, maximum-minimum; graphing; L'Hospital's Rule; antiderivates; the definite integral; integration using substitution; applications of the integral to evaluation of area; alternate definition of the natural logarithmic function. ***Students successfully completing this course will be eligible to receive 5 credits for MATH 2215 through Stockton University.***

Statistics (SU CIST 1206)

Course Description: Statistics is the science, or a branch of mathematics, that involves collecting, classifying, analyzing, interpreting, and presenting numerical facts and data. We will take an applied approach to the study of statistics, emphasizing statistical thinking with business, economic, and science applications. We will discuss descriptive statistics, basic probability, one-sample inferential statistics, and selected topics from multivariate analysis. Students will use probability and distributions to make predictions, estimate parameters and test hypotheses. Students also have the opportunity to analyze data sets using technology. ***Students successfully completing this course will be eligible to receive 4 credits for CIST 1206 through Stockton University.***

Data Visualization with Python

Course Description: This course will build upon the knowledge established in the introductory computer science course. It will cover a variety of data analysis and visualization technologies focusing primarily on Python but also venturing into Excel and business intelligence applications such as Tableau. Students will learn how to pre-process and clean data, perform exploratory data analysis, create a variety of graphics (both static and interactive), and adhere to good visual design principles. The course will be heavily project based, with projects covering domains such as finance, engineering, and meteorology. The course will conclude with a summative independent project that will demonstrate knowledge of all course material.

Data Science

Course Description: Data Science requires a wide-ranging set of technical skills along with a strong understanding of how to formulate problems that will offer unbiased, effective solutions. This course introduces students to this rapidly growing and high demand field. Students will learn concepts, techniques, and tools they need to deal with various facets of data science practice, including data collection and integration, exploratory data analysis, predictive modeling, descriptive modeling, machine learning, and effective communication. Our focus will be on breadth as opposed to depth, and emphasis will be placed on integration and synthesis of concepts and their application to problem solving. Students will acquire a working knowledge of data science through projects and case studies covering a variety of domains. Issues of ethics are also highlighted.

Prerequisite: Data Visualization with Python (including object-oriented programming)

Computer Science Capstone

Course Description: This pass/fail summative computer science course will provide an opportunity to propose and take a computer science project from start to finish. The teacher will play two roles in this course: the facilitator for student progress, and the "client" for the projects. As a member of a one- to three-person team, students will gather requirements from the client, propose a development plan, and then begin work. Over the course of the term students will submit Progress Reports to track progress, identify obstacles and mitigation measures, demonstrate progress in video format, and document sources used. At the conclusion of the term, each team will submit a final report, poster, and give a presentation (40+ minute) to the class and teacher.

Prerequisites: Data Visualization with Python (including object-oriented programming) and Data Science

Introduction to Engineering Design

Course Description: Students will dig deep into the engineering design process applying a variety of engineering concepts such as material selection, human-centered design, manufacturability, and sustainability to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3-D modeling software and additive manufacturing.

Principles of Engineering
Course Description: Principles of Engineering (POE) is a foundation course of the high school engineering pathway. This survey course exposes students to some of the major concepts that they will encounter in a postsecondary engineering course of study. Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of materials and structures, automation, and kinematics. The course applies and concurrently develops secondary level knowledge and skills in mathematics, science, and technology. Students have the opportunity to develop skills and understanding of course concepts through activity-, project-, and problem-based (APB) learning. By solving rigorous and relevant design problems using engineering and science concepts within a collaborative learning environment, APB learning challenges students to continually hone their interpersonal skills, creative abilities, and problem-solving skills. Students will also learn how to document their work and communicate their solutions to their peers and members of the professional community. It also allows students to develop strategies to enable and direct their own learning, which is the ultimate goal of education.
Prerequisite: Introduction to Engineering Design

First Year Research Project
Project Description: Each year, incoming MATES students complete an independent research project that is presented in the 3rd Marking Period and is a part of the first semester science class. First year MATES students must complete an independent research project to develop critical thinking skills. MATES students have the option of continuing their research experiences beyond their first year based on their performance and their ability to problem solve.

Biology I
Course Description: Biology is an activity driven course that covers topics in great depth and at a fast pace. Out of class preparation is a vital component of this course along with the ability to apply critical thinking skills. Completion of summer independent work is required prior to entering the class. Instruction will include inquiry-based learning along with traditional learning styles integrating the marine and environmental fields. The curriculum emphasizes cellular and molecular biology, taxonomy and an ecosystems approach to functions. Also included are invertebrate studies, genetics and evolution with an emphasis on marine invertebrates and their adaptation within the coastal ecosystem. Students are expected to expand their understanding of the framework of notes delivered in class by studying their text and outlining each unit. Unit tests frequently include materials from several chapters of the textbook as well as information gleaned from lab work. There will be extensive laboratory and fieldwork to support classroom lessons focusing on our local environment. The rigorous nature of the material being taught at this level requires students to be both highly motivated and self-directed.

Chemistry I
Course Description: This course encourages the development of higher-level thinking and problem-solving skills via self-directed activities and assignments. Out of class preparation is a vital component of this course along with the ability to apply critical thinking skills. Direct student experience is required in all lab exercises. Emphasis is on stoichiometry, atomic structure and theory, bonding, solutions and colligative properties, various equilibriums, kinetics, thermodynamics and electrochemistry. There will be a relationship to chemistry in the environment especially estuarine systems. Descriptive chemistry is included on a regular basis.

Chemistry II
Course Description: This course encourages the development of higher-level thinking and problem-solving skills via self-directed activities and assignments. Out of class preparation is a vital component of

this course along with the ability to apply critical thinking skills. Direct student experience is required in all lab exercises. Some of the topics in this course include: kinetic- molecular theory, kinetics, thermodynamics, electrochemistry, organic molecules, and solution equilibrium. There will be emphasis on alternative energy sources necessary to reduce the effects of pollutants in the environment. A key focus is fuel cell technology and the efficiency of them for transportation. Students will learn about the effects of biphenyls and their impact on organisms, and the effects of global warming on ocean chemical processes. There will be intensive laboratory and field related activities focusing on our local environment. Motivated students are encouraged to take the SAT II in Chemistry.

Aquatic Ecology

Course Description: This course will introduce students to the ecological principles of aquatic ecosystems. Students identify what is meant by ecology and the relationships between living and nonliving components and the principles common to all ecosystems. Out of class preparation is a vital component of this course along with the ability to apply critical thinking skills. The student will compare and contrast the different types of freshwater ecosystems and the structure and function of various invertebrates, sponges, nematodes, segmented worms, water mites, and numerous crustaceans within them. Marine ecosystems are also studied, including abiotic and biotic factors. They will study geophysical properties, chemical properties, and biological indicators of water quality. This course is field-based. The course culminates with an analysis of problem-based learning, covering topics involving the effects of human activities on natural resources, relationships between technology and society in coastal sciences, and pollution in the aquatic environment.

Research Methods/Field Ecology

Course Description: Research Methods/Field Ecology is an elective variation to the traditional Aquatic Ecology course. Research Methods/Field Ecology This course will examine all aspects of conducting a research project including project development, planning, experimental design, gathering results, maintaining data, and analyzing the data. Regular course work over the semester will include weekly field excursions, data collection, statistical analysis, technical writing, practical examinations, and presentations. Students will become familiar with a variety of scientific equipment for field sampling and laboratory analysis, as well as refine their statistics skills. Students are expected to create a new independent project proposal for the following school year where they will present at our regional science fair. This course will still focus on many of the topics covered in Aquatic Ecology such as water quality testing, freshwater ecosystems, and the organisms that inhabit our local water ways.
Prerequisite: Selection of student in grade 9 to present research outside of MATES OR approval from the Freshman Research Project (FRP) advisor based on FRP performance.

Anatomy and Physiology (SU BIOL 1260/1265)

Course Description: The course is an examination of human anatomy and the basic principles of physiology. In addition to microscopic and gross anatomy of the human body, students will learn about fundamental mechanisms that underlie the function of cells, tissues, and the integumentary, skeletal, muscular, and nervous systems. ***Students successfully completing this course will be eligible to receive 5 credits for BIOL 1260/1265 through Stockton University.***

Biotechnology (SU BIOL 1200/1205)

Course Description: This course is intended primarily to serve the needs of transfer students as well as those wishing to develop an understanding of biology at the college level. Students enrolled in this course will develop an understanding of the basic tenets of biology that apply to all living organisms, the origin of life and evolution, cellular and bio-molecular concepts, reproduction, and basic genetics. Emphasis will be placed on the Moneral, Fungal, and Plant Kingdoms. ***Students successfully completing this course will be eligible to receive 5 credits for BIOL 1200/1205 through Stockton University.***

Physics (SU PHYS 2110/2120)
Course Description: This course emphasizes analytical and laboratory techniques as they are applied to motion, forces, dynamics, heat, electricity and magnetism, optics and atomic theory. The course begins with a review of mechanics and proceeds with an in-depth study of heat and thermodynamics, electricity and magnetism, waves and optics, and topics in modern physics. Emphasis is on problem solving with laboratory activities designed to develop through understanding of physical phenomena. Out of class preparation is a vital component of this course, along with the ability to apply critical thinking skills. It is a course in classical physics theory designed for those students who are preparing to study science in college. Data collection techniques and analysis are emphasized throughout the course. ***Students successfully completing this course will be eligible to receive 8 credits for PHYS 2110 and 2120 through Stockton University.***

Oceanography (SU MARS 1300)
Course Description: This course begins with the history and origins of oceanography, concentrating on the modern technological approaches to science. Students will examine physical and chemical properties of seawater, as well as the interactions of ocean, atmosphere, and climate. Further investigations include local coastlines, estuaries, and bays. Out of class preparation is a vital component of this course along with the ability to apply critical thinking skills. ***Students successfully completing this course will be eligible to receive 4 credits for MARS 1300 through Stockton University.***

Advanced Oceanographic Research (SU MARS 1300)
Course Description: This course is a college introductory approach to major concepts in oceanography. This course will include technology and Global Climate Change as major themes in ocean and estuarine sciences. The course focuses on research being conducted in the field and how these relate to the ever-changing Global Ecosystem. The course will include data collection and analysis, advanced statistical analysis, and presentation development (written and oral). This course will also help students to improve scientific writing related to field reports, technical reports and manuscript preparation. AOR is only open to students by invitation based on their research background and research potential. ***Students successfully completing this course will be eligible to receive 4 credits for MARS 1300 through Stockton University.***

Environmental Science (SU ENVL 1100)
Course Description: This course addresses concerns for the environment. This course is an interdisciplinary course integrating scientific principles of chemistry, biology, and earth science to understand interrelationships of the natural world. It provides an in-depth overview of the three major vectors in the environment. It emphasizes topics including: Pine Barrens Ecology, Estuarine Biology, Forestry, Wildlife Management, Population Dynamics, Toxicology, and Energy. This course will frequently require students to research current information that relates to the environment and society. Field experiences relate classroom topics to community research projects. Oral reports and group presentations will often be required. Students will be asked to think and form opinions based on research and facts rather than emotions. It is a project-based course.
Students successfully completing this course will be eligible to receive 4 credits for ENVL 1100 through Stockton University.

Geographic Information System (GIS)- (SU GNM 1242)
Course Description: This senior year elective is designed to be an introduction to Geographic Information System that will let students make and use digital maps in creative and problem-solving ways. GIS is a software system that allows users to manage and analyze geographic information to find relationships and trends in a meaningful visual model. The course will begin with basic instruction and exercises on how to use the software, and then progress to case study and project-based learning. This

interdisciplinary course will focus heavily on group work, and critical thinking, and help to strengthen interpersonal communication between students. It is a course designed for students who are preparing to study environmental science, oceanography, engineering, political science, human health, and a host of other professions and fields. ***Students successfully completing this course will be eligible to receive 4 credits for GNM 1242 through Stockton University.***

Geo/Astrophysics (SU GEOL 2120)
Course Description: This senior year elective is a laboratory and field course dealing with the major disciplines of the Geological Sciences and Astronomy. The course will be divided into two ten-week sessions. The first will focus on the elements of Geological Sciences and Meteorology: Stratigraphy, Structural Geology, Sedimentology, Paleontology, Petrology, and Atmospherics. The second will focus on Astronomy: The Solar System, Stars and their Life-Cycles, Galaxies and Cosmology. Field and laboratory work will include astronomical observations, analysis of astronomical data, collection and analysis of sediments, structural geological data, orienteering, and fossils.
Students successfully completing this course will be eligible to receive 4 credits for GEOL 2120 through Stockton University.

World History
Course Description: World History is a challenging course that covers the dynamics of continuity and change through history. This course begins with a study of world cultures in the 17th century and ends with an analysis of challenges facing the world today. From Western culture, to the Middle East, Asia, and Africa, students will be acquainted with the major political, social, religious, and economic changes in an ever-growing interconnected global system. Emphasis is placed on the close reading of historical documents, textual analysis, critical thinking scenarios, data-base questioning, and historical research.

United States History I
Course Description: US History I concentrates on "chapters" in American history through engagement with the words of the individuals who contributed to the "story" of the United States. US History I addresses "chapters" in the "story" of America from the American Revolution to the Progressive movement. Students will trace the political, economic, cultural, and geographic development of the United States of America. Emphasis is placed on the close reading of historical documents, textual analysis, historical research, and the reinforcement of Social Studies skills.

United States History II
Course Description: US History II examines the Age of Expansion, Progressivism, our nation's involvement in World War I and Vietnam, and concludes with an analysis of post-9/11 America. Emphasis is placed on the close reading of historical documents, textual analysis, cultural and historical research, and the reinforcement of Social Studies skills.

Spanish II
Course Description: Spanish II reinforces and expands upon the communicative skills that were established in Spanish I to ensure successful transition into Spanish III while promoting a life-long love of learning and language. Practical oral use of the language as well as developing written skills will serve as a basis for continued growth. Attention to the exploration of Latino and Iberian cultures through Internet access will increase. Progress will be assessed through a combination of rubric-specific, performance-based activities and objective evaluations.

Spanish III

Course Description: Spanish III reinforces and expands upon the communicative skills that were established in Spanish I and II, to ensure solid growth towards practical use of the language and success as a life-long learner of Spanish. Students will develop oral and written language proficiency through a series of authentic performance-based activities. Students must demonstrate independence and self-direction, meet high evaluation standards, and assume ownership of their academic work. While a communicative approach leading towards a life-long love of the language continues to be its basis, increased emphasis is placed on language usage skills found at this level. Internet resources and varied media complement the program.

Spanish IV (SU LANG 2142)

Course Description: This elective course reinforces and expands upon the communicative skills that were established in Spanish I through III to promote solid practical usage of Spanish, as well as a life-long love of the language. Continued exploration of the language and culture will include student-based projects, cultural readings, and exploration of Internet resources and enjoyment of varied media. Performance-based assessments and some objective evaluations will ensure student proficiency in Spanish. Students must demonstrate independence and self-direction, meet high evaluation standards, and assume ownership of their academic work. Literary and cultural texts are important course components, and students will be required to read complete, original literary works in Spanish. ***Students successfully completing this course will be eligible to receive 4 credits for LANG 2142 through Stockton University. Once Spanish IV is complete, students are also eligible to earn a New Jersey State Seal of Biliteracy in Spanish by testing June of their junior year.***

Spanish V (SU LANG 2143)

Course Description: This elective course is the culmination of the district's Spanish program. It emphasizes practical language use as well as extensive exploration of all aspects of Latino and Iberian culture via film documentaries, short stories, excerpts from novels and plays, poems, songs, and articles from magazines. It seeks to intensify students' desires to continue acquiring the Spanish language, encourage cultural contacts beyond high school, and be prepared to enter into the undergraduate study of Spanish. Students must demonstrate independence and self-direction, meet high evaluation standards, and assume ownership of their academic work. Literary and cultural texts are critical course components, and students will be required to read original literary works in Spanish by Manuel Machado, Gregorio López y Fuentes, Marco A. Almazán, M. Toledo y Benito, Amado Nervo, Alberto Cortez, Pedro Villa Fernández, Rigoberto Menchú, Antonio Jiménez, as well as other noted authors. By the end of the course, students will prepare a PowerPoint presentation using an integrated approach (i.e. different media and genres, as illustrated by the course materials) on aspects of the Spanish culture using advanced grammar, vocabulary, and good pronunciation. ***Students successfully completing this course will be eligible to receive 4 credits for LANG 2143 through Stockton University.***

Introduction to Art

Course Description: This course will provide students with the ability to explore multiple artistic styles and time periods and gain an appreciation for the importance of art in society. They will develop an understanding of art and history's influence upon it. Students will be encouraged to make connections between artworks and their influences. They will be able to study methods used to critique art and apply them in group situations. They will learn to use critique to improve upon skills and advance their techniques. Students will gain hands on experience with multiple mediums used in art. They will create original artworks as well as use famous works as models for their own art. Students will have the opportunity to practice using the principles of design and apply them to real life situations. Students will learn to use problem solving skills to solve artistic challenges. Students will also be exposed to career

opportunities provided by the arts. This course will provide students with a working knowledge of concepts and an enriched vocabulary so that they can become more informed consumers of art.

Art History/Basic Drawing (SU GAH 2243/SU GAH 1261)
Course Description: Art History is a survey of the visual arts, focusing on the sculpture, painting and architecture from the Prehistoric through the Post Impressionism. This course explores the motivations, motifs, and vocabulary of art within its physical and socio-political context. The course concentrates on the arts of the Western tradition, including America, but twenty percent of the course content will be from non-Western cultures. Emphasis will be placed on the identification of works and their association with their time period, culture and subsequent characteristics. Students will be assessed with weekly quizzes and/or tests. Students will use critical thinking and literacy skills to write short essays analyzing specific artworks and their significance in history. ***Students successfully completing this course will be eligible to receive up to 8 credits for GAH 2243 and GAH 1261 through Stockton University.***

Physical Education **Grades 9,10,11,12**
Course Description: This program presents a full spectrum of knowledge and skill experiences in the area of physical education in order to equip students to maintain active lifestyles, identify fitness needs and objectives, and achieve well being throughout their lives. The program consists of planned learning experiences which will assist students in gaining understanding, attitudes and practices related to fitness, rhythm and cooperative activities as well as team and individual sports.

Health I
Course Description: Health I is a course required for all freshmen students. The course emphasizes and promotes responsible student attitudes and behaviors in the pursuit of lifelong wellness. This course gives students a foundation of knowledge to enable them to make healthy lifestyle choices. The state-required ten hours of annual instruction in substance awareness is an inherent part of the course, as is mandated HIV education.

Health II/Driver's Education
Course Description: Driver's Education is a course required of all students in their sophomore year. Students will receive thirty hours of driver education theory and safety instruction in preparation for the NJ State Motor Vehicle written examination. This course is intended to prepare students to responsibly operate a motor vehicle in today's society. Students must, however, meet all State regulations and standards to qualify for a learner's permit.

Health III/Financial Literacy
Course Description: Health III is a course required for all junior students. The course will provide students with the essential tools and skills for making informed decisions, recognizing risk reduction and prevention strategies in the areas of optimum wellness, substance awareness, and sexuality. A component on Financial Literacy is also included in this course.

Health IV
Course Description: Health IV is a course required for all seniors. The course will provide students with the knowledge and skills necessary to respond appropriately to common first aid emergencies and CPR training.