

# Bonny Eagle High School

## STEM Program Guide

### (2019-2020)

At Bonny Eagle High School we are committed to developing multiple opportunities for all students to excel in the areas of Science, Technology, Engineering and Math (STEM.) The following pathways are designed to help students develop skills, solve problems, and explore career opportunities in STEM fields. Individual students can also create their own pathway by combining components from the following three. Students are encouraged to discuss STEM options with their advisors and counselors when choosing their high school courses and creating a post-secondary plan.

### STEM Diploma Pathway

Students who complete a rigorous course program that includes all four STEM disciplines will be awarded a STEM endorsed Bonny Eagle High School Diploma. To qualify for the endorsement, a student must successfully complete at least 4 credits each of math and science as well as 1.5 credits of STEM designated elective courses. Half of the math and science credits must be at the AP or Honors level. In addition to the coursework, the student must also complete a Senior Capstone Project that is focused on a STEM related field or topic.

<b>Math Course Options (Minimum of 4 Credits)</b>	Algebra I A/B, Geometry A/B, Honors Geometry A/B, Honors Algebra II A/B, Honors PreCalculus, Honors Trigonometry, Honors Discrete Math A/B, Calculus A/B, Statistics A/B, AP Calculus, AP Statistics
<b>Science Course Options (Minimum of 4 Credits)</b>	Lab Earth Science A/B, Honors Lab Earth Science A/B, Lab Biology A/B, Honors Lab Biology A/B, Lab Chemistry A/B, Honors Lab Chemistry A/B, Lab Physics A/B, Honors Lab Physics A/B, AP Biology, AP Chemistry, AP Physics, Aquatic Biology A/B, Anatomy and Physiology A/B, Astronomy
<b>STEM Designated Elective Course Options (Minimum of 1.5 Credits)</b>	Engineering/Design/Build, Wood Tech I and II, Computer Science, Medieval Siege, Science Island, Journey Home, Video Game Design, Metal Fabrication, C and C Routing
<b>Capstone Project Options</b>	Students may select any science, technology, engineering, math or medical field related topic for their capstone project as long as it is approved by their homebase advisor.

## Pre-Engineering Pathway

Bonny Eagle High School has a partnership agreement with the University of Maine where students who are accepted to the University of Maine can enter their Engineering Program with up to **36 credits**. The credits are awarded based on the successful completion of AP courses with scores of 3, 4 or 5 and university approval. This pathway also meets the requirements for a BEHS STEM Diploma.

<b>Grade 9 Pathway Courses</b>	Honors English 9 A/B Honors Global Village A/B Honors Lab Earth Science 1.5 credits of honors level math such as: Hon Geometry A/B and Hon Algebra II A Hon Algebra II A/B and Hon Trigonometry 0.5 credit of STEM approved elective 2 credits of other graduation requirements/electives including a world language
<b>Grade 10 Courses</b>	Honors English 10 A/B Honors US History or AP US History Honors Lab Biology Honors Lab Chemistry 1.5 credits of honors level math such as: Hon Algebra IIB, Hon Trigonometry, Hon PreCalculus Hon PreCalculus, Hon Discrete Math A/B 1.0 credit of STEM approved electives or other graduation requirements including a world language
<b>Grade 11 Courses</b>	AP English Language Honors Economics and Honors Government AP Calculus B/C* AP Chemistry or AP Physics*
<b>Grade 12 Courses</b>	AP English Literature or Honors English 12 AP Physics* or AP Chemistry AP Statistics or Statistics  *AP Calculus B/C and AP Physics are required either junior or senior year.

## **STEM Course and Dual Enrollment Pathways**

Bonny Eagle High School, in conjunction with local community college partners, have several opportunities for students to explore careers in technical fields while earning dual enrollment college credit. Students can design an academic pathway that includes any combination of math, science, technology and engineering courses and include post-secondary experiences to fully round out the program.

### Current Opportunities for Dual Enrollment in Math:

AP Calculus and Calculus A/B: Up to 6 credits granted through the University of Southern Maine Project Aspire program.

AP Statistics and Statistics A/B: 3 credits granted through the University of Southern Maine Project Aspire program.

### Current Opportunities for Dual Enrollment in Industrial Technology:

Students enrolled in some industrial technology courses may earn 0.5cr for the course as well as 1 college credit from Central Maine Community College for BCT101-Introduction to Hand and Power Tools.

Students enrolled in some industrial technology courses may earn 0.5cr for the course as well as 3 college credits from Kennebec Valley Community College for SAF101-OSHA 30 Standards.

### Current Opportunities for Dual Enrollment, Articulation Agreements and National Certifications Through CTE Programs

Westbrook Regional Vocational Center STEM Field Programs	Portland Arts and Technology High School STEM Field Programs
Automotive Technology Computer Repair and Networking Computer Science and Multimedia Electricity EMT/Firefighting Medical Occupations	Automotive Collision Technology Automotive Technology Biomedical and Health Sciences Cybersecurity Marine Systems Plumbing and HVAC Welding Technology/Blacksmithing Basics