Mt. Ararat High School
Program of Studies
2019 – 2020

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The Mt. Ararat High School *Program of Studies* presents information about courses which may be taken towards a Mt. Ararat High School diploma. This publication is designed to inform students and parents as they plan with their future goals in mind.

Please note that some courses or other provisions described in this publication may turn out to be unavailable in 2019-2020, depending on course enrollment, staffing, or other factors. For example, it is unlikely that courses with enrollments of fewer than 10 students will run.

Information on educational programming for students in grades 9-12 with documented disabilities, as determined through Individualized Educational Plan (IEP) meetings, is available from the Special Services Department at Mt. Ararat High School.

For additional information, contact the high school principal at Mt. Ararat High School, 73 Eagles Way, Topsham, ME 04086. Telephone: (207) 729-2951. Fax: (207) 729-2953. Web site: http://mta.link75.org

MT. ARARAT HIGH SCHOOL VISION

Empowering **A**ll to **G**row, **L**earn, **E**xplore & **S**oar

MTA's Code of Cooperation

Engage in Learning
Demonstrate Effort and Perseverance
Take Responsibility for Your Own Learning
Be Respectful of Self and Others
Be Safe

At Mt. Ararat High School, our vision is for every student to explore and work toward fulfilling his or her unique potential.

In order to achieve this vision, it is our mission to

- ensure challenging and personalized learning;
- teach the essential skills necessary to meet the demands of a changing world;
- provide a safe, nurturing, and intellectually vibrant environment where diversity is valued and everyone is respected; and
- work in partnership with families and the community to promote the health and development of the whole individual.

Academic Expectations for Student Learning

All Mt. Ararat High School graduates will be self-directed and lifelong learners. As such, they will be

- effective communicators,
- quality workers,
- problem solvers, and
- integrative and informed thinkers.

Civic and Social Expectations for Student Learning

All Mt. Ararat High School graduates will be responsible and involved citizens. As such, they will

- assume responsibility for their own behavior and utilize appropriate conflict resolution skills,
- demonstrate an understanding of the rights, duties, and responsibilities of citizenship in a democratic society, and
- be respectful and tolerant.

These academic, civic, and social expectations adhere to 21st Century learning expectations and the Maine Guiding Principles.

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ACADEMIC REQUIREMENTS AND GRADUATION

Please refer to MSAD No. 75 policy for more information on graduation requirements.

Mt. Ararat High School students must earn a minimum of 21.25 credits to be awarded a diploma. Of the 21.25 credit total required, students must earn a minimum of:

4 English credits (English I-IV; qualified students may substitute AP English for levels III and/or IV)
3 Social Studies credits (Social Studies I - III)
3 Math credits (Please refer to the Mathematics section for details on required courses for graduation.)
3 Science credits (Science I-IV. Refer to the Science section for details on required science courses.)
1 Fine Arts credit (All Music and Visual Arts courses and any fine arts English elective courses)
1 Physical Education credit (PE I plus either PE II or Outdoor Education)
.50 Health credit
1.25 credits through participation in and completion of the Advisory Program and Capstone Project

Students enroll in elective courses for credit to achieve the 21.25 credit requirement for graduation.

Students earn credits when courses are passed; partial credits are not awarded. A full credit is awarded for year-long courses and a half credit is awarded for semester courses. A quarter credit is awarded for each year of the Advisory Program with the exception of grade 12 which is a half credit program.

BEYOND REQUIREMENTS

In addition to satisfying graduation credit requirements:

- Students are encouraged to take classes that challenge their academic abilities.
- Students should keep options open as they plan for careers and/or post-secondary education, two or four year colleges.
- Students should plan to exceed the high school graduation requirements. At least three years of a world language, four years of formal mathematics and science study are strongly advised for any students who plans to enroll in a four year college or technical/scientific based community college or military programs.
- Students who seek to compete as Division I or II athletes must satisfy the NCAA Clearinghouse academic eligibility guidelines, and need to be aware of NCAA eligibility requirements. Contact the counseling office for more information or go to http://www.ncaa.com.

For operational purposes, all students move to the next grade level at the conclusion of each year, progressing through Mt. Ararat High School's program as first-year, second-year, third-year, and fourth-year students. Typically, students graduate in four years. All third-year students, regardless of the number of credits earned, are required by the State of Maine to take the SAT and Science Augmentation Assessment in April. Note that students who attend Region 10 Technical High School prior to 11th grade are subject to modified graduation requirements. Additional information regarding credits, requirements, and course options is available through the school counseling office.

ACADEMIC STANDARDS: ASSESSMENT OF ACHIEVEMENT IN REQUIRED SUBJECTS

Students demonstrate achievement of required subject area learning standards by successfully completing essential course tasks and associated common assessments. All students taking required high school courses of study in the required subject areas will complete these common assessments. Such multiple measures allow faculty to ascertain each student's academic achievement.

ACADEMIC SUPPORT and REMEDIATION

Mt. Ararat High School provides support and remediation for students who need help meeting the academic standards associated with required content. Teachers may make themselves available to students in need academic help before and after school or at such times as teachers may designate in their schedules. Parents are urged to contact their child's teacher or the appropriate academic department heads for information about academic support. Some of the available supports include Math and English Interventions, Academic Support Time (AST), and After School Supports for specific content areas.

ADVANCED PLACEMENT: COURSES, EXAMINATIONS, AND POSSIBLE COLLEGE CREDIT

Students should keep in mind that they can earn possible college credit for AP coursework only by taking actual AP Exams. In accordance with the May AP Examination schedule, students taking courses designated “Advanced Placement" or "AP" are expected to take the AP Examination associated with each course. The academic transcripts of those students who elect not to take the corresponding AP Examinations are amended to read "Advanced" rather than "Advanced Placement." Students and their parents are encouraged to check the AP credit policies of particular colleges and universities by contacting the institutions or checking credit information through the College Board's website: http://www.collegeboard.com/ap/creditpolicy/.

MAINE SCHOOL ADMINISTRATIVE DISTRICT NO. 75 CONTENT AREA STANDARDS FOR GRADUATION

(adopted by the Board on May 7, 2015)

English Language Arts

English Language Arts Standard 1
READING COMPREHENSION: Read and comprehend appropriately complex literary and informational texts independently and proficiently. (CCRA 10)

English Language Arts Standard 2
READING INTERPRETATION: Interpret, analyze, and evaluate appropriately complex literary and informational texts. (CCRA 7, 10)

English Language Arts Standard 3
WRITING ARGUMENTS: Write clear and coherent arguments for a range of tasks, purposes, and audiences. (CCWA 1, 4,10)

English Language Arts Standard 4
WRITING INFORMATIVE AND NARRATIVE TEXTS: Produce clear and coherent informative and narrative writing for a range of tasks, purposes, and audiences. (CCWA 2, 3, 4, 10)

English Language Arts Standard 5
WRITING PROCESS: Develop and strengthen writing. (CCWA 5)

English Language Arts Standard 6
WRITING RESEARCH: Conduct short and sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. (CCWA 7, 10)

English Language Arts Standard 7
SPEAKING AND LISTENING DISCUSSION: Initiate and participate effectively in a range of discussions, responding thoughtfully to diverse perspectives, and expressing ideas clearly and persuasively. (CCSLA 1)

English Language Arts Standard 8
SPEAKING AND LISTENING PRESENTATION: Present information, findings, and supporting evidence, conveying a clear and distinct perspective (CCSLA 4)

(It should be noted that the research related standards listed above can be applied in any of the content areas that follow.)

Mathematics

Mathematics Standard 1

NUMBER AND QUANTITY: Reason and model quantitatively, using units and number systems to solve problems.

Mathematics Standard 2

ALGEBRA: Interpret, represent, create and solve algebraic expressions.

Mathematics Standard 3

FUNCTIONS: Interpret, analyze, construct, and solve linear, quadratic, and trigonometric functions.

Mathematics Standard 4

GEOMETRY: Prove, understand, and model geometric concepts, theorems, and constructions to solve problems.

Mathematics Standard 5

STATISTICS & PROBABILITY: Interpret, infer and apply statistics and probability to analyze data and reach and justify conclusions.

Science

Science Standard 1

PHYSICAL SCIENCES - STRUCTURE/PROPERTIES OF MATTER, FORCES, AND INTERACTIONS: Understand and analyze matter, reactions and physical systems as demonstrated through the integration of scientific and engineering practices and crosscutting concepts (PS 1 + PS 2)

Science Standard 2

PHYSICAL SCIENCES - ENERGY, WAVES, AND ELECTROMAGNETIC RADIATION: Understand and analyze energy and the characteristics and dynamics of waves as demonstrated through the integration of scientific and engineering practices and crosscutting concepts (PS 3 + PS 4)

Science Standard 3

LIFE SCIENCES - STRUCTURE, FUNCTION, AND INFORMATION PROCESSING: Understand and analyze molecular, structural, and chemical biology as demonstrated through the integration of scientific and engineering practices and crosscutting concepts (LS 1)

Science Standard 4

LIFE SCIENCES - MATTER AND ENERGY IN ORGANISMS AND ECOSYSTEMS: Understand and analyze the characteristics, functions, and behavioral interactions within an ecosystem as demonstrated through the integration of scientific and engineering practices and crosscutting concepts (LS 2)

Science Standard 5

LIFE SCIENCES - GROWTH, DEVELOPMENT, AND REPRODUCTION OF ORGANISMS, NATURAL SELECTION, AND ADAPTATIONS: Understand and analyze genetics, adaptation, and biodiversity as demonstrated through the integration of scientific and engineering practices and crosscutting concepts (LS 3 + LS 4)

Science Standard 6

EARTH AND SPACE SCIENCES - EARTH, SPACE, AND THE UNIVERSE: Understand and analyze the origins, interactions and relationships between and among the earth, our solar system, and the universe as demonstrated through the integration of scientific and engineering practices and crosscutting concepts (ESS 1)

Science Standard 7

EARTH AND SPACE SCIENCES - EARTH SYSTEMS: Understand and analyze earth's systems and the relationship between human activity and the earth as demonstrated through the integration of scientific and engineering practices and crosscutting concepts (ESS 2 + ESS 3)

Science Standard 8

ENGINEERING, TECHNOLOGY, AND APPLICATION OF SCIENCE: Demonstrate engineering concepts across multiple disciplines and novel situations as demonstrated through the integration of scientific and engineering practices and crosscutting concepts (ETS 1 + ETS 2).

Social Studies

Social Studies Standard 1

CIVIC ENGAGEMENT: Apply the attributes of a responsible and involved citizen to affect a real world issue based on a local need. (MLR, A2 + A3)

Social Studies Standard 2

CIVICS AND GOVERNMENT: Apply understanding of the ideals and purposes of founding documents, the principles and structures of the constitutional government in the United States, and the American political system to analyze interrelationships among civics, government and politics in the past and the present, in Maine, the United States and the world. (MLR, B)

Social Studies Standard 3

ECONOMICS: Understand and apply the concepts and processes from economics to understand issues of personal finance and issues of production, distribution and consumption in the community, Maine, the United States and the world. (MLR C)

Social Studies Standard 4

GEOGRAPHY: Analyze the physical, human and environmental geography of Maine, the United States and various regions of the world to evaluate the interdependent relationships and challenges facing human systems in the past, present and future. (MLR D)

Social Studies Standard 5

HISTORY: Apply and demonstrate knowledge of major eras, enduring themes, turning points and historic influences to analyze the forces of continuity and change in the community, in Maine, the United States and the world. (MLR E)

World Language

INTERPERSONAL COMMUNICATION*: Engage in conversations and informal written correspondence on a variety of topics. (MLR A1)

INTERPRETIVE COMMUNICATION: Understand and interpret written and spoken language on a variety of topics. (MLR A2)

PRESENTATIONAL COMMUNICATION: Present information, concepts and ideas, orally and in writing, to an audience of listeners or readers on a variety of topics. (MLR A3)

COMPARISON OF PRACTICES, PRODUCTS AND PERSPECTIVES: Compare the nature of language and the culture(s) of the target language with one's own. (MLR A4, B13, C2)

COMMUNITIES: Encounter and use the target language both in and beyond the classroom for personal enjoyment and lifelong learning. (MLR C1, D1)

Visual and Performing Arts

Visual and Performing Arts Standard 1
DISCIPLINARY LITERACY: Students show literacy in the discipline through understanding and demonstrating concepts, skills, terminology, and processes.

Visual and Performing Arts Standard 2
CREATION, PERFORMANCE, EXPRESSION: Students create, perform/produce, and express ideas through the art discipline.

Visual and Performing Arts Standard 3
CREATIVE PROBLEM SOLVING: Students approach artistic problem solving using multiple solutions and the creative process.

Visual and Performing Arts Standard 4
AESTHETICS AND CRITICISM: Students describe, analyze, interpret, and evaluate art.

Visual and Performing Arts Standard 5
CONNECTIONS: Students understand the relationship among the arts, history and world culture; and they make connections among the arts and to other disciplines, to goal setting, and to interpersonal interaction.

Health Education and Physical Education

Health Education Standard 1
HEALTH CONCEPTS: Students comprehend concepts related to health promotion and disease prevention to enhance health. (MLR A)

Health Education Standard 2
HEALTH INFORMATION, PRODUCTS, AND SERVICES: Demonstrate the ability to access valid health information, services and products to enhance health. (MLR B)

Health Education Standard 3
HEALTH PROMOTION AND RISK REDUCTION: Demonstrate the ability to practice health enhancing behaviors and avoid or reduce health risks. (MLR C)

Health Education Standard 4
INFLUENCES ON HEALTH: Analyze the ability of family, peers, culture, media, technology and other factors to enhance health. (MLR D)

Health Education Standard 5
ADVOCACY, DECISION MAKING AND GOAL SETTING SKILLS: Demonstrate the ability to use interpersonal communication and advocacy skills; make decisions; and set goals to enhance personal, family and community health. (MLR E, F)

Physical Education Standard 1
MOVEMENT/MOTOR SKILLS AND KNOWLEDGE: Demonstrate the fundamental and specialized motor skills and apply principles of movement for improved performance. (MLR G)

Physical Education Standard 2
PHYSICAL FITNESS ACTIVITIES AND KNOWLEDGE: Demonstrate and apply fitness concepts. (MLR H)

Physical Education Standard 3
PERSONAL AND SOCIAL SKILLS AND KNOWLEDGE: Demonstrate and explain responsible personal behavior and responsible social behavior in physical activity settings. (MLR I)

Career and Education Development

Career and Education Development Standard 1
SELF KNOWLEDGE AND INTERPERSONAL RELATIONSHIPS: Assess and demonstrate a thorough understanding of the knowledge, attitudes, behaviors and skills needed to be successful in school, careers, civic life, and relationships with others. (NCDG PS1, PS2)

Career and Education Development Standard 2
EDUCATION, CAREER AND LIFE ROLES: Demonstrate an understanding of the relationship between the changing nature of work in a 21st century global economy and educational requirements; how learning new skills and educational achievement lead to increased career options and lifelong learning. (NCDG ED 1, ED 2 ,CM 3, CM 5)

Career and Education Development Standard 3
MAKING DECISIONS, UTILIZING A PLANNING PROCESS, CREATING OPPORTUNITIES AND MAKING MEANINGFUL CONTRIBUTIONS: Demonstrate effective decision making and planning skills in their pursuit of success in education, work and citizenship roles. (NCDG CM 1, CM 2, CM 3, CM 4)

Guiding Principles

A. A Clear and Effective Communication
Understands the attributes and techniques that positively impact constructing and conveying meaning for a variety of purposes and through a variety of modes.

B. A Self Directed and Lifelong Learner
Understands the importance of embracing and nurturing a growth mindset.

C. A Creative and Practical Problem Solver
Skilled at selecting and applying a process of problem solving to deepen understanding and determine whether redefining the goal is a better way of addressing a problem situation and continuing to consider other alternative solutions until one resonates as the best one.

D. A Responsible and Involved Citizen
Understands the interdependence within and across systems and brings to each situation the appropriate actions.

E. An Integrative and Informed Thinker
Skilled at using complex reasoning processes to make meaning.

COURSE REGISTRATION

The serious business of course registration period for the 2019-2020 academic year begins with the publication of the *Program of Studies* and ends on the last day of school in June. During this time, students, parents, and faculty work together to determine student schedules for the following academic year. The entire process involves planning then making choices and commitments. Registrations influence the shape of the master schedule and the allocation of school resources such as faculty, staff, materials, and space.

Schedule-building

At the start of the course registration period, students consult with their advisors then with teachers of their current courses, who recommend subsequent courses and placements. If a teacher or department recommendation does not match a student's desired course or placement, that student's parents may override the teacher's recommendation, providing the student meets published course prerequisites. As initial registration activities proceed, students receive information on other courses (including electives and Region 10 High School programs) through the *Program of Studies* and other means. Students may then select any additional courses.

Schedule review / adjustment

After the schedule-building phase of the course registration period, each student receives a preliminary schedule. Students must review their preliminary schedules with their parents and, as needed, with school counselors and other faculty. Modifications must be made prior to the June 2019 close of the course registration period.

Step-Up Day

This annual event is important for the entire school community. On this day, students receive course information from faculty that currently teaches the courses they are scheduled to take next year. Step-up day allows students the opportunity to request final changes in their selection of courses. The teaching faculty, guidance counselors, and school staff thus are better able to balance class sizes and provide an appropriate number of course sections.

Course registrations and schedules are considered final on the last day of school in June, 2019.

After the last day of school in June, a student's preliminary schedule becomes final. From that point on, a schedule may only be changed when:

- a department head approves a different academic placement,
- a school counselor determines the existence of a situation that requires intervention in the affected student's best academic interest (for example, a student may need to address particular graduation requirements or may have assumed an inappropriate course load), or
- a department head determines that course sections require balancing.

Mt. Ararat High School

COURSE / CREDIT CHECKLIST FOR GRADUATION

NAME _____ **PROJECTED Y.O.G.** _____

ADDRESS _____ **TELEPHONE** _____

PARENT INFO _____

First HS year (grade 9)	**Second HS year (grade 10)**	**Third HS year (grade 11)**	**Fourth HS year (grade 12)**
_ Advisory	**_ Advisory**	**_ Advisory**	**_ Advisory**
_ English _____	**_ English _____**	**_ English _____**	**_ English _____**
_ Math _____	**_ Math _____**	**_ Math _____**	**_ Math _____**
_ Science _____	**_ Science _____**	**_ Science _____**	**_ Science _____**
_ Soc.St. _____	**_ Soc. St. _____**	**_ Soc. St. _____**	**_ Soc. St. _____**
_ Phys Ed I	**_ PE II / Outdoor Ed**	**_ Fine Arts _____**	**_ Fine Arts _____**
_ Fine Arts _____	**_ Health**	**_ World Lang. ___**	**_ World Lang. ___**
_ World Lang ___	**_ Fine Arts _____**	**_ Elective(s):**	**_ Elective(s)**
_ Elective(s):	**_ World Lang. ___**	**_____**	**_____**
_____	**_ Elective(s):**	**_____**	**_____**
_____	**_____**	**_____**	**_____**
_____	**_____**	**_____**	**_____**
_ Year 1 total	**_ Year 2 total**	**_ Year 3 total**	**_ Year 4 total**
_ TOTAL CREDITS	**_ TOTAL CREDITS**	**_ TOTAL CREDITS**	**_ TOTAL CREDITS (21.25 needed)**

DATE ENROLLED _____ **FROM**_____

Required subjects and number of credits required

_ _ _ _	(4 cr)	English I-IV (AP English courses may substitute for English III or IV)
_ _ _	(3cr)	Science
_ _ _	(3 cr)	Social Studies (1 Credit must be US History)
_ _ _	(3 cr)	Mathematics
_	(1 cr)	Physical Education
_	(1 cr)	Fine Arts
_	(.5 cr)	Health
_	(1.25 cr)	Advisory Program

(Technical education students adjusted credit requirements based on number of years enrolled in Tech 10.)

NOTES:

FRESHMAN YEAR COURSE REGISTRATION 2019-2020

Freshmen must sign up for at least 6 courses per semester

Published course requirements, including screening requirements, must be met. Students who wish to take a course at a level that is not recommended must have their parent's/guardian's documented approval.

Below are the courses available for freshmen.

REQUIRED COURSES

ENGLISH ***(1 of the following)***
1111 Academic English I
1112 Advanced English I

MATHEMATICS ***(1 of the following)***
1310 Foundations in Algebra I
1311 Academic Algebra I
1321 Academic Geometry
1322 Advanced Geometry

SCIENCE ***(1 of the following)***
1410 Physical Science
1411 Academic Physical Science
1412 Honors Physical Science

SOCIAL STUDIES ***(both semesters)***
1511a Acd. Intro to World Religions *(1st sem)*
1511b Acd. World Governments *(2nd sem)*

FINE ARTS
2110s Foundations in Visual Arts
& 1 Visual Arts elective **-OR-**
2213s Beginning Guitar
-OR- ***(1 of the following)***
2210 Concert Band
2221 Concert Choir

PHYSICAL EDUCATION
3210s PE I

ELECTIVE COURSES

ENGLISH
1150a Creative Writing (fall)*
1150b Creative Writing (spring)*
1152s Sports Literature

WORLD LANGUAGES
1211 French I
1212 German I
1213 Spanish I

MATHEMATICS
1370s Intro to Coding
1371 Computer Science

SCIENCE
1452s Astronomy
1458s Marine Science
1460 Explorations in Engineering

VISUAL ARTS
2122s Drawing
2123s Painting
2125s Sculpture
2129s The Art of Craft

JOBS FOR MAINE GRADUATES
6001a JMG - Freshman (fall)*
6001b JMG - Freshman (spring)*

REGION 10
7000s Foundations of Technology

*Courses noted as "fall" and "spring" can be taken either semester or both semesters

SOPHOMORE YEAR COURSE REGISTRATION 2019-2020

Sophomores must sign up for at least 6 courses per semester

Published course requirements, including screening requirements, must be met. Students who wish to take a course at a level that is not recommended must have their parent's/guardian's documented approval.

Below are the courses available for sophomores.

REQUIRED COURSES

ENGLISH ***(1 of the following)***
1121 Academic English II
1122 Advanced English II

MATHEMATICS ***(1 of the following)***
1320 Foundations in Geometry
1321 Academic Geometry
1331 Academic Algebra II
1332 Advanced Algebra II

SCIENCE ***(1 of the following)***
1420 Biology
1421 Academic Biology
1422 Honors Biology *(lab required)*
1422s Honors Biology Lab

SOCIAL STUDIES ***(2 acd. semesters or AP year long)***
1521a Academic Comparative Economics *(1st sem)*
1521b Academic American Foreign Policy *(2nd sem)*
1522 AP European History

FINE ARTS ***(if not yet fulfilled)***
1 Visual Arts elective
-OR-
2213s Beginning Guitar

HEALTH/PHYSICAL EDUCATION ***(Health & either PE II or Outdoor Ed)***
3220s PE II
3221s Outdoor Education
3222s Health

ELECTIVE COURSES

ENGLISH
1150a Creative Writing (fall)*
1150b Creative Writing (spring)*
1151a Journalism (fall)[†]
1151b Journalism (spring)[†]
1152s Sports Literature

WORLD LANGUAGES
1221 French II
1222 German II
1223 Spanish II
1231 French III
1232 German III
1233 Spanish III

MATHEMATICS
1370s Intro to Coding
1371 Computer Science
1372 AP Computer Science

SCIENCE
1452s Astronomy
1456s Infectious Disease
1458s Marine Science
1460 Explorations in Engineering

*Courses can be taken either semester or both semesters.
[†]Course offered as first semester only, or full year. Student MUST complete fall semester to take spring semester.

Continued on reverse

ELECTIVE COURSES CONTINUED

VISUAL ARTS

2122s Drawing
2123s Painting
2125s Sculpture
2129s The Art of Craft
2131s Ceramics I
2132s Ceramics II

MUSIC

2210 Concert Band
2211 Wind Ensemble
2213s Beginning Guitar
2221 Concert Choir
2222 Chamber Singers
2223 Treble Choir

HEALTH/PHYSICAL EDUCATION

3231s Fit for Life

JOBS FOR MAINE GRADUATES

6002a JMG - Multiyear (fall)*
6002b JMG - Multiyear (spring)*

*Courses can be taken either semester or both semesters.
†Course offered as first semester only, or full year. Student MUST complete fall semester to take spring semester.

REGION 10

7000s Foundations of Technology
7001 Auto Collision Repair
7002 Auto Technology I (AM)
7003 Auto Technology II (PM)
7004 Building Trades
7005 Culinary Arts
7006 Early Childhood I (AM)
7007 Early Childhood II (PM)
7008 EMT Basic
7009 General Trades
7011 Metal Fabrication & Welding
7012 Multimedia Communications (AM)
7013 Outdoor Powersports I (AM)
7014 Outdoor Powersports II (PM)
7015a Introduction to Engineering
7015b Principles of Engineering
7016a Mechatronics

JUNIOR YEAR COURSE REGISTRATION 2019-2020

Juniors must sign up for at least 6 courses per semester

Published course requirements, including screening requirements, must be met. Students who wish to take a course at a level that is not recommended must have their parent's/guardian's documented approval.

Below are the courses available for juniors.

REQUIRED COURSES

ENGLISH ***(1 of the following)***
1130 English III WRL
1131 Academic English III
1132 AP English Language & Composition

MATHEMATICS ***(1 of the following)***
1333 Algebra II Part I
1331 Academic Algebra II
1332 Advanced Algebra II
1341 Pre Calculus
1342 Advanced Pre Calculus

SCIENCE ***(1 of the following)***
1430 Chemistry
1431 Academic Chemistry
1432 Honors Chemistry *(lab required)*
1431s Honors Chemistry Lab
1433 Chemistry/Physics

SOCIAL STUDIES ***(2 semesters or AP year long)***
1531a Academic US History I: 1775-1914 *(1st sem)*
1531b Academic US History II: 1914 - Present *(2nd sem)*
1532 AP United States History
1533a SMCC US History to 1877 *(1st sem)*
1533b SMCC US History since 1877 *(2nd sem)*

FINE ARTS ***(if not yet fulfilled)***
1 Visual Arts elective
-OR-
2213s Beginning Guitar

HEALTH/PHYSICAL EDUCATION ***(1 if not yet fulfilled)***
3220s PE II
3221s Outdoor Education

ELECTIVE COURSES

ENGLISH
1150a Creative Writing (fall)*
1150b Creative Writing (spring)*
1151a Journalism (fall)†
1151b Journalism (spring)†
1152s Sports Literature
1153a Understanding Film (fall)†
1153b Understanding Film (spring)†

WORLD LANGUAGES
1231 French III
1232 German III
1233 Spanish III
1241 French IV
1242 German IV
1243 Spanish IV
1261a Global Culture in Film (fall)*
1261b Global Culture in Film (spring)*

MATHEMATICS
1370s Intro to Coding
1371 Computer Science
1372 AP Computer Science

SCIENCE
1452s Astronomy
1453s Forensic Science
1455 Human Anatomy & Physiology
1456s Infectious Disease
1458s Marine Science
1460 Explorations in Engineering

*Courses can be taken either semester or both semesters.
†Course offered as first semester only, or full year. Student MUST complete fall semester to take spring semester.
Continued on reverse

ELECTIVE COURSES CONTINUED

SOCIAL STUDIES

1553a Art & Society Part I (fall)*
1553b Art & Society Part II (spring)*
1555s Mythology
1556s The News & You
1558s Psychology
1559s Sociology

VISUAL ARTS

2122s Drawing
2123s Painting
2124s Photography
2125s Sculpture
2127 AP 2D Design
2129s The Art of Craft
2131s Ceramics I
2132s Ceramics II
2133 AP 3D Ceramics

MUSIC

2210 Concert Band
2211 Wind Ensemble
2221 Concert Choir
2222 Chamber Singers
2223 Treble Choir

HEALTH/PHYSICAL EDUCATION

3231s Fit for Life
3232s Independent Living
3233s Resistance Training
3234s Team Sports

JOBS FOR MAINE GRADUATES

6002a JMG - Multiyear (fall)*
6002b JMG - Multiyear (spring)*

*Courses can be taken either semester or both semesters.
[†]Course offered as first semester only, or full year. Student MUST complete fall semester to take spring semester.

REGION 10

7001 Auto Collision Repair
7002 Auto Technology I (AM)
7003 Auto Technology II (PM)
7004 Building Trades
7005 Culinary Arts
7006 Early Childhood I (AM)
7007 Early Childhood II (PM)
7008 EMT Basic
7009 General Trades
7010 Health Occupations - CNA
7011 Metal Fabrication & Welding
7012 Multimedia Communications (AM)
7013 Outdoor Powersports I (AM)
7014 Outdoor Powersports II (PM)
7015a Introduction to Engineering
7015b Principles of Engineering
7016a Mechatronics

SENIOR YEAR COURSE REGISTRATION 2019-2020

Seniors must sign up for at least 5 courses per semester

Published course requirements, including screening requirements, must be met. Students who wish to take a course at a level that is not recommended must have their parent's/guardian's documented approval.

Below are the courses available for seniors.

REQUIRED COURSES

ENGLISH ***(1 of the following)***
1140 English IV WRL
1141 Academic English IV
1142 AP English Literature & Composition
1143 SMCC English IV Composition 100

MATHEMATICS ***(1 of the following)***
1334 Algebra II Part II/Trigonometry
1341 Pre Calculus
1342 Advanced Pre Calculus
1351 Calculus
1352 AP Calculus AB
1353 AP Calculus BC

SCIENCE ***(1 of the following)***
1433 Chemistry/Physics
1440 Physics
1441 Academic Physics
1442 Honors Physics *(lab required)*
1442s Honors Physics Lab

SOCIAL STUDIES ***(both semesters if not yet fulfilled)***
1531a Academic US History I: 1775-1914 *(1st sem)*
1531b Academic US History II: 1914 - Present *(2nd sem)*

FINE ARTS ***(if not yet fulfilled)***
1 Visual Arts elective
-OR-
2213s Beginning Guitar

HEALTH/PHYSICAL EDUCATION ***(1 if not yet fulfilled)***
3220s PE II
3221s Outdoor Education

ELECTIVE COURSES

ENGLISH
1150a Creative Writing (fall)*
1150b Creative Writing (spring)*
1151a Journalism (fall)[†]
1151b Journalism (spring)[†]
1152s The Literature of Sports
1153a Understanding Film (fall)[†]
1153b Understanding Film (spring)[†]

WORLD LANGUAGES
1241 French IV
1242 German IV
1243 Spanish IV
1251 French V
1252 German V
1253 Spanish V
1261a Global Culture in Film (fall)*
1261b Global Culture in Film (spring)*

MATHEMATICS
1360 College Readiness Math
1361 Statistics
1362 AP Statistics
1370s Intro to Coding
1371 Computer Science
1372 AP Computer Science

*Courses can be taken either semester or both semesters.
[†]Course offered as first semester only, or full year. Student MUST complete fall semester to take spring semester.

Continued on reverse

ELECTIVE COURSES CONTINUED

SCIENCE

1450 AP Biology *(lab required)*
1450s AP Biology Lab
1451 AP Environmental Science *(lab required)*
1451s AP Environmental Science Lab
1452s Astronomy
1453s Forensic Science
1455 Human Anatomy & Physiology
1456s Infectious Disease
1458s Marine Science
1460 Explorations in Engineering

SOCIAL STUDIES

1542 AP US Government & Politics
1553a Art & Society Part I (fall)*
1553b Art & Society Part II (spring)*
1555s Mythology
1556s The News & You
1558s Psychology
1559s Sociology

VISUAL ARTS

2122s Drawing
2123s Painting
2124s Photography
2125s Sculpture
2127 AP 2D Design
2129s The Art of Craft
2131s Ceramics I
2132s Ceramics II
2133 AP 3D Ceramics

MUSIC

2210 Concert Band
2211 Wind Ensemble
2213s Beginning Guitar
2221 Concert Choir
2222 Chamber Singers
2223 Treble Choir

HEALTH/PHYSICAL EDUCATION

3231s Fit for Life
3232s Independent Living
3233s Resistance Training
3234s Team Sports

JOBS FOR MAINE GRADUATES

6003a JMG -Senior (fall)*
6003b JMG - Senior (spring)*

REGION 10

7001 Auto Collision Repair
7002 Auto Technology I (AM)
7003 Auto Technology II (PM)
7004 Building Trades
7005 Culinary Arts
7006 Early Childhood I (AM)
7007 Early Childhood II (PM)
7008 EMT Basic
7009 General Trades
7010 Health Occupations - CNA
7011 Metal Fabrication & Welding
7012 Multimedia Communications (AM)
7013 Outdoor Powersports I (AM)
7014 Outdoor Powersports II (PM)
7015a Introduction to Engineering
7015b Principles of Engineering
7016a Mechatronics
7100 Pre Apprenticeship

*Courses can be taken either semester or both semesters.
[†]Course offered as first semester only, or full year. Student MUST complete fall semester to take spring semester.

ADDITIONAL PROGRAMS

ADVISORY PROGRAM

1.25 credits (*.25 credit per year grades 9-11, .5 credit grade 12)*

The Mt. Ararat High School Advisory Program provides each student with an ongoing connection with a faculty member who can provide both academic and social support. Advisory activities include regular review of each student's academic progress, communication with parents, development of a post-secondary plan, discussion of school-wide issues, and other activities that build a sense of community and belonging within the school. The Advisory curriculum may be accessed on the Mt. Ararat High School website. All students are required to complete certain activities focused on career and education development standards including Freshmen completing a career project, Sophomores doing a budget activity, Juniors writing a resume, and Seniors fill out a college application and complete a Capstone project.

EARLY COLLEGE COURSES

Juniors and seniors may qualify to enroll in college courses at Southern Maine Community College, University of Southern Maine and University of Maine at Augusta. Students may take courses at the main campus of each of these colleges or other campuses such in the area. Interested students should check with their school counselor for information about eligibility, registration, and financial assistance. Course information for all Maine colleges can be accessed from Mt. Ararat's web page. Upon successful completion of a college course, students earn dual credit: 1 high school credit and 3 college credits which may be transferable upon graduation. Courses are intended to supplement, not replace, high school required courses. Course options at other nearby colleges, such as Bowdoin College in Brunswick, can be explored. See your school counselor for more information.

INDEPENDENT STUDY

A student may apply for Independent Study in order to pursue worthy educational goals that cannot be met through the regular academic program. Independent Study work is monitored and supported by a teacher who agrees to the student's request for such supervision. As part of the approval process, counseling services determine whether a course can be or could have been accessed through regular enrollment and whether the suggested study is educationally appropriate for the student to pursue. The appropriate academic department head reviews the time, faculty support, materials, credit and other provisions of the proposal and makes a recommendation to the school counselor.

ENGLISH LANGUAGE DEVELOPMENT PROGRAM

The English Language Development Program serves referred students who demonstrate limited English proficiency due to cultural relocation or similar circumstances. Students receive guided individualized instruction in acquiring literacy and communications skills in English. Students work on listening, speaking, reading, and writing. English language learner support is also offered to students who are proficient in basic communications skills but lack the cognitive academic English proficiency level to succeed in regular classes. The teacher consults with content area teachers in

order to select and modify appropriate materials. Work completed in the context of program instruction may apply to various state and school requirements by prearrangement with the appropriate department head and approval of the principal.

NAVIGATE/MENTORING PROGRAM

.5 credit for juniors and seniors

Navigate is a high school-based mentoring program with a mission to support first-year students. It is designed to foster one-on-one relationships through which volunteer mentors help their student mentees (freshman) face social, academic, and behavioral challenges implicit in their adjustment to high school. These consistent supervised relationships can yield tangible benefits for youth including improved relationships with peers and family, increased self awareness and building of trust, and a sense of belonging in school. This program signifies leadership, involvement, and community.

NAVIGATE/MENTEE PROGRAM

.5 credit for freshman

Navigate is a high school-based peer mentoring program with a mission to support first-year students. It is designed to foster one-on-one relationships through which volunteer mentors (juniors and seniors) help their freshman mentees face social, academic, and behavioral challenges implicit in their adjustment to high school. . These consistent supervised relationships can yield tangible benefits for youth including improved relationships with peers and family, increased self awareness and building of trust, and a sense of belonging in school. The ultimate goal of Navigate is for students to achieve four successful years in school which leads to a high school diploma.

SPECIAL EDUCATION SERVICES

Special Services provides an integrated educational program for students with documented disabilities, determined through an Individualized Education Plan (IEP) meeting. Contact the Special Services office at Mt. Ararat High School for more detailed information. The MSAD #75 Special Services director can be reached at 729-1557.

CAREER PROGRAMS

JOBS FOR MAINE'S GRADUATES (JMG)

JMG - SENIOR #6003a (fall) and #6003b (spring)

Recommended level: 12

This is a class for seniors that will help you acquire the skills needed to successfully transition into adulthood. Topics covered include the college application process, apprenticeship programs and job shadowing, career exploration, resumes and cover letters, the job search, job interviews, managing

your money, health and nutrition, buying/maintaining a car, academic support, building and supporting healthy relationships, communication, community service projects, and teamwork. Activities are frequently hands-on. Classes are small and class discussions are common. JMG provides an opportunity for you to figure out who you are, what you want for your future, what opportunities are available, and how to take advantage of them.

JMG - MULTI-YEAR #6002a (fall) and #6002b (spring)
JMG - 9th GRADE #6001a (fall) and #6001b (spring)
Recommended level: 9-11
The JMG Multi-Year Program is about you and your future. What interests you? What are you good at? What do you find challenging? How do you learn best? What makes for a successful team? Are you a leader? What can you do now to prepare for your future? To answer these questions, we will engage in hands-on activities, discussions, and community service projects. Classes are small with a strong focus on creating a safe supportive environment that allows the class to function as a team.

INTERNSHIP
Recommended level: 11-12
The internship program is for juniors and seniors who might benefit from an on-the -job experience to assist them in their post-secondary planning. Students who might be interested in such an experience should see their guidance counselor.

ENGLISH

Academic Planning Notes:
• English credits required: 4 (English I-IV; AP English courses, comprised of introductory college level work, also count for required English credits.)
• In order to proceed to the next course in the required English sequence, students must complete specific common assessments associated with these courses that demonstrate their achievement of English language arts proficiency.
• The scope and sequence of the English program means that students cannot take two required, sequenced English courses simultaneously for credit. However, 3rd- or 4th-year students who need an additional English credit for graduation may, with all required approvals, enroll in Critical Reading and Writing at Merrymeeting Adult Education concurrently with their enrollment in their regular English course or during the summer.
• Enrollment in Writing and Reading Lab III or IV courses and Literacy Workshop requires English department referral. The courses are not available as student selections during course registration.
• English electives do not satisfy state English requirements. However, Creative Writing applies to the state Fine Arts credit requirement.

• **REGION TEN TECHNICAL HIGH SCHOOL ENGLISH** course allows students with credit deficiencies in other required subjects to earn required state English credit at Region 10 and thus undertake or maintain involvement in their vocational program. However, course content, including unit scope and sequence and course assessments, differs from that of the Mt. Ararat High School English curriculum.

ENGLISH I *1 Credit*

Ninth-grade (first-year) students take one of the following two courses:

Course Title: ACADEMIC ENGLISH I #1111
Suggested Grade Level: **9**
Prerequisites: *none*

English I is a transitional course designed to further develop the language arts skills, concepts, and practices that students will need to grow as readers and writers throughout high school and beyond. Specifically, students explore how to become critical readers of literary text, including fiction and nonfiction. They also strive to become more effective communicators by sharpening their command of oral and written expression. This involves learning how to use the writing process — planning, drafting, revision, and editing — to produce articulate, well-crafted papers. Progress toward these goals is measured in five required common assessments: (1) analysis of argument, (2) culture reading project, (3) literary analysis of a Shakespearean passage, (4) living history presentation, and (5) thematic essay.

Learning Goals Associated with the Course:

1. Determine themes of a grade-appropriate text and analyze its development in detail.
2. Analyze the impact of literary devices and strategies on meaning and tone in grade-appropriate texts.
3. Support analysis of grade-appropriate literary text with textual evidence.
4. Support analysis of grade-appropriate nonfiction text with textual evidence.
5. Determine the meaning of words as they are used in a text.
6. Write clear and cohesive arguments.
7. Write clear and cohesive informative/explanatory texts.
8. Write narratives to develop real or imagined experiences or events.
9. Demonstrate command of conventions of standard English grammar and usage when writing.
10. Use the skills and strategies of the writing process including pre-drafting, drafting, and revising based on feedback.
11. Collect, evaluate, and integrate accurate information into a fictional narrative text while avoiding over-reliance on any one source.
12. Come to group discussions prepared, having read and researched material.

13. Use voice and other oral communication skills to deliver focused and cohesive presentations.
14. Behave in respectful and supportive ways as members of an audience.

Course Title: ADVANCED ENGLISH I #1112
Suggested Grade Level: **9**
Prerequisites: *participation in guided advanced study in English Language Arts learning goals in the eighth grade; department screening including completion of summer work; students must demonstrate both the maturity and academic readiness to undertake advanced study as a high school freshman*

This course is intended for ninth graders who demonstrate (1) a strong interest in the study of language, literature, and writing, (2) proficiency in ninth-grade learning goals, and (3) the maturity and academic readiness to engage in an intensive, accelerated program of study. As readers and writers, students consider various literary genres (essays, speeches, poems, fiction, and drama), paying close attention to language features, form, and meaning. Students are expected to read regularly outside of class and to confer with their peers and teacher about their writing. Freshmen who successfully complete this course will be prepared to take Advanced English II in their sophomore year.

Learning Goals Associated with the Course:

1. Determine the themes of advanced literary text and analyze their development with detail and insight.
2. Analyze the impact of literary devices and strategies to enrich the reading, analysis, and/or writing of poetry.
3. Determine central ideas of advanced nonfiction text and analyze their development with detail and insight.
4. Determine the meaning of words as they are used in a text.
5. Support analysis of advanced nonfiction text with apt selection of textual evidence.
6. Support analysis of advanced literary text with apt selection of textual evidence and citations.
7. Write narratives to develop real or imaginary experiences using purposeful techniques, details, and diction.
8. Write clear and cohesive arguments using valid reasoning and appropriate evidence.
9. Use the skills and strategies of the writing process including pre-drafting, drafting, and revising based on peer- and teacher-feedback.
10. Collect, evaluate, and integrate information into a coherent text.
11. Employ the conventions of MLA formatting and citations.
12. Demonstrate command of conventions of standard English grammar and usage when writing.
13. Respond thoughtfully to diverse perspectives.

14. Use voice and other oral communication skills to deliver effective presentations to an audience.
15. Behave in respectful and supportive ways as members of an audience.

ENGLISH II *1 Credit*

Prerequisite: Academic or Advanced English I
Students who have earned English I credit take one of the following two courses:

Course Title: ACADEMIC ENGLISH II #1121
Suggested Grade Level: **10**
Prerequisites: *Academic or Advanced English I*

Students deepen their awareness and appreciation of literary form and meaning. They write and revise regularly as they learn how to build support for their ideas, observations, and positions. They also present and defend ideas in class discussions and group work. Students gather, synthesize, and shape information and opinions into an informed research project that culminates in an "I-Search" paper. Students confer regularly with their peers and teacher about their writing.

Learning Goals Associated with the Course:

1. Determine themes of a grade-appropriate text and analyze its development in detail.
2. Analyze the impact of literary devices and strategies on meaning and tone in grade-appropriate texts.
3. Determine central ideas of a grade-appropriate text and analyze their development.
4. Compare and contrast two or more grade-appropriate texts and analyze how their juxtaposition contributes to meaning.
5. Support analysis of grade-appropriate nonfiction text with textual evidence.
6. Support analysis of grade-appropriate literary text with textual evidence and citations.
7. Write clear and cohesive arguments using valid reasoning and appropriate evidence.
8. Acknowledge and refute counterclaim.
9. Write clear and cohesive informative/explanatory texts to examine and convey complex ideas, concepts, and information.
10. Use the skills and strategies of the writing process including pre-drafting, drafting, and revising based on feedback.
11. Demonstrate command of conventions of standard English grammar and usage when writing.
12. With guidance, collect, evaluate, and integrate information into a coherent text.
13. Employ the conventions of MLA formatting and citations.
14. Respond thoughtfully to diverse perspectives.
15. Make strategic use of digital media in presentations.
16. Adapt presentation style to appropriate contexts and tasks.
17. Behave in respectful and supportive ways as members of an audience.

Course Title: ADVANCED ENGLISH II #1122
Suggested Grade Level: **10**
Prerequisites: *Academic or Advanced English I; department screening including completion of summer work; students must demonstrate readiness to undertake advanced study through achievement in freshman English course*

Students who successfully complete this course will be prepared to undertake introductory college-level work in subsequent AP English courses. This course is intended for students with strong interest in the study of language, literature, and writing who are ready to do intensive, accelerated work. As readers and writers, students consider various literary genres (essays, speeches, poems, fiction, and drama), paying close attention to language features, form, and meaning. Students complete a major research project and confer regularly with their peers and teacher about their writing.

Learning Goals Associated with the Course:

1. Determine themes of a grade-appropriate text and analyze its development in detail.
2. Analyze the impact of literary devices and strategies on meaning and tone in grade-appropriate texts.
3. Determine central ideas of a grade-appropriate text and analyze their development.
4. Determine the meaning of words as they are used in a text.
5. Compare and contrast two or more grade-appropriate texts and analyze how their juxtaposition contributes to meaning.
6. Support analysis of grade-appropriate nonfiction text with textual evidence.
7. Support analysis of grade-appropriate literary text with textual evidence and citations.
8. Write clear and cohesive arguments using valid reasoning and appropriate evidence.
9. Acknowledge and refute counterclaim.
10. Write clear and cohesive informative/explanatory texts to examine and convey complex ideas, concepts, and information.
11. Use the skills and strategies of the writing process including pre-drafting, drafting, and revising based on feedback.
12. Demonstrate command of conventions of standard English grammar and usage when writing.
13. Collect, evaluate, and integrate information into a coherent text.
14. Employ the conventions of MLA formatting and citations.
15. Respond thoughtfully to diverse perspectives.
16. Adapt presentation style to appropriate contexts and tasks.
17. Behave in respectful and supportive ways as members of an audience.

ENGLISH III *1 Credit*

Prerequisite: Academic English II or Advanced English II

Students who have earned English II credit take one of the following two courses:

Course Title: ACADEMIC ENGLISH III #1131
Suggested Grade Level: **11**
Prerequisites: *Academic English II or Advanced English II*

Students consider American writing and culture through the study of essays, short fiction, poetry, and longer works such as *The Night Thoreau Spent in Jail*, *Montana 1948* and *The Catcher in the Rye*. Works by accomplished women writers such as Walker, Berg, Kingsolver, Angelou, Tan, and Smiley are read and discussed during a community reading unit. Regular student writing for various purposes augments discussions and assigned readings. Listening, speaking, group work, and vocabulary skills are featured in course units and strands. Students confer regularly with their peers and teacher about their writing.

Learning Goals Associated with the Course:

1. Determine central ideas of a grade-appropriate text and analyze their development.
2. Analyze the impact of rhetorical strategies on the meaning and tone of a grade-appropriate text.
3. Support textual analysis of grade-appropriate literary text with textual evidence and citations.
4. Support textual analysis of grade-appropriate non-fiction text with textual evidence and citations.
5. Write clear and cohesive arguments using valid reasoning and evidence.
6. Acknowledge and refute counterclaim.
7. Write narratives to develop real or imagined experiences or events using purposeful techniques, details, and diction.
8. Use the skills of the writing process including pre-drafting, drafting, and revising based on feedback.
9. Demonstrate command of conventions of standard English grammar and usage when writing.
10. Propel conversations by posing and responding to questions related to the current discussion.
11. Use voice and presence to communicate and present information effectively to a range of audiences.
12. Behave in respectful and supportive ways as members of an audience.

Course Title: ENGLISH III WRL (WRITING AND READING LAB) #1130
Suggested Grade Level: **11**
Prerequisites: *Academic English II or Advanced English II; English department referral*

Students who need to strengthen writing and reading skills in an individualized workshop environment are referred to this course. Students address topics that require research, interviews,

writing, and revising. Each student writes a feature piece, usually a profile, as a capstone to his or her work. Students also read and work with quality written texts and films in connection with their writing. They also develop on-demand writing skills and confer regularly with their teacher about their writing.

ENGLISH IV *1 Credit*

Prerequisite: Academic English III, AP English Language & Composition, or English III WRL
Students who have earned an English III credit take one of the following two courses:

Course Title: ACADEMIC ENGLISH IV #1141
Suggested Grade Level: **12**
Prerequisites: *Academic English III, AP English Language & Composition, or English III WRL*

This course is the culmination of the high-school English program that prepares students for their transition to postsecondary study, the military, or employment. They explore a compelling array of short stories, essays, poetry and longer literary works (plays and novels) such as *The Kite Runner*, *The Things They Carried*, *Death of a Salesman*, and *Hamlet*. Accompanying films include *Gran Torino* and *Apocalypse Now*. The concepts of voice, turning points, human culture, and truth provide a focus for study. Major assignments focus on the development of language and film/image awareness as well as listening and speaking skills. Critical analysis and synthesis papers, including a senior paper (graduation and course requirement), are completed in connection with readings. Students confer regularly with their teacher about their writing.

Learning Goals Associated with the Course:

1. Determine themes of a grade-appropriate text and analyze their development.
2. Determine central ideas of a grade-appropriate text and analyze their development.
3. Support textual analysis of grade appropriate literary text with textual evidence and citations.
4. Support textual analysis of grade appropriate nonfiction text with textual evidence and citations.
5. Write clear and cohesive arguments to support claims by synthesizing multiple sources.
6. Acknowledge and refute counterclaim.
7. Write clear and cohesive informative/explanatory texts to examine and convey complex ideas, concepts, and information across multiple media.
8. Can use elaboration and description to develop relationships between character, setting, and theme, and to effectively pace the plot.
9. Use the skills of the writing process including pre-drafting, drafting, and revising based on feedback.
10. Demonstrate command of conventions of standard English grammar and usage when writing.
11. Independently collect, evaluate, and integrate information into a coherent text.

12. Employ the conventions of MLA formatting and citations.
13. Initiate and participate effectively in a range of collaborative discussions.
14. Present thoughts, feelings, knowledge, and opinions both formally and informally in front of audiences and in well crafted presentations.
15. Behave in respectful and supportive ways as members of an audience.

Course Title: ENGLISH IV WRL (WRITING AND READING LAB) #1140
Suggested Grade Level: **12**
Prerequisites: *Academic English III or English III WRL; English department referral*

Students with demonstrated need to develop and strengthen individual writing and reading skills in a workshop environment are referred to this lab course. Each student is expected to fulfill individual and independent reading programs keyed to his or her interests and designed to develop reading proficiency. Students also consider quality written works and films linked to major course themes. Each student completes a senior paper. Students confer about their writing outside of class.

Southern Maine Community College Dual Enrollment Courses

Course Title: SMCC ACADEMIC ENGLISH IV COMPOSITION 100 #1143
Suggested Grade Level: **12**
Prerequisites: *Academic English III or AP English Language & Composition; appropriate score on Accuplacer; teacher recommendation*

Motivated students are invited to apply for this opportunity to earn college credit as well as the required credit for high school graduation in their final English class at MTA. English Composition 100 is the introduction to college writing across the curriculum. It emphasizes the process of drafting, revising, and editing written work in a variety of rhetorical modes. The course explores the distinctions between spoken and written, formal and informal uses of language. It also provides an introduction to research and the task of producing a formal research paper and fulfills the Senior Paper graduation requirement. Additionally, we will consider various works of literature, including drama, film, fiction, nonfiction, and short stories. Titles may include *The Kite Runner*, *The Things They Carried*, and *Death of a Salesman.* SMCC attendance and late-work policies will be enforced.

***In order to be successful in the course, it is strongly recommended that students take the Accuplacer no more than twice to meet the minimum score.

ADVANCED PLACEMENT ENGLISH COURSES *1 Credit*

Prerequisite: department screening, including completion of required summer work; students must demonstrate readiness to undertake introductory college-level study through achievement in previous high-school-level English courses
College-level credit or advanced college or university course placement may be earned depending on AP exam score and college or university policy.

Course Title: AP ENGLISH LANGUAGE AND COMPOSITION #1132
Suggested Grade Level: 11-12
Prerequisites: *see above*

Students in this introductory college-level course will have previously demonstrated strong writing and analytical skills. Students consider a broad and challenging array of prose selections and image-based texts concerning a wide range of important subjects. Through close reading, frequent writing, and purposeful inquiry, students develop their ability to work with language and deepen their understanding of rhetoric and argument. Students work extensively with nonfiction, including essays, speeches, letters, memoirs, and other writings by authors such as Didion, Capote, Dillard, White, Woolf, Lincoln, Swift, Hazlitt, Twain, Orwell, Mead, King, Mairs, Murray, Sontag, Wolff, Oates, and Shakespeare. Students confer with teachers about their writing in class and outside of class.

Course Title: AP ENGLISH LITERATURE AND COMPOSITION #1142
Suggested Grade Level: 12
Prerequisites: *see above*

This introductory college-level course is for students with an exceptional interest in and commitment to the study of imaginative literature: fiction, poetry, and drama. Students will have previously developed the strong writing and analytical skills that are needed for careful study of literature at the introductory college level. Students consider and explore the features, meaning, and value of various literary texts and their relationship to contemporary experience as well as to the times in which they were written. Writing conferences are also held regularly outside of class times. A senior paper is required.

ENGLISH ELECTIVES

NOTE: The availability of all English electives depends on sufficient student enrollment. Elective courses do NOT fulfill scope and sequence or credit requirements associated with English I-IV coursework. The ½ credit earned in Creative Writing may be applied towards Maine's Fine Arts requirement.

Course Title: CREATIVE WRITING #1150a (fall) and/or #1150b (spring)
Suggested Grade Level: 9-12
Prerequisites: *satisfactory achievement in required English*

In Creative Writing, students explore various forms in poetry, fiction, creative nonfiction and drama. They are expected to cultivate their ability to write with precision and clarity while developing instincts for a variety of genres. Class operates on a workshop model wherein students are expected to share their writing for feedback and, in turn, to offer thoughtful and precise feedback to others. Over the duration of the course, students will write for a variety of audiences and will be expected to submit pieces for publication.

Course Title: JOURNALISM #1151a (fall) and #1151b (spring)
Suggested Grade Level: 10-12
Prerequisites: *course offered as fall semester only, or both semesters; students MUST complete fall semester in order to take spring semester*

In Journalism, students read and write investigative stories in short- and long-term form. The focus of this class is on story writing, with finished work published in an online newspaper. Students hone their skills in objective journalism, as well as opinion editorials, media reviews and editorial cartoons. Academically, the class explores the history of print journalism, while returning to the challenge of capturing and maintaining an audience in the 21st-century information age of "new media." Students pay close attention to current events and leave the class as better informed citizens prepared to understand and interpret the goings-on in their world.

Course Title: THE LITERATURE OF SPORTS #1152s
Suggested Grade Level: 9-12
Prerequisites: *satisfactory achievement in required English*

The Literature of Sports is a one-semester English elective course designed for students from any grade level with varying abilities. Students will engage in reading, class discussion, writing, and projects centered on a wide array of topics to sports. Two major texts will be studied, one for each quarter of the semester. First, students will read *The Blind Side,* which deals with issues of homelessness, public education, and the rise of a future college and NFL football star. During the 2nd quarter students read *Eagle Blue,* the story of the Fort Yukon (Alaska) High School boys' basketball team as they attempt to continue their regional championship success of past seasons. Students will also encounter frequent in-class reading selected from magazines, texts, newspapers, and online publications. Readings will be divided into units by sports—those covered will include football, basketball, boxing, baseball, soccer, and track and field. Students will complete a final research project on an individual, team, event, or controversy/topic related to athletics and present their research to the class.

Course Title: UNDERSTANDING FILM #1153a (fall) and #1153 (spring)
Suggested Grade Level: 11-12
Prerequisites: *course offered as fall semester only, or both semesters; students MUST complete fall semester in order to take spring semester*

Students in Understanding Film watch, analyze, and make films to support three goals: 1) to expand students' taste, so that they can become an audience for a wide range of films; 2) to expand students' critical awareness of what goes on in movies, so that they can see more in what they watch; 3) to give students experience in shooting and editing films, and working with soundtracks. Each quarter students complete at least two film projects and present them to the class. First semester develops basic skills; second semester focuses on documentaries, audio, and independent projects.

Course Title: LITERACY WORKSHOP #1170s
Suggested Grade Level: 9
Prerequisites: *students who need additional support in reading fluency and comprehension*

Students are referred to this course based on both interest and/or a need for literacy support. It has been designed to meet students' individual needs in both reading fluency and comprehension. Students will learn how to improve their reading habits, reflect on their abilities, and set specific literacy goals. Course work involves support from a Reading Specialist, one-on-one reading conferences with the instructor, a workshop environment, book clubs with peers, modeling of effective reading strategies and practices, in-class reading sessions, and choice in reading material.

HEALTH

Academic Planning Notes:
- Health credit required: 1/2
- Specific course required: Health
- Electives do not satisfy the state health credit requirement

Course Title: HEALTH #3222s
Suggested Grade Level: **10**
Prerequisites:

Health means more than just the absence of illness. Your personal health affects everything about you and impacts all aspects of your life such as your relationships, career goals, attitudes, successes, etc. This course is designed to help teens not only survive, but also thrive in a challenging world as they study the various dimensions of health.

Learning Goals Associated with the Course:

1. Analyze the interrelationships of physical, mental/intellectual, emotional and social health.
2. Explain causes of common diseases, disorders, and other health problems and propose ways to reduce, prevent or treat them.
3. Analyze and describe how genetics and family history can impact personal Health.
4. Analyze complex health concepts related to personal and mental health, disease prevention, sexuality, alcohol and other drug use prevention.
5. Demonstrate healthy practices/behaviors to maintain or improve the health of self and others.
6. Design, implement and evaluate a plan for stress management.
7. Analyze how some health risk behaviors, can influence the likelihood of engaging in

unhealthy behaviors such as drug and alcohol use.

8. Utilize effective communication skills with family, peers and others to enhance health.

HEALTH ELECTIVES

NOTE: these courses do NOT address Maine's health credit requirement.

Course Title: INDEPENDENT LIVING #3233s
Suggested Grade Level: **11-12**
Prerequisites:

This course is designed to promote healthy financial literacy with a focus on personal finance and consumerism. Students will acquire the skills and knowledge necessary for living successfully on their own, as they focus on topics such as credit, income taxes, checking and savings account maintenance, housing options, and others.
NOTE: this course does NOT address Maine's health credit requirement.

Learning Goals Associated with the Course:

1. Apply strategies to monitor income and expenses, plan for spending, and save for future goals.
2. Apply reliable information and systematic decision-making to personal finance decisions.
3. Develop strategies to control and manage credit and debit.
4. Explain and analyze the role of financial institutions and banking in personal finance.
5. Apply appropriate and cost-effective risk management strategies as they pertain to insurance, housing, advertising and purchasing, etc.
6. Explore various career paths and develop effective job search techniques.
7. Understand the role of taxes as they pertain to employment and fill out and file federal and Maine tax forms.

MATHEMATICS

Academic Planning Notes:
• Mathematics credits required: 3 (For the classes of 2017-2020.)
• Students who plan to attend a community college, four-year college or university are strongly advised to complete four years of mathematics.
• Students who enroll in Foundations in Algebra I in the 9th grade should expect to study mathematics for four years in order to become proficient in each of the mathematics graduation standards. (For the class of 2021 and beyond.)

• Typical sequence of courses for students who have successfully completed 8th Grade Math:
√ Academic Algebra I
√ Academic Geometry
√ Academic Algebra II
√ Pre-Calculus (and/or Statistics)

• Typical sequence of courses for students who have successfully completed Algebra I in the 8th grade:
√ Advanced Geometry
√ Advanced Algebra II
√ Advanced Pre-Calculus
√ AP Calculus AB (and/or AP Statistics)

• Typical sequence of courses for students who have demonstrated the need for additional classroom support and/or slower pacing to be successful in mathematics:
√ Foundations in Algebra I
√ Foundations in Geometry
√ Algebra II Part 1
√ *Algebra II Part 2/Trigonometry*
***NOTE**: Students are placed in the above four courses through teacher recommendation or department head approval only.*

• Actual student paths over the course of four years may differ from the above examples. Placement of students in the appropriate level of a course is determined by mathematics teacher recommendations, and is done on a yearly basis.
• Elective math courses do not satisfy mathematics credit requirements.
• All courses count for one credit unless otherwise noted.

Course Title: FOUNDATIONS IN ALGEBRA I #1310
Suggested Grade Level:
Prerequisites:

This course allows students to strengthen their understanding of Pre-Algebra concepts while studying topics in Algebra I. Students will have the opportunity to work with solving equations and inequalities in one variable, simplifying algebraic expressions, properties of exponents, linear equations and graphs. This course also includes integrated topics in geometry and statistics.

Learning Goals Associated with the Course:

1. Maintain fluency in the addition, subtraction, multiplication, and division of rational numbers.
2. Reason quantitatively, create expressions and solve equations that model real-life mathematical problems.
3. Understand the structure of expressions and use foundational skills to write, simplify and apply properties of operations to algebraic expressions.
4. Analyze linear equations and understand the process of reasoning associated with creating and solving them in one variable.
5. Represent and solve linear equations graphically and understand the connections between lines and their equations.
6. Solve systems of equations by graphing, substitution, elimination and apply these methods to solve real-life mathematical problems.
7. Perform basic arithmetic operations on monomials and polynomials.
8. Understand the concept of a function, to include the representation of functions using tables, graphs, mappings and basic function notation.
9. Use basic graphical and numerical techniques to analyze data in one and two variables and make inferences to justify conclusions.

Course Title: ACADEMIC ALGEBRA I #1311
Suggested Grade Level:
Prerequisites:

This course includes topics in algebra such as solving equations and inequalities in one variable, exponents and radicals, radical expressions, linear equations in two variables, and quadratic equations. The course also integrates topics from geometry, probability and statistics. Reading and problem solving are emphasized throughout the course.

Learning Goals Associated with the Course:

1. Maintain fluency in the addition, subtraction, multiplication, and division of rational numbers.
2. Reason quantitatively, create expressions and solve equations that model real-life mathematical problems.
3. Understand the structure of expressions and use foundational skills to write, simplify and apply properties of operations to algebraic expressions.
4. Analyze linear equations and understand the process of reasoning associated with creating and solving them in one variable.
5. Represent and solve linear equations graphically and understand the connections between lines and their equations.
6. Solve systems of equations by graphing, substitution, elimination and apply these methods to solve real-life mathematical problems.
7. Analyze linear inequalities algebraically and graphically and understand the process of reasoning associated with creating and solving them in one variable.

8. Perform basic arithmetic operations on monomials and polynomials.
9. Understand the process of factoring as the inverse of multiplying and use it to generate equivalent expressions and to solve algebraic equations.
10. Understand the concept of a function, to include the representation of functions using tables, graphs, mappings and basic function notation.
11. Use basic graphical and numerical techniques to analyze data in one and two variables and make inferences to justify conclusions.

Course Title: ALGEBRA II, PART I #1333
Suggested Grade Level:
Prerequisites: *Geometry*

This course allows students to study a subset of topics from the Algebra II curriculum over the course of a full year. Topics include linear relations and functions, linear systems, matrices, polynomial operations and functions, quadratic functions, and an introduction to rational functions. Students who wish to complete the study of Algebra II should plan to follow this course with Algebra II Part 2/Trigonometry.

Learning Goals Associated with the Course:

1. Analyze linear inequalities algebraically and graphically and understand the process of reasoning associated with creating and solving them in one variable.
2. Understand the process of factoring as the inverse of multiplying and use it to generate equivalent expressions and to solve algebraic equations.
3. Extend skills in reasoning quantitatively, creating expressions and solving equations that model real-life linear, quadratic and exponential problems.
4. Maintain fluency and extend skills in analyzing linear equations and inequalities and understand the reasoning associated with creating and solving them in one variable.
5. Maintain fluency and extend skills in solving systems of equations and inequalities by graphing, substitution, elimination and apply these methods to solve real-life mathematical problems.
6. Apply arithmetic operations and the properties of exponents to simplify, factor and solve polynomial and radical expressions and equations over the set of complex numbers.
7. Maintain fluency and extend skills in representing equations and inequalities in multiple forms, including function notation and graphing to understand the connections between lines and their equations.
8. Analyze and solve quadratic equations and inequalities by graphing, factoring, completing the square and use of the quadratic formula.
9. Maintain fluency and extend skills in using basic graphical and numerical techniques to analyze data in one and two variables and make inferences to justify conclusions.

Course Title: ACADEMIC ALGEBRA II #1331
Suggested Grade Level:
Prerequisites: *Geometry*

This course is intended for students who have demonstrated a sound understanding of the concepts studied in previous mathematics courses. There will be more emphasis on the structure of mathematics than in the Algebra II course. Topics such as trigonometry, logarithms, exponents, and complex numbers will be included.

Learning Goals Associated with the Course:

1. Extend skills in reasoning quantitatively, creating expressions and solving equations that model real-life linear, quadratic and exponential problems.
2. Perform basic arithmetic operations on complex numbers.
3. Maintain fluency and extend skills in analyzing linear equations and inequalities and understand the reasoning associated with creating and solving them in one variable.
4. Maintain fluency and extend skills in solving systems of equations and inequalities by graphing, substitution, elimination and apply these methods to solve real-life mathematical problems.
5. Apply arithmetic operations and the properties of exponents to simplify, factor and solve polynomial and radical expressions and equations over the set of complex numbers.
6. Simplify rational expressions and solve and graph rational equations including direct and inverse variation.
7. Maintain fluency and extend skills in representing equations and inequalities in multiple forms, including function notation and graphing to understand the connections between lines and their equations.
8. Analyze and solve quadratic equations and inequalities by graphing, factoring, completing the square and use of the quadratic formula.
9. Analyze, solve and graph polynomial functions of higher degree and understand the relationship between a function and its zeros, factors and inverse.
10. Understand the relationship between the geometric descriptions, graphs and equations of conics.
11. Maintain fluency and extend skills in using basic graphical and numerical techniques to analyze data in one and two variables and make inferences to justify conclusions.

Course Title: ADVANCED ALGEBRA II #1332
Suggested Grade Level: y
Prerequisites: *Advanced Geometry; department screening*

This course is intended for students who are ready for a more intensive study of algebra in preparation for Advanced Pre-Calculus and AP Calculus. In addition to the topics introduced in

Academic Algebra II (above), students will study polynomial, radical, rational, exponential, and logarithmic functions and their graphs in depth. *This course requires summer work.*

Learning Goals Associated with the Course:

1. Extend skills in reasoning quantitatively, creating expressions and solving equations that model real-life linear, quadratic and exponential problems.
2. Perform basic arithmetic operations on complex numbers.
3. Maintain fluency and extend skills in analyzing linear equations and inequalities and understand the reasoning associated with creating and solving them in one variable.
4. Maintain fluency and extend skills in solving systems of equations and inequalities by graphing, substitution, elimination and apply these methods to solve real-life mathematical problems.
5. Apply arithmetic operations and the properties of exponents to simplify, factor and solve polynomial and radical expressions and equations over the set of complex numbers.
6. Simplify rational expressions and solve and graph rational equations including direct and inverse variation.
7. Maintain fluency and extend skills in representing equations and inequalities in multiple forms, including function notation and graphing to understand the connections between lines and their equations.
8. Analyze and solve quadratic equations and inequalities by graphing, factoring, completing the square and use of the quadratic formula.
9. Analyze, solve and graph polynomial functions of higher degree and understand the relationship between a function and its zeros, factors and inverse.
10. Analyze, solve and graph exponential and logarithmic functions.
11. Understand the relationship between the geometric descriptions, graphs and equations of conics.
12. Maintain fluency and extend skills in using basic graphical and numerical techniques to analyze data in one and two variables and make inferences to justify conclusions.

Course Title: ALGEBRA II, PART II / TRIGONOMETRY #1334
Suggested Grade Level:
Prerequisites: *Algebra II Part I or equivalent*

This course provides students an opportunity to strengthen their understanding of algebraic concepts and reinforce skills developed in the first part of Algebra II. Additional topics studied include radical equations and complex numbers, rational functions, sequences and series, probability, and trigonometry.

Learning Goals Associated with the Course:

1. Extend skills in reasoning quantitatively, creating expressions and solving equations that model real-life linear, quadratic and exponential problems.
2. Perform basic arithmetic operations on complex numbers.
3. Maintain fluency and extend skills in analyzing linear equations and inequalities and understand the reasoning associated with creating and solving them in one variable.
4. Maintain fluency and extend skills in solving systems of equations and inequalities by graphing, substitution, elimination and apply these methods to solve real-life mathematical problems.
5. Apply arithmetic operations and the properties of exponents to simplify, factor and solve polynomial and radical expressions and equations over the set of complex numbers.
6. Maintain fluency and extend skills in representing equations and inequalities in multiple forms, including function notation and graphing to understand the connections between lines and their equations.
7. Analyze and solve quadratic equations and inequalities by graphing, factoring, completing the square and use of the quadratic formula.
8. Maintain fluency and extend skills in using basic graphical and numerical techniques to analyze data in one and two variables and make inferences to justify conclusions.
9. Apply triangular trigonometry to solve geometric problems including real-world applications.
10. Use trigonometric functions to model periodic quantities and understand the characteristics of trigonometric graphs defined by using a unit circle.

Course Title: FOUNDATIONS IN GEOMETRY #1320
Suggested Grade Level:
Prerequisites: *Algebra I*

This course follows Foundations in Algebra I. It covers basic geometric topics using an activity approach. Students are encouraged to explore and investigate geometry using a variety of manipulatives and computer software. Topics covered include vocabulary, plane and solid figures, measurement, area, perimeter, volume, proportions, similarity, and if time permits, transformations, and trigonometry. Upon completion of this course, students would usually take Algebra II as the third course in a three-year sequence.

Learning Goals Associated with the Course:

1. Reason quantitatively, create expressions and solve equations that model real-life problems in geometry.
2. Maintain fluency of algebra skills in relation to solving geometric problems.
3. Identify points, lines, planes and angles and describe the relationships between them to include drawing and constructions.

4. Use properties of perpendicular and parallel lines to solve problems.
5. Classify and identify triangles and apply geometric theorems to show congruency and to solve problems.
6. Classify and identify quadrilaterals and apply geometric theorems to solve problems algebraically and graphically.
7. Identify similar figures and use ratios and proportions to solve problems.
8. Define trigonometric ratios and use those ratios and the Pythagorean Theorem to solve problems involving right triangles.
9. Solve real-world and mathematical problems involving areas of polygons and circles.
10. Visualize relationships between two and three-dimensional objects and solve real-world and mathematical problems involving surface area and volume of prisms, pyramids and spheres.
11. Use transformations to explore translations, reflections, size changes, and rotations.

Course Title: ACADEMIC GEOMETRY #1321
Suggested Grade Level:
Prerequisites: *Algebra I*

This course will help students develop an understanding of geometric figures and their properties. Skills in drawing, visualizing, and using geometric tools will be emphasized. Real-life applications will be included. Throughout the course, algebra will be integrated with geometric topics.

Learning Goals Associated with the Course:

1. Reason quantitatively, create expressions and solve equations that model real-life problems in geometry.
2. Maintain fluency of algebra skills in relation to solving geometric problems.
3. Identify points, lines, planes and angles and describe the relationships between them to include drawing and constructions.
4. Use properties of perpendicular and parallel lines to solve problems.
5. Classify and identify triangles and apply geometric theorems to show congruency and to solve problems.
6. Recognize and apply relationships between sides and angles in a triangle to prove triangles congruent and to solve problems.
7. Identify and use special segments in a triangle to solve problems and use the inequalities in triangles to apply relationships between sides and angles.
8. Classify and identify quadrilaterals and apply geometric theorems to solve problems algebraically and graphically.
9. Identify similar figures and use ratios and proportions to solve problems.
10. Define trigonometric ratios and use those ratios and the Pythagorean Theorem to solve problems involving right triangles.

11. Solve real-world and mathematical problems involving areas of polygons and circles.
12. Visualize relationships between two and three-dimensional objects and solve real-world and mathematical problems involving surface area and volume of prisms, pyramids and spheres.
13. Use transformations to explore translations, reflections, size changes, and rotations.
14. Use inductive and deductive reasoning to make conjectures both verbally, algebraically, and geometrically.
15. Use properties of circles to solve problems and find arc lengths and areas of sectors.

Course Title: ADVANCED GEOMETRY #1322
Suggested Grade Level:
Prerequisites: *Algebra I in 8th grade*

The course content is similar to that of Academic Geometry, but with additional emphasis on problem solving, trigonometry, and solid geometry. *This course requires summer work.*

Learning Goals Associated with the Course:

1. Reason quantitatively, create expressions and solve equations that model real-life problems in geometry.
2. Maintain fluency of algebra skills in relation to solving geometric problems.
3. Identify points, lines, planes and angles and describe the relationships between them to include drawing and constructions.
4. Use properties of perpendicular and parallel lines to solve problems.
5. Classify and identify triangles and apply geometric theorems to show congruency and to solve problems.
6. Recognize and apply relationships between sides and angles in a triangle to prove triangles congruent and to solve problems.
7. Identify and use special segments in a triangle to solve problems and use the inequalities in triangles to apply relationships between sides and angles.
8. Classify and identify quadrilaterals and apply geometric theorems to solve problems algebraically and graphically.
9. Identify similar figures and use ratios and proportions to solve problems.
10. Define trigonometric ratios and use those ratios and the Pythagorean Theorem to solve problems involving right triangles.
11. Solve real-world and mathematical problems involving areas of polygons and circles.
12. Visualize relationships between two and three-dimensional objects and solve real-world and mathematical problems involving surface area and volume of prisms, pyramids and spheres.
13. Use transformations to explore translations, reflections, size changes, and rotations.
14. Use inductive and deductive reasoning to make conjectures both verbally, algebraically, and

geometrically.

15. Use properties of circles to solve problems and find arc lengths and areas of sectors.

Course Title: PRE-CALCULUS #1341
Suggested Grade Level:
Prerequisites: *Advanced Algebra II or Academic Algebra II with grade of C or better*

This course is intended for students who wish to continue their study of mathematics and prepare for post-secondary requirements. Topics such as quadratic functions, polynomial functions, rational functions, transformations of graphs, exponential and logarithmic functions, and trigonometric functions are studied. The course will provide the necessary background for college level calculus.

Learning Goals Associated with the Course:

1. Analyze advanced concepts in functions that includes linear, piecewise, absolute value, inverse and composite functions and use graphs to show how one variable is related to another.
2. Apply advanced skills in solving systems of equations and inequalities to solve real-life mathematical problems by graphing and using optimization techniques.
3. Analyze families of graphs and understand the effects of transformations.
4. Apply advanced mathematical modeling and graphing to polynomial and rational functions over the set of complex numbers.
5. Apply advanced mathematical modeling and graphing to exponential and logarithmic functions.
6. Apply triangular trigonometry to solve geometric problems including real-world applications.
7. Use trigonometric functions to model periodic quantities and understand the characteristics of trigonometric graphs defined by using a unit circle.

Course Title: ADVANCED PRE-CALCULUS #1342
Suggested Grade Level:
Prerequisites: *Advanced Algebra II; department screening*

This course is intended for students who plan to study calculus, statistics or other college-level math courses in their senior or college years. All important pre-calculus topics are addressed, including but not limited to: polynomial functions, analytic geometry, exponential and logarithmic functions, complex numbers, trigonometry functions, sequences and series, matrices, combinatorics, probability and an introduction to calculus. *This course requires summer work.*

Learning Goals Associated with the Course:

1. Model real-life applications of sequences and series using patterns and formulas
2. Maintain fluency and extend skills in understanding the relationship between the geometric descriptions, graphs and equations of conics.
3. Analyze advanced concepts in functions that includes linear, piecewise, absolute value, inverse and composite functions and use graphs to show how one variable is related to another.
4. Apply advanced skills in solving systems of equations and inequalities to solve real-life mathematical problems by graphing and using optimization techniques.
5. Analyze families of graphs and understand the effects of transformations.
6. Apply advanced mathematical modeling and graphing to polynomial and rational functions over the set of complex numbers.
7. Apply advanced mathematical modeling and graphing to exponential and logarithmic functions.
8. Apply triangular trigonometry to solve geometric problems including real-world applications.
9. Use trigonometric functions to model periodic quantities and understand the characteristics of trigonometric graphs defined by using a unit circle.
10. Simplify and solve trigonometric functions using trigonometric identities.
11. Solve counting problems and use probabilities to evaluate outcomes of compound, mutually exclusive, independent and conditional events.

Course Title: CALCULUS #1351
Suggested Grade Level:
Prerequisites: *Pre-Calculus or Advanced Pre-Calculus with grade of C or better*

This course is offered to students who wish to prepare for postsecondary study in fields such as engineering, mathematics, physics, and applied science. Students will study topics such as limits, derivatives and their applications, and integral calculus with applications. *This course offers optional dual enrollment in USM Calculus A and the opportunity to earn 4 college credits.*
This course requires summer work.

Learning Goals Associated with the Course:

1. Maintain fluency in working with functions represented in a variety of ways (graphical, numerical, analytical, and/or verbal) and understand the connections among these representations.
2. Understand the limit process and evaluate limits analytically, graphically, and numerically.
3. Understand the meaning of the derivative in terms of a rate of change and find derivatives by applying differentiation rules to include implicit differentiation and higher-order derivatives.
4. Apply calculus techniques to analyze and graph functions and understand the relationship

between the sign, direction and concavity of curves and their equations.
5. Use derivatives to solve a variety of applied problems including related rates and optimization.
6. Evaluate indefinite integrals and understand the meaning of the definite integral as a limit of Riemann sums, the net accumulation of change, and as an area.
7. Describe the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus and use integrals to solve a variety of applied problems.
8. Apply differentiation and integration techniques to exponential, logarithmic, trigonometric and inverse functions.
9. Model real-life situations with a function, a differential equation, or an integral and use calculus techniques to solve corresponding applied problems.

Course Title: AP CALCULUS AB #1352
Suggested Grade Level:
Prerequisites: *Pre-Calculus or Advanced Pre-Calculus; department screening*

This course is offered to students who want to prepare for a field requiring an extensive background in mathematics. Students will study all topics addressed in a first semester college calculus course, including limits, derivatives and integral calculus with applications. Students are prepared for the Advanced Placement Calculus Examination, which may enable them to earn college course credits. *This course requires summer work.*

Learning Goals Associated with the Course:

1. Maintain fluency in working with functions represented in a variety of ways (graphical, numerical, analytical, and/or verbal) and understand the connections among these representations.
2. Understand the limit process and evaluate limits analytically, graphically, and numerically.
3. Understand the meaning of the derivative in terms of a rate of change and find derivatives by applying differentiation rules to include implicit differentiation and higher-order derivatives.
4. Apply calculus techniques to analyze and graph functions and understand the relationship between the sign, direction and concavity of curves and their equations.
5. Use derivatives to solve a variety of applied problems including related rates and optimization.
6. Evaluate indefinite integrals and understand the meaning of the definite integral as a limit of Riemann sums, the net accumulation of change, and as an area.
7. Describe the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus and use integrals to solve a variety of

applied problems.

8. Apply differentiation and integration techniques to exponential, logarithmic, trigonometric and inverse functions.
9. Understand the relationship between slope fields and solutions to differential equations and use separation of variables to solve differential equations.
10. Represent and calculate the volume of solid figures using integrals.
11. Model real-life situations with a function, a differential equation, or an integral and use calculus techniques to solve corresponding applied problems.

Course Title: AP CALCULUS BC #1353
Suggested Grade Level:
Prerequisites: *AP Calculus AB or instructor's permission*

This course is offered to students who wish to enter college prepared to study multivariable calculus. The course will strengthen the student's mastery of the AB Calculus syllabus and extend to parametric, polar, and vector functions. It will expand the student's knowledge and understanding of limits, graphical behavior, derivatives, integrals and differential equations. This course will also introduce the student to polynomial approximations and series. Students prepare for the Advanced Placement BC Calculus Examination. *This course requires summer work.*

Learning Goals Associated with the Course:

1. Maintain fluency and extend skills in evaluating limits, derivatives and integrals to solve corresponding applied problems.
2. Apply advanced integration techniques to evaluate integrals to include integration by parts, partial fractions, and improper integrals.
3. Analyze curves given in parametric form, and use derivatives and integrals of parametric equations to solve applied problems including motion, vectors, and curve length.
4. Analyze curves given in polar form, evaluate derivatives of polar equations and use integrals to find arc lengths and areas of polar curves.
5. Understand the difference between convergent and divergent sequences and series and apply appropriate tests to determine convergence.
6. Represent and approximate functions using Taylor polynomials and series and determine the accuracy of such approximations by analyzing the remainder.
7. Apply a variety of techniques to solve differential equations, including separation of variables, Euler's method and logistic growth models.
8. Apply advanced calculus skills to model real-life situations with a function, a differential equation, or an integral and to solve corresponding applied problems.

MATH ELECTIVE COURSES

*Elective courses do **not** satisfy mathematics credit requirements.*

Course Title: COLLEGE READINESS MATH #1360
Suggested Grade Level: 12
Prerequisites: *Algebra I, Geometry, Algebra II*

This course is designed to deepen the core knowledge expected of students in college entry level mathematics courses. It provides the skill reinforcement and support needed for success in the transition from secondary to postsecondary education. Students with Accuplacer Arithmetic and/or Algebra placement test scores below 65 and SAT scores below 490 are encouraged to enroll.

Learning Goals Associated with the Course:

1. Students will maintain fluency in the arithmetic and algebra skills that are assessed by college placement exams.

Course Title: INTRODUCTION TO CODING #1370s
Suggested Grade Level: 9-12
Prerequisites: *none*

This semester course is designed as an introduction to the coding experience. No prior computer programming experience is needed. In this course students will create programs to solve problems and develop interactive games or stories that they can share. Fundamental coding concepts such as loops and function parameters will be explored. Upon completion of this course interested student may take Computer Science I.

Learning Goals Associated with the Course:

1. Develop programming algorithms to solve problems.
2. Apply standard functions in programs to solve problems.
3. Implement functions with parameters in programs to solve problems.
4. Write conditional statements to develop parameters to solve problems.
5. Utilize *while* loops in programs to make for more efficient code.
6. Implement nested loops in code to solve problems.
7. Apply appropriate debugging methods to solve program issues.
8. Utilize *for* loops in programs to make for more efficient code.

Course Title: COMPUTER SCIENCE #1371
Suggested Grade Level: 9-12
Prerequisites: *Algebra I*

Designed to help students experience sound techniques of problem-solving through the use of the computer, this course is an introduction to programming in Java. Computer Science is a heavily lab-oriented, hands-on class where students are encouraged to develop their own problem-solving strategies. Students will solve problems involving business, science, mathematics, manufacturing, and construction. The course stresses the construction of software that is both user-friendly as well as well-documented.

Learning Goals Associated with the Course:

1. Understand the basic structure of computer hardware and software along with machine code (binary number systems), assembly language and higher level programming languages.
2. Utilize established GUI dialog box interfaces to develop user friendly programs.
3. Utilize GUI interfaces to create graphic content.
4. Define variables and write algebraic formulas and expressions in Java.
5. Understand the fundamentals of classes and object oriented programming.
6. Write conditional statements and establish looping sequences in Java.
7. Apply the structure of the JPanel class inheritance and interface structures to solve problems.
8. Utilize GUI interface to explore recursive fractal mathematics.
9. Utilize arrays and array list to organize variable data.
10. Utilize program structures to interact with data files and databases.

Course Title: AP COMPUTER SCIENCE #1372
Suggested Grade Level: 10-12
Prerequisites: *Computer Science or permission of instructor*

This is both a course for potential computer science majors and a foundation course for students planning to study in other technical fields such as engineering, physics, chemistry, and geology. The course emphasizes programming methodology and problem-solving through hands-on lab experiences. Students are prepared for the Advanced Placement Computer Science A exam, which may enable them to earn college credits. (Pending School Board approval).

Learning Goals Associated with the Course:

1. Understand the structure of computer hardware and software along with machine code

(binary and hexadecimal number systems), assembly language and higher level programming languages, such as HTML, JAVA, C++.
2. Recognize and use two-dimensional arrays to solve problems.
3. Utilize appropriate methods for searching and sorting arrays.
4. Utilize methods of recursion and merge sort to solve problems.
5. Understand the difference between variables declared as "int" or "double" and write algebraic formulas and expressions in Java.
6. Understand the fundamentals of and develop customized classes in object oriented programming.
7. Apply method functions to the string class.
8. Write conditional statements and establish efficient user friendly looping sequences in Java.
9. Apply the structure of class inheritance and interface structures to solve problems.
10. Utilize arrays and array list to organize objects and variable data.

Course Title: STATISTICS #1361
Suggested Grade Level: 11-12
Prerequisites: *Pre-Calculus*

This course is intended for students who plan to enroll in majors that use statistics, such as psychology, business, health science, sociology, history, education, science, pre-law, and engineering. Students will analyze data using the TI83 graphing calculator. The concepts studied include: organizing and exploring data, correlation and regression, sampling and experiments, and probability. Students may take this class concurrently with Pre-Calculus with math teacher recommendation.

Learning Goals Associated with the Course:

1. Distinguish between categorical and quantitative variables and use appropriate methods to display and describe these types of data.
2. Model distributions of data with density curves and understand the concept of standardizing values within a normal distribution to calculate z-scores and percentiles.
3. Analyze scatterplots and residual plots to describe relationship and correlation between two variables, and use the least squares regression line to assess fit and predict future values.
4. Identify and explain different methods of sampling and surveys and evaluate strengths and weaknesses of various experimental designs.
5. Apply probability rules and use diagrams to calculate and interpret complementary, mutually exclusive, independent and conditional probabilities.
6. Calculate and interpret probabilities using distributions of discrete, continuous, independent, binomial and geometric random variables.
7. Describe sampling distributions by including measures of shape, center, and spread for

sample proportions and sample means.
8. Model nonlinear data using transformations to achieve linearity and conduct inference on the resulting linear regression models.

Course Title: AP STATISTICS #1362
Suggested Grade Level: 11-12
Prerequisites: *Pre-Calculus*

This course is intended for students who wish to move beyond the topics covered in Statistics, described above. A supplementary text is assigned, as the course features more rigorous problems and additional topics. Students may take this class concurrently with Pre-Calculus with math teacher recommendation. Students are prepared for the AP Statistics Examination, which may enable them to earn college credit. *This course requires summer work.*

Learning Goals Associated with the Course:

1. Distinguish between categorical and quantitative variables and use appropriate methods to display and describe these types of data.
2. Model distributions of data with density curves and understand the concept of standardizing values within a normal distribution to calculate z-scores and percentiles.
3. Analyze scatterplots and residual plots to describe relationship and correlation between two variables, and use the least squares regression line to assess fit and predict future values.
4. Identify and explain different methods of sampling and surveys and evaluate strengths and weaknesses of various experimental designs.
5. Apply probability rules and use diagrams to calculate and interpret complementary, mutually exclusive, independent and conditional probabilities.
6. Calculate and interpret probabilities using distributions of discrete, continuous, independent, binomial and geometric random variables.
7. Describe sampling distributions by including measures of shape, center, and spread for sample proportions and sample means.
8. Apply techniques of confidence intervals and hypothesis testing to draw and communicate conclusions regarding population proportions and population means.
9. Analyze and interpret significance test results to determine statistical significance of population proportions and means
10. Compare two population proportions or means using tests of significance or confidence intervals.
11. Perform and interpret conclusions from the Chi-squared tests for goodness of fit, homogeneity and independence to make inference for distributions of categorical data.
12. Model nonlinear data using transformations to achieve linearity and conduct inference on the resulting linear regression models.

MUSIC

Academic Planning Notes:

• All music courses address the Fine Arts credit requirement.

• All music courses, except Jazz Band and Songwriting, carry 1 Credit

• Advanced credit for the music department's band and chorus courses is available providing the student meets certain requirements. Interested students should see the department head for details.

Course Title: CONCERT BAND #2210
Suggested Grade Level: **9-10**
Prerequisites: *demonstrates proficiency on an instrument*

In this course students will perform and learn about a variety of pieces from the concert band repertoire. Throughout the year students will perform in a variety of settings including school concerts, festivals and pep band games. In the Spring the band also marches in the memorial day parade. In order to be in band, a student must demonstrate a proficiency level that shows the student can be a contributing band member.

Learning Goals Associated with the Course:

1. Students will demonstrate how understanding the style, genre, and context of a varied repertoire of music informs prepared performances as well as performers' technical skill to connect with the audience.
2. Students will develop, apply, and refine appropriate rehearsal strategies to address individual and ensemble challenges in a varied repertoire of music.
3. Students will demonstrate an understanding and mastery of the technical demands and expressive qualities of the music through prepared performances of a varied repertoire representing diverse cultures, styles, genres, and historical periods.
4. Students will justify interpretations of the expressive intent and meaning of musical works by comparing and synthesizing varied researched sources, including reference to other art forms

Course Title: JAZZ BAND #2212
Suggested Grade Level: **9-12**
Prerequisites: *must be a member of Concert Band or Wind Ensemble and be selected by the instructor*

The course is an opportunity for instrumental musicians to explore and perform traditional big band jazz charts. There will be opportunities for students to learn improvisation. The group rehearses 3-4 hours a week after school, schedule to be determined. This group performs at school concerts, festivals and other functions throughout the year. This is a half credit course. Attendance at rehearsals and performances is mandatory.

Learning Goals Associated with the Course:

1. Students will demonstrate how understanding the style, genre, and context of a varied repertoire of music informs prepared performances as well as performers' technical skill to connect with the audience.
2. Students will develop, apply, and refine appropriate rehearsal strategies to address individual and ensemble challenges in a varied repertoire of music.
3. Students will demonstrate an understanding and mastery of the technical demands and expressive qualities of the music through prepared performances of a varied repertoire representing diverse cultures, styles, genres, and historical periods.
4. Students will justify interpretations of the expressive intent and meaning of musical works by comparing and synthesizing varied researched sources, including reference to other art forms

Course Title: WIND ENSEMBLE #2211
Suggested Grade Level: **11-12**
Prerequisites: *audition*

In this course students will perform and learn about a variety of pieces from the concert band repertoire, playing more advanced music and going into more detail than the concert band. Throughout the year students will perform in a variety of settings including school concerts, festivals, competitions and pep band games. In the Spring the band also marches in the memorial day parade. Students must audition in order to be eligible for this group.

Learning Goals Associated with the Course:

1. Students will demonstrate how understanding the style, genre, and context of a varied repertoire of music informs prepared performances as well as performers' technical skill to connect with the audience.
2. Students will develop, apply, and refine appropriate rehearsal strategies to address individual and ensemble challenges in a varied repertoire of music.
3. Students will demonstrate an understanding and mastery of the technical demands and expressive qualities of the music through prepared performances of a varied repertoire representing diverse cultures, styles, genres, and historical periods.
4. Students will justify interpretations of the expressive intent and meaning of musical works by comparing and synthesizing varied researched sources, including reference to other art forms

Course Title: CONCERT CHOIR #2221
Suggested Grade Level: **9-12**
Prerequisites: *none*

In this course, students perform standard choral literature, ranging in difficulty from grade III to grade V. Proper vocal technique and ensemble singing is stressed. The Concert Choir performs at school concerts and festivals. Students need not audition to enter this group but must maintain a level of proficiency that enables the student to be a contributing member of the ensemble.

Learning Goals Associated with the Course:

1. Students will demonstrate how understanding the style, genre, and context of a varied repertoire of music informs prepared performances as well as performers' technical skill to connect with the audience.
2. Students will develop, apply, and refine appropriate rehearsal strategies to address individual and ensemble challenges in a varied repertoire of music.
3. Students will demonstrate an understanding and mastery of the technical demands and expressive qualities of the music through prepared performances of a varied repertoire representing diverse cultures, styles, genres, and historical periods.
4. Students will justify interpretations of the expressive intent and meaning of musical works by comparing and synthesizing varied researched sources, including reference to other art forms

Course Title: CHAMBER SINGERS #2222
Suggested Grade Level: **11-12**
Prerequisites: *audition*

This course is offered to instruct singers, both male and female, who wish to explore more difficult choral literature for smaller groups. Music literacy instruction is offered to all members of the group. The ensemble has an extensive performance schedule at school concerts and festivals, both in state and regionally.

Learning Goals Associated with the Course:

1. Students will demonstrate how understanding the style, genre, and context of a varied repertoire of music informs prepared performances as well as performers' technical skill to connect with the audience.
2. Students will develop, apply, and refine appropriate rehearsal strategies to address individual and ensemble challenges in a varied repertoire of music.

3. Students will demonstrate an understanding and mastery of the technical demands and expressive qualities of the music through prepared performances of a varied repertoire representing diverse cultures, styles, genres, and historical periods.
4. Students will justify interpretations of the expressive intent and meaning of musical works by comparing and synthesizing varied researched sources, including reference to other art forms

Course Title: TREBLE CHOIR #2223
Suggested Grade Level: **10-12**
Prerequisites: *audition*

This course is offered to female singers who wish to explore advanced treble (upper) voice choral literature. Music literacy instruction is offered to all members of the group. The ensemble has an extensive performance schedule at school concerts and festivals, both in state and regionally.

Learning Goals Associated with the Course:

1. Students will demonstrate how understanding the style, genre, and context of a varied repertoire of music informs prepared performances as well as performers' technical skill to connect with the audience.
2. Students will develop, apply, and refine appropriate rehearsal strategies to address individual and ensemble challenges in a varied repertoire of music.
3. Students will demonstrate an understanding and mastery of the technical demands and expressive qualities of the music through prepared performances of a varied repertoire representing diverse cultures, styles, genres, and historical periods.
4. Students will justify interpretations of the expressive intent and meaning of musical works by comparing and synthesizing varied researched sources, including reference to other art forms

Course Title: BEGINNING GUITAR #2213s
Suggested Grade Level: 9-12
Prerequisites: None

This course is designed for the absolute beginning guitar student (no experience necessary) or someone who may wish to become proficient in any of the course learning goals. Students are welcome to use their own guitar (classical with nylon strings preferred) or they may use a school guitar for the duration of the course on a first come basis. This class does not perform any public concerts.

This is a half year course for 0.5 Music/Performing Arts credit

Learning Goals Associated with the Course:

1. Students will learn to properly maintain and care for a guitar.
2. Students will play melodies and chords in a variety of styles.
3. Students will learn to read sheet music, tablature and chord symbols.
4. Students will gain experience playing as both a soloist and member of an ensemble.

PHYSICAL EDUCATION

Academic Planning Notes:
• Physical Education credit required: 1
• Required courses: **PE I** *and* **PE II** *or* **OUTDOOR EDUCATION**
• Electives do not satisfy the state physical education requirement.

Course Title: PHYSICAL EDUCATION I #3210s
Suggested Grade Level: **9**
Prerequisites:

This course introduces students to the foundations of physical conditioning and personal wellness and teaches them how to assess their strength, flexibility, muscular endurance, and cardiovascular fitness. Students must complete specific common assessments that demonstrate achievement of the State Learning Standards in physical education. Students also participate in various types of fitness and individual lifetime activities.

Learning Goals Associated with the Course:

1. Demonstrate understanding of the five health related fitness components and the principles of training (specificity, overload, and progression).
2. Participate in a health-related fitness assessment to establish personal fitness goals and reassess their fitness over time. Assessed during Fitness Pre and Post Tests as well as individualized fitness program designs.
3. Design and critique a personal fitness plan, from established goals,that applies the principles of training.
4. Select and participate in physical activities that address their personal fitness plans and apply the five health-related fitness components.
5. Demonstrate responsible and ethical personal behavior while participating in physical activities.
6. Demonstrate collaborative skills while participating in physical activities.

Course Title: PHYSICAL EDUCATION II #3220s
Suggested Grade Level: **10-12**

Prerequisites: *Physical Education I*

Students are introduced to and select from a variety of recreational and lifetime activities to fulfill Maine's PE requirement. In this course, students have the opportunity to explore and participate in activities that are designed to enhance personal fitness and cognitive, social, and psychomotor skills. Students in this course must also complete specific common assessments that demonstrate their achievement of the State Learning Standards in physical education.

Learning Goals Associated with the Course:

1. Explain the relationship of fitness skill components to specialized movement skills.
2. Demonstrate a variety of specialized movement skills specific to game/physical activity while participating in that game/physical activity.
3. Demonstrate responsible and ethical personal behavior while participating in physical activities.

Course Title: OUTDOOR EDUCATION #3221s
Suggested Grade Level: **10-12**
Prerequisites: *Physical Education II*
*NOTE: Students may take and complete this course instead of **PE II** in order to earn required credit*

This course provides students with an alternative way to fulfill Maine's PE requirement. Coursework introduces students to lifelong activities in an outdoor setting. Activities may include biking, cross country skiing, snowshoeing, archery, and disc golf.

Learning Goals Associated with the Course:

1. Demonstrate a variety of specialized movement skills specific to game/physical activity while participating in that game/physical activity.
2. Demonstrate responsible and ethical personal behavior while participating in physical activities.

PHYSICAL EDUCATION ELECTIVES

NOTE: These courses do NOT address Maine's physical education requirement.

Course Title: RESISTANCE TRAINING #3233s
Suggested Grade Level: **11-12**
Prerequisites: *Successful completion of PE I and PE II or Outdoor Education*

This course gives students the opportunity to improve fitness and exercise levels within the field of weight training. The focus of this course is the proper use of resistance training to increase strength and flexibility to promote a healthy body.

Learning Goals Associated with the Course:

1. Demonstrate understanding of the five health related fitness components and the principles of training (specificity, overload, and progression)
2. Design and critique a personal fitness plan, from established goals,that applies the principles of training.
3. Participate in a health-related fitness assessment to establish personal fitness goals and reassess their fitness over time. Assessed during Fitness Pre and Post Tests as well as individualized fitness program designs.

Course Title: TEAM SPORTS #3234s
Suggested Grade Level: **11-12**
Prerequisites: *Successful completion of PE I and PE II or Outdoor Education*

This course is designed for the student who likes to participate in a sports environment and is willing to work cooperatively with classmates. Students learn how to strategize, develop team concepts, exhibit proper sportsmanship, and experience a team atmosphere. Activities may include basketball, soccer, ultimate frisbee, or others chosen by individual class sections.

Learning Goals Associated with the Course:

1. Demonstrate a variety of specialized movement skills specific to game/physical activity while participating in that game/physical activity.
2. Demonstrate responsible and ethical personal behavior while participating in physical activities.

Course Title: FIT FOR LIFE #3231s
Suggested Grade Level: **10-12**
Prerequisites: *Successful completion of PE I and PE II or Outdoor Education*

Are you looking to make some changes in your life? Maybe you want to be in better shape or learn how to eat healthier. The focus of this semester-long class is to develop an appreciation for a healthy lifestyle that promotes good overall health.

Learning Goals Associated with the Course:

1. Predict how behaviors impact health status by analyzing individual responsibility for one's health,barriers to healthy behaviors, personal susceptibility and potential severity of injury and illness when practicing unhealthy behaviors.

2. Analyze the interrelationships of physical, mental intellectual, emotional and social health.
3. Utilize effective communication skills with family, peers and others to enhance health in the following ways: asking for and offering assistance to enhance the health of self and others; refusal; negotiation and collaboration skills to avoid and reduce health risks; and strategies for prevention, management and resolution of interpersonal conflicts without harm to self or others.
4. Analyze and describe how the environment, genetics, family history, are interrelated and can impact personal health.
5. Demonstrate responsible and ethical personal behavior while participating in physical activities.

SCIENCE

Academic Planning Notes:
Students and parents should be aware of the following when selecting science courses:
* At least three (3) science credits are required to graduate.
* Educational experiences are required in Science I, II, III, and IV (Physical Science, Biology, Chemistry, and Physics). To meet these requirements, a student must complete one of the following core curriculum sequences:

A. Four-course sequence (recommended in preparation for post-secondary education):

Grade	Course
9	Science I (Physical Science or Honors Physical Science)
10	Science II (Biology, Academic Biology, or Honors Biology)
11	Science III (Chemistry, Academic Chemistry, or Honors Chemistry)
12	Science IV (Physics, Academic Physics, or Honors Physics)

B. Three-course sequence (not recommended if likely pursue post-secondary education):

Grade	Course
9	Science I (Physical Science)
10	Science II (Biology or Academic Biology)
11 or 12	Science III/IV Combined(Chemistry/Physics)

The decision to select the three-course sequence must be made prior to beginning 11th grade.

* Elective courses may be taken in addition to, though not in replacement of, those from the selected core curriculum sequence.
* All levels of the Physical Science, Biology, Chemistry, and Physics courses have a laboratory component. Many competitive post-secondary institutions suggest taking yet another advanced

level laboratory science course.
* Students who wish to enroll in advanced placement or honors level courses must complete a screening process in the second half of the preceding school year. Screening test dates will be communicated via school wide announcements.
* Three and four year Region 10 Technical High School students have modified graduation requirements. Guidance counselors will assist students in scheduling a modified course sequence to be completed in conjunction with the Region 10 Technical High School program.

Guidelines to address course failures:
* Students who do not pass Science I must retake a Physical Science course. They may enroll at the same time as Science II with administrative permission.
* Students who do not pass Science II must retake a Biology course. They may enroll at the same time as Science III with administrative permission.
* Students who do not pass Science III should enroll in Chemistry/Physics to complete their third science credit.

SCIENCE I COURSES

Course Title: PHYSICAL SCIENCE #1410
Suggested Grade Level: **9**
Prerequisites: *Middle School Science*

This course is designed to engage students who may have difficulty mastering relevant mathematical, reading, and/or writing skills. There is a laboratory component to the course, though it may be limited in scope as compared to the Academic Physical Science class. Lessons are structured to help students gain an understanding of content through experimentation and data analysis. There is a focus on the development of scientific skills, practices, and habits of mind. Topics include: scientific methods, chemistry of the universe, classification and interactions of matter, Earth cycles and systems, energy, and human activity and the environment. Students are expected to maintain a science notebook and complete daily assignments.

Learning Goals Associated with the Course:

1. Properties of Elements [PS1.A: 1-1] Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
2. Chemical Reactions [PS1.A,B: 1-2] Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

3. Energy Conversion [PS3.A: 3-3] Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.
4. Energy from Stars [ESS1.A: 1-1]Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.
5. Big Bang Theory [ESS1.A: 1-2] Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.
6. Elements in Stars [ESS1.A: 1-3]Communicate scientific ideas about the way stars, over their life cycle, produce elements.
7. Earth's Systems [ESS2.A,D: 2-2] Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.
8. Energy & Climate [ESS2.A,D: 2-4] Use a model to describe how variations in the ow of energy into and out of Earth's systems result in changes in climate.
9. Carbon Cycle [ESS2.A,D: 2-6] Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.
10. Climate Change [ESS3.D: 3-5] Analyze geoscience data and the results from global climate models to make an evidence- based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.
11. Human Impacts on Earth [ESS3.D: 3-6] Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.
12. Engineering Designs & Solutions [ETS1] Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
13. Engineering, Technology, & Science [ETS2] Demonstrate an understanding of the interrelationships between science, engineering, and technology.

Course Title: ACADEMIC PHYSICAL SCIENCE #1411
Suggested Grade Level: **9**
Prerequisites: *Middle School Science*

This rigorous course provides students with an opportunity for a laboratory science experience in the first year of high school. Lessons are structured to help students gain a deep understanding of content through experimentation and data analysis. There is a focus on developing critical scientific skills, practices, and habits of mind. Topics include: scientific methods, chemistry of the universe, classification and interactions of matter, Earth cycles and systems, energy, and human activity and the environment. Topics include: scientific methods, chemistry of the universe, classification and interactions of matter, Earth cycles and systems, energy, and human activity and the environment. Students are expected to maintain a science notebook and complete daily assignments.

Learning Goals Associated with the Course:

1. Properties of Elements [PS1.A: 1-1] Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
2. Chemical Reactions [PS1.A,B: 1-2] Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
3. Energy Conversion [PS3.A: 3-3] Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.
4. Energy from Stars [ESS1.A: 1-1]Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.
5. Big Bang Theory [ESS1.A: 1-2] Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.
6. Elements in Stars [ESS1.A: 1-3]Communicate scientific ideas about the way stars, over their life cycle, produce elements.
7. Earth's Systems [ESS2.A,D: 2-2] Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.
8. Energy & Climate [ESS2.A,D: 2-4] Use a model to describe how variations in the ow of energy into and out of Earth's systems result in changes in climate.
9. Carbon Cycle [ESS2.A,D: 2-6] Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.
10. Climate Change [ESS3.D: 3-5] Analyze geoscience data and the results from global climate models to make an evidence- based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.
11. Human Impacts on Earth [ESS3.D: 3-6] Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.
12. Engineering Designs & Solutions [ETS1] Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
13. Engineering, Technology, & Science [ETS2] Demonstrate an understanding of the interrelationships between science, engineering, and technology.

Course Title: HONORS PHYSICAL SCIENCE #1412
Suggested Grade Level: **9**
Prerequisites: *Middle School Science; Advanced Algebra I; department screening including successful completion of summer work*

This level of physical science is more demanding than Academic Physical Science. The course provides students with an opportunity for a lab science class in their first year of high school.

Lessons are structured to help students gain a deep understanding of content through experimentation and data analysis. There is a focus on developing critical scientific skills, practices, and habits of mind. Topics include: scientific methods, chemistry of the universe, classification and interactions of matter, Earth cycles and systems, energy, and human activity and the environment. Students are expected to maintain a science notebook and complete daily assignments. Students must complete department screening process and required summer work.

Learning Goals Associated with the Course:

1. Properties of Elements [PS1.A: 1-1] Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
2. Chemical Reactions [PS1.A,B: 1-2] Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
3. Energy Conversion [PS3.A: 3-3] Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.
4. Energy from Stars [ESS1.A: 1-1]Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.
5. Big Bang Theory [ESS1.A: 1-2] Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.
6. Elements in Stars [ESS1.A: 1-3]Communicate scientific ideas about the way stars, over their life cycle, produce elements.
7. Earth's Systems [ESS2.A,D: 2-2] Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.
8. Energy & Climate [ESS2.A,D: 2-4] Use a model to describe how variations in the ow of energy into and out of Earth's systems result in changes in climate.
9. Carbon Cycle [ESS2.A,D: 2-6] Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.
10. Climate Change [ESS3.D: 3-5] Analyze geoscience data and the results from global climate models to make an evidence- based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.
11. Human Impacts on Earth [ESS3.D: 3-6] Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.
12. Engineering Designs & Solutions [ETS1] Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
13. Engineering, Technology, & Science [ETS2] Demonstrate an understanding of the interrelationships between science, engineering, and technology.

SCIENCE II COURSES

Course Title: BIOLOGY #1420
Suggested Grade Level: **10**
Prerequisites: *Science I*

This course is designed for students who plan to further their education beyond high school, but who have had difficulty mastering more complex scientific and mathematical concepts. It is designed to provide a fundamental understanding of the principles of biology. Topics include: molecular biology, ecology, cells, heredity and reproduction, and evolution. The course takes a more descriptive and conceptual approach to topics, though experimentation and data analysis are incorporated into many lessons. There continues to be an emphasis on the development of scientific skills, practices, and habits of mind. Students are encouraged to assume more independent roles and responsibilities in the learning process. Students are expected to maintain a science notebook and complete daily assignments. Projects involving library research, independent research, and presentations are also required.

Learning Goals Associated with the Course:

1. DNA & Protein [LS1.A: 1-1] Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.
2. Organization in Organisms [LS1.A: 1-2] Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
3. Homeostasis [LS1.A: 1-3] Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
4. Cell Division & Differentiation [LS1.B: 1-4] Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.
5. Photosynthesis [LS1.C: 1-5] Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.
6. Molecules of Life [LS1.C: 1-6] Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.
7. Cellular Respiration [LS1.C: 1-7] Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.
8. Carrying Capacity [LS2.A: 2-1] Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.

9. Aerobic & Anaerobic Systems [LS2.B: 2-3] Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.
10. Cycling of Matter & Energy [LS2.B: 2-4] Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.
11. Carbon Cycle in Cells [LS2.B: 2-5] Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.
12. Stability of Ecosystems [LS2.C: 2-6] Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.
13. Inheritance of Traits [LS3.A: 3-1] Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.
14. Causes of Genetic Variation [LS3.B: 3-2] Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.
15. Variation in Populations [LS3.B: 3-3] Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.
16. Ancestry & Evolution [LS4.A: 4-1] Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.
17. Causes of Evolution [LS4.B,C: 4-2] Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.
18. Natural Selection [LS4.B,C: 4-3] Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.
19. Adaptation of Populations [LS4.C: 4-4] Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

Course Title: ACADEMIC BIOLOGY #1421
Suggested Grade Level: **10**
Prerequisites: *Science I*

This rigorous course addresses the following topics: molecular biology, ecology, cells, heredity and reproduction, and evolution. There continues to be an emphasis on the development of scientific skills, practices, and habits of mind. There are strong expectations concerning the roles and responsibilities of students in the learning process. Strong work ethic and writing proficiency are essential for student success. Frequent lab exercises, independent projects with oral presentations,

readings, homework, library research, and Internet research are required.

Learning Goals Associated with the Course:

1. DNA & Protein [LS1.A: 1-1] Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.
2. Organization in Organisms [LS1.A: 1-2] Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
3. Homeostasis [LS1.A: 1-3] Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
4. Cell Division & Differentiation [LS1.B: 1-4] Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.
5. Photosynthesis [LS1.C: 1-5] Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.
6. Molecules of Life [LS1.C: 1-6] Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.
7. Cellular Respiration [LS1.C: 1-7] Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.
8. Carrying Capacity [LS2.A: 2-1] Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.
9. Aerobic & Anaerobic Systems [LS2.B: 2-3] Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.
10. Cycling of Matter & Energy [LS2.B: 2-4] Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.
11. Carbon Cycle in Cells [LS2.B: 2-5] Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.
12. Stability of Ecosystems [LS2.C: 2-6] Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.
13. Inheritance of Traits [LS3.A: 3-1] Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.
14. Causes of Genetic Variation [LS3.B: 3-2] Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

15. Variation in Populations [LS3.B: 3-3] Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.
16. Ancestry & Evolution [LS4.A: 4-1] Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.
17. Causes of Evolution [LS4.B,C: 4-2] Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.
18. Natural Selection [LS4.B,C: 4-3] Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.
19. Adaptation of Populations [LS4.C: 4-4] Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

Course Title: HONORS BIOLOGY #1422
Suggested Grade Level: **10**
Prerequisites: *Science I, Algebra II; department screening including successful completion of summer work*

This level of biology is more demanding than Academic Biology. Topics include: molecular biology, ecology, cells, heredity and reproduction, evolution. There continues to be an emphasis on the development of scientific skills, practices, and habits of mind. As compared to academic biology, there is an even greater expectation concerning the responsibility of the student in the learning process. Very strong work ethic and writing proficiency are essential for student success. Frequent lab exercises, independent projects with oral presentations, readings, homework, will be part of the course expectations. Students are expected to conduct a research project, complete extra readings, and keep an ecology journal. Students must complete department screening process and required summer work.

Learning Goals Associated with the Course:

1. DNA & Protein [LS1.A: 1-1] Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.
2. Organization in Organisms [LS1.A: 1-2] Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
3. Homeostasis [LS1.A: 1-3] Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

4. Cell Division & Differentiation [LS1.B: 1-4] Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.
5. Photosynthesis [LS1.C: 1-5] Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.
6. Molecules of Life [LS1.C: 1-6] Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.
7. Cellular Respiration [LS1.C: 1-7] Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.
8. Carrying Capacity [LS2.A: 2-1] Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.
9. Aerobic & Anaerobic Systems [LS2.B: 2-3] Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.
10. Cycling of Matter & Energy [LS2.B: 2-4] Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.
11. Carbon Cycle in Cells [LS2.B: 2-5] Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.
12. Stability of Ecosystems [LS2.C: 2-6] Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.
13. Inheritance of Traits [LS3.A: 3-1] Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.
14. Causes of Genetic Variation [LS3.B: 3-2] Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.
15. Variation in Populations [LS3.B: 3-3] Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.
16. Ancestry & Evolution [LS4.A: 4-1] Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.
17. Causes of Evolution [LS4.B,C: 4-2] Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.
18. Natural Selection [LS4.B,C: 4-3] Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.

19. Adaptation of Populations [LS4.C: 4-4] Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

Course Title: HONORS BIOLOGY LAB #1422s
Suggested Grade Level: **10**
Prerequisites: *Current enrollment in Honors Biology*

This lab will meet for an entire period during only the fall semester.

SCIENCE III COURSES

Course Title: CHEMISTRY #1430
Suggested Grade Level: **11**
Prerequisites: *Science I, Science II, Algebra I*

This course is designed for students who plan to further their education beyond high school, but who have had difficulty mastering more complex scientific and mathematical concepts. It is designed to provide a fundamental understanding of the principles of chemistry. Topics include: nucleosynthesis, periodic table, atomic structure, chemical formulas, chemical bonding, chemical equations, matter and energy, and climate change. The course takes a more descriptive and conceptual approach to topics, though experimentation and data analysis are incorporated into many lessons. There continues to be an emphasis on the development of scientific skills, practices, and habits of mind. Students are encouraged to assume more independent roles and responsibilities in the learning process. Students are expected to maintain a science notebook and complete daily assignments.

Learning Goals Associated with the Course:

1. Properties of Elements [PS1.A: 1-1] Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
2. Chemical Reactions [PS1.A,B: 1-2] Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
3. Structure & Electrical Forces [PS1.A: 1-3] Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
4. Bond Energy [PS1.A,B: 1-4] Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

5. Rate of Reaction [PS1.B: 1-5] Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.
6. Chemical Reactions & Equilibrium [PS1.B: 1-6] Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.
7. Conservation of Mass [PS1.B: 1-7] Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.
8. Molecular-Level Structures [PS2.B: 2-6] Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

Course Title: ACADEMIC CHEMISTRY #1431
Suggested Grade Level: **11**
Prerequisites: *Science I, Science II, Algebra II (or concurrent enrollment)*

This rigorous course addresses the following topics: nucleosynthesis, periodic table, atomic structure, chemical formulas, chemical bonding, chemical equations, matter and energy, and climate change. It is structured similarly to a college course. There continues to be an emphasis on the development of scientific skills, practices, and habits of mind. There are strong expectations concerning the roles and responsibilities of students in the learning process. Math and writing proficiencies are essential for student success. Students are expected to maintain a science notebook and complete daily assignments.

Learning Goals Associated with the Course:

1. Properties of Elements [PS1.A: 1-1] Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
2. Chemical Reactions [PS1.A,B: 1-2] Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
3. Structure & Electrical Forces [PS1.A: 1-3] Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
4. Bond Energy [PS1.A,B: 1-4] Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.
5. Rate of Reaction [PS1.B: 1-5] Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

6. Chemical Reactions & Equilibrium [PS1.B: 1-6] Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.
7. Conservation of Mass [PS1.B: 1-7] Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.
8. Molecular-Level Structures [PS2.B: 2-6] Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

Course Title: HONORS CHEMISTRY #1432
Suggested Grade Level: **11**
Prerequisites: *Science I, Science II, Algebra II; department screening including successful completion of summer work*

This level of chemistry is more demanding than Academic Chemistry. Topics include: nucleosynthesis, periodic table, atomic structure, chemical formulas, chemical bonding, chemical equations, matter and energy, and climate change. There continues to be an emphasis on the development of scientific skills, practices, and habits of mind. As compared to Academic Chemistry, there is an even greater expectation concerning the responsibility of the student in the learning process. The approach of this course allows for a deeper exploration of topics, and requires very strong math skills along with the ability to independently design and conduct experiments. Students must complete department screening process and required summer work. Students are expected to maintain a science notebook and complete daily assignments.

Learning Goals Associated with the Course:

1. Properties of Elements [PS1.A: 1-1] Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
2. Chemical Reactions [PS1.A,B: 1-2] Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
3. Structure & Electrical Forces [PS1.A: 1-3] Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
4. Bond Energy [PS1.A,B: 1-4] Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.
5. Rate of Reaction [PS1.B: 1-5] Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

6. Chemical Reactions & Equilibrium [PS1.B: 1-6] Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.
7. Conservation of Mass [PS1.B: 1-7] Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.
8. Molecular-Level Structures [PS2.B: 2-6] Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

Course Title: HONORS CHEMISTRY LAB #1432s
Suggested Grade Level: **11**
Prerequisites: *Current enrollment in Honors Chemistry*

This lab will meet for an entire period during only the fall semester**.**

SCIENCE IV COURSES

Course Title: PHYSICS #1440
Suggested Grade Level: **12**
Prerequisites: *Science I, Science II, Science III, Algebra I*

This course is designed for students who plan to further their education beyond high school, but who have had difficulty mastering complex algebraic and trigonometric concepts. Lessons are designed to help students improve their problem solving and mathematical skills. Topics include: motion, forces, two-dimensional interactions, gravitation, orbital motion, impulse and momentum, energy and work, conservation of energy, electricity, and magnetism. The course explores the nature of physics conceptually, mathematically, and experimentally. There continues to be an emphasis on the development of scientific skills, practices, and habits of mind. There are strong expectations concerning the roles and responsibilities of students in the learning process. Students are expected to maintain a science notebook and complete daily assignments.

Learning Goals Associated with the Course:

1. Force, Mass, & Acceleration [PS2.A: 2-1] Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.
2. Conservation of Momentum [PS2.A: 2-2] Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.
3. Impulse and Momentum [PS2.A: 2-3] Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

4. Gravitational & Electrostatic Forces [PS2.B: 2-4] Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.
5. Electric Current & Magnetic Field [PS2.B: 2-5] Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.
6. Conservation of Energy [PS3.A,B: 3-1] Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.
7. Kinetic & Potential Energy [PS3.A: 3-2] Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored in fields.
8. Properties of Waves [PS4.A: 4-1] Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.
9. Waves & Technology [PS4.A,B: 4-5] Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.
10. Orbital Motion [ESS1.B: 1-4] Use mathematics or computational representations to predict the motion of orbiting objects in the solar system.
11. Reducing Human Impacts on Earth [ESS3.C: 3-4] Evaluate or refine a technical solution that reduces impacts on human activities on natural systems.
12. Engineering Designs & Solutions [ETS1] Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
13. Engineering, Technology, & Science [ETS2] Demonstrate an understanding of the interrelationships between science, engineering, and technology.

Course Title: ACADEMIC PHYSICS #1441
Suggested Grade Level: **12**
Prerequisites: *Science I, Science II, Science III, Algebra II*

This rigorous course addresses the following topics: motion, forces, two-dimensional interactions, gravitation, orbital motion, impulse and momentum, energy and work, conservation of energy, electricity, and magnetism. The course explores the nature of physics conceptually, mathematically, and experimentally. There continues to be an emphasis on the development of scientific skills, practices, and habits of mind. There are strong expectations concerning the roles and responsibilities of students in the learning process. Math and writing proficiencies are essential for student success. Students are expected to maintain a science notebook and complete daily assignments.

Learning Goals Associated with the Course:

1. Force, Mass, & Acceleration [PS2.A: 2-1] Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.
2. Conservation of Momentum [PS2.A: 2-2] Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.
3. Impulse and Momentum [PS2.A: 2-3] Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.
4. Gravitational & Electrostatic Forces [PS2.B: 2-4] Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.
5. Electric Current & Magnetic Field [PS2.B: 2-5] Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.
6. Conservation of Energy [PS3.A,B: 3-1] Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.
7. Kinetic & Potential Energy [PS3.A: 3-2] Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored in fields.
8. Properties of Waves [PS4.A: 4-1] Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.
9. Waves & Technology [PS4.A,B: 4-5] Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.
10. Orbital Motion [ESS1.B: 1-4] Use mathematics or computational representations to predict the motion of orbiting objects in the solar system.
11. Reducing Human Impacts on Earth [ESS3.C: 3-4] Evaluate or refine a technical solution that reduces impacts on human activities on natural systems.
12. Engineering Designs & Solutions [ETS1] Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
13. Engineering, Technology, & Science [ETS2] Demonstrate an understanding of the interrelationships between science, engineering, and technology.

Course Title: HONORS PHYSICS #1442
Suggested Grade Level: **12**
Prerequisites: *Science I, Science II, Science III, Advanced Algebra II; department screening including successful completion of summer work*

This level of physics is more demanding than Academic Physics. Topics include: motion, forces, two-dimensional interactions, gravitation, orbital motion, impulse and momentum, energy and work, conservation of energy, electricity, and magnetism. The course explores the nature of physics conceptually, mathematically, and experimentally. There continues to be an emphasis on the development of scientific skills, practices, and habits of mind. As compared to academic physics, there is an even greater expectation concerning the responsibility of the student in the learning process. The approach of this course allows for a deeper exploration of topics, and requires very strong math skills along with the ability to independently design and conduct experiments. Students must complete department screening process and required summer work. Students are expected to maintain a science notebook and complete daily assignments.

Learning Goals Associated with the Course:

1. Force, Mass, & Acceleration [PS2.A: 2-1] Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.
2. Conservation of Momentum [PS2.A: 2-2] Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.
3. Impulse and Momentum [PS2.A: 2-3] Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.
4. Gravitational & Electrostatic Forces [PS2.B: 2-4] Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.
5. Electric Current & Magnetic Field [PS2.B: 2-5] Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.
6. Conservation of Energy [PS3.A,B: 3-1] Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.
7. Kinetic & Potential Energy [PS3.A: 3-2] Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored in fields.
8. Properties of Waves [PS4.A: 4-1] Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.
9. Waves & Technology [PS4.A,B: 4-5] Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.

10. Orbital Motion [ESS1.B: 1-4] Use mathematics or computational representations to predict the motion of orbiting objects in the solar system.
11. Reducing Human Impacts on Earth [ESS3.C: 3-4] Evaluate or refine a technical solution that reduces impacts on human activities on natural systems.
12. Engineering Designs & Solutions [ETS1] Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
13. Engineering, Technology, & Science [ETS2] Demonstrate an understanding of the interrelationships between science, engineering, and technology.

Course Title: HONORS PHYSICS LAB #1442s
Suggested Grade Level: **12**
Prerequisites: *Current enrollment in Honors Physics*

This lab will meet for half of a period all year long. Students can enroll in both Honors Physics and an Advanced Placement science course. If an Advanced Placement science course is not chosen, a half-period study hall will be assigned.

SCIENCE III/IV COMBINED COURSE

Students take the following course:

Course Title: CHEMISTRY/PHYSICS #1433
Suggested Grade Level: **11-12**
Prerequisites: *Science I, Science II*

This full year course introduces students to fundamental concepts in chemistry and physics. Topics covered include scientific measurement, force and motion, nuclear physics, states of matter, atomic structure, chemical bonding and reactions, and energy with emphasis on consideration of alternative energy sources.

Learning Goals Associated with the Course:

1. Properties of Elements [PS1.A: 1-1] Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
2. Chemical Reactions [PS1.A,B: 1-2] Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
3. Structure & Electrical Forces [PS1.A: 1-3] Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

4. Conservation of Mass [PS1.B: 1-7] Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.
5. Force, Mass, & Acceleration [PS2.A: 2-1] Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.
6. Conservation of Momentum [PS2.A: 2-2] Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.
7. Conservation of Energy [PS3.A,B: 3-1] Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.
8. Orbital Motion [ESS1.B: 1-4] Use mathematics or computational representations to predict the motion of orbiting objects in the solar system.
9. Reducing Human Impacts on Earth [ESS3.C: 3-4] Evaluate or refine a technical solution that reduces impacts on human activities on natural systems.
10. Engineering Designs & Solutions [ETS1] Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
11. Engineering, Technology, & Science [ETS2] Demonstrate an understanding of the interrelationships between science, engineering, and technology.

SCIENCE ELECTIVES

NOTE: These courses do NOT fulfill scope and sequence requirements associated with Science I, II, III, and IV coursework. Some may not be offered in a given year, dependent upon student interest and section availability.

Course Title: ASTRONOMY #1452s
Suggested Grade Level: **9-12**
Prerequisites: *Physical Science (or concurrent enrollment), Algebra I (or concurrent enrollment)*

Astronomy surveys the universe, from solar system bodies to galaxies. Students consider theories about the scale, content and motion of objects in space from both historical perspectives and through the use of current technologies. Techniques include: field observation, scientific research and digital production. The course prepares students for careers in science research or astronomy and invites lifetime astronomical involvement. Students work in teams and individually with telescopes and imaging systems, conduct authentic research, and present their findings.

Learning Goals Associated with the Course:

1. Orbital Motion [ESS1.B: 1-4] Use mathematics or computational representations to predict the motion of orbiting objects in the solar system.

2. Energy from Stars [ESS1.A: 1-1]Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.
3. Big Bang Theory [ESS1.A: 1-2] Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.
4. Elements in Stars [ESS1.A: 1-3] Communicate scientific ideas about the way stars, over their life cycle, produce elements.
5. History of the Earth [ESS1.B-6] Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.

Course Title: AP BIOLOGY #1450
Suggested Grade Level: **12**
Prerequisites: *Science I-III; department screening including successful completion of summer work*

This rigorous introductory college level course is for students who want to pursue a college major in any branch of the sciences. There is an emphasis on the development of scientific skills, practices, and habits of mind. This course requires extensive readings and a demanding laboratory program. Students are expected to take the AP Examination in May. Students who do not take the AP Examination will have their transcripts amended to "Advanced" rather than "Advanced Placement". Summer work is required.

Learning Goals Associated with the Course:

1. The process of evolution drives the diversity and unity of life. (B1 1)
2. Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis. (B1 2)
3. Living systems store, retrieve, transmit and respond to information essential to life processes. (BI 3)
4. Biological systems interact, and these systems and their interactions possess complex properties. (BI 4)
5. Change in the genetic makeup of a population over time is evolution. (EU 1.A)
6. Organisms are linked by lines of descent from common ancestry. (EU 1.B)
7. Life continues to evolve within a changing environment. (EU 1.C)
8. The origin of living systems is explained by natural processes. (EU 1.D)
9. Growth, reproduction and maintenance of the organization of living systems require free energy and matter. (EU 2.A)
10. Growth, reproduction and dynamic homeostasis require that cells create and maintain internal environments that are different from their external environments. (EU 2.B)
11. Organisms use feedback mechanisms to regulate growth and reproduction, and to maintain dynamic homeostasis. (EU 2.C)
12. Growth and dynamic homeostasis of a biological system are in uenced by changes in the system's environment. (EU 2.D)

13. Many biological processes involved in growth, reproduction and dynamic homeostasis include temporal regulation and coordination. (EU 2.E)
14. Heritable information provides for continuity of life. (EU 3.A)
15. Expression of genetic information involves cellular and molecular mechanisms. (EU 3.B)
16. The processing of genetic information is imperfect and is a source of genetic variation. (EU 3.C)
17. Cells communicate by generating, transmitting and receiving chemical signals. (EU 3.D)
18. Transmission of information results in changes within and between biological systems. (EU 3.E)
19. Interactions within biological systems lead to complex properties. (EU 4.A)
20. Competition and cooperation are important aspects of biological systems. (EU 4.B)
21. Naturally occurring diversity among and between components within biological systems affects interactions with the environment. (EU 4.C)

Course Title: AP BIOLOGY LAB #1450s
Suggested Grade Level: **12**
Prerequisites: *Current enrollment in AP Biology*

This lab will meet for half period all year long. Students can take both AP Biology and Honors Physics. If Honors Physics is not chosen, a half-period study hall will be assigned.

Course Title: AP ENVIRONMENTAL SCIENCE #1451
Suggested Grade Level: **11-12**
Prerequisites: *Completion of Academic or Honors Biology; department screening including successful completion of summer work*

This rigorous introductory college level course concerns the science of environmental problems, processes, and solutions. Students explore the interrelationships of the natural world and the impacts of humans. Students are exposed to several field techniques used to gather environmental data. Specific topics include land, air, and water pollution, biodiversity, global climate change, energy, public health, urban planning, and sustainability. Students are expected to take the AP Examination in May. Students who do not take the AP Examination will have their transcripts amended to "Advanced" rather than "Advanced Placement". Summer work is required.

Course Title: AP ENVIRONMENTAL SCIENCE LAB #1451s
Suggested Grade Level: **11-12**
Prerequisites: *Current enrollment in AP Environmental Science*

This lab will meet for half period all year long. Students can take both AP Environmental Science and Honors Physics. If Honors Physics is not chosen, a half period-study hall will be assigned.

Course Title: FORENSIC SCIENCE #1453s
Suggested Grade Level: **11-12** ***(10th with department head approval)***

Prerequisites: *Science II*

This course focuses on practices associated with the analysis of physical evidence found at crime scenes. Students will utilize scientific skills, practices, and habits of mind to solve intriguing problems. Topics include: types of evidence, impression evidence, forensic law, fingerprints, hair, fibers, toxicology, soil and glass analysis, blood, DNA, and entomology. Frequent readings of case studies, discussions, homework, lab exercises, and independent projects are required.

Course Title: HUMAN ANATOMY AND PHYSIOLOGY #1455
Suggested Grade Level: **11-12**
Prerequisites: *Completion of Academic or Honors Biology and completion or concurrent enrollment in Academic or Honors Chemistry*

This course provides mature students with an opportunity to explore and apply knowledge of the human body. The major organ systems of the body will be studied including skin and body membranes, skeletal system, muscular system, nervous system, senses, endocrine system, blood, cardiovascular system, lymphatic system and body defenses, respiratory system, digestive system and metabolism, urinary system and reproductive system. Frequent readings, discussions, homework, lab exercises and independent projects are required.

Learning Goals Associated with the Course:

1.1 The Language of Anatomy - I can communicate using the language of anatomy.
1.2 Organization - I can construct an explanation for the organization of the human body.
1.3 Maintaining Homeostasis - I can construct explanations for how humans maintain life using feedback loops.
2.1 Basic Chemistry - I can construct an explanation based on evidence for how the subatomic particles dictate the structure and function of atoms.
2.2 Molecules of Life - I can use models to describe the structure and function of water and the major biological molecules.
3.1 Microscopy & Cell Structure - I can use a model to explain the structure, function, and interactions among the organelles within a cell and how cells undergo cell division.
3.2 Cell Physiology - I can use models to construct explanations for the physiological functions of a cell.
3.3 Tissues - I can use models to describe the basic structures and functions of the major types of human tissues.
4.1 Body Membranes - I can use models to describe the differences in structure and function of the four types of body membranes.
4.2 The Integumentary System - I can use models to describe the structure and function of the integumentary system.
5.1 Overview of the Skeletal System - I can use models to describe the structure and function of the skeletal system.

5.4 Joints & Synovial Movements - I can describe the structural and functional classification of joints and types of synovial joints including the types of movement allowed.

6.1 Muscle Tissues Histology & Skeletal Muscle Physiology - I can use a model to describe how the microscopic anatomy of a skeletal muscle functions during contraction.

6.2 Gross Musculature - I can use a model or diagram to identify the major muscles of the human body.

7.1 Organization of the Nervous System -

7.2 Neuron Anatomy & Physiology - I can use models to construct an explanation based on evidence for how neurons transmit information.

7.3 Functional Anatomy of the Brain - I can use a model to explain how different regions of the brain have different functions.

9.1 Overview of Endocrine System & Hormone Action - I can construct an explanation for the organization and major mechanisms of action of the endocrine system.

9.2 Organs of the Endocrine System - I can communicate information for how the hormones of the endocrine system maintain homeostasis within the body.

10. Blood - I can construct an explanation for how blood serves as a vehicle for distributing body heat and for transporting nutrients, respiratory gases, and other substances throughout the body.

11.1 Anatomy of the Heart - I can use a model to construct an explanation for how heart rate is regulated.

11.2 Physiology of the Heart - I can use a model to construct an explanation for how heart rate is regulated.

11.3 Blood Vessels & Blood Pressure - I can construct an explanation for how the structure of blood vessels affects their function.

12.1 The Lymphatic System - I can use a model to describe the structures of the lymphatic system and construct an explanation for the functioning of the lymphatic system.

12.2 The Immune Response - I can use a model(s) to describe the immune response including both the nonspecific and specific defenses.

13.1 Anatomy of the Respiratory System - I can use a model to explain the functional anatomy of the respiratory system.

13.2 Physiology of the Respiratory System - I can use models & mathematics to construct an explanation for the physiological functioning of the respiratory system.

14.1 Anatomy of the Digestive System - I can use models to describe the structure and general functions of the organs of the digestive system.

14.2 Physiology of the Digestive System - I can construct an explanation for how the organs and structures perform digestion and absorption.

15.1 The Urinary System & Urine Formation - I can construct an explanation for how urine is formed and eliminated from the body.

15.2 Fluid, Electrolyte, and Acid-Base Balance - I can construct an explanation for how the kidneys maintain fluid, electrolyte, and acid-base balance.

INFECTIOUS DISEASE #1456s
Suggested Grade Level: 11-12 (10th with department head approval)
Prerequisites: *Science II (or concurrent enrollment)*

This course focuses on the biology of bacteria, viruses, and prions, as well as the response of human immune system. Topics of epidemiology and public health are introduced. The historical relevance of epidemics is also presented. This course will require various readings and research projects. Students who want to learn about infectious disease globally including past and present issues, and may be thinking about a career in the health field or just have a curiosity about public health are encouraged to take this course.

Course Title: MARINE SCIENCE #1458
Suggested Grade Level: **9-12**
Prerequisites: *Science I (or concurrent enrollment)*

This course gives students an opportunity to explore the relationships between the physical, geological, and chemical properties of the oceans. It also covers the ecological, environmental, and evolutionary positions occupied by marine organisms. Students examine and at times use technologies for investigating oceans. Mankind's actions and their impact on the quality of our oceans are examined with an emphasis on the New England area. This is a laboratory-based course featuring individual research projects, and library, and Internet research.

Learning Goals Associated with the Course:

1. Principles of Marine Science: Explain the methodology of marine science and the role that scientific investigations play in the search for scientific understanding of the sea by describing the geology of ocean basins and characteristics of the marine environment as well as physical and chemical properties of seawater.
2. Organisms of the Sea: Apply the basic principles of biology to marine organisms in order to explain and illustrate, with examples, how living systems interact with the biotic and abiotic environment.
3. Humans & the Seas: Describe how humans are dependent on the diversity of resources provided by the marine environment and the effect that they have on those resources.

SOCIAL STUDIES

Academic Planning Notes:
• Social Studies credits required: 3 (Social Studies I-III). All students must complete required assessments embedded in Social Studies I-III courses.
• Many students enroll in one or more additional social studies courses during their final two years

of high school or earlier with department head approval.

SOCIAL STUDIES I

9th grade students take the two semester courses that follow:

Course Title: ACADEMIC INTRODUCTION TO WORLD RELIGIONS #1511a
Suggested Grade Level: **9**
Prerequisites: None

Introduction to World Religions will examine the purpose of religion. We will especially focus on the origins, history, and practices of different religious traditions while paying special attention to religious founders, scriptures, branches, sacred objects and places, rites of passage, holidays,, and conflicts.

Learning Goals Associated with the Course:

1. Analyze the spatial organization of people, places, and environments on the Earth's surface using mental maps, geographic data and representations, geospatial technologies and spatial thinking.
2. Apply an understanding of the forces of continuity and change to analyze the evolution of historical eras, the persistence of enduring themes, and the significance of turning points and current issues locally, in the nation, and the world.
3. Analyze the physical, human and environmental geography of Maine, the United States and various regions of the world to evaluate the interdependent relationships and challenges facing human systems in the past, present and future.
4. Trace and evaluate the development of democratic ideals, the persistence of enduring themes (e.g. power and authority; migration) and their impact on societal issues, trends and events.

Course Title: ACADEMIC WORLD GOVERNMENTS #1511b
Suggested Grade Level: **9**
Prerequisites:

World Governments will examine the purpose of government and compare the basic philosophies and structures of government in five countries, with special emphasis on the United States. We will explore the rights and responsibilities of citizenship and current issues that cause conflict in each of the places we study.

Learning Goals Associated with the Course:

1. Evaluate current issues by applying the democratic ideals in the founding documents and the constitutional principles of the United States government, and explain how and why democratic institutions and interpretations of democratic ideals have changed over time.
2. Analyze the constitutional principles, and the roles of the citizen and the government, in major laws or cases, and compare the rights, duties, and responsibilities of United States citizens with those of citizens of other nations.
3. Analyze the interaction between human actions and environmental systems, and evaluate the meaning, use, distribution, and importance of resources in various regions of the world.
4. Evaluate how people influence government and work for the common good.
5. Compare and evaluate various forms of government and political systems in the United States and the world, and describe their impact on societal issues, trends and events.

SOCIAL STUDIES II

Prerequisite: Social Studies I
10th grade students take the two semester courses that follow or screen for AP European History

Course Title: ACADEMIC COMPARATIVE ECONOMICS #1521a
Suggested Grade Level: **10**
Prerequisites: *Social Studies I*

This course will start with an examination of the basic origin and structures of various economic models. 'What defines wealth?' and 'How do people manage their wealth?' are some of the questions that will be addressed in the first part of the course. The second half of the course will have a more in-depth study of the American school of economics and its blending of the traditional economic systems.

Learning Goals Associated with the Course:

1. Students will be able to explain and apply economic concepts to contemporary, personal and/or historical events.
2. Students will be able to compare and contrast the characteristics of different economic systems.
3. Students will be able to identify examples of monetary policy and explain its role in a modern economy.

Course Title: ACADEMIC AMERICAN FOREIGN POLICY #1521b
Suggested Grade Level: **10**
Prerequisites: *Social Studies I*

In this course, students will be asked to develop their views on how both the United States and the individual student should interact with the rest of the world. This will be accomplished by having students analyze case studies within broader themes such as the environment, terrorism, foreign aid, genocide, conflict resolution, immigration and international rivalries and competition.

Learning Goals Associated with the Course:

1. Students will be able to evaluate multiple sources for meaning and relevance.
2. Students will be able to present and defend an argument both orally and in writing.
3. Students will be able to produce an informed policy statement on a contemporary issue using appropriate social studies skills and knowledge.
4. Students will be able to explain how the forces of conflict and cooperation impact human interactions.
5. Students will be able to identify bias in sources.

Course Title: AP EUROPEAN HISTORY #1522
Suggested Grade Level: **10**
Prerequisites: *Social Studies I; department screening including completed summer work*

This course, for the student who wants to prepare for the Advanced Placement European History Examination, deepens the student's knowledge and understanding of European history. The course offers an in-depth look at selected areas of the history of Europe and related topics. College level materials are used in class. Strong emphasis is placed upon analytical writing, examination of historical schools of thought, and the ability to express points of view in both written and verbal modes.

Learning Goals Associated with the Course:

1. Gather, synthesize and evaluate information from multiple sources representing a wide range of views; make judgements about conflicting finds from different sources,incorporating those from sources that are valid and refuting others.
2. Construct and present arguments orally and/or in writing in which claims,counterclaims, reasons, and evidence demonstrate their relevance to each other and the overall argument and the piece is organized anticipating the audience's knowledge level, concerns, values, and possible biases.
3. Evaluate how the forces of cooperation and conflict among people, as well as the movement and interactions of various groups of people, including Native Americans, influence the division and control of the Earth's surface historically and in the present.
4. Identify and critique diverse perspectives on societal issues, trends, and events and articulate priorities different groups or people hold in their perspectives.Explain and analyze the role of financial institutions, the stock market, and government including fiscal, monetary, and trade policies in personal, business, and national economies.

5. Explain and apply the concepts of specialization, economic interdependence, comparative advantage, and supply and demand as they relate to economic conditions or issues.
6. Compare different economic systems in a variety of regions and groups including Maine, Native Americans, the United States, and various regions of the world; explain the relationship between the region's economic system and its government, and the resulting costs and benefits.

SOCIAL STUDIES III

Prerequisite: Social Studies II
*In order to fulfill Maine's US History requirement, 11th grade students take one of the fall **and** one of the spring semester courses that follow **or** they may screen for AP United States History, which is a year long course.*

Course Title: ACADEMIC US HISTORY I: 1775-1914 #1531a
Suggested Grade Level: **11**
Prerequisites: *Social Studies II*

In this course, students study major events, themes, and patterns in United States history from the colonial period up to 1914. Students will develop key skills such as understanding historical cause and effect, analyzing sources, making historical interpretations of events, and making oral and written arguments to defend their history-based opinions.

Learning Goals Associated with the Course:

1. Develop compelling inquiry questions and conduct research on current social studies issues by applying appropriate methods and ethical reasoning skills, and using relevant tools, technologies, and sources from social studies fields to conduct the inquiry.
2. Develop informative/explanatory texts about social studies topics, including the narration of historical events, and present a coherent set of findings orally and/or in writing.
3. Evaluate various explanations and authors' differing point of view on the same event or issue, citing specific textual evidence from primary and secondary sources to support analysis
4. Using examples of historical or current issues, analyze the political structures, power, and perspectives of diverse cultures, including Native Americans, various historical and recent immigrant groups in the United States, and various cultures in the world.

Course Title: ACADEMIC US HISTORY II: 1914-Present #1531b
Suggested Grade Level: **11**
Prerequisites: *Social Studies II*

In this course, students study major events, themes, and patterns in United States history from the

beginning of World War One to the present day. Students will develop key skills such as understanding historical cause and effect, analyzing sources, making historical interpretations of events, and making oral and written arguments to defend their history-based opinions.

Learning Goals Associated with the Course:

1. Develop compelling inquiry questions and conduct research on current social studies issues by applying appropriate methods and ethical reasoning skills, and using relevant tools, technologies, and sources from social studies fields to conduct the inquiry.
2. Develop informative/explanatory texts about social studies topics, including the narration of historical events, and present a coherent set of findings orally and/or in writing.
3. Evaluate various explanations and authors' differing point of view on the same event or issue, citing specific textual evidence from primary and secondary sources to support analysis
4. Using examples of historical or current issues, analyze the political structures, power, and perspectives of diverse cultures, including Native Americans, various historical and recent immigrant groups in the United States, and various cultures in the world.

Southern Maine Community College Dual Enrollment Courses

Course Title: SMCC UNITED STATES HISTORY TO 1877 #1533a
Suggested Grade Level: **11**
Prerequisites: *Social Studies II; SAT Critical Reading Score 450 or higher; Accuplacer Reading Comprehension 68 or higher and Sentence Skills 74 or higher or acceptable PSAT score; SS II teacher and guidance counselor recommendations required*

This is an introductory survey covering the history of the United States through Reconstruction. This course is designed to acquaint students with most major topics in the American experience ranging from the origins of British settlement in North America through the Civil War and the end of reconstruction in 1877. This course will explore the cultures that discovered and created American society and the interactions of European, Native American and African peoples. This course also will introduce students to the process of thinking historically, with a focus on original historical sources.

Learning Goals Associated with the Course:

1. Apply an understanding of the forces of continuity and change to analyze the evolution of historical eras, the persistence of enduring themes, and the significance of turning points and current issues in Maine, Maine Native American cultures, the nation and the world.
2. Select and organize evidence from primary and secondary sources to support an historical interpretation or argument.

3. Trace and evaluate the development of democratic ideals, the persistence of enduring themes (e.g. power and authority; migration) and their impact on societal issues, trends and events. (inds from different sources,incorporating those from sources that are valid and refuting others.
4. Identify and critique diverse perspectives on societal issues, trends and events and articulate priorities different groups or people hold in their perspectives.
5. Apply an understanding of causality, connections, and significance to develop credible explanations of historical events based on reasoned interpretation of evidence.

Course Title: SMCC UNITED STATES HISTORY SINCE 1877 #1533b
Suggested Grade Level: **11**
Prerequisites: *Social Studies II; SAT Critical Reading Score 450 or higher; Accuplacer Reading Comprehension 68 or higher and Sentence Skills 74 or higher or acceptable PSAT score; SS II teacher and guidance counselor recommendations required*

This is an introductory survey covering the history of the United States since the end of Reconstruction. This course is designed to acquaint students with most major topics in the American experience ranging from the aftermath of the Civil War through the contemporary period. Some of the key topics to be covered include: industrialization, progressivism, World Wars I and II, the Great Depression and the Civil Rights Movement. This course also will introduce students to the process of thinking historically, with a focus on original historical sources.

Learning Goals Associated with the Course:

1. Apply an understanding of the forces of continuity and change to analyze the evolution of historical eras, the persistence of enduring themes, and the significance of turning points and current issues in Maine, Maine Native American cultures, the nation and the world.
2. Select and organize evidence from primary and secondary sources to support an historical interpretation or argument.
3. Trace and evaluate the development of democratic ideals, the persistence of enduring themes (e.g. power and authority; migration) and their impact on societal issues, trends and events. (inds from different sources,incorporating those from sources that are valid and refuting others.
4. Identify and critique diverse perspectives on societal issues, trends and events and articulate priorities different groups or people hold in their perspectives.
5. Apply an understanding of causality, connections, and significance to develop credible explanations of historical events based on reasoned interpretation of evidence.

Course Title: AP UNITED STATES HISTORY #1532
Suggested Grade Level: **11**
Prerequisites: *Social Studies I and Social Studies II; department screening including completed summer work*

This course, designed for the student who wishes to prepare for the Advanced Placement US History Examination, provides an in-depth examination of US history. College level materials are utilized and a heavy emphasis is placed upon analytical writing, examination of historical schools of thought and the ability to express points of view in a seminar format. There is required summer work for this course.

Learning Goals Associated with the Course:

1. Apply an understanding of the forces of continuity and change to analyze the evolution of historical eras, the persistence of enduring themes, and the significance of turning points and current issues in Maine, Maine Native American cultures, the nation and the world.
2. Select and organize evidence from primary and secondary sources to support an historical interpretation or argument.
3. Trace and evaluate the development of democratic ideals, the persistence of enduring themes (e.g. power and authority; migration) and their impact on societal issues, trends and events. (inds from different sources,incorporating those from sources that are valid and refuting others.
4. Identify and critique diverse perspectives on societal issues, trends and events and articulate priorities different groups or people hold in their perspectives.
5. Apply an understanding of causality, connections, and significance to develop credible explanations of historical events based on reasoned interpretation of evidence.

SOCIAL STUDIES ELECTIVES

NOTE: these courses do NOT fulfill scope and sequence requirements or learning goals/standards for graduation associated with Social Studies I-III coursework.

Course Title: The News & You #1556s
Suggested Grade Level: 11-12
Prerequisites:

NOTE: This does NOT fulfill the Social Studies I, II or III requirements.

This semester course is designed to provide students with an opportunity to discuss, explore, and understand the complex issues of today in a respectful, meaningful, and active way. Because the subject of this class is "the news", topics will vary considerably depending on the current news cycle. During the semester students will explore in depth two to three issues, which will be determined by student interest. Students will also learn how opinions are shaped, how to read political cartoons, and how to detect bias and fake news. This course uses newspapers, online media, cartoons, newscasts, and documentaries to support class discussion. NOTE: This does NOT fulfill the Social Studies I, II or III requirements.

Learning Goals Associated with the Course:

1. Apply the attributes of a responsible and involved citizen to affect a real world issue based on a local need.
2. Evaluate how people influence government and work for the common good.
3. Develop and present, orally and in writing, individual and collaborative decisions and plans by:
   • considering multiple points of view;
   • prioritizing the pros and cons of those ideas;
   • building on ideas of others and sharing in an attempt to sway the opinions of others
4. Compare and evaluate various forms of government and political systems in the United States and the world, and describe their impact on societal issues, trends and events.
5. Identify and critique diverse perspectives on societal issues, trends and events and articulate priorities different groups or people hold in their perspectives.

Course Title: ART & SOCIETY, PARTS I & II #1553a (fall) and #1553b (spring)
Suggested Grade Level: **11-12**
Prerequisites:

These two semester-length courses examine the creative impulse throughout Western history. Semester 1 features art, architecture and culture from the prehistoric to medieval eras, while semester 2 focuses on the modern period (the Renaissance to the present). Students uncover the artistic and intellectual advances in history and their connection to society through classroom discussions, analysis of written and visual works as well as studio art experiences involving various media. The courses will be taught by a pair of teachers from both the Visual Arts and Social Studies departments.

Learning Goals Associated with the Course:

1. Apply an understanding of the forces of continuity and change to analyze the evolution of historical eras, the persistence of enduring themes, and the significance of turning points and current events in the world.
2. Select and organize evidence from primary and secondary sources to support an historical interpretation or argument.
3. Apply an understanding of causality, connections and significance to develop credible explanations of historical events based on reasoned interpretation of evidence.
4. Research and explain how art and artists reflect and shape their time and culture.
5. Analyze the characteristics and purposes of visual arts to understand history and/or world cultures.

Course Title: PSYCHOLOGY #1558s
Suggested Grade Level: **11-12**
Prerequisites:

This course gives the student a basic understanding of individual human behavior. The course covers topics such as motivation, perception, communication, learning, thinking, personality, and

abnormal behavior. Students develop an understanding of these topics through experiments and consideration of human experience.

Learning Goals Associated with the Course:

1. Describe major concepts related to the study of learning, cognition, and memory.
2. Describe major concepts related to the study of biopsychology, sensation and perception, and motivation and emotion.
3. Describe the factors that create distinct personality traits in humans and account for differences in intelligence.
4. Describe and analyze the psychological challenges and issues faced during different developmental stages.
5. Describe the major concepts related to the study of stress and health, abnormal behavior, and therapy.
6. Analyze the major concepts in the field of social psychology and how groups influence individual behavior.

Course Title: SOCIOLOGY #1559s
Suggested Grade Level: **11-12**
Prerequisites:

The study of sociology involves learning about relationships within groups and in social institutions. The course provides students with a basic and practical knowledge of the working relationships within cultures, families, groups, institutions, and belief systems. Principles are applied to social problems and issues, addressing topics such as the family, religion, poverty, population, values, and education.

Learning Goals Associated with the Course:

1. Describe the components of culture.
2. Analyze how culture influences individuals, including themselves.
3. Evaluate important social institutions and how they respond to social needs.
4. Assess how social institutions and cultures change and evolve.
5. Describe the process of socialization across the life course.
6. Analyze the effects of social inequality on groups and individuals.
7. Explain the relationship between social institutions and inequality.

Course Title: MYTHOLOGY #1555s
Suggested Grade Level: **11-12**
Prerequisites:

Using an interdisciplinary approach using art, literature and film, this course will focus on how

mythology reflects cultural beliefs, both past and present. A broad examination of myths from different cultures will help illustrate the purposes and universal themes expressed in mythology such as creation/origin, heroism, sacrifice, death or justice. Students should develop and awareness of the presence and role of mythology in our culture and be able to make connections between myths from different cultures and time periods.

Learning Goals Associated with the Course:

1. Students will be able to identify patterns and themes across different myths.
2. Students will be able to analyze the deeper meaning inside myths.
3. Students will be able to express course themes clearly both orally and in writing.

Course Title: AP US GOVERNMENT & POLITICS #1542
Suggested Grade Level: **12**
Prerequisites: *Social Studies III*

This Advanced Placement course provides students with the opportunity to fully understand and appreciate the profound impact that government has on our lives. We will examine the foundations and structure of American government, including early American history, the Constitution, political parties, elections, media, special interest groups, and current events.

Learning Goals Associated with the Course:

1. Evaluate how people influence government and work for the common good.
2. Evaluate current issues by applying the democratic ideals in the founding documents and constitutional principles of the United States government, and explain how and why democratic institutions and interpretations of democratic ideals have changed over time.
3. Compare and evaluate various forms of government and political systems in the United States and the world, and describe their impact on societal issues, trends and events.
4. Analyze constitutional principles, and the roles of the citizen and the government, in major laws or cases, and compare the rights, duties, and responsibilities of United States citizens with those of citizens from other nations

VISUAL ARTS

Academic Planning Notes:
• The Department recommends that at least ½ credit in the Visual Arts be completed prior to grade 11.
• Foundations in Visual Arts is a prerequisite for all visual arts courses taken freshman year.
• Students planning to take visual arts courses to fulfill the Fine Arts requirement are encouraged to

take Foundations in Visual Arts.
• Many students exceed the minimum Fine Arts credit requirement by taking several visual arts courses.

Course Title: FOUNDATIONS IN VISUAL ARTS #2110s
Suggested Grade Level: **9**
Prerequisites:

This course is available to students who wish to partially fulfill the fine arts requirement, as well as students who are considering taking other art courses later during high school. Students develop a visual and aesthetic "foundation" on which to build by increasing their exposure to the visual world, enlarging their visual vocabulary and experience, improving their skills in visual expression, and making them more aware of their visual surroundings. Students will use design elements and principles in a variety of media such as paint, printmaking, drawing, and 3-dimensional forms.

Learning Goals Associated with the Course:

Students will evaluate the elements and principles of design within a piece of art while making comparisons with other pieces of art and their techniques.

1. Students will compare the effects of different media, tools, techniques, and processes to create a variety of original artwork.
2. Students will apply and analyze creative problem-solving skills to help improve their work and the work of others.
3. Students will identify the difference between a personal opinion and an informed judgment when analyzing a work of art.
4. Students will analyze visual arts skills and concepts that are similar across the various disciplines. They will be able to explain how knowledge of the arts relates to learning in careers, life skills, and recreational activities.

VISUAL ARTS ELECTIVES

The second half of a Visual Arts credit for graduation can be met in the following courses listed. Students who have not met the Prerequisite of Foundations in Visual Arts may request enrollment in one of these courses with the approval of the Visual Arts Department Chair.

Learning Goals Associated with the following Visual Arts Courses:

1. Students will be able to research and explain how artists reflect and shape their time and culture.
2. Students will use the Elements and Principles of Design to create original artworks that demonstrate the development of personal style.
3. Students will analyze and evaluate varied interpretations of works of art using evidence

from technical knowledge, observations, and a variety of print and/or non-print sources.

4. Students will analyze the characteristics and purposes of visual arts to understand history and/or world cultures.

Course Title: CERAMICS I #2131s
Suggested Grade Level:
Prerequisites: *Foundations in Visual Arts*

Designed for the student who chooses to work intensely with clay, the course teaches the skills and processes involved in pottery. Various hand-building techniques, work on the potter's wheel and the production of functional and nonfunctional as well as sculptural clay objects are taught. Through this course, a student is able to focus on technical, historical, aesthetic, cultural and contemporary concerns of clay workers as they develop their own personal and artistic ways of working.

Course Title: CERAMICS II #2132s
Suggested Grade Level:
Prerequisites: *Ceramics I*

This course should be taken the second semester after Ceramics I. Students in this course will be building on their basic skills in hand building and wheel throwing with clay, improving craftsmanship and confidence. Both the creation of non-objective and utilitarian pieces will be explored. The overall goal is to allow the student to grow as an artist through the study and become more self-aware of their art. This course is a recommended prerequisite before taking AP 3D design.

Course Title: AP 3D CERAMICS #2133
Suggested Grade Level:
Prerequisites: *Department screening or grade of C or higher in Ceramics II or Sculpture*

AP 3D Ceramics is a year-long course that elaborates on the many different means of working with clay and related sculptural materials as an artistic medium. Understanding and working with the principles of design will be stressed throughout this course as well as relationships of form to historical and cultural periods. Because of the advanced level of the assigned work, previous classes in ceramics and/or sculpture are required. This means that it will be possible for students who are seriously interested in a particular area to submit an AP Portfolio in that media.

Course Title: DRAWING #2122s
Suggested Grade Level:
Prerequisites: *Foundations in Visual Arts*

Drawing is an art form and means of personal expression. Its practice increases visual literacy: understanding what and how we see. Design elements of drawing are studied including historical study of visual communication. Visual observation, basic media skills, and creative uses of drawing media are stressed. Various drawing media such as pencil, ink, charcoal, mixed media and the computer are explored as drawing tools.

Course Title: AP 2D DESIGN #2127
Suggested Grade Level:
Prerequisites: *Department screening or grade of C or higher in Drawing, Painting, or Photography*

AP 2D Design is a year-long course that allows students to develop a greater command of technical skills, various media, and advanced vocabulary while pursuing more thematic depth and complexity, and a wider range of creative responses in their work. Overall, it is a "Portfolio Preparation" course meant to build and refine 2D work for college and AP Studio Art Portfolios, or for personal interest. Thus, another major emphasis of the class is on the development of personal work, leading students to explore artistic interest and intent. This course prepares the student to submit a portfolio of two-dimensional work in painting, drawing, design, and printmaking. It is recommended that students have previously taken Foundations, Studio Art, and other related art courses.

Course Title: PAINTING #2123s
Suggested Grade Level:
Prerequisites: *Foundations in Visual Arts*

Students experience various painting media and techniques. Students come to understand the expressive qualities of acrylic, watercolor, and tempera through their work. In addition, the historical significance of artists as reflectors of their time is studied providing a context for an understanding of visual art. In applications including drawing assignments, written responses, and studio work, students will demonstrate an understanding of painting's visual language.

Course Title: PHOTOGRAPHY #2124s
Suggested Grade Level: 11-12 ***(10th grade with instructor approval)***
Prerequisites: *Foundations in Visual Arts*

A visual language, photography is part of contemporary communication and culture. Black and white photography, both analog and digital, is the medium used to learn the language. Students encounter the elements and principles of design, the history and appreciation of photography, the use of 35mm analog cameras, developing film, and darkroom techniques as well as non-silver processes. The digital component of the course will involve the digital camera, scanning negatives, and positives, and preparing images on the computer to make black and white inkjet and laser prints. Emphasis is placed on seeing, analyzing, and creating through structured photographic

assignments, written analyses of master photographers, journals, readings, and group discussions.

Course Title: SCULPTURE #2125s
Suggested Grade Level:
Prerequisites: *Foundations in Visual Arts*

Sculpture is an intermediate course for students who enjoy working with clay, plaster, wood, wire, and mixed media. The course concentrates on developing technical skills and artistic appreciation of successful three-dimensional artwork. Studio projects will be tied to the discussion of art historical topics and/or uses of art in modern societies. Lessons will include studio work and class discussions in which students are required to participate. Students should have some understanding of the elements and principles of art and other concepts fundamental to art making, which will be further developed. The dynamics of the spatial aspects of an object and how an idea develops into an art form are investigated. Students will carve, cast and assemble in three dimensions with clay, metal, plastic, wood, plaster, found objects and more.

WORLD LANGUAGES

Academic Planning Notes:
• Students interested in pursuing post-secondary education (particularly 2 or 4 year college programs) are expected to have completed at least 2 years of a World Language, and many colleges require 4 years at the high school level.
• Placement in various course levels depends upon proficiency.

Course Title: WORLD LANGUAGE I (French #1211, German #1212, Spanish #1213)
Suggested Grade Level:
Prerequisites:

This course is for students beginning a language or continuing with their middle school introduction to that language. Students will aim to meet the novice-mid level of proficiency (ACTFL Guidelines) in the four linguistic skill areas (speaking, listening, reading and writing), as well as cultural understanding.

Learning Goals Associated with the Course:

1. Communicate on very familiar topics using a variety of words practiced or memorized.
2. Recognize some familiar words and phrases when hearing them spoken.
3. Recognize and understand some learned or memorized words and phrases when read.

4. Present information about self and some other very familiar topics using a variety of words, phrases, and memorized expressions.
5. Write lists and memorized phrases on familiar topics.
6. Describe practices and perspectives of a culture(s) in which the target language is spoken.
7. Identify connections between target language and another content area using either English or the target language.

Course Title: WORLD LANGUAGE II (French #1221, German #1222, Spanish #1223)
Suggested Grade Level:
Prerequisites: *World Language I*

Students will be able to communicate in the present and past. They will be able to produce sentences and strings of sentences while comprehending more advanced structures. Students will strive to meet novice-high level of proficiency (ACTFL Guidelines).

Learning Goals Associated with the Course:

1. Communicate and exchange information about familiar topics using phrases and simple sentences, sometimes supported by memorized language.
2. Handle short social interactions in everyday situations by asking and answering simple questions.
3. Understand words, phrases, and simple sentences related to everyday life.
4. Recognize pieces of information and sometimes understand the main topic of what is being said.
5. Understand familiar words, phrases, and sentences within short and simple texts related to everyday life. Understand the main idea of what was read.
6. Present basic information on familiar topics using practiced phrases and simple sentences.
7. Write short messages and notes on familiar topics related to everyday life.
8. Identify and explain how perspectives of a culture(s) are related to cultural practices of a culture(s) in which the target language is spoken.
9. Explain how products such as political structures, historical artifacts, literature, and/or visual and performing arts reflect the perspectives of a culture(s) in which the target language is spoken.
10. Use knowledge of the target language to identify and make connections with specialized vocabulary used in various fields of study.
11. Explain the importance of culture and language acquisition in a 21st century global economy.

Course Title: WORLD LANGUAGE III (French #1231, German #1232, Spanish #1233)
Suggested Grade Level:
Prerequisites: *World Language II*

Students will be able to produce written and spoken language in the present, past, and future. They will communicate using strings of sentences and paragraphs aiming to reach the intermediate-low level of proficiency (ACTFL Guidelines). Their increase in vocabulary will aid in understanding more

complicated texts and films.

Learning Goals Associated with the Course:

1. Participate in conversations on a number of familiar topics using simple sentences. Handle short social interactions in everyday situations by asking and answering simple questions.
2. Understand the main idea of short and simple texts when the topic is familiar.
3. Present information on most familiar topics using a series of simple sentences.
4. Write briefly about most familiar topics and present information using a series of simple sentences.
5. Explain how products, practices, and perspectives of a culture in which the target language is spoken contribute to the culture in which the student lives.
6. Use language within and beyond the school setting.

Course Title: WORLD LANGUAGE IV (French #1241, German #1242, Spanish #1243)
Suggested Grade Level:
Prerequisites: *World Language III*

Students will be able to produce written and spoken language in the present, past, future. They will learn to express themselves in hypothetical situations as well as analyze, compare and contrast. Students will strive to communicate at the intermediate-mid level of proficiency (ACTFL Guidelines).

Learning Goals Associated with the Course:

1. Participate with ease and confidence in conversations on familiar topics. Talk about events and experiences in various time frames and describe people, places, and things.Handle social interactions in everyday situations, sometimes even when there is an unexpected complication.
2. Understand the main idea in messages and presentations on a variety of topics related to everyday life and personal interests and studies. Understand the main idea in conversations that are overheard.
3. Understand the main idea of texts related to everyday life and personal interests or studies.
4. Make presentations on a wide variety of familiar topics using connected sentences.
5. Write on a wide variety of familiar topics using connected sentences.
6. Use language within and beyond the school setting.

Course Title: WORLD LANGUAGE V (French #1251, German #1252, Spanish #1253)
Suggested Grade Level:
Prerequisites: *World Language IV*

Students will do an in-depth study of all previously learned tenses and strive to produce language at the intermediate-high level of proficiency (ACTFL Guidelines). Students will hone their skills by viewing full-length films, debating global current events, reading and discussing literature, creating skits and

stories and occasional exchanges with schools in other countries. These courses will require the ability to work independently, individually, and in small groups.

Learning Goals Associated with the Course:

1. Participate with ease and confidence in conversations on familiar topics. Talk about events and experiences in various time frames. Describe people, places, and things. Handle social interactions in everyday situations, sometimes even when there is an unexpected complication.
2. Make presentations in a generally organized way on school, work, and community topics, and on researched topics. Make presentations on some events and experiences in various time frames.
3. Write on topics related to school, work, and community in a generally organized way. Write some simple paragraphs about events and experiences in various time frames.
4. Easily understand the main idea in messages and presentations on a variety of topics related to everyday life and personal interests and studies. Understand a few details of what is overheard in conversations, even when something unexpected is expressed. Follow what is heard about events and experiences in various time frames.
5. Easily understand the main idea of texts related to everyday life, personal interests, and studies. Follow stories and descriptions about events and experiences in various time frames.

WORLD LANGUAGES ELECTIVES

Course Title: GLOBAL CULTURE IN FILM #1261a (fall) and #1261b (spring)
Suggested Grade Level: 11-12
Prerequisites:

Students will have the opportunity to expand their awareness of other cultures through the study of foreign films and to develop an appreciation for how films can reflect a culture. Students will review and analyze award-winning films of a variety of genres in several world languages. Foreign films are a unique way to examine life and civilization in another country as they open a window into an unfamiliar culture and society and expand one's horizon. Detailed study of works will help students make cultural connections and comparisons with their own cultures and increase their global awareness. The course will have a discussion format where we will discuss the elements of film form, narrative, and cultural manifestation.

REGION 10 TECHNICAL HIGH SCHOOL

Region 10 Technical High School is located in Brunswick and serves the needs of Freeport, Brunswick, and Mt. Ararat students. Students are transported to Region 10 for half day morning or afternoon programs. Three vocational credits are awarded for a full year's attendance at Region 10.

Region 10 has developed dual enrollment and articulation agreements with some post-secondary schools which means that these colleges will award credit for work completed at Region 10. Opportunities are available for students in Culinary Arts, Metal Fabrication/Welding, Automotive Technology, Early Childhood Development, Health Occupations, Outdoor Powersports I, Auto Collision Repair, and Multimedia Communications. Students in Multimedia Communications, Early Childhood Development, EMT-Basic, Auto Collision Repair, and Health Occupations may also earn transferable college credit reported on a transcript.

Please contact Region 10 Technical High School with questions related to individual programs at 729-6622.

Academic Planning Notes:

- A full year Region 10 course usually represents 3 credits / three Carnegie units. Check to be sure of your credit status.
- Certain Mt. Ararat credit requirements may be modified for Region 10 students. Please consult your guidance counselor for details.
- **TECHNICAL ENGLISH and TECHNICAL MATH** are available at Region 10 for students whose course load would otherwise prevent them from scheduling a technical program. Permission from guidance counselor is required for enrollment in Technical English or Technical Math.

FOUNDATIONS OF TECHNOLOGY #7000s

Program-specific prerequisites: *Solid high school-level reading and math ability; Genuine desire to pursue or explore technical education*

Foundations of Technology is a new semester-long program that will provide instruction to 9th or 10th grade students in Career and Technical Education preparation for future enrollment in one of the Region 10 programs, many of which result in national or state certifications or licenses. Many of the skill standards included in the Foundations curriculum are the same introductory skills taught in our specialized CTE program areas, creating a sequential curriculum to enhance student success. Students will understand the technological process and related theory, and be able to operate a wide variety of tools and get oriented to technologies across an impressive range of technical programs and disciplines. Among other things, the program will cover: Workplace safety; Technological process; Measurement skills; Basic carpentry; Culinary and engine technology; Engineering basics and applications; Hand tools and applications; and orientation to different Region 10 programs.

AUTO COLLISION REPAIR #7001

Program-specific prerequisites: *Proficient in basic high school math and science; Good "people skills" and ability to work in teams; Genuine interest in learning the trade*

Students enrolled in this course will receive instruction on how to safely and productively perform all phases of collision repair and refinishing. This program is divided in four courses consisting of:

painting and refinishing, non-structural analysis and damage repair, mechanical and electrical components. Automotive refinishing is a major component of this program. Color mixing, matching, tinting and blending techniques are explored emphasizing hands-on experience. Upon completion of this course, the student should be able to enter the workforce at an entry level position or move on to a technical college to further advance their skills. Students are encouraged to participate in SkillsUSA (student organization) to enhance their leadership opportunities and compete at both state and national levels. This program has a dual enrollment with Northern Maine Community College for OSHA 10 Hour Card and articulation agreements for automotive refinishing with Ohio Technical College and Universal Technical Institute.

AUTOMOTIVE TECHNOLOGY I #7002

Program-specific prerequisites: *Shall have passed or shall be concurrently enrolled in Algebra I; Pass interview with program instructor; Pass entry quiz; Attention to detail, a genuine interest in learning about automotive technology, and a desire to make things work correctly.*

NOTE: morning only

The Automotive Technology I program introduces students to the world of automotive maintenance and repair through a combination of classroom training and shop work on customer vehicles. Students will gain the knowledge, skills and attitudes necessary to safely work in a shop setting using the tools and equipment to perform professional repairs on modern vehicles. Utilizing national, state, and local resources including standards set by NATEF (National Automotive Technicians Education Foundation) and the Maine Department of Education, students will have the opportunity to earn professional certifications from ASE (Automotive Service Excellence) and a Maine State Inspection License. Units covered during this first-year program include comprehensive safety training, Brake Systems, Electrical and Electronic Systems, Engine Performance, and Steering and Suspension Systems. Class meets Monday-Friday for 2.5 hours in the AM session only. Students are encouraged to participate in SkillsUSA (student organization) to enhance their leadership opportunities and compete at both state and national levels.

AUTOMOTIVE TECHNOLOGY II #7003

Program-specific prerequisites: *Successful completion of Automotive Technology I*

NOTE: afternoon only

The Automotive Technology II program is designed for students who have successfully completed the Automotive Technology I program. Auto Tech II continues to build a student's portfolio of skills and knowledge in the automotive field through work in the shop that strengthens and augments previously covered units of instruction. Newly covered units include Automatic Transmission and Transaxle, Manual Drive Train and Axles, Engine Repair, and Heating and Air Conditioning Systems. All students completing the course will leave with a professional resume and a letter of introduction to enable the student to seek immediate employment in the automotive field or to enhance the admission process into a post-secondary school. ASE certification and State Inspection licensing are encouraged. Professional development through Skills USA continue to provide growth opportunity as well as potential scholarship sources. Class meets Monday- Friday for 2.5 hours in

the PM session only. Students are encouraged to participate in SkillsUSA to enhance their leadership opportunities and compete at both state and national levels. This course provides articulation agreement credits at SMCC and CMCC.

BUILDING TRADES #7004

Program-specific prerequisites: *Good grasp of basic high school math; Can work well independently and with others*

This course of study provides a combination of masonry and carpentry. Together, they offer a wide range of classroom and hands-on work experiences in the construction trades with a strong emphasis on safety. Carpentry areas of concentration include: rough and finish carpentry, floor, wall, and roof framing, exterior trim, insulation, drywall installation, construction planning and drafting. Masonry areas of concentration include: forms and foundation, brick and block work, stone, tile, masonry materials and mortars, scaffolding, chimneys, fireplace construction, arches and steps. Working offsite on community project functions is an important component of building trades. Students are encouraged to participate in SkillsUSA (student organization) to enhance their leadership opportunities and compete at both state and national levels.

CULINARY ARTS #7005

Program-specific prerequisites: *Solid high school-level reading ability; Able to work independently and with a team*

Culinary Arts prepares students for careers that support Maine's Hospitality Industry. Students learn concepts in food preparation and restaurant management. Emphasis is placed on maintaining a healthy environment through sanitation training and workplace wellness. Knowledge is applied through catering school and public functions. Participation in our public restaurant continues to develop competencies. Students earn ServeSafe Manager Certification upon successful completion of the National Restaurant Association Exam. Students are encouraged to participate in SkillsUSA (student organization) to enhance their leadership opportunities and compete at both state and national levels. ***Articulation agreement or dual enrollment credits are available with Culinary Institute of America and all Maine Community College culinary programs.***

EARLY CHILDHOOD EDUCATION I #7006

Program-specific prerequisites: *Solid high school-level reading ability; Genuine desire to work with preschool children; Behavior and grooming appropriate for work with preschool children and their families*

NOTE: morning only

The Early Childhood Program prepares individuals to provide care and guidance of young children under the supervision of professional personnel. Students study the introductory ideas and concepts of Early Childhood Education from birth to grade 3 in an academic classroom. Students plan, organize and conduct activities for children to promote physical, interpersonal, motor, mental, and social growth and development of acceptable behavior: cleanliness, eating, playing, resting, and toilet habits. Supervised students operate a daycare three sessions per week. Students are

encouraged to participate in SkillsUSA (student organization) to enhance their leadership opportunities and compete at both state and national levels. Students have the opportunity to obtain CPR, First Aide, and Servsafe Food Handler Certifications.

EARLY CHILDHOOD EDUCATION II #7007

Program-specific prerequisites: *Successful completion of Early Childhood Education I*

NOTE: afternoon only

This program offers a three-credit dual enrollment, Introduction to Early Childhood Education, through Southern Maine Community College. When not in the academic classroom, students will continue supervised teaching in the preschool program or may choose to practice teaching skills more independently in an internship position. Students will also have the ability to become Maine Certified Early Childhood Care Assistants.

EMT – BASIC #7008

Program-specific prerequisites: *Solid high school-level math and reading ability; Able to work independently and with a team*

The EMT Basic course of study includes trauma emergencies, pediatrics, special patient populations, and spinal assessment. Training includes clinical time in a hospital emergency facility and "ride along" training with a licensed Emergency Medical Service. Training will include vital signs, CPR/AED, oxygen administration, diabetic emergency treatment, spinal immobilization, and use of airway devices, along with other important life support training, including bleeding control. Students will learn the technical terms for life saving medicines and emergency application. Students must be prepared for a serious, rigorous course of study, and must possess a maturity commensurate with treating life-threatening incidents. Students may opt for the Health Occupations curriculum to interface with EMT Basic. Students successfully completing the dual enrollment are eligible to sit for the national EMT Basic certification exam. ***5 credits dual enrollment with SMCC is available.***

GENERAL TRADES #7009

Program-specific prerequisites: *Willingness to learn, be safe, and to follow directions*

The General Trades program is a one-to-two year vocational training program designed to prepare students for employment or future placement in another Region 10 program. Emphasis is placed on the development of attitudes, behaviors, and basic skills common to all trades. The Cooperative Learning approach is utilized in both the classroom and the workshop areas. The student must be able to work at a community job experience independently, be self-motivated, understand the concept of work, and be able to follow directions.

HEALTH OCCUPATIONS – CERTIFIED NURSING ASSISTANT #7010

Program-specific prerequisites: *Be at least 16 years of age as of September 1 of the current school year; Be a high school junior or senior; Have solid high school-level math and reading skills; have no record of criminal convictions or suspensions for violence; Abstain from drug and alcohol use; Be*

trustworthy with a good work ethic and excellent "people skills"; Have a genuine interest in the field
This course fulfills the Health requirement.

Health Occupations is a class for juniors and seniors and prepares students to sit for the Maine State Certification Exam to earn CNA certification. The class includes academic study, skills lab, and clinical time in long term and hospital settings. The CNA certification allows graduates to work in a wide variety of health care settings offering comprehensive and compassionate daily care to elderly or ill patients. The academic study includes anatomy and physiology, medical terminology, ethics, pathophysiology (the disease process), infection control, patient care skills, and portfolio development. Students will need to purchase uniforms and white sneakers or shoes (costing approximately $100; scholarship money may be available to help defray this cost if needed). Dual enrollment in medical terminology is available.

METAL FABRICATION AND WELDING #7011

Program-specific prerequisites: *Solid high school math ability, especially in terms of fractions and measurement; Ability to work well independently and as a team member*

The Metal Fabrication and Welding program combines several trades. Topics covered include safety, measurement, general metallurgy, bench work, layout, and blueprint reading. Welding processes covered are shielded metal arc welding, metal inert gas (MIG) welding, tungsten inert gas (TIG) welding, flame cutting, along with electrode use and selection. Technical college credits may be awarded for blueprint reading and basic welding courses while preparing the student for qualifications towards the American Welding Society structural plate certification. Articulation agreement credits are available.

MULTIMEDIA COMMUNICATIONS #7012

Program-specific prerequisites: *True desire to learn or explore graphic arts/digital communications; Successful completion of related courses or ability to demonstrate evidence of computer operation and drawing skills*

This course meets the Fine Arts requirement

NOTE: morning only.

With Graphic Design and Illustration as a foundation for the program, Multimedia Communications is designed to introduce students to careers associated with digital design including but not limited to graphic design, illustration, animation, and video game design, Students will be introduced to the basic principles and elements of design and gain software experience required to solve visual communication problems. Using industry standard Adobe software and related programs, students develop the ability and confidence to determine appropriate and successful designs to industry standards for a variety of applications. Upon completion of the course, students will have the opportunity to become Adobe Certified Associates upon successful completion of the Adobe exam. The main area of focus are: Solve graphic design problems with principles and elements of design; Learn industry standard Adobe software (Photoshop, Illustrator, InDesign, and Flash); Prepare portfolio for professional presentation, evaluation, and college entry; Develop analytical thinking and problem solving skills for the digital design industry. Dual enrollment worth 3 credits is

available.

OUTDOOR POWERSPORTS I #7013

Program-specific prerequisites: *Mechanical aptitude and interest*

NOTE: morning only

Outdoor Powersports technicians inspect, service, and repair small engines, recreational vehicles, and motorcycles. Students in this course learn to use hand and power tools and various precision measuring instruments, basic engine theory, two and four cycle engine overhaul, lubrication, cooling systems, electrical systems, carburetor and fuel systems. Types of equipment worked on include but are not limited to motorcycles, snowmobiles and ATVs. Students are encouraged to participate in SkillsUSA (student organization) to enhance their leadership opportunities and compete at both state and national levels. ***Articulation credits are available for students choosing to attend Universal Technical Institute.***

OUTDOOR POWERSPORTS II #7014

Program-specific prerequisites: *Successful completion of Outdoor Powersports I*

NOTE: afternoon only

Second year Outdoor Powersports students will continue working primarily on snowmobiles, ATVs, and motorcycles. Class and shop work will focus on theory and application of basic and advanced electrical systems, fuel injection systems, ignition systems, transmissions and clutches, and suspension systems. More advanced measuring tools will be used. ***Articulation credits are available for students choosing to attend Universal Technical Institute.***

PRE-ENGINEERING

The Pre-Engineering program provides strong math students interested in learning about engineering a solid foundation in engineering principles, elements, and applications that they can apply in their daily lives, profit from in the workplace, and use to prepare for college study in engineering or related majors. The Pre-Engineering program includes three available semester classes, taught using the nationally-recognized engineering curriculum *Project Lead the Way* (PLTW). The PLTW curriculum includes Introduction to Engineering (1st semester) and Principles of Engineering (2nd semester). Students who have completed Introduction to Engineering are also eligible to take the Mechatronics course the following fall semester.

INTRODUCTION TO ENGINEERING #7015a

Program-specific prerequisites: *Completed or enrolled in Algebra I (honors or college prep level)*

NOTE: 1st semester only

Topics include:

- Design Process
- Technical Sketching and Drawing
- Measurement and Statistics
- Computer Aided Design (CAD)

- Geometry and Design
- Reverse Engineering
- Documentation
- Advanced Computer CAD Modeling
- Design Team
- Design Challenges

PRINCIPLES OF ENGINEERING #7015b

Program-specific prerequisites: *Successful completion of Introduction to Engineering*

NOTE: 2nd semester only

Topics include:

- Energy and Power: Energy systems, mechanical systems, and alternative energy applications; Basic principles of machine components, energy, work, and power
- Materials and Structures: Material properties and effects on design; Basics of statics and materials testing
- Control Systems: Controlling mechanical systems through various control devices such as computer coded controls, hydraulics, and pneumatic controls
- Statistics and Kinematics: Interpreting data and probability, the dynamics of accelerated bodies, and the forces which cause motion

MECHATRONICS #7016a

Program-specific prerequisites: *Successful completion of Introduction to Engineering*

NOTE: 1st semester only

Topics include:

- Multidisciplinary field of engineering which combines mechanical engineering, robotics, electronics, computer engineering, telecommunications engineering, systems engineering, and controls engineering
- Basic coding and electrical circuits used to program
- Kinetics, electrical input, and controls to program robots, LEDs, sensors, motors, and more

PRE-APPRENTICESHIP PROGRAM #7100

Program-specific prerequisites: *Instructor permission, as these are state-registered work/study opportunities; Commitment to work in field related to identified career goal*

To be eligible for the program, students must be employed. Pre-Apprenticeship involves planned on-the-job training in areas related to the occupation. The class discussions focus on diverse skills and knowledge as well as maturity, and independence of judgment. All the practical and theoretical aspects of the work required in a skilled occupation are covered in detail. Pre-Apprenticeships can lead to a full Maine State apprenticeship, post-secondary education, and/or permanent employment with the participating employer. Through Pre-Apprenticeship, students will in many cases have access to professional skill level positions with area employers. An opportunity to participate in a skill area not currently offered at Region 10 exists through this program. Pre-Apprenticeship

requires the recommendation of your instructor if you are in a Region 10 program or your guidance counselor if you are not already enrolled at Region 10.