

## **CLYMER CENTRAL SCHOOL COURSE DESCRIPTION GUIDE**

### **INTRODUCTION**

The purpose of this publication is to stimulate increased student and parent involvement in the process of course selection and scheduling. We have listed all of the courses that will be offered during the next several years at Clymer Central School. Any new courses that might be mandated by the State Education Department or elective courses that are developed will be added to this book as necessary.

You will find a brief summary of each course. Also included in this publication are the requirements for a New York State high school diploma as mandated by the Regents Action Plan. Requirements for both the Advanced Regents diploma and the Regents diploma are listed.

It is our hope that you will use this booklet to plan your high school academic career. Your school counselor stands ready to provide assistance and guidance in helping students make wise and relevant decisions when selecting courses.

Planning an educational program is an important responsibility because the subjects chosen in high school will have a great influence on one's future. In selecting a program of study, the student should give careful thought to future education and vocational goals, past achievements, abilities, aptitudes, and interests.

To reach an informed decision regarding appropriate course selections, the student is urged to study this booklet carefully. The Student Services Department personnel and individual instructors in each academic department will be happy to make recommendations for any student based on his/her ability, interest, and past performance. The ultimate responsibility for the proper selection of courses rests with the parents/guardian and student.

### **COURSE SELECTION**

After you have carefully read the course descriptions and requirements for graduation, please indicate your course selection on the course selection sheet your student brought home. Bring this form with you when you have your scheduling appointment with the school counselor.

Students are required to carry a minimum of six credits plus physical education each year. For an early release or late arrival, students must have a job requiring them to be dismissed early or to arrive late. Students must then complete an early release / late arrival form and have it approved by parents, the school counselor, and the high school principal.

Please give careful consideration to your course selections. Keep in mind the requirements for earning a high school diploma. See chart below for Clymer Central School's graduation requirements based on New York State standards.

## Regents Diploma

## Advanced Regents Diploma

Subject	Required Credits	Regents Exams		Subject	Required Credits	Regents Exams
English	4	1		English	4	1
Social Studies	4	1		Social Studies	4	2
Mathematics	3	1		Mathematics	3	3
Science	3	1		Science	3	2
Health	.50			Health	.50	
Fine Arts	1			Fine Arts	1	
Physical Ed.	2			Physical Ed.	2	
Second Language	1	(Checkpoint A)		Second Language	3	1 (Checkpoint B)
Electives	3.5			Electives	1.5	
Math, Science, Social Studies, CTE, LOTE or Arts exam Or CDOS Credential		1		Math, Science, Social Studies, CTE, LOTE or Arts exam Or CDOS Credential		
<b>Total required for diploma type</b>	<b>22</b>	<b>5 plus Checkpoint A</b>		<b>Total required for diploma type</b>	<b>22</b>	<b>8 plus Checkpoint B*</b>

\*This is the traditional combination, there is also a Pathway, Math and Science Combination

Pathway Combination (other than STEM): ELA, 1 social studies, 3 mathematics, 2 science (1 must be life science and 1 must be physical science), and either 1 Pathway (other than science or mathematics) or meet the requirements for the CDOS Commencement Credential = 7 or 8 Assessments

STEM (Mathematics) Pathway Combination: ELA, 1 social studies 4 mathematics, 2 science (1 must be life science and 1 must be physical science) = 8 Assessments

STEM (Science) Pathway Combination: ELA, 1 social studies, 3 mathematics, 3 science (1 must be life science and 1 must be physical science) = 8 Assessments

In addition a student must pass either a locally developed Checkpoint B LOTE examination or complete a 5 unit sequence in the Arts or CTE

There are other diploma options available for students with disabilities. Please see the link titled "February 2017 Updated Diploma Requirements". This can be found in the Guidance/Course Guide section of the school website. This is where you can also find the description of all courses offered at CCS.

## DEFINITION OF TERMS

**Required Subjects** – These are subjects all students must take to meet state and local graduation requirements.

**Electives** – These subjects are not required but are chosen by the student.

**Prerequisites** – The requirements a student must meet in order to be eligible to take a given subject.

Clymer Central School attempts to offer a wide variety of courses for students to choose from. For this reason not all courses are offered on a yearly basis. Many elective courses are taught every other year or possibly every three years. You will find the years that course will tentatively be offered following the name of the course. It is possible that a course could be dropped due to low enrollment.

## GRADING AND PROMOTION

Students and parents may review grades at any time on the parent portal. Please visit the school website ([clymercsd.org](http://clymercsd.org)) to request access to the portal.

**Report Cards** are issued every 10 weeks. Minimum passing grade in each subject for all students is 65%.

**Interim Progress Reports** are issued every 5 weeks, between report card periods. Teachers may issue reports of positive academic progress and are required to issue reports of academic deficiencies if a student is failing, near failing, or not working to potential.

**Failed Courses** must be completed by passing in summer school or by repeating the course for a full regular course term.

Without question, summer school is the best method available to clear up a required course deficiency. Students who wish to enroll in summer school be approved by the school counselor. Since registration for summer school often takes place **before** final report cards are received, any student who suspects that he/she may fail or may have failed a required course should check with the counselor before leaving school in June.

Students who decide not to attend summer school will be reassigned to the required course that was failed. Students who do not attend summer school to make up a failed required course may be retained and are risking their chances to graduate in the normal four-year time span. This option could result in schedule conflicts and result in a delay in graduation.

## **COURSE SELECTION CONSIDERATIONS**

In addition to selecting courses that are necessary to meet high school diploma requirements, students should be considering their post high school plans. Although specific career goals will probably change several times during high school and even beyond that, tentative plans should be developed.

To simplify this, most Clymer High School graduates will choose from the following options:

- 1) to continue their education at a four-year college or university
- 2) to attend Jamestown Community College or another two-year college with intentions to transfer to a four-year college
- 3) to enroll in a specific career training school to prepare for a skilled job, such as Jamestown Business College, Alfred State College, or a hospital school of nursing
- 4) seek employment locally or elsewhere
- 5) enter a branch of military service for further career training and experience

Whichever option a student might be considering, as many opportunities as possible should be kept available by careful course selection.

## **COLLEGE PREPARATION**

Students who plan to continue their education at a two-year or four-year college should take as challenging a college preparatory program as they can handle. A mark of 75% is the suggested minimum college recommended grade.

A college prep program should include at least four credits each in mathematics and science. Many colleges also require 3 credits of a foreign language. Keep in mind that college admission requirements differ greatly from college to college. The more selective a college is regarding admission standards, the stronger your high school record must be. In addition to grades, colleges place a very high priority on your class rank and S.A.T. or A.C.T. exam scores. Also of significance in getting to the college of your choice are teacher and counselor recommendations and participation in extracurricular activities.

**Best advice: Choose the most challenging academic program that you feel you can handle and do the very best you can.**

# AGRICULTURE

## **Animal Science (Science)**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

Students will have the opportunity to learn about different types of animals, large and small, domestic, and wild. Topics that will be covered include anatomy and physiology, reproduction, caring for and handling animals, animal behavior, health and diseases. This course will also focus on improving animal's living conditions and habitats.

## **Aquaculture (Science)**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

Students will participate in the culturing of plants and fish for today's market demand. We will look at raising fish, types of fish, diseases, and rate of gain, and consumer markets. Field trips may also accompany this class.

## **Floriculture/ Horticulture and Greenhouse Management I (Science or Art)**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

This course is devoted to the greenhouse industry and the production of crops. Greenhouse structures, equipment, and management will provide the basis for growing many crops and other plants for making profit. Part I will deal mainly with greenhouse structures, climate control, automation, growing media, plant nutrition, plant anatomy, plant propagation, growing potted plants, bulbs, etc. Students will also learn floral design to create centerpieces, holiday arrangements, corsages, boutonnieres, etc.

## **Floriculture/ Horticulture and Greenhouse Management II (Science or Art)**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite – Floriculture/ Horticulture and Greenhouse Management I

This course will continue to build student's knowledge of greenhouse management with selected projects to raise money for FFA and other community activities. This will also provide students with the capability to manage plants for profit.

## **Landscaping I**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

Students will learn the basics of landscaping – planning, designing, identifying, growing zones, and constructing small scale landscaping designs.

### **Landscaping II**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite – Landscaping I

This course will cover additional in-depth details with full scale landscaping projects to enhance the school, classrooms, and/or community.

### **Agricultural Mechanics 1**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

This course offers a basic understanding of the skills needed by today’s agricultural mechanics. Students learn basic skills in welding, small engines, plant science, and agricultural equipment maintenance and repair. Students use skills through hands on applications where they design and build projects, fix machinery, and learn safe shop maintenance. Students also have the opportunity to participate in various field trips where they compete in career development events at colleges and fairs.

### **Agricultural Mechanics 2**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - Agricultural Mechanics 1

Students experience more in-depth design and operation of agricultural equipment. Students use repair and maintenance manuals to refurbish/overhaul equipment brought in by community members and students (upon approval). Students also have the opportunity to participate in various field trips where they compete in career development events at colleges and fairs.

### **Veterinary Science (Science)**

1 credit

9<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – none

Students will have the opportunity to learn about large and small animals. This course is especially useful if you have or are planning to raise farm animals as pets. Topics that will be covered include veterinary terminology, anatomy and physiology, clinical exam, hospital procedures, parasitology, laboratory techniques, animal nutrition, and more. There will also be short field trips with hands-on capability to care and/or treat animals.

**Environmental Science (Science)**

½ credit

9<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – none

Many aspects of the environment will be covered including mammals, medicinal plants, tree identification, pollution, alternative energies, fossil fuels, nuclear energy, abiotic cycles, weather, and much more. Build your own environmental ethic!

**Forestry and Conservation (Science)**

½ credit

9<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – none

Students enrolled in this course will have the opportunity to learn a great deal about the forest and forestry industry. Students will learn about topics such as timber selection, orienteering, lumber selection, timber cruising, marketing, plot samples, maple syrup production, equipment handling, and safety.

**Agricultural Studies**

½ credit

9<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – none

If you haven't heard of sustainability, time to venture into meeting today's energy demand through population study and improved land management practices. Students will be involved in a "Green" project to improve schools and/or communities.

**Food Science, Health, Nutrition, and Fitness (Science)**

½ credit

9<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – none

Learn how the food you eat starts from a raw product and transforms into a product in your grocery basket. In this class you will develop knowledge about the food industry by examining the production of food, food safety, and handling practices and the use of marketing techniques. All students will have the opportunity to be involved in FFA allowing them to participate in contests and field trips.

**Leadership for Success**

½ credit

9<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – none

Soon you will be embarking on a journey as both an individual and as a member of society. In giving yourself the chance to learn and grow through education, you have the power to create a better world for yourself and others. This course will help you face the challenges ahead and give you ideas, strategies, and

skills that will contribute to your success in college, your chosen career, and your personal life. Students that are members of FFA are highly encouraged to take this course.

## **ART**

### **Studio in Art**

9<sup>th</sup> -12<sup>th</sup> grade

1 credit

Prerequisite – none

Students will work with a variety of media and expand upon, through studio production, the elements and principles of art, techniques, art history, art appreciation and criticism. Students will also participate in a field trip to a museum to experience a rich cultural and learning institution.

### **Black and White Photography**

½ credit

10<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – Studio in Art

This course focuses on the use of a 35mm manual Single Lens Reflex (SLR) camera, film developing, processing prints, and mounting. Students will learn how to take strong photos using composition, contrast, exposure, and lighting.

### **Digital Photography**

½ credit

10<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – Black & White Photography

This course introduces digital photographic equipment, theory and processes. Using digital cameras students will learn camera operation, composition, creative expression, and computer photo manipulation using Adobe Photoshop. Upon completion, students should be able to successfully expose, digitally manipulate, and print a well-conceived composition.

### **Advanced Digital Photography**

½ credit

10<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – Digital Photography

This advanced course will cover both technical and creative skills beyond Digital Photography. Learn how to use advanced camera features and Adobe Photoshop features to get unique and professional results. Learn to master image correction, compositing, retouching, and printing.

### **Calligraphy/Pen & Ink Drawing**

½ credit

10<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – Studio in Art

Students will learn the art of calligraphy writing mixed with the skill of drawing with pen and ink to create personally significant works using calligraphy, pen and ink, and brush techniques.

### **Ceramics**

½ credit

10<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – Studio in Art

Students will learn traditional skills in hand-building and wheel-throwing techniques to develop an awareness of three dimensional form and its expressive potential. They will also develop skill in the proper use of clay, glazes, and various equipment.

### **Drawing and Painting**

½ credit

10<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – Studio in Art

Students will learn drawing and painting techniques with an emphasis on the elements of art – line, shape, color, value, and form. Studies in color theory, composition, and perspective will be covered. Links to artist and art movements will be incorporated into each unit of study. Drawing and Painting will focus more on a development of personal styles, themes, and ideas in your artwork. Attention will focus on an in-depth exploration of a range of media.

### **Sculpture**

½ credit

10<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – Studio in Art

A variety of construction techniques and materials will be used to explore three-dimensional “form.” Historical and contemporary three-dimensional art will be discussed to inspire self-expressive student work. Materials used may include: wood, metal, plaster, sandstone, recycled materials, paper products, fibers, and clay.

### **Computer Drawing**

½ credit

10<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – Graphics and/or Digital Photography

Students learn to use Adobe Illustrator and Photoshop to create original works of computer generated art.

**Drawing I - JCC ART 1510**

½ credit (weighted 1.10) (3 college credits)

11<sup>th</sup> – 12<sup>th</sup> grade or prior teacher approval

Prerequisite – Studio in Art

Students will gain a working knowledge of foundation skills and abilities in artistic visual expression. Students are introduced to drawing media and concepts. Students learn to draw perceived objects and become able to discuss the drawings meaningfully.

**Ceramics - JCC ART 1590**

½ credit (weighted 1.10) (3 college credits)

11<sup>th</sup> – 12<sup>th</sup> grade or prior teacher approval

Prerequisite – Studio in Art

Students will gain a working knowledge of fundamental and advanced studio work in clay preparation, hand building, throwing, mold making, slip casting, glaze preparation, decorating techniques, and firing techniques.

**Media Production 1,2,3,4**

1 credit

9<sup>th</sup>-12<sup>th</sup> grade

The purpose of this course is to provide a project-based media arts program, which guides students to achieve the standards in the media production area, by providing students with the technical instruction and practical experiences for production of a morning announcement program, video, and other media projects. Students experience both the creative and technical aspects of media production and will be instructed on the three stages of project creation. In pre-production, students learn the basic principles of story development, writing, storyboarding, and scheduling. Instruction in the production stage includes basic visual composition, color theory, set up and operation of camera, sound, and lighting equipment. Students learn to use software applications for video and audio post-production. Mastering and delivery methods, in both traditional and new media, are explored. The course also includes the production of the CCS morning announcement broadcast.

# BUSINESS

## **Accounting I**

1 credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

Accounting I is a full year course that is included in many of the Business Education sequences. This course encompasses the complete accounting cycle and provides students with an understanding of double-entry bookkeeping. Accounting for proprietorships, partnerships, and corporations are covered. This course is highly recommended for anyone going on in any business-related field.

## **Business Leadership**

1 credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - Must enroll as FBLA member

Business students gain hands-on experience conducting individual and group projects using integrated business curriculum and FBLA programs. This includes working in the school store: customer service, cash register operations, window and point of purchase displays, inventory management, and advertising. All students completing this course will satisfy the National FBLA requirements of at least the "Future" level of the Business Achievement Awards.

## **Graphic Communications 1 (Art)**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - None

(Photography is recommended but not required)

In Graphics 1 students will focus on desktop publishing and journalism using the yearbook as the major focus. Computer programs used include Adobe InDesign and Adobe Photoshop. Students will also learn how to use a digital camera and scanner.

## **Graphic Communications 2 (Art)**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

(Photography is recommended but not required)

Students will focus on desktop publishing and journalism using the yearbook as the major focus. Computer programs used include Adobe InDesign and Adobe Photoshop. Students will also learn how to use a digital camera and scanner.

## **Graphic Communications 3 (Art)**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

(Photography is recommended but not required)

Students will focus on desktop publishing and journalism using the yearbook as the major focus. Computer programs used include Adobe InDesign and Adobe Photoshop. Students will also learn how to use a digital camera and scanner.

### **Graphics Communications 4 (Art)**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

(Photography is recommended but not required)

Students will focus on desktop publishing and journalism using the yearbook as the major focus. Computer programs used include Adobe InDesign and Adobe Photoshop. Students will also learn how to use a digital camera and scanner.

### **Retail Management/Marketing**

1 credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

Retail Management is a full-credit course that acquaints the student with the process by which goods and services reach the consumer. Marketing motives, demographics, marketing strategies, etc. help the businessperson and consumer alike understand marketing. Many "real" businesses are used as examples to illustrate various marketing principles. The school store is an integral part of this curriculum. Students will learn about customer service, visual displays, cash register operations, security and inventory management issues.

### **College Shorthand/Note Taking**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Shorthand is designed to develop note taking skills including topics on Shorthand theory, reading, and writing. This course is a plus for the college bound student for building note-taking skills as well as the vocationally directed student to develop minimum employability standards.

### **Business Law**

1 credit

10<sup>th</sup> -12<sup>th</sup> grade

Prerequisite - none

Students will develop a respect for and understanding of Business Law as it affects their personal, family, and occupational lives. Law as it affects contracts, employer-employee relationships, rights of minors, insurance, wills, etc., is covered with a case-style approach. This course is an excellent elective for any student, since it helps prepare for the business relationships that will be faced by everyone.

**Career & Financial Management**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

This course is "Reality 101" for all students to prepare for adult life beyond high school. Units of study include employment perspectives, job search skills, apartment/house hunting skills, how to purchase a new or used car, how to purchase all kinds of insurance (car, health, life, property), manage finances (checking/savings accounts/saving for retirement/investing), etc.

**Entrepreneurship/Business Management**

1 credit course

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

This course prepares a student to plan and organize a new business, prepare a business plan, and learn basic management principles of a business. Students will have many hands-on learning experiences through this course.

**MOUS (Microsoft Office User Specialist)**

½ credit course

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

This course will thoroughly prepare the student to complete the Microsoft Office User Specialist certification exam. Advanced features of Microsoft Word, Access database, Excel spreadsheets, PowerPoint, and Publisher software will be introduced.

**College Keyboarding – JCC BUS 1220**

½ credit course (weighted 1.05) (3 college credits for 11<sup>th</sup> – 12<sup>th</sup> grade only)

11<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – none

Students will master the keyboard and develop skills and techniques in accuracy, proofreading, speed, and document production. Basic letters, one-page reports, and a variety of business documents are introduced and keyed using the computer. Skill building is emphasized through individualized instruction.

**Word Processing – JCC BUS 1320**

½ credit course (weighted 1.05) (3 college credits for 11<sup>th</sup> – 12<sup>th</sup> grade only)

11<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – College Keyboarding – JCC BUS 1220

Students will learn to create, edit, save, and print documents. Preparation of business letters and reports will enhance basic and production skills and office simulation activities. The ability to produce and edit

professional business documents is strengthened. The course provides hands-on training in word processing software.

### **Accounting Fundamentals – JCC BUS 1410**

1 credit course (weighted 1.10) (3 college credits for 11<sup>th</sup> – 12<sup>th</sup> grade only)

11<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – none

Students will gain an understanding of the accounting principles and procedures used to record, classify, and summarize financial data. Students will become familiar with accounting terminology and many financial records, forms, and statements used in an electronic environment.

## **DRIVER SAFETY EDUCATION**

**Space is limited. Older students are given preference.**

### **Driver's Theory**

**summer**

¼ credit

9<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – Sixteen years of age on or before class starts – NO EXCEPTIONS.

Driver's Theory is designed to make the student aware of the safety, knowledge, and social requirements to be a good driver. It also meets the drug awareness problems of driving. Students will investigate buying, maintaining, and insuring a vehicle. A minimum of 24 clock hours of classroom instruction is required to successfully complete this course.

### **Behind the Wheel**

**summer**

¼ credit

9<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – Must be taken concurrently with Driver Theory

Behind the Wheel is the skill part of Driver Safety Education where the student is shown and practices safe driving skills. A minimum of 6 clock hours of driving time and 18 clock hours as a passenger is required to successfully complete this course.

## ENGLISH

### **English 9**

1 credit

9<sup>th</sup> grade

Prerequisite-English 8

English 9 launches the student into high school English curriculum bridging the gap between junior and senior high. Learning strategies provide the student with basic review and the introduction of new skills. Every attempt is made to provide an integrated language arts program. Often the course of study is thematic centering on the world of survival, for instance. The culminating evaluation is the project: Wherein students are expected to demonstrate the ability to use all of the related communication skills as a means of self-discovery, connect and combine information, analyze literature and apply skills across the curriculum. Diversity in abilities, learning skills and interest provide for in the project.

### **English 10**

1 credit

10<sup>th</sup> grade

Prerequisite- English 9

Over the course of the semester, students will read novels, short stories, poetry, scholarly articles, academic journals, and a work of William Shakespeare's. We will also study vocabulary, grammar, essay writing, and public speaking. Students will be expected to write essays, complete routine homework assignments, read outside the classroom, and complete several thematically relevant projects. Students in this class write a 4-5 page MLA style research paper. The class will culminate with a cumulative final exam.

### **English 11**

1 credit

11<sup>th</sup> grade

Prerequisite- English 10

Using literature as a stimulus, students will learn to write and speak clearly and effectively in English 11. Students will be expected to use language to discover both the power and the beauty of literature as a mirror of human experience. A comprehensive examination and course work will be used as criteria for grading.

### **English 12**

1 credit

12<sup>th</sup> grade

Prerequisite- English 11

Students will read works from several genres including poetry, short stories, essays, novels, scholarly articles, academic journals, and a work of William Shakespeare's. Students will be required to participate in classroom discussions and complete homework assignments. Students in this class write a 7-10 page MLA style research paper. This requirement must be met in order to pass English 12.

## Electives

### Creative Writing

½ credit

9<sup>th</sup> – 12<sup>th</sup> grade

This course will focus on the basics of writing both poetry and short stories. Students will be expected to read poems and short stories outside of class to serve as models. We will discuss the writing process, share pieces with each other, and critique them as a class. The publication process will also be discussed and students will be encouraged to submit pieces for publication. As this is a writing-intensive class built on class discussion, attendance, a positive attitude, and a willingness to accept criticism are essential. Students wishing to take this course should work well independently and be comfortable meeting deadlines.

### Public Speaking-JCC CMM 1610

½ credit course (weighted 1.10) (3 college credits)

10<sup>th</sup>– 12<sup>th</sup> grade

Prerequisite: admission by placement score: Writing score 4+ and Reading score 80+.

The primary concern of this course will be with the source and substance of ideas, evidence, and reasoning that form the basis of good oral communication. Students will develop and present original speeches applying these ideas and the principles of organization, clarity, vitality, and ethics. When speaking, students will learn effective ways to use voice and body language to communicate a message. Additional time will be spent studying the basics of rhetoric and its function in a speech. As this will be a discussion-dependent course, student attendance is critical. Students wishing to take this course should work well independently and be comfortable meeting deadlines.

### College Composition I – JCC ENG 1510

½ credit (weighted 1.15) (3 credit hours available through JCC)

12<sup>th</sup> grade

Prerequisite: admission by placement score: Writing score 4+ and Reading score 80+.

Students will learn to write precise, clear, substantial, and logical essays. Students will work with multi-page papers, organization, and mechanics. Emphasis will be placed on critical thinking, reading, and writing.

### College Composition II – JCC ENG 1530

¼ credit (weighted 1.15) (3 credit hours available through JCC)

12<sup>th</sup> grade

Prerequisite: ENG 1510 or placement score: Writing score 7+ and Reading score 80+.

Students will learn to write precise, clear, substantial, and logical essays. Students will develop critical thinking and writing skills required in higher education, employment, and life. Students will also learn to conduct research and write a research paper.

## **HEALTH**

### **Health/Parenting**

½ credit

10<sup>th</sup>-12<sup>th</sup> grade

Prerequisite - none

The goal of the health class is to have each student recognize the value of attaining and maintaining good health. Units in eating disorders, emotional health, mental health, stress, nutrition, drug and alcohol use, smoking, cardiovascular disease, and HIV/AIDS are studied. Informed decisions can help an individual lead a lifetime of wellness.

### **Pre-Anatomy**

½ credit

11<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite – none

This course is designed for students who plan on going on to college and have to take Anatomy and Physiology. This course is an introduction to the subject of Human Anatomy. Students will become familiar with the organs of body systems. The systems studied are the skeletal, muscular, digestive, respiratory and cardiovascular systems. Other topics include blood pressure, anatomical terms, tissues and microscopy. Lab work includes use of the microscope and the dissection of preserved specimens such as a rat, fetal pig and sheep heart. Upon completion students will demonstrate a basic knowledge in anatomy.

## **LANGUAGES OTHER THAN ENGLISH**

### **Spanish I**

1 credit

8<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

Spanish I is a beginning Spanish course with a concentration on basic grammatical structures and vocabulary. Students will have a basic understanding of the language and be able to respond to simple questions. Students also will be introduced to Hispanic cultures and people. Eighth graders may receive high school credit for this course by passing both Spanish 8 and the Proficiency exam in Spanish.

### **Spanish II**

1 credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - Spanish I

Spanish II is an intermediate Spanish course that continues to improve on the grammar and vocabulary of Spanish I but stresses written and spoken proficiency. This course provides for an active and in-depth look at Hispanic cultures, slang, and everyday lives.

### **Spanish III**

1 credit (weighted 1.10)

10<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - Spanish II

Spanish III stresses everyday communication, fine grammar points, and a study of Spanish and early Latin-American Civilization.

### **Intermediate Spanish I - JCC SPA 2510**

1 credit (weighted 1.15) (3 credit hours available through JCC)

11<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite: Spanish III and admission by placement score; Writing score 4+ and Reading score 80+

Although a review of the fundamentals of the Spanish language is integral to this course, special attention is given to the continuing development of students' conversational and reading skills. Students build upon their understanding of literature in Spanish through study of the works of Spanish and Spanish-American authors.

### **Intermediate Spanish II – JCC SPA 2520**

1 credit (weighted 1.15) (3 credit hours available through JCC)

11<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite – SPA 2510

Although a review of the fundamentals of the Spanish language is integral to this course, special attention is given to the continuing development of students' conversational and reading skills. Students build upon their understanding of literature in Spanish through study of the works of Spanish and Spanish-American authors.

### **Introductory Sign Language I-JCC ASL 1510**

1 credit (weighted 1.10) (3 credit hours available through JCC)

11<sup>th</sup>-12<sup>th</sup> grade

Pre-requisite Admission by accuplacer score; writing score 4+ and reading score 80+

Students will gain a working knowledge of manual communication, including sign language, fingerspelling, conceptualization, structure, and syntax of American Sign Language. An introduction to cultural and historical perspectives of the Deaf community is also emphasized.

## MATHEMATICS

### Algebra I A and Algebra I B

2 credits

9<sup>th</sup> and 10<sup>th</sup> grades

Prerequisite - Math 8

This course covers the same material that is covered in Algebra I over a two year period so the pace is much slower. This is a great choice for students that require extra time in math.

### Algebra I

1 credit

9<sup>th</sup> grade

Prerequisite - Math 8

Operations with polynomials; solving linear equations and inequalities; systems of equations; graphs and solutions of linear, quadratic, exponential, absolute value and piecewise functions; transformations of functions; univariate and bivariate statistics.

### Geometry

1 credit

10<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite - Integrated Algebra

Quadratic equations and inequalities; radical equations; equations of a line and of a circle; midpoint and distance formula; median and altitude of a triangle; geometric shapes on the coordinate plane; parabolas; locus; logic; congruent and similar triangles; deductive proofs parallel lines; angles of polygons; quadrilaterals; mean proportions of triangles; tangents, secants and chords of a circle; angle measurement with a circle; and constructions.

## ELECTIVES

### Algebra II

1 credit (weighted 1.10)

10<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite - Geometry

Absolute value, quadratic, and radical equations; rational equations and inequalities; polynomial and trigonometric equations; exponential and logarithmic equations; advanced factoring; rules of exponents; logarithmic properties; trigonometric functions and graphs; special triangles; unit circle; law of sines and cosines; trigonometric proofs; complex numbers; radian measure; permutations and combinations; theoretic and empirical probability; independent and dependent probability; correlation coefficient; and standard deviation.

### Problem Solving with Math – JCC MAT 1500

½ credit (weighted 1.05) (3 credit hours available through JCC)

10<sup>th</sup>, 11<sup>th</sup>, or 12<sup>th</sup> grade

Prerequisite – Integrated Algebra or Algebra I and admission by placement score; Reading score 80+ and Math score 57+

Students will develop problem solving skills through a detailed study of topics such as financial mathematics, linear and exponential modeling, and geometry, in concert with specific problem solving strategies such as drawing diagrams, making systematic lists, looking for patterns, identifying sub-problems, and working backwards. Solution presentations and communication are emphasized.

### **Elementary Statistics – JCC MAT 1540**

½ credit (weighted 1.10) (3 credit hours available through JCC)

11<sup>th</sup> or 12<sup>th</sup> grade

Prerequisite – Geometry and Problem Solving with Math or admission by placement score; Reading score 80+ and Math score 76+

Students will investigate various topics in both descriptive and inferential statistics including measures of central tendency and spread, graphical analysis of data, probability, random sampling, correlation and regression, hypothesis testing and confidence intervals. Practical applications are emphasized throughout the course.

### **Pre-Calculus**

1 credit (weighted 1.10)

11<sup>th</sup> or 12<sup>th</sup> grade

Prerequisite - Integrated Algebra II and Trigonometry

This course is designed to prepare a student for studying calculus and discrete mathematics. Algebra topics include functions and their graphs, polynomial and rational function, exponents and logarithms, and trigonometric topics such as analytical trigonometry. Other included topics include polar coordinates, sequences, induction, limits and derivatives. A graphing calculator is used to complement the topics studied.

### **Calculus & Analytic Geometry I – JCC MAT 1710**

1 credit (weighted 1.15) (4 credit hours available through JCC)

12<sup>th</sup> grade

Prerequisite - Pre-Calculus

Students will study the fundamental concepts of calculus. Topics include an introduction to analytic geometry, functions, limits and continuity, and derivatives and integrals and their applications. A computer algebra system such as DERIVE is incorporated into the course.

### **Business Math**

1 credit

9<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite – none

A wide variety of business topics are covered in Business Math. These include personal finance records, borrowing money, savings and investments, home expenses, and finances of a small business.

# MUSIC

## **Mixed Chorus**

½ credit

7<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

Mixed Chorus meets every other day during a rotation for rehearsals. Rehearsals are a vital part of the individual and ensemble growth. Missed rehearsals and performances will affect a singer's grade. Different styles of music such as Sacred, Secular, Spirituals, Patriotic, Jazz, Classical, Oldies, Pop tunes and songs from Musicals are included in the repertoire. Singers will learn proper technique and good vocal production. They will also work on proper pronunciation of words when sung, good breathing techniques, proper projection of the voice, and various other vocal habits for healthy singing. Performances are graded and attendance at the spring, Pop's and Christmas Concerts is mandatory. The concerts are considered as important as a major exam would in a core subject. Missed concerts must be made up and will count towards a singer's grade. If there is interest to pursue solo or small ensemble singing, students are encouraged to do so after school or join the Glee club. Any student who wishes to do a NYSSMA (New York State School Music Association) vocal solo level III-VI must be able to sight read and choose an appropriate solo from the manual to perform for an adjudicator in May or June. It is best to start your solo in September so you have plenty of time to prepare it. The NYSSMA solo must also be used to get in to Area-All State and Conference All-State Choirs. Chorus members are also able to participate in the All-County Winter Festival (Women's Chorus and Vocal Jazz grades 9-12) and the Spring All-County Festival (grades 5-12) at the Chautauqua Institute.

## **Concert Band**

½ credit

7<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite – Open to anyone who has prior musical experience (voice, instrument, piano, etc.)

The Clymer Concert Band, a NYSSMA Silver Award winning band, provides important and life-changing musical experiences for all who participate. Students in 7<sup>th</sup> and 8<sup>th</sup> grade will participate in Middle School Concert band and students in 9-12 will participate in High School Concert Band. In addition, skills learned from the ensemble equip you for leadership roles after you've left Clymer. It is an opportunity for students to grow musically and develop friendships with students from many different grade levels. Throughout the year, the Concert Band will perform at 2 major concerts - one at Christmas time and the other in the Spring, the NYSSMA Majors Band Festival, graduation, and march proudly in the annual Findley Lake Memorial Day Parade and bi-annual Tulip Festival Parade. Outside of concert band, all students are encouraged to perform with the screaming hot "Maroon Madness" pep band. All students involved will be required to attend weekly lessons, practice at home or at school, and attend concerts for mid-term and final exam grades. Students are encouraged to participate in performance groups outside the school curriculum (i.e. All-County Band, Area All-State Music Festivals, and Solo Festival.)

## **Jazz Ensemble**

½ credit

7<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite – must be in concert band, student must enroll at permission of the teacher

The Clymer Jazz Band, CJB, a 20 piece chamber group, consists of students in grades 7-12 and features instruments of the saxophone family, trumpets, trombones, and rhythm section. Other band instruments are allowed under digression of the teacher. Rehearsals are 40 minutes every other day opposite of concert band. CJB performs numerous times throughout the year which includes Open House, the Christmas Concert, the Pops at Clymer, The Jazz Invitational in April, the Spring Concert, and other small performance opportunities. Jazz is America's music, and the CJB offers great opportunities for students to learn about soloing, improvising, playing modern music, and the history of some great jazz musicians.

### **Music Theory I** (Required for a music sequence)

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite –Must be in band and/or chorus

Music Theory I is an intense study of music primarily focused on the fundamentals of music from a theoretical, practical, and aural standpoint. Students will be held responsible for learning notation in treble, bass, and alto clef, and the basic study of scales, chords, intervals, and Roman numeral analysis. Singing and ear training will also be a major factor in this class, as all students will sing and learn to identify pitch differences with only their ear and voice. There will be a comprehensive final exam at the end of the semester.

### **Music Theory II** (Required for a music sequence)

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - Music Theory I

Music Theory II furthers the study of chords, melody, and harmonic functions from the previous semester, focusing on modulation, cadences, non-chord tones, dictation and Roman numeral analysis. The advancement of keyboard (piano/electronic keyboard), computer program utilization, and ear training will also be included. A comprehensive final exam will conclude the second semester of Music Theory II.

### **Glee Club**

½ credit

8<sup>th</sup> -12<sup>th</sup> grade

Prerequisite- \*Audition required (June of the previous year)

Glee club offers a unique opportunity to study advanced vocal techniques in a small select group. Singers will be exposed to A-Capella singing but not limited to one style of music. Basic music theory, history, interpretation, vocal pedagogy, and other musical topics will be covered as it relates to helping the singers become more aware of their voices. Students will explore various types of vocal styles and raise their performance level. The vocalist will be familiar with and be able to sing proficiently each piece worked on even though they may not reach performance level on all music worked on. Discussion of vocal problems, health, good tone quality, memorization, self-confidence, interpretation and expression will also be part of the focus. Glee club meet every other day all year long and outside practice is expected for success in the

ensemble. Vocalists are encouraged to seek outside semi-professional performance opportunities (singing the national anthem at sporting events, church choirs, soloist opportunities, chamber choir festivals, concert in the parks and leadership roles). Due to the small size of the ensemble it is expected that they will perform outside of the school setting.

### **Guitar/Piano Keyboard Lab**

½ Credit

9<sup>th</sup>-12<sup>th</sup> grades

Full year or fall/ spring semester class

Prerequisite- None

Students will learn fundamentals of playing guitar or piano/ keyboard, how to read notation, basic music theory and how to compose basic songs. Class time will be divided into instruction time on computers/ipads and practice time on their instrument. Grades will be based on individual growth and basic proficiency of the instrument.

## **PHYSICAL EDUCATION**

### **Physical Education**

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite - none

The responsibility of the physical education program is to provide opportunities for students to achieve the skills, knowledge, and attitudes that will allow them to attain an optimal quality of life and well being. Experiences gained at lower levels are built upon and expanded. The objectives are to develop higher levels along with nurture positive attitudes toward movement and lifetime physical fitness. Grading will be based on skill level, attitude, participation, attendance, preparedness for class, and testing. Units covered include, physical conditioning skills and knowledge, flag football, soccer, basketball, floor hockey, softball, volleyball, hockey, lacrosse, individual and dual lifetime sports, tennis, archery, golf, bowling, cross country skiing, table tennis, shuffleboard, and orienteering, self-testing activities, tumbling, track and field, ball handling skills, group games.

### **Fitness For Life**

1/2 Credit (Counts as Physical Education Credit)

Course Description: Students will explore the basic areas of Health Related Fitness, Body Composition, Cardiovascular Fitness, Flexibility, Muscular Endurance, and Strength Conditioning. Students will identify their fitness level, body composition and together with the teacher develop an individualized program. Students will learn how to set up a safe exercise program for their particular needs. They will experience various ways to exercise and use methods best suited for specific results. Students will be responsible to keep a progress log from beginning of the course till the finish. Swimming, Walking, Jump rope, Tae Bo, Weight Training and Biking are some of the exercises students will be participating in throughout this program.

## SCIENCE

### **Physical Setting: Earth Science**

1 credit

9<sup>th</sup> grade

Prerequisite - none

Earth Science explores the relationship of the earth with other planets, the universe, weather, climate, and living in the space age. The major theme through the course is the investigation of change. Earth Science requires a lab experience using models to solve problems. Each student must file at least 30 labs to complete the course.

### **Living Environment**

1 credit

10<sup>th</sup> grade

Prerequisite - none

Living Environment, formerly called Biology, is designed to provide and awareness of the natural world, an understanding of biological concepts and processes, and an exposure of biological careers. A lab experience is required for this course. Each student is required to complete a minimum of 30 written laboratory investigations.

### **ELECTIVES**

#### **Physical Setting/Chemistry**

1 credit (weighted 1.10)

11<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite – Integrated Algebra (Geometry recommended)

This is a full credit, one semester laboratory course designed to prepare students to explain, both accurately and with appropriate depth, concepts and models relating to chemistry. Each student will be scheduled for one laboratory session in every four-day cycle as well as the daily, eighty-minute class sessions. All laboratory activities must be successfully completed in order for a student to sit for the final examination. Some background in mathematics is assumed; students who have successfully completed Math A should be well prepared.

Students will explore the following Concepts: Atomic Structure, The Periodic Table, Stoichiometry, Chemical Bonding, Physical Properties of Matter, Kinetics and Equilibrium, Organic Chemistry, Oxidation and Reduction, Electrolytes, and Nuclear Chemistry.

**Advanced Chemistry (CLEP)**

1 credit (weighted 1.15) (3-9 college credits offered from a variety of colleges)

12<sup>th</sup> grade

Prerequisite- Regents Chemistry and Teachers Discretion

Students will consider selected basic concepts from inorganic, organic, and biological chemistry. Topics include understanding of the structure and states of matter, reaction types, equations and stoichiometry, equilibrium, kinetics, thermodynamics, and descriptive and experimental chemistry. Student is responsible to pay an **\$80 fee** to take the CLEP exam in June.

**Physical Setting/Physics**

1 credit (weighted 1.10)

11<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite – Geometry (Algebra II and Trig recommended)

This is a full credit, one semester laboratory course designed to prepare students to explain, both accurately and with appropriate depth, concepts and models relating to physics. Each student will be scheduled for one laboratory session in every four-day cycle as well as the daily, eighty-minute class sessions. All laboratory activities must be successfully completed in order for a student to sit for the final examination. Some background in mathematics is assumed; students who have successfully completed Math A should be prepared, but at least one more Regents-level math course is recommended.

Students will explore the following **Concepts**: Mechanics, Energy and Work, Electricity and Magnetism, Waves, and Modern Physics.

**Field Forensics**

½ credit

11<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite – Biology

Field Forensics is a one semester course focusing on DNA and its uses in identifying various types of organisms. Its basis is founded in a good understanding of DNA and how it can be useful in identifying organisms or individuals. Students learn about DNA extraction and gel electrophoresis and the use of the PCR machine and its enzymes that make this possible.

**Physiology and the Athlete**

½ credit

9<sup>th</sup> - 12<sup>th</sup> grade

Prerequisite – none

Physiology and the Athlete is a one semester course focusing on human physiology as it relates to the effects of training on the body. In addition it focuses on nutrition and the effects of certain foods on the function of metabolic processes. These metabolic processes are directly related to an athlete's performance.

**Microbiology**

½ credit

11<sup>th</sup> -12<sup>th</sup> grade

Prerequisite - Biology

Microbiology is designed for college bound seniors who have a desire to learn more about the microbial world. The student will be dealing with microorganisms, performing many procedures to acquaint themselves with basic laboratory techniques and tools of microbiology, and collecting data from the study of microbes. The student will be expected to write and submit a term paper. This course is limited to 12 students.

## **SOCIAL SCIENCES**

### **Global History I**

1 credit

9<sup>th</sup> grade

Prerequisite - 8th grade Social Studies

Global History I takes the student through five regions of the world. Students will familiarize themselves with Latin America, China, Sub-Sahara Africa, India, and Japan through discussions of the culture of each area. Students will concentrate on the geography, the history, and the personalities of each area. Current events are followed and discussed throughout the school year.

### **Global History II**

1 credit

10<sup>th</sup> grade

Prerequisite - Global History I

Students will concentrate chronologically on the geography, the history, and the personalities involved in the shaping of world cultures from the Enlightenment to modern times. Students will also use UPFRONT magazine to maintain an awareness of current global events and issues. By the middle of June, students will all be prepared to pass the New York State Regents exam.

### **United States History & Government**

1 credit

11<sup>th</sup> grade

Prerequisite -Global History II

U.S. History & Government has as its core two basic purposes. The first is to convey to the student a sense of his /her own nations past and to demonstrate how historical events shape life in the present-day United States. The second is to give the student practical knowledge regarding the development, structure and function of our democratic form of government. Key areas of emphasis include, but are not restricted to, the Constitution, immigration, technological developments, major historical events/people, and foreign policy.

### **US History I – JCC HIS 1530**

½ credit (weighted 1.15) (3 credit hours available through JCC)

11<sup>th</sup> or 12<sup>th</sup> grade

Prerequisite – Global History II and admission by recommendation and placement score; Reading score 4+ and Reading Score 80+.

Students will be introduced to the history of the United States from the European Encounter through the Civil War. Using the methodology of the social sciences, students will learn and evaluate the major political, social, cultural, scientific-technological, economic, and natural developments that shaped the United States during its formative years; when the American republic was founded, expanded, and tested by division. Students will give special attention to the unique contributions made by diverse peoples and

institutions, and the responsibilities of educated citizens today. It is not necessary to take HIS 1530 before HIS 1540. HIS courses are reading and writing intensive.

### **US History II – JCC HIS 1540**

½ credit (weighted 1.15) (3 credit hours available through JCC)

11<sup>th</sup> or 12<sup>th</sup> grade

Prerequisite – Global History II and admission by recommendation and placement score; Reading score 4+ and Reading Score 80+.

Students will examine the history of the United States from the conclusion of the Civil War to the present. Using the methodology of the social sciences, students will learn and evaluate the major political, social, cultural, scientific-technological, economic, and natural developments that have shaped the recent American experience. Students will give special attention to the unique contributions made by diverse peoples and institutions, and will better understand the responsibilities of educated citizens today. It is not necessary to take HIS 1530 before HIS 1540. HIS courses are reading and writing intensive.

### **Government**

½ credit

12<sup>th</sup> grade

Prerequisite - U.S. History & Government

Government is a senior level class that takes a look into American government at the local, state and national levels. Much of this course is based on discussions, role-playing, and problem-solving activities. This course includes readings, research projects and class discussions on current issues that affect our nation.

### **Economics**

½ credit

12<sup>th</sup> grade

Prerequisite - U.S. History & Government

Economics is essentially the study of how individuals and society choose to use limited resources in an effort to satisfy unlimited human needs and wants. This course conveys both theoretical and practical knowledge to the student. Initially, there is an overview of basic economic concepts/issues, with emphasis on their applicability to the market system. Microeconomics then focuses on such topics as the consumer, the business firm and market structure, government and business, and labor. Macroeconomics addresses such issues as money, GDP, and monetary and fiscal policy. Finally, international trade and finance are examined in some detail.

## **Electives**

### **World History thru Film**

½ credit

11<sup>th</sup> – 12<sup>th</sup> grade

Prerequisite -85% or higher on Global History and US History Regents exams (or 85% or higher average in Global History II for current 10<sup>th</sup> graders)

This course will use film to approach significant eras & people in world history. Students will be asked to rethink the *relationships between "reality" and "representation"* and re-conceptualize the boundaries between history and film. The course will be arranged around the *IMPACT of the individual* in history.

### **Civil War**

½ credit

12<sup>th</sup> grade

Prerequisite – This course is an elective course for Seniors who have passed the U.S. History Regents with a minimum score of an 80.

This course is a study of the American Civil War. In its design we will focus on the military aspect of the era. However, we cannot study the war without first taking a look at the political and social issues that plagued our country. Students will be evaluated through class discussions, tests, quizzes, projects and papers. The goal of this course is to give the student an appreciation and better understanding of the sacrifices made by Americans in the 1860's.

# TECHNOLOGY

## Design and Drawing for Production

1-unit course. This course provides experiences for the student to be given a design problem and present a solution through design and drawing methods. This approach is a major step in the process towards product design and engineering. Students will be exposed to a variety of drawing types, skills and processes while completing a number of drawings and design briefs. Manual drawing tools will be used as well as 2D CAD and 3D solid modeling software. [Recommended for 9<sup>th</sup> grade intro course](#)

## Energy and Electronics

½ unit course. This course is a general introduction to electronics, covering basic analog and digital circuits. The majority of time is spent on electronic experiments and the construction and fabrication of electronic devices. Students will investigate current and future energy sources and applications including windmills, solar farms and hydro power.

[Recommended for 10<sup>th</sup> grade, offered in the fall semester opposite transp.](#)

## Transportation Systems

½ unit course. This course is an introduction to land, marine and air transportation. Students will explore various modes of travel, as they research, design, build and test a variety of model vehicles. Students will build cars, boats, planes and rockets, as they learn about how we move people and products around the world.

[Recommended for 10<sup>th</sup> grade, offered in the spring opposite electronics](#)

## Product Design and Engineering

½ unit course. This course exposes students to manufacturing concepts through hands on activities in the design, engineering and production of manufactured goods. Student will work in teams to mass produce a basic wood product. Students will explore research and development techniques in a realistic, hands-on fashion. Brainstorming, research skills, problem solving, modeling and prototyping will be employed as the students design or redesign various products and devices.

[Recommended for 10<sup>th</sup> or 11<sup>th</sup> grade, offered in the fall opposite Mat. Proc.](#)

## Materials Processing

½ unit course. This course offers an introduction to common processes used to convert materials into useful products. Students will explore these processes as they produce a basic product in woodworking. Students will also complete projects involving basic metal fabrication processes and plastic forming processes.

[Recommended for 10<sup>th</sup> -12<sup>th</sup> grade, offered in the spring opposite P.D.E.](#)

**Architectural Drawing**

½ unit course. This is a study of the design and drawing methods specific to the building trades and home construction. Students will design a home as they complete a set of drawing plans using CAD software (Chief Architect). Students will also complete a presentation model of their house design.

Recommend for 11<sup>th</sup> and 12<sup>th</sup> grade, offered in the fall opposite Res. Const.

**Residential Construction:**

½ unit course. This course covers the basic construction methods used in non high rise residential buildings. Students will complete a scale model house representing all common building materials as they learn about each phase of a construction project. Carpentry skills will be practiced as the students

construct a garden shed, outdoor structure or community project. Recommended for 11<sup>th</sup>-12<sup>th</sup> grade, Offered in the spring opposite Arch. Drawing.

**Computer Aided Design (CAD):**

½ unit course. This course is an introduction to computer aided design (CAD) using the 3D modeling software SolidWorks. Students will learn the basic functions by completing online tutorials. They will then complete a variety of design problems and produce prototypes using rapid prototyping or 3D printing methods (MakerBot) Prerequisite Design and Drawing offered in the fall opposite Robotics

**Robotics Engineering:**

½ unit course. This course is an introduction to mobile robotics. Students will solve a variety of real world design problems as they engineer, build and program various robots. The class will use Mindstorm robotics and follow coursework developed by Carnegie Mellon Robotics Academy. Students will write computer programs in order to control the robots by means of light sensors, touch sensors, sound sensors and ultrasonic sensors. Students will also compete in local robotics competitions. Recommend for 10<sup>th</sup> - 12<sup>th</sup> grade students with a strong interest in STEM (science, technology, engineering and math) Offered in the spring opposite CAD

## **Career and Technical Education**

The Hewes Career and Technical Education (CTE) Center located at the BOCES facilities in Ashville offers instruction in twelve major areas of vocational training to high school juniors and seniors. Vocational education means training for employment. This center is dedicated to teaching high school students the skills that employers need. Course work is organized in a competency format with both theory and hands-on experience.

Students who enroll in CTE courses spend half of each school day in their home school and the other half at the BOCES Center. To enroll in a CTE course means completing an application in February of the year preceding the beginning the program. Prospective students are encouraged to visit the BOCES Center for a tour of the facilities prior to submitting an application to enroll. Visits to the BOCES Center can be arranged in the Guidance Office.

**Students will receive 1/2 credit each of Technical Science and Technical Math both years, 1/2 credit of Career and Financial Management their first year, and one credit of Technical Writing their second year of enrollment in CTE.**

### **Career & Financial Management**

#### **Technical Math**

#### **Technical Science**

#### **Technical Math**

#### **Auto Body Repair and Refinishing Technology**

2 year program

2 ½ credits the first year

2 credits the second year

11<sup>th</sup> & 12<sup>th</sup> grade

In this challenging and rewarding program, students learn to operate the tools and equipment used in the field of Auto Body Repair. Students develop skills in straightening, aligning, replacing, filling, MIG welding, plasma cutting, painting, air brush custom painting, automotive finish detailing, and buffing.

#### **Automotive Technology**

2 year program

2 ½ credits the first year

2 credits the second year

11<sup>th</sup> & 12<sup>th</sup> grade

This program follows a challenging diagnosis and repair curriculum with hands-on experience on modern automobiles covering the most common high tech systems. Successful students may complete an internship at a dealership during their senior year and may receive Advanced Placement SUNY college credit

### **Conservation/Natural Resource Management**

2 year program  
 2 ½ credits the first year  
 2 credits the second year  
 11<sup>th</sup> & 12<sup>th</sup> grade

This program is designed to provide students with basic knowledge and hands-on skills leading to employment and educational opportunities in the areas of conservation, landscape management, equipment operation, and a variety of other outdoor careers. General areas of study include wildlife studies, forestry, landscape and greenhouse operations, plant and soil sciences, and equipment operation and maintenance.

### **Construction Technology**

2 year program  
 2 ½ credits the first year  
 2 credits the second year  
 11<sup>th</sup> & 12<sup>th</sup> grade

Students will acquire skills for entry-level work or post-secondary education including rough and finished carpentry, masonry, plumbing, heating, and electrical. Students also receive instruction in construction procedures such as the use of power and specialized tools and equipment, footings and foundations, framing, roofing, siding, stair construction, interior and exterior finishing, blueprint reading, and estimating.

### **Cosmetology**

2 year program  
 2 ½ credits the first year  
 2 credits the second year  
 11<sup>th</sup> & 12<sup>th</sup> grade

This program offers both theory and practical experience necessary to be employed as an entry-level Cosmetologist. Safety, professional image, decontamination, anatomy, haircutting, chemical texturizing services, hair coloring and styling, nail and skin care, makeup, and salon management are topics covered in the curriculum. Second year students participate in a hands-on clinic and those completing the required 1000 practicum hours will be prepared for the New York State Licensing Exam.

### **Criminal Justice/Homeland Security/Forensics**

2 year program  
 2 ½ credits the first year  
 2 credits the second year  
 11<sup>th</sup> & 12<sup>th</sup> grade

Students in this program are provided a general background in the history of Criminal Justice and will receive instruction pertaining to legal terminology and practical application of communication skills necessary for a career in law enforcement at the local, state, and federal levels. Students will study case law as it applies to constitutional issues, law enforcement, courts, and corrections and they will participate in mock trials and scenarios. Students receive certification in CPR/First Aid/AED, Community Emergency

Response Team (CERT, FEMA, Firearm Cartridge Case Comparison, Firearm Bullet Comparison, DR-24, National E-911 Dispatch, Ham Radio, and Presidential Service.

### **Culinary Arts**

2 year program

2 ½ credits the first year

2 credits the second year

11<sup>th</sup> & 12<sup>th</sup> grade

The essential components of the food service industry presented include menu planning, food preparation, conversion of recipes, equipment identification, baking, cost analysis, dining room service, and banquet and buffet skills. Culinary principles with emphasis on soups, sauces, and stocks are practiced. Training in sanitation including the availability of Serv Safe Certification, hazard analysis critical control points (HACCP) principles and kitchen safety is offered. Students are prepared for future employment and/or enrollment at post-secondary schools specializing in the culinary industry.

### **Diesel/Heavy Equipment Repair**

2 year program

2 ½ credits the first year

2 credits the second year

11<sup>th</sup> & 12<sup>th</sup> grade

Students in this program learn and practice diagnostic procedures, disassembly and assembly of engines, fuel systems, clutches, transmissions, drivelines and differentials, and all aspects of diesel engine operation. Precision measuring and the specific use of tools for component repair are taught throughout the program. Brake, suspension, and electrical systems are also incorporated into the program. Oxy-acetylene and electrical arc welding are also taught.

### **Graphic Technology**

2 year program

2 ½ credits the first year

2 credits the second year

11<sup>th</sup> & 12<sup>th</sup> grade

Students will receive instruction in commercial art, desktop publishing, ad design, sign/computer-aided sign making, and computer graphics. This course prepares students for the fields of commercial art, computer graphics, photography, electronic media, and for further education in Commercial Graphics and Design.

### **Health Careers**

2 year program

2 ½ credits the first year

2 credits the second year

11<sup>th</sup> & 12<sup>th</sup> grade

The Health Careers program will enable the student to be introduced to a full range of career opportunities in the Health Care Industry. This course focuses on a strong academic foundation, communication,

employability skills, legal responsibilities, ethics, safety practices, health maintenance practices, and technical skills. Students will study basic anatomy and physiology, diseases/disorders, medical terminology, nutrition, geriatrics, child development, infection control, and pharmacology. Students learn to assist with routine patient care, perform basic nursing procedures, and function as part of a health care team. The Health Careers curriculum is designed to give students instruction that may lead to New York State Nurse's Aid and CPR certifications as well as meeting the high school health education requirement. Internships at participating health care facilities will expose students to a full range of opportunities in the health care industry.

### **Information Technology/Computer Systems**

2 year program

2 ½ credits the first year

2 credits the second year

11<sup>th</sup> & 12<sup>th</sup> grade

Students will receive training in Computer Science theory and introductory level computer networking. First year students focus on hardware, software, and operating systems, while second year students focus on networking. Students will prepare for careers in the information technology industry and will complete CompTIA A+ and Network+ training programs. Instruction will also prepare students to take industry-recognized CompTIA A+ and Network+ exams as well as a certification in Microsoft Office software. In addition, students will develop Android Smartphone applications.

### **Small Animal Science**

2 year program

2 ½ credits the first year

2 credits the second year

11<sup>th</sup> & 12<sup>th</sup> grade

This course teaches students specialized and advanced skills in areas of veterinary assistance, the care and handling of animals in a laboratory or veterinary setting, dog grooming, and kennel or pet shop management. Students interested in pre-veterinary medicine or veterinary science should consider this program.