Wappingers Central School District

District Syllabi Course Handbook
2011 - 2012

Roy C. Ketcham · Orchard View · John Jay

Wappingers Central School District
PHILOSOPHY OF EDUCATION

We are confronted with an ever-changing society. It is essential to equip our students not only to survive in that society, but also to manage their life experiences effectively. Among the challenges facing our students are:

- **the uncertainties of our world in a time of new scientific, environmental, economic, political and social realities;**
- **problems related to our economic, political and social systems;**
- **the questioning of fundamental social institutions, traditional values, and the introduction of new cultural patterns;**
- **the threat to individual rights, dignity and freedom**

The task of our school district is to prepare students to deal effectively with these challenges in order to live successfully and happily. Since they will be asked to identify or choose from a vast array of alternative possibilities, OUR PURPOSE IS TO PREPARE HUMANE CRITICAL THINKERS, DECISION-MAKERS AND PROBLEM-SOLVERS. To accomplish this, our students must develop and utilize:

- **intellectual curiosity and eagerness for lifelong learning**
- **a positive self-image based on a realistic acceptance of self**
- **the knowledge, skills and attitudes of maintaining physical well-being throughout their lifetimes**
- **fundamental skills of computation and communication, including demonstrating, observing, speaking, listening, reading and writing**
- **aesthetic appreciation and self-expression in the fine, performing, practical and popular arts**
- **the ability to think and evaluate constructively and creatively**
- **self-discipline including effective work habits and responsible behavior**
- **an understanding of a variety of processes that can be used in decision-making situations**
- **interpersonal and group dynamic skills**
- **ethical and moral behavior based on respect and appreciation for human values, beliefs and the rights of others**
- **an awareness of our relationships to the family and to local, national and world communities**
- **a knowledge of our American heritage, its civil rights and responsibilities**
- **an understanding of the various types of work, and their function in and contribution to society**

The effective implementation of this philosophy shall require the acceptance, support and participation of the Board of Education, staff, students and community. We commit ourselves to providing the necessary efforts, means and resources.

WAPPINGERS CENTRAL SCHOOL DISTRICT

January, 2011

Dear Students and Families,

Over the next few weeks, you will be assisting your son or daughter in selecting courses for the 2011-12 school year. Our schools and the State of NY Education Department are encouraging all students to achieve higher standards. Please take the time to review carefully his or her selections. There are a few changes in this year's course selection guidebook, so please review each course carefully.

Throughout the year, we have many occasions to talk with graduates of our high schools. Without a doubt, the most common regret expressed by our alumni is, "I wish I had challenged myself more in high school." A great majority of John Jay, Roy C. Ketcham, and Orchard View students do quite well in college and in post-high school careers. Those who do not perform as well as they would like, typically "took the path of least resistance" in high school.

In today's competitive work force and global economy, more and more education is clearly necessary. Good choices now will pave the way toward good opportunities in the future. It is our sincere hope that each of our students, upon graduation, will return to your respective schools and make the comment, "I'm glad I worked hard in high school. It has really paid off."

Our counseling staff and teaching faculty are willing and ready to assist in the process of course selection. Visit the guidance office and the career information centers in both high schools to gain the information you need to make informed choices. Please feel free to speak with your grade administrator or building principal as well as with your guidance counselor in making these important decisions. Work hard in high school and you will find the effort is well-rewarded whatever your future plans may be.

Sincerely,

Dwight Bonk, Principal   G. Thomas Stella, Principal   Eleanore DiCioccio, Principal
John Jay High School   Roy C. Ketcham High School   Orchard View Alt. High School

Steven Shuchat, Principal   Vincent M. Di Grandi, Principal
Van Wyck Junior High School   Wappingers Junior High School

WAPPINGERS CENTRAL SCHOOL DISTRICT

School Year 2011-2012

Dear Parents/Guardians and Students:

In order to ensure an efficient and effective scheduling process, we would like you to be aware of the following calendar:

MARCH
Each student will have the opportunity, either through an individual guidance conference or a small group scheduling session, to select courses, including electives, for the following school year. Changes in selections of electives must be completed by the end of marking period three.

APRIL
Parents will receive this course request list in the mail.

AUGUST
Schedules will be mailed home. Concerns about the student's schedule must be addressed during the summer prior to the first day of school.

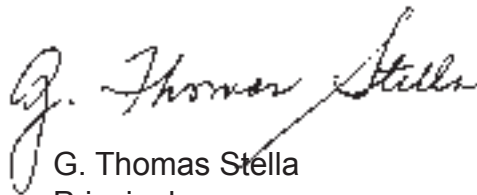The following schedule change requests cannot be accommodated:
· Lunch period changes (unless accompanied by a doctor's note citing a medical reason)
· Class period changes for the purpose of being with friends
· Change of teacher (unless student has previously failed a course with the assigned teacher)

There may be legitimate exceptions to these procedures, in which case building administration must approve the change in question. We look forward to working together and we encourage you to actively participate in your child's course selection process.

Sincerely,

Dwight Bonk
Principal
John Jay High School

G. Thomas Stella
Principal
Roy C. Ketcham High School

TABLE OF CONTENTS*

*Please Note: This entire WCSD Course Handbook may be viewed on-line at www.wappingersschools.org/course_handbook
The Curriculum Information & Textbook Resources may be viewed on-line at:
www.wappingersschools.org/Academics/CurInfo.html

Cover created by
Alexandra Pagan, a Junior
at Roy C. Ketcham High School

TELEPHONE DIRECTORY

Guidance Staff:

John Jay High School....................................897-6700

Dwight Bonk .... Principal
Doug Maset ....Assistant Principal
Paul Albanese.....................................Assistant Principal
Bonnie King ....Assistant Principal

Bonnie Schilling - Counselor in Charge
Heather Daley
Karrie Davis
June May
Jeff Palazzolo
Elena Peratikos
Stacy Roe-Marshall
Jennifer Soltish

Roy C. Ketcham High School.........................298-5100

G. Thomas Stella................................. Principal
Anthony Giovinazzi.............................Assistant Principal
Matthew Lawrence ....Assistant Principal
Caroline Pidala ....Assistant Principal

Ryan Lawler - Counselor in Charge
Kate DeGroat
Suzanne deSimone
Jenna Frangione
Diane Klemm
Layra Ligotino
Antoinette Sarna
Phillip Toretta
David Townsend

Van Wyck Junior High School........................227-1700

Steven Shuchat .... Principal
Lauren Guerrero ....Assistant Principal Grade 6
Michael Siena ....Assistant Principal Grade 7
Terrence Thompson..............Assistant Principal Grade 8

Ann Bogen - Counselor in Charge
Sandra Brown
Graceann Smith

Wappingers Junior High School 298-5200

Vincent M. Di Grandi .... Principal
Eric Seipp ....Assistant Principal
Michael Anderson ....Assistant Principal

Mary Bronzi - Counselor in Charge
Christine Lowery
Paul Nostrand

Orchard View Alternative High School.........298-5000

Eleanore DiCiccio.............................. Principal

DISTRICT COORDINATORS

Continuing Education/Driver's Education	Jeffrey Behnke	298-5000	x137
Fine & Performing Arts/Foreign Language	Mary Bish	298-5000	x121
English Language Arts K-12/Social Studies K-6	Dana Brown	298-5000	x128
Technology & Library Media/English as a Second Language (ESL)	Mary Ann Politi	298-5000	x156
Mathematics & Business Education/Social Studies 9-12	Todd Mensch	298-5000	x170
Physical Education, Athletics, Health, Family & Consumer Science	Kathryn Polumbo	298-5000	x166
Science and Technology/Social Studies 7-8	Carole Levy	298-5000	x174
Student Services & Special Education Programs	Mary Nicoletti	298-5100	x159

GRADUATION REQUIREMENTS CLASS OF 2011 AND BEYOND

REGENTS DIPLOMA	
Required Courses	**Credits**
English	4
Social Studies	4
Math	3[1]
Science	3[1]
Foreign Language	1[2]
Art/Music	1
Health	.5
Physical Education	2[4]
Sequence/Electives	3.5
Total	22
Required Exams	
English Language Arts Comprehensive Regents[5] (passing score of 65 and above)	
Regents Math A or Regents Algebra Exam[5] (passing score of 65 and above)	
Regents Global Studies Exam[5] (passing score of 65 and above)	
Regents U.S. History Exam[5] (passing score of 65 and above)	
Regents Science Exam[5] (passing score of 65 and above)	
Second Language Proficiency Exam[2]	

[1] To earn a Regents Diploma a commencement-level course in Technology Education may be used as the third unit of credit in Mathematics or Science, but not both.

[2] Students who complete Checkpoint A and two units of study in a single Foreign Language no later than the end of grade 8 must pass the Second Language Proficiency Examination in order to earn one unit of credit toward the high school diploma.

[3] 5 Units of credit in Art, Music, Business, Technology, Career & Life Sciences or Vocational Education satisfies the Foreign Language requirement for an Advanced Regents diploma.

[4] Students must take and pass Physical Education during each semester of attendance, including Personal Challenge (grade 9), Healthy Lifestyles (grade 10), and four semesters of Lifetime P.E. (grades 11 and 12). Each semester earns .25 credit.

[5] The RCT exam and the Local Diploma are available for special education students.

ADVANCED REGENTS DIPLOMA	
Required Courses	**Credits**
English	4
Social Studies	4
Math	3
Science	3
Foreign Language	3[3]
Art/Music	1
Health	.5
Physical Education	2[4]
Sequence/Electives	1.5
Total	22
Required Exams	
English Language Arts Comprehensive Regents	
Regents Math A Exam and Math B Exam, or Algebra, Geometry, Algebra 2 and Trigonometry. See your Guidance Counselor for acceptable combinations of these exams	
Regents Global Studies Exam[5]	
Regents U.S. History Exam[5]	
Two Regents Science Exams (one must be Living Environment)	
Regents Foreign Language Exam[3]	

DIPLOMA REQUIREMENTS BASED ON JANUARY 2010 NYS BOARD OF REGENTS AMENDMENT.

Entering Grade 9 (Freshman Class)	Regents Diploma Requirements	Regents Diploma with Advanced Designation Requirements
2008[1]	Score 65 or above on 5 required Regents exams. Earn 22 units of credit.	Score 65 or above on 8 required Regents exams. Earn 22 units of credit.
2009[1]	Score 65 or above on 5 required Regents exams. Earn 22 units of credit.	Score 65 or above on 9 required Regents exams. Earn 22 units of credit.
2010 and on[1]	Score 65 or above on 5 required Regents exams. Earn 22 units of credit.	Score 65 or above on 9 required Regents exams. Earn 22 units of credit.

Students with disabilities entering grade 9 during school year 2010-2011 still maintain the safety net. The safety net allows students with disabilities who do not pass one or more of the required Regents examinations to instead meet testing requirements for the local diploma by passsing the corresponding RCT(s).

The Board of Regents is reviewing the extension of the local diploma options for students with disabilities. Students entering grade 9 in September 2012 may not have the option of a local diploma. Students will be notified when the decision is finalized.

IEP DIPLOMA: The criteria for earning a graduation IEP Diploma has not changed. Certain students with disabilities may qualify for and earn this diploma based on their Individualized Education Plan (IEP). Further information about this option may be obtained in consultation with the Guidance Office or the Office of Special Education.

[1] Assuming students complete diploma requirements in four years.

ORCHARD VIEW

PROGRAM OVERVIEW

Orchard View Alternative High School is a Wappingers Central School District (WCSD) program for students who have not been successful in the traditional high school setting. The school provides students with a full range of courses required for high school graduation. The school asks students to recognize that they have a job: full-time student. Their future success in life rests on making good decisions. The program offers students an opportunity to take control of their future, academic and career, in a highly structured, supportive environment where they must choose to make good decisions. In addition, an integral part of the Orchard View program is community service. Full time students are required to give back to the local community in the form of 25 hours of volunteer service per academic year.

GENERAL INFORMATION

- Grades 10-12
- Located on the second floor at 167 Myers Corners Rd., separate entrance.
- Small classes (1:20 or smaller)
- Accelerated/block classes
- School hours: 10:30am – 4:30pm
- Busing provided
- Orchard View AHS follows the WCSD calendar
- Voluntary enrollment
- Class schedule: there are eight (8) forty-two (42) minute academic periods
- There is limited food service, a school store, and vending machines
- Monthly Family Nights or Pot Luck Lunches

STUDENT PROFILE

Orchard View is a wonderful opportunity for students who have been struggling in the traditional high school model. Students who are struggling academically and/or experiencing discipline problems may be good candidates for the program. Most students who come to the program have not been earning credit towards the ultimate goal of graduation. Often students have not been successful because of inadequate study skills, behavior control issues, low self-esteem, short attention span, truant and/or tardy behavior, and lack of motivation. We offer some accelerated courses that allow students an opportunity to catch-up in some areas (e.g. 10th and 11th grade English and Social Studies, gym, art,…).

ACADEMIC PROFILE

The small classes in the Orchard View program allow teachers to understand individual learning styles and tailor curriculum to meet their needs. Students are placed in classes according to the graduation requirements of WCSD. The program offers 2 separate enrollment options:

- A two-to four-year diploma program designed to have the learner graduate from high school while 100% enrolled in Orchard View
- A one-year concurrent program, in which learners take academic courses at both their WCSD base high school as well as Orchard View.

COMMUNITY SERVICE

The community service aspect of the Orchard View program is very important. Community service is designed to encourage direct giving in the community in order to give something back to the community as well as enhance the healthy development of self-esteem. In addition this experience provides the opportunity to foster and develop interpersonal skills, teach responsibility, and build self-confidence. Each full time student is required to complete 25 hours of community service per academic year they are with us. While some opportunities may be arranged by the school, most community service projects will be outside of school with students providing their own transportation. Community service must occur during the day and must not interfere with the Orchard View academic program.

COUNSELING PROGRAM

The Orchard View school counselor will:

- Counsel individual students with needs or concerns relating to academic, behavioral, and social/emotional issues.
- Counsel small groups with needs or concerns relating to academic, behavioral, and social/emotional issues.
- Provide support for families regarding school related problems.
- Provide referrals to appropriate specialists, special programs, or agencies.

ENROLLMENT PROCEDURE

Enrollment in Orchard View Alternative High School is voluntary. Students may apply at anytime during the school year. Enrollment takes place before the start of the school year and at the start of the Second Semester. If a student applies in the middle of a marking period he/she will be placed on a waiting list once the completed application has been received.

TO APPLY:

1) Pick up an application from your guidance office or call 298-5000 x178 to receive one.
2) Fill out the application completely with help from your guidance counselor.
3) Signatures: student, parent/guardian, guidance counselor, base school principal.
4) Attach student essay.
5) Return completed application to the guidance office or Orchard View Main Office.

Once a complete application has been received, families will receive a letter from the school to inform the applicant the application has been received, let them know when the next enrollment period is and whether there are spaces available. Serious applicants will be asked to come in for an interview with their parent/guardian.

ALTERNATIVE COURSES THAT MEET GRADUATION REQUIREMENTS

CORE REQUIREMENT	ALTERNATE COURSE
Art/Music/1 credit	Interior Design & World of Fashion (1 credit)
	SIA/Communication Systems
	Theatre I (1 credit)
	Design & Drawing for Production (1 credit)
4th credit in English	Corporate Communications (1 credit)
	(must have passed English 11 Regents)
3rd credit in Mathematics or Science	Financial Math (1 credit) Math only
	Design and Drawing for Production (Math or Science)
	Digital Electronics (Science)
	Principles of Engineering (Science)
	Civil Engineering and Architecture (Science)
Economics	Business Economics
	College Business Economics DCC 105

It is important to remember that course enrollment and staff availability determine whether or not a course can be offered. Therefore, as you make your preliminary selections, develop reasonable alternatives as well.

SENIOR OPTIONS

Articulation agreements have been made with two local colleges so that qualifying seniors can complete their first year of college at the same time they conclude their final year of high school. Talk with your guidance counselor or principal, or with the college contact person if you have questions. Although college tuition/fees and transportation are family responsibilities, the rates are favorable -- and so is the one-year headstart! As another option please also note the "New Visions" pre-college program sponsored by BOCES.

BRIDGE

MARIST

Poughkeepsie, New York 12601-1387
(845) 575-3300

High school juniors who are judged by their high school and the Marist College admissions committee to have the necessary qualifications to complete the Bridge Year Program successfully are eligible to participate in the program during their senior year. Academic competence and maturity are among the factors that will be considered. All Bridge students will take the English course (AP English Literature) which will be taught at the high school by its own faculty. Approved and supervised by Marist College, it will receive full Marist course credit. Bridge students will come to the Marist campus to complete their academic program with other college students. Bridge students will be allowed to take up to 15 credits plus one laboratory course each semester.
Contact person: Barbara Carpenter, Asst. Dean for Student Academic Affairs

TRANSITIONS

DUTCHESS COMMUNITY COLLEGE

53 Pendell Road
Poughkeepsie, New York 12601-1595
(845) 431-8000

Full-time admission is dependent upon high school GPA and passing a qualifying examination taken in the junior year as well as recommendation by the high school and the Dutchess Community College admissions staff. This will allow students to participate in after school activities if they choose. The 30-32 credits earned during the year may be used to fulfill the first year of an Associate degree at DCC, or transferred to other colleges. To receive high school credit they must receive a grade of C or higher. For part-time admission, the qualifying exam in English is needed to enroll in Eng 101.
Contact person: Cari Denti, Associate Dean of Academic Affairs

JUNIOR OPTIONS

ADVANCED PLACEMENT/HONORS PROGRAM

Students enrolled in Advanced Placement courses are encouraged to take the AP exams that are associated with the courses. The transcripts of students who do not take the required AP exams will show the courses as Honors courses, not AP courses.

For purposes of determining class rank only, Advanced Placement grades will be weighted at 1.06 and Honors course grades will be weighted at 1.04.

DIVERSIFIED CO-OP PROGRAM

The Diversified Co-op Program is a general work-based learning program for Seniors not enrolled in other Co-op programs. The program consists of 300 hours of paid, school-related, supervised work-experience, along with a minimum of one period per week of related in-school instruction. The student will receive one unit of elective credit.

CO-CURRICULAR AND EXTRA-CURRICULAR ELIGIBILITY

Board of Education Policy #5205 ~ Adopted: July 19, 2004

The Wappingers Central School District believes that participation in co-curricular and extra-curricular activities, including athletics, benefits both the participant and the school community. To insure the integrity of these programs, however, all students are expected to meet guidelines for academic eligibility and to follow the student code of conduct with respect to behavioral responsibilities. A full explanation of the district's guidelines governing participation in co-curricular and extra-curricular activities is available by obtaining a copy of Board Policy #5205 or as printed in the WCSD Student Handbook, the WCSD Code of Conduct, or the Interscholastic Eligibility and Participation Booklet. A brief summary of the eligibility guidelines appears below:

Eligibility – The Student Conduct Component: When students are given the privilege of representing our school and community in co-curricular activities, we expect them to conduct themselves in an exemplary and acceptable manner. This includes attendance in school and all scheduled classes on the day of an activity in order to participate in that co-curricular activity (e.g., game, practice, performance, rehearsal, etc.) Additionally, the expectation for appropriate student conduct shall apply at all times and in all public places; not only to school premises, school hours, or those times when a student is actually participating in the co/extra-curricular activity. Any student activities participant or athlete who engages in misconduct or other inappropriate behavior will be subject to discipline or denial of the continuing privilege of participating.

Eligibility – The Academic Standards Component: Prior to beginning a co-curricular or an athletic program or participating in the tryout period in either case, a student must demonstrate his academic eligibility status based upon the previous marking period report card. Once the program begins, eligibility status must be maintained throughout the marking periods. Once a student falls below the minimum requirements, he/she may no longer participate in the activity. A student may regain their eligible status through an appeals process. The academic eligibility standards in brief include:

- A student must be considered a full-time student by carrying the correct minimum number of courses, with Physical Education counting as one course. Freshman, Sophomores and Juniors must carry and maintain acceptable averages in six (6) courses. Seniors must carry and maintain acceptable averages in five (5) courses, including college level, bridge, internship and co-op courses.
- A student must have had and must continue to maintain an overall average of 70%, with no more than one failure. The most recent marking period report card will be used in making this determination.
- Probationary Status: Under the rules outlined above, a student may remain eligible for participation in co-curricular activities, including athletics, with one course failing grade if he/she maintains an overall average of 70% or better. However, if a student is so identified, he/she will be placed on "probationary status" until the next marking period grades have been awarded. This means the student will be expected to pass the "failed" course by the time of the next marking period, as well as continuing to pass all other courses and achieving an overall average of 70% or better. If at the time of the next marking period, the student has not passed the course which triggered the probation, the student is changed to ineligible. If the student should fail any other course and/or fall below an overall average of 70%, even if he/she has passed the course that had triggered the probation, the student is changed to ineligible.

The Wappingers Central School District believes that participation in co-curricular and extra-curricular activities benefits both the participant and the school community. It provides the participant with the opportunity to develop self-confidence, respect for self and others, commitment, independence, leadership, social interaction skills and problem solving skills. It is the hope that all students will strive for this well-rounded education and participate in these activities.

The Business Education program is comprehensive and designed to meet the personal, college and career needs of the Wappingers Central School District students.

NCAA CLEARINGHOUSE INFORMATION

Student-Athletes who attend high school in the Wappingers Central School District and their parents are responsible for monitoring their own progress toward meeting the required standards set by the NCAA to be eligible to receive athletic-based scholarships. The following pages serve as basic information for students and parents about this process.

Throughout the course catalog and syllabi courses which meet the NCAA requirements for "core-courses" are designated with this symbol:

If you, as a student-athlete, aspire to play a sport in college please see your guidance counselor as soon as possible and talk to them about the necessary steps that you need to take.

The information provided to you in this course handbook is intended to serve as a guide, more information can also be found at www.eligibilitycenter.org.

FREQUENTLY ASKED QUESTIONS

What is the NCAA Clearinghouse?

The NCAA was setup for students who plan to play Division I or Division II sports during their freshman year of college. All students who plan to play collegiately at the Division I or Division II level must register with the NCAA during their senior year of high school. This registration process certifies that the student has met certain academic and other standards, as required under NCAA guidelines in order to compete and receive athletic-based financial aid.

Why are the NCAA Clearinghouse Eligibility Requirements Important?

Prior to competing at the Division I or Division II level all students must be approved by the NCAA Clearinghouse. In order to be approved by the NCAA Clearinghouse and deemed eligible for athletic competition, all students must have completed all of the required coursework at the high school level. Requirements for eligibility will vary depending upon whether a student plans to compete at the Division I or the Division II level. The NCAA Clearinghouse Eligibility requirements are very important in a student's class scheduling process. All students who play high school sports, AAU, or are a member of any type of travel team should inform his/her guidance counselor during their freshman year in order to ensure they are placed on the appropriate scheduling track.

NCAA CLEARINGHOUSE INFORMATION

What are the NCAA Clearinghouse Eligibility Requirements for the Division I and Division II levels?

DIVISION I

16 CORE COURSES*
- 4 years of English.
- 3 years of mathematics
- 2 years of natural/physical science
- 1 year of additional English, mathematics or natural/physical science.
- 2 years of social science.
- 4 years of additional courses

Division I has a sliding scale for test score and grade-point average.
Please see www.eligibilitycenter.org for more detailed information.

DIVISION II

14 CORE COURSES *(as of 2013, 16 core courses will be required)**
- 3 years of English.
- 2 years of Mathematics
- 2 years of Natural/Physical Science
- 2 years of additional English, mathematics or natural/physical science.
- 2 years of Social Science.
- 3 years of additional courses

The Division II grade-point-average requirement is a minimum of 2.000.
The Division II minimum SAT score is 820 (verbal and math sections only)
The Division II minimum ACT sum score is 68.

Please see www.eligibilitycenter.org for more detailed information.

*Core Courses are indicated by the symbol:

Parents and student-athletes are responsible for checking the status of core courses at www.eligibilitycenter.org.

What do student athletes need to do?

Grade 9
- Verify with your high school guidance counselor and the online core-course listing to make sure you are on track.

Grade 10
- Verify with your high school guidance counselor and the online core-course listing to make sure you are on track.
- Complete and sign two copies of the NCAA Transcript Release Form and turn it into your guidance counselor.

Grade 11
- Register with the eligibility center.
- Make sure you are still on course to meet core-course requirements (verify you have the correct number of core courses and that the core courses are on your high school's 48-H with the eligibility center).
- After your junior year, have your high school guidance counselor send a copy of your transcript. If you have attended any other high schools, make sure a transcript is sent to the eligibility center from each high school.
- When taking the ACT or SAT, request test scores to be sent to the eligibility center (the code is "9999").
- Begin your amateurism questionnaire.

Grade 12
- When taking the ACT or SAT, request test scores to be sent to the eligibility center (the code is "9999").
- Complete amateurism questionnaire and sign the final authorization signature online on or after April 1 if you are expecting to enroll in college in the fall semester. (If you are expecting to enroll for spring semester, sign the final authorization signature on or after October 1 of the year prior to enrollment.)
- Have your high school guidance counselor send a final transcript with proof of graduation to the eligibility center.

Information obtained from the NCAA Initial Eligibility Clearinghouse
www.eligibilityclearinghouse.com

BUSINESS EDUCATION

Our purpose is to prepare students for entry-level employment in the business office and marketing occupations and for post-secondary studies in business.

To enhance this purpose, we also encourage participation in the Work Based Learning Programs, Distributive Education Clubs of America (DECA) and Future Business Leaders of America (FBLA).

All courses are open to any student.

Please note the following:

- Career and Financial Management is a suggested course for <u>all</u> Occupational Education students.
- Students who complete a 5-credit Career and Technical Education sequence (Business, Career and Life Sciences and/or Technology), may use this in place of the additional 2 units of Foreign Language and Regents exam for an advanced Regents diploma.
- Corporate Communications satisfies a 4th English credit after passing the English Regents exam.
- Business Economics and College Business Economics satisfies the ½ unit of credit requirement in Economics (D655).
- Financial Math satisfies a third math credit after the Intergrated Algebra Examination.
- Business Cooperative Education (Work Experience) is available to students who have taken or are enrolled in Career and Financial Management; and who are enrolled in Business Education courses for the full year.
- Diversified Cooperative Education (Work Experience) is available to seniors not enrolled in another Co-op program.This course is specifically designed for students who do not qualify for Business Co-op or for CALS Co-op.

All students are encouraged to take Career and Financial Management and Word Processing. Listed below are career clusters to assist students to select a career path. <u>However, courses may be taken that are not listed in your chosen cluster.</u>

BUSINESS EDUCATION

FOUNDATION-LEVEL BUSINESS EDUCATION COURSES
Career and Financial Management (½)
Word Processing (½)

ACCOUNTING/FINANCE
Career Cluster
Microsoft Office (½)
Business Economics (½)
College Business Economics - DCC 105 (½)
Financial Math (1)
Accounting I (1)
College Accounting - DCC 101-102 (1)
Business Ownership (1)
Business Co-op (1)

BUSINESS ADMINISTRATION
Career Cluster
Keyboarding-Business Communications (1)
Corporate Communications (1)
Business Law (1)
Sports Law (½)
Entertainment Law (½)
Business Ownership (1)
Business Co-op (1)

MARKETING
Career Cluster
Sports & Entertainment Marketing (1)
Business Law (1)
Sports Law (½)
Entertainment Law (½)
Business Ownership (1)
Business Co-op (1)

OTHER 5-UNIT CAREER AND TECHNICAL EDUCATION OPTIONS
A 3 or 4-credit Business Career Cluster
PLUS
1 or 2 credits from Technology or Career and Life Sciences

BUSINESS EDUCATION

CAREER AND FINANCIAL MANAGEMENT
Code: 0700   Half Year (9-12)   (½ credit) (rank weight 1.00)
Prerequisite: None

Areas of Study Include:

BUSINESS SYSTEMS AND ECONOMICS
- Economic System
  - Questions to be answered by every economic system
  - Production and distribution decisions (Circular Flow)
  - Choices
  - Factors affecting the economic system
  - Sociological, economic, and technological issues
  - Effect of technology on the labor market
- Business Systems
  - How business is organized
  - How business functions
  - How business applies resources

CAREER PLANNING
- Self Assessment
  - Career Interest/Personality
  - Align with requirements of clusters
  - Recognize attitudes needed for career success
  - Importance of transferable skills
- Create and Implement a Career Plan
  - Identify career cluster
  - Determine requirements for selected career
  - Relate career to personal abilities
  - Lifelong learning
  - How to gain career area experience
  - Tangible and Intangible rewards
  - Career opportunities from technology
- Life Goals
  - Decision Making and Planning
  - Assess financial resources and personal needs
  - How these shape career choices
  - Influence and earning potential
  - Advancement and financial rewards
  - Reaching goals and priority setting

THE CAREER SELECTION PROCESS
- Changing Trends and Employment Opportunities
  - Current labor market information
  - Traditional and Nontraditional opportunities
  - Diverse workforce
  - Entrepreneurial opportunities
  - Alternate types of employment
- Career Research Resources and Planning
  - Research employment opportunities
  - Certify competencies to enter the workforce
  - Record of job search
- Career Presentation Package
  - Resume
  - Job application
  - Letter of application
- Job Interview Process
  - The job interview
  - Follow–up letter
  - Job selection and communication

CAREER SUCCESS
- Successful Employment
  - Personal Qualities
  - Interpersonal Skills
- Orientation/Introduction to the Job
  - Complete required forms
  - Familiar with working conditions
- Conditions Affecting Productivity
  - Physical Health
  - Interdependent Relationships
  - Time Management
- Workplace Laws and Regulations
- Role of Labor Unions and Professional Organizations

FINANCIAL LITERACY
- Managing Finances and Banking
  - Banking and Investments
  - Developing a Personal Budget
- Taxes
  - Services through taxes
  - How Taxes affect society
  - Tax Reporting
- Credit
  - Sources and types of Credit
  - Establishing Credit
  - Cost of Credit
  - Legal Aspects
- Credit Purchasing
  - Product Information
  - Alternative Methods of Financing
- Insurance
  - Determine Risk and Loss Prevention
  - Types of Insurance
  - Consequences of Not Having Insurance
- Consumer Protection
  - Identify Credit Legislation
  - Identify Consumer Protection Legislation
  - Sales Fraud and Remedies
  - Private and Public Protection Agencies
  - E-commerce

Assessment: District-wide final exam

KEYBOARDING - BUSINESS COMMUNICATIONS
Code: B451   Full Year (9-12)   (1 credit) (rank weight 1.00)
Prerequisite: None

Areas of Study Include:
- Introduction to computer basics
  - Identification of computer parts
  - Instruction on opening a document
- Keyboard readiness
  - Instruction on touch keyboarding method
  - Location and reach of home row keys
  - Proper techniques at the keyboard
- Introduction to Microsoft Word
  - Identification of operational commands
  - Identify parts of the Word screen
  - Production of Word documents
  - Centering
  - Enumerations
  - Letters
  - Reports

BUSINESS EDUCATION

- Resume
- Memorandums
- Forms
- Employment documents
- Internet Project
- Proofread and spell check documents
• Skill Development
- Three minute timed writings
• Communications
- Grammar skills
- Capitalization
- Punctuation
- Subject/verb agreement
- Pronouns
- Prepositions
- Numerical presentation
- Oral presentations using PowerPoint
• Introduction to PowerPoint
- Identification of operational commands
- Create a PowerPoint presentation
• Introduction to Excel
- Identification of operational commands
- Create a simple spreadsheet

Assessment: District-wide portfolio project

WORD PROCESSING
Code: B730   Half Year (9-12)   (½ credit)   (rank weight 1.00)
Prerequisite: None

NOTE: IT IS RECOMMENDED THAT ALL STUDENTS TAKE THIS COURSE. It is a necessary skill to function in today's world. Students can receive credit for either WORD PROCESSING, OR KEYBOARDING-BUSINESS COMMUNICATIONS, not both.

NOTE: Speed and accuracy development is required.

Areas of Study Include:
• Introduction to computer basics
- Identification of computer parts
- Instruction on opening a document
• Keyboard readiness
- Instruction on touch keyboarding method
- Identify parts of the Word screen
• Introduction to Microsoft Word
- Identification of operation commands
- Identify parts of the Word screen
• Production of Word documents
- Centering
- Enumerations
- Letters
- Reports
- Resume
- Memorandums
- Proofread and spell documents
• Skill Development
- Three minute timed writings

Assessment: District-wide portfolio project

ADAPTIVE KEYBOARDING
Code: B731   Full Year (9-12)   (1 credit) (rank weight 1.00)
Enrollment by teacher recommendation ONLY

Areas of Study Include:
• Introduction to Computer Basics
- Identification of computer parts
- Instruction on start up procedures
- Instruction on log on and off procedures
- Instruction on opening a document
- Instruction on exiting a program
• Keyboard Readiness
- Instruction on touch keyboarding method
- Location and reach of home row keys
- Location and reach to alphabetic, punctuation, & symbol keys
- Instruction on numeric keypad
- Proper techniques at the keyboard
• Introduction to Microsoft Word
- Identification of operational commands
- Identify parts of the Word screen
- Save and Retrieve documents
• Production of Word documents
- Centering
- Enumerations
- Business Letters
- Short Reports
- Clip art
• Occupational Education Skills
- Library Skills
- Career Search (use of Dictionary of Occupational Titles)
- Career Search Report
- Resume
- Job Application
- Letter of Application
- Interview Skills
- Thank you Letter
• Internet Skills
- Search the Wappingers Central School District Website
• Introduction to PowerPoint
- Incorporate speaking skills from Career Report using PowerPoint

Assessment: District-wide portfolio project

ADAPTIVE CAREER & FINANCIAL MANAGEMENT/ COOPERATIVE WORK EXPERIENCE (ADAPTIVE CFM/CO-OP)
Code: B701   Full Year (9-12)   (1 credit) (rank weight 1.00)
Enrollment by teacher recommendation ONLY

Areas of Study Include:

PLANNING YOUR CAREER
- You and Work
- Why Work Matters
- Today's Workplace
- Understanding Yourself
- Getting to Know Yourself
- Being an Individual
- Exploring Careers
- Narrowing Your Career Choices
- Learning About Careers
- Your Training and Education

BUSINESS EDUCATION

- Your Training Options
- Education After High School
- Making a Career Plan
- Making a Career Decision
- Planning Your Career

GETTING THE JOB YOU WANT
- Finding Job Openings
- Gathering Job Leads
- Networking
- Applying for a Job
- Preparing Job Application Forms
- Writing Your Resume
- Interview Success
- Preparing for the Interview
- Succeeding in the Interview

SUCCEEDING ON THE JOB
- Your First Days on the Job
- Getting Off to a Good Start
- Your Pay and Benefits
- Job Safety
- Safety Basics
- Working Safely
- Getting Along With Others
- Working Well With Others
- Communicating Well
- Being a Valuable Employee
- Employability Skills
- Moving Ahead in Your Career

SKILLS FOR EVERYDAY LIVING
- Your Paycheck and Your Taxes
- Understanding Your Paycheck
- Filing Your Taxes
- Managing Your Money
- Making a Budget
- Understanding Banking and Credit
- Using Technology
- Technology Basics
- Computer Applications
- Planning Your Future
- Living on Your Own
- Being Part of Your Community

The student is required to work a minimum of 25 hours of paid or unpaid work experience. NOTE: Working papers and social security card are required.

BUSINESS LAW
Code: B610   Full Year (9-12)   (1 credit) (rank weight 1.00)
Prerequisite: None

Areas of Study Include:
- Ethics and the Law
  - Defining Ethics
  - Sources of Law
- The Court System
  - A Dual Court System
  - Trial Procedures
- Criminal Law
  - What Is a Crime?
  - Particular Crimes

- The Law of Torts
  - Intentional Torts
  - Negligence and Strict Liability
- How Contracts Arise
  - Contracts
  - Offer and Acceptance
- Genuine Agreement
  - Fraud and Misrepresentation
  - Mistake, Duress, and Undue Influence
- Contractual Capacity
- Consideration
  - Consideration
  - Agreements without Consideration
- Legality
  - Agreements that Violate Statutes
  - Agreements Contrary to Public Policy
- Form of a Contract
  - The Statue of Frauds
  - Special rules and Formalities
- Contracts for the Sale of Goods
  - The Sale and Lease of Goods
  - Ownership and Risk of Loss in Sales of Goods
  - E-Commerce and the Law
- Consumer Protection and Product Liability
  - Consumer Protection
  - Product Liability
- Owning a Vehicle
  - Acquiring a Vehicle
  - Motor Vehicle Insurance
- Personal Property and Bailments
  - Personal Property
  - Bailments
- Borrowing Money and Buying on Credit
  - What Is Credit?
  - Credit Protection Laws
  - Managing Your Debts
- Negotiable Instruments
  - Purpose and Types of Negotiable Instruments
  - Requirements of Negotiability
- Transferring Negotiable Instruments
  - Transferring Instruments
  - Endorsements
- Sole Proprietorship and Partnership
  - Sole Proprietorship
  - The Partnership
- Forming and Financing a Corporation
  - Corporations
- Marriage
  - Marriage Formalities and Restrictions
  - Marriage Laws
- Divorce and Its Legal Consequences
  - Ending a Marriage
  - Divorce Settlement
- Renting a Place To Live
  - The Rental Agreement
  - Responsibilities of Landlord and Tenant
- Buying a Home
  - Evaluating Housing Alternatives
  - The Home Buying Process

BUSINESS EDUCATION

- Insurance Protection
  - The Insurance Contract
  - Life and Health Insurance
  - Property Insurance
- Retirement and Wills
  - Retirement Income
  - Estate Planning

Assessment: District-wide final exam taken as Part 1 in January and Part 2 in June.

SPORTS LAW
Code: B620   Half Year (10-12) (½ credit)   (rank weight 1.00)
Prerequisite: Business Law

NOTE: Topics pertain specifically to amateur and professional sports

Areas of Study Include:
- Introduction
  - Torts
  - Contracts
  - Civil Law
- What is Sports Law?
  - Understanding the difference between what is a sport and what is not a sport
- Sports Contracts
  - Classification of Sports
- Amateur Sports
  - Title IX
  - Penalties for violation of eligibility for recruitment
  - Letter of Intent
  - Unethical Conduct
  - Contract to Participate in Sports
  - Endorsements
  - Contractual Right to an Education
  - Contractual Right to Academics and Sports
  - Duty of Care
  - Drug Testing
  - Case Studies
- Professional Sports
  - Contract to Participate in Sports
  - Conduct
  - Antitrust Law
  - Morality Clause
  - Breach of Contract
  - Unique Issues with Long Term Sport Contracts
  - Case Studies
- Common Torts and Crimes in Sports
  - Betting/Gambling
  - Liability of One Participant to Another
  - Vicarious Liability
  - Stadium Safety against Fans (No-Duty Rule)
  - Negligence
  - Duty of Care Doctor/Trainer
  - Drug Testing
  - Reverse Discrimination
  - Health and Disability Issues
  - Case Studies

Assessment: District-wide final project

ENTERTAINMENT LAW
Code: B630   Half Year (10-12) (½ credit)   (rank weight 1.00)
Prerequisite: Business Law

NOTE: Topics pertain specifically to entertainment and the media

Areas of Study Include:
- Business Law Review
  - Torts
  - Contracts
  - Civil Law
- Freedom of Speech
  - Constitution
  - Government Regulation
  - Freedom of Speech v. Artistic Expression
  - Regulating Freedom of Speech in the Entertainment Industry
  - Motion Picture Association Ratings System
  - Case Studies
- Privacy
  - Invasion of Privacy vs. Freedom of the Press
  - Privacy in Public Areas
  - Privacy in Semi-Public Places
  - Privacy of Public Figures
  - Types of Invasions
  - Categories of Invasion of Privacy Torts
  - Defenses in Invasion of Privacy Cases
  - Case Studies
- Defamation
  - Case Studies
- Intellectual Property
  - Copyrights
  - Fair Use and Fair Use and Parodies
  - Work for Hire
  - Transfer of Copyright
  - Music Plagiarism
  - Case Studies

Assessment: District-wide final project

FINANCIAL MATH
Code: B415   Full Year (11-12) (1 credit)   (rank weight 1.00)
Prerequisite: Two years of Math

NOTE: The final exam will be given in two parts. Part 1 is given at the end of the 2nd quarter and Part 2 is given in June. Each part counts for 50% of the final exam grade. Students MUST take both parts. This course satisfies a third math credit after the Integrated Algebra Regents Examination.

Areas of Study Include:
- Gross Income
  - Hourly Pay
  - Overtime Pay
  - Weekly Time-Card
  - Piecework
  - Salary
  - Commission
  - Graduated Commission
- Net Income
  - Federal Income Tax
  - State Income Tax
  - Graduated State Income Tax
  - Social Security Tax
  - Group Insurance
  - Earnings Statement

- Checking Accounts
  - Deposits
  - Writing Checks
  - Check Registers
  - Bank Statements
  - Reconciling the Bank Statement
- Savings Accounts
  - Deposits
  - Withdrawals
  - Passbooks
  - Account Statements
  - Simple Interest
  - Compound Interest
  - Compound Interest Tables
  - Daily Compounding
- Cash Purchases
  - Sales Tax
  - Total Purchase Price
  - Unit Pricing
  - Finding the Better Buy
  - Coupons and Rebates
  - Markdown
  - Sale Price
- Charge Accounts and Credit Cards
  - Sales Receipts
  - Account Statements
  - Finance Charge – Previous-Balance Method
  - Finance Charge – Unpaid-Balance Method
  - Finance Charge – Average-Daily Balance (No New Purchases Included)
  - Finance Charge – Average-Daily Balance (New Purchases Included)
- Loans
  - Single – Payment Loans
  - Installment Loans
  - Simple Interest Installment Loans
  - Installment Loans – Allocation of Monthly Payment
  - Paying Off Simple Interest Installment Loans
  - Determining the APR
  - Refund of Finance charge
- Automobile Transportation
  - Purchasing A New Automobile
  - Dealer's Cost
  - Purchasing a Used Automobile
  - Automobile Insurance
  - Operating and Maintaining an Automobile
  - Leasing an Automobile
  - Renting an Automobile
- Housing Costs
  - Mortgage Loans
  - Monthly Payment and Total Interest
  - Closing Costs
  - The Monthly Payment
  - Real Estate Taxes
  - Homeowner's Insurance
  - Homeowner's Insurance Premium
  - Other Housing Costs
- Insurance and Investments
  - Health Insurance Premiums
  - Health Insurance Benefits
  - Term Life Insurance

- Other Types of Life Insurance
- Certificates of Deposits
- Effective Annual Yield
- Stocks
- Stock Dividends
- Selling Stocks
- Bonds
- Recordkeeping
  - Average Monthly Expenditure
  - Preparing a Budget Sheet
  - Using a Budget
- Personnel
  - Hiring New Employees
  - Administering Wages and Salaries
  - Employee Benefits
  - Disability Insurance
  - Travel Expenses
  - Employee Training
- Production
  - Manufacturing
  - Break-Even Analysis
  - Quality Control
  - Time Study – Number of Units
  - Time Study – Percent of Time
  - Packaging
  - Purchasing
  - Trade Discounts
  - Trade Discount-Complement Method
  - Trade-Discount Rate
  - Chain Discounts
  - Chain Discounts-Complement Method
  - Cash Discounts-Ordinary Dating
  - Cash Discounts-EOM Dating
- Sales
  - Markup
  - Markup Rate
  - Net Profit
  - Net-Profit Rate
  - Determining Selling Price-Markup Based on Selling Price
  - Markup Rate Based on Cost
  - Determine Selling Price-Markup Based on Cost
  - Markdown
- Marketing
  - Opinion Surveys
  - Sales Potential
  - Market Share
  - Sales Projections
  - Sales Projections-Factor Method
  - Newspaper Advertising Costs
  - Television Advertising Costs
  - Pricing
- Services
  - Building Rental
  - Maintenance and Improvement
  - Equipment Rental
  - Utilities Costs-Telephone
  - Utilities Costs-Electricity
  - Professional Services
- Accounting Records
  - Assets, Liabilities, and Equity
  - Balance Sheet

- Cost of Goods Sold
- Income Statement
- Vertical Analysis
- Horizontal Analysis
- Corporate Planning
  - Inflation
  - Gross National Product
  - Consumer Price Index
  - Budget

Assessment: District-wide final exam taken as Part I in January and Part II in June.

ACCOUNTING 1
Code: B452   Full Year (9-12)   (1 credit) (rank weight 1.00)
Prerequisite: None

Areas of Study Include:
- Introduction to Accounting
  - Accounting Equation
  - Classification of Accounts
- Basic Accounting Cycle for the Sole Proprietorship
  - Analyzing Business Transactions
  - Journalizing to the General Journal
  - Posting to the General Ledger
  - Six-Column Worksheet
  - Financial Statements for the Sole Proprietorship
  - Closing Entries
  - Banking Procedures
- Payroll Accounting
  - Calculating Payroll
  - Journalizing and Posting the Payroll
- Accounting Cycle for Merchandising Business
  - Sales and Cash Receipts
  - Purchases and Cash Payments
  - Special Journals
  - 10-Column Worksheet and Adjustments
  - Financial Statements for a Corporation
  - Closing Entries for a Merchandising Business
- Special Accounting Procedure
  - Change and Petty Cash
  - Assets and Depreciation

Assessment: District-wide simulation project

COLLEGE ACCOUNTING -
DCC ACCOUNTING 101 AND 102
Code: B652   Full Year (11, 12)(1 credit) (rank weight 1.06)
Prerequisite: None

NOTE: This is a college level course. The accelerated pace demands a willingness to accept the responsibility of intensive preparation. Students successfully completing this course will be awarded 8 SUNY credits.

Areas of Study Include:
- Accounting in Action
  - Why study accounting?
  - What is accounting?
  - Financial statements
  - The accounting profession
- Recording Process
  - The account: debits and credits
  - Steps in the recording process
  - The trial balance

- Adjusting Accounts
  - Timing issues
  - Adjusting entries
  - Adjusting trial balance and financial statements
- Completion of the Accounting Cycle
  - Preparing and adjusting a work sheet
  - Preparing and posting closing entries
  - Reversing entries
  - Classified balance sheet
- Accounting for Merchandising Operations
  - Operating cycles and inventory systems
  - Recording purchases and sales of merchandise
  - Adjusting and closing entries
- Inventories
  - Classifying and determining quantities
  - Cost under a periodic inventory system
  - Inventory errors
  - Statement presentation and analysis
- Accounting Information Systems
  - Principles of accounting information systems
  - Developing an accounting system
  - Subsidiary ledgers
  - Sales, cash receipts, purchase, and cash payments journals
- Internal Control and Cash
  - Principles of internal control
  - Limitations of internal control
  - Cash controls
  - Use of a bank
  - Reporting cash
- Accounting for Receivables
  - Types of accounts receivables
  - Recognizing accounts receivables
  - Notes receivables
  - Statement preparation and analysis
- Plant Assets, Natural Resources, and Intangible Assets
  - Determining the cost for plant assets (land, buildings, & equipment)
  - Factors in computing depreciation
  - Depreciation methods
  - Accounting for intangibles
- Current Liabilities and Payroll Accounting
  - Accounting for current liabilities
  - Contingent liabilities
  - Payroll accounting
- Accounting Principles
  - Objectives of financial reporting
  - Qualitative characteristics of accounting information
  - Elements of financial statements
  - Assumptions
  - Principles
  - Constraints in accounting
- Accounting for Partnerships
  - Characteristics of a partnership
  - Advantages and disadvantages of a partnership
  - Basic partnership accounting
  - Liquidation of a partnership
- Corporations: Organizations and Capital Stock Transactions
  - Characteristics of a corporation
  - Forming a corporation
  - Ownership rights of stockholders

- Corporate capital
- Accounting for common stock issues
- Accounting for treasury stock
- Preferred stock
• Corporations: Dividends, Retained Earnings, and Income Reporting
- Cash and stock dividends
- Retained Earnings
• Long Term Liabilities
- Bond basics
- Accounting for bond issues
- Accounting for bond retirements
- Accounting for long-term liabilities
• Investments
- Why corporations invest
- Accounting for debt investments
- Accounting for stock investments
- Valuing and reporting investments
• Statement of Cash Flows
- Usefulness and format for the statement of cash flows
- Significant noncash activities
- Preparing statement of cash flows
- Indirect and direct methods
• Managerial Accounting
- Comparing managerial and financial accounting
- Ethical standards for managerial accounting
- Managerial cost concepts
- Manufacturing costs in financial statements

Assessment: District-wide final exam taken as Part I in January and Part II in June

BUSINESS ECONOMICS
Code: B655   Half Year (12) (½ credit)   (rank weight 1.00)
Prerequisite: None

NOTE: This course satisfies the graduation requirement of a ½ credit in economics and may be taken instead of D655, Economics.

Areas of Study Include:

FUNDAMENTAL ECONOMIC CONCEPTS
• What Is Economics
- Scarcity and the Science of Economics
- Basic Economic Concepts
- Economic Choices and Decision Making
• Economic Systems and Decision Making
- Economic Systems
- Evaluating Economic Performance
- Capitalism and Economic Freedom
• Business Organizations
- Forms of Business Organization
- Business Growth and Expansion
- Other Organizations

MICROECONOMICS
• Demand
- What Is Demand?
- Factors Affecting Demand
- Elasticity of Demand

• Supply
- What Is Supply?
- The Theory of Production
- Cost, Revenue, and Profit Maximization
• Prices and Decision Making
- Prices as signals
- The Price System at Work
- Social Goals vs. Market Efficiency
• Market Structures
- Competition and Market Structures
- Market Failures
- The Role of Government

MACROECONOMICS: INSTITUTIONS
• Employment, Labor, and Wages
- The Labor Movement
- Resolving Union and Management Differences
- Labor and Wages
- Employment Trends and Issues
• Sources of Government Revenue
- The Economics of Taxation
- The Federal Tax System
- State and Local Tax Systems
- Current Tax Issues
• Government Spending
- The Economics of Government Spending
- Federal Government Expenditures
- State and Local Government Expenditures
- Deficits, Surpluses, and the National Debt
• Money and Banking
- The Evolution of Money
- Early Banking and Monetary Standards
- The Development of Modern Banking
• Financial Markets
- Savings and the Financial System
- Investment Strategies and Financial Assets
- Investing in Equities, Futures, and Options

MACROECONOMICS: POLICIES
• Economic Performance
- Measuring the Nation's Output
- GDP and Changes in the Price Level
- GDP and Population
- Economic Growth
• Economic Instability
- Business Cycles and Fluctuations
- Unemployment
- Inflation
- Poverty and the Distribution of Income
• The Fed and Monetary Policy
- The Federal Reserve System
- Monetary Policy
- Monetary Policy, Banking, and the Economy
• Achieving Economic Stability
- The Cost of Economic Instability
- Macroeconomic Equilibrium
- Stabilization Policies
- Economics and Politics

BUSINESS EDUCATION

INTERNATIONAL AND GLOBAL ECONOMICS
- International Trade
  - Absolute and Comparative Advantage
  - Barriers to International Trade
  - Financing and Trade Deficits
- Comparative Economic Systems
  - The Spectrum of Economic Systems
  - The Rise and Fall of Communism
  - The Transition to Capitalism
  - The Various Faces of Capitalism
- Developing Countries
  - Economic Development
  - A Framework for Development
  - Financing Economic Development
- Global Economic Challenges
  - The Global Demand for Resources
  - Economic Incentives and Resources
  - Applying the Economic Way of Thinking

Assessment: District-wide final exam

COLLEGE BUSINESS ECONOMICS - DCC ECONOMICS ISSUES 105

Code: B656   Half Year (12) (½ credit)   (rank weight 1.06)
Prerequisite: None

NOTE: This course satisfies the graduation requirement of a ½ credit in economics and may be taken instead of D655-Economics or B655-Business Economics. This is a college level course and the accelerated pace demands a willingness to accept the responsibility and challenge of intensive preparation. Although the topics are similar to B655-Business Economics, this class requires additional analysis, introspection, reading and writing on some of the top economic issues affecting people today. Students who successfully complete this course will be awarded 3 SUNY credits.

Areas of Study Include:
- Economics, The Study of Opportunity Costs
  - Economics and Opportunity Costs
  - Modeling Opportunity Costs Using the Production Possibilities Frontier
  - Attributes of the Production Possibilities Frontier
  - The Big Picture
  - Thinking Economically
- The Cost of War
  - Opportunity Costs
  - Present Value and the Value of a Human Life
  - Economic versus Accounting Costs
- Supply And Demand
  - Definitions
  - The Supply and Demand Model
  - All about Demand
  - All About Supply
  - Determinants of Demand
  - Determinants of Supply
  - The Effect Changer in Price Expectations on the Supply And Demand Model
- Personal Income Taxes
  - How Income Taxes Work
  - Issues in Income Taxation
  - Incentives and the Tax Code
  - Who Pays Income Tax
  - The Tax Debates of the Last Decade

- Perfect Competition , Monopoly, and Economic Versus Normal Profit
  - From Perfect Competition To Monopoly
  - Supply Under Perfect Competition
- Poverty And Welfare
  - Measuring Poverty
  - Programs for the Poor
  - Incentives, Disincentives, Myths, and Truths
  - Welfare Reform
- Education
  - Investments in Human Capital
  - Should We Spend More
  - School Reform Issues
  - College And University Education
- The Concept of Elasticity and Consumer Producer Surplus
  - Elasticity Of Demand
  - Alternative Ways to Understand Elasticity
  - More on Elasticity
  - Consumer and Product Surplus
- Energy Prices
  - The Historical View
  - OPEC
  - Why Do Prices Change So Fast
  - Electric Utilities
- Firm Production Cost and Revenue
  - Production
  - Costs
  - Revenue
  - Maximizing Profit
- Minimum Wage
  - Traditional Economic analysis of a Minimum Wage
  - Rebuttals to the Traditional Analysis
  - Where are Economists Now
- Ticket Brokers and Ticket Scalping
  - Defining Brokering And Scalping
  - An Economic Model Of Ticket Sales
- Every Macroeconomic Word You Ever Heard: Gross Domestic Product, Inflation, Unemployment, Recession and Depression
  - Measuring The Economy
  - Real Gross Domestic Product and Why It Is Not Synonymous with Social Welfare
  - Measuring and Describing Unemployment
  - Business Cycles
- The Stock Market and Crashes
  - Stock Prices
  - Efficient Markets
  - Stock Market Crashes
  - The Accounting Scandals of 2001 and 2002
- Interest Rates and Present Value
  - Interest Rates
  - Present Value
- Aggregate Demand and Aggregate Supply
  - Aggregate Demand
  - Aggregate Supply
  - Shifts in Aggregate Demand And Aggregate Supply
  - Causes of Inflation
  - How The Government Can Influence (but Probably not Control) the Economy

BUSINESS EDUCATION

- Fiscal Policy
  - Nondiscretionary and Discretionary Fiscal Policy
  - Using Fiscal Policy to Counteract "Shocks"
  - Evaluation Fiscal Policy
- Unions
  - Why Unions Exist
  - A Union as a Monopolist
  - The History of Labor Unions
  - Where Unions Go From Here
- Federal Spending
  - A Primer on The Constitution and Spending Money
  - Using Our Understanding of Opportunity Costs
  - Using Our Understanding of Marginal Analysis
  - Budgeting for the Future
- Federal Deficits, Surpluses and the National Debt
  - Surpluses, Deficits, and the Debt: Definitions and History
  - How Economists See the Deficit and the Debt
  - Who Owns the Debt
  - A Balanced Budget Amendment
- Monetary Policy
  - Goals, Tools, and Model of Monetary Policy
  - Central Bank Independence
  - Modern Monetary Policy
- Social Security
  - The Basics
  - Why Do We Need Social Security
  - Social Security Effects On the Economy
  - Whom Is the Program Good For
  - Will the System Be There For Me
- International Trade: Does it Jeopardize American Jobs
  - What We trade and With Whom
  - The Benefits of International Trade
  - Trade Barriers
  - Trade as a Diplomatic Weapon
- The International Monetary Fund: Doctor or Witch Doctor
  - Before The IMF and Its birth
  - Foreign Exchange Markets
  - Today's IMF
  - The Asian Financial Crisis
- The Economics of Race and Sex Discrimination
  - The Economic Status of Women and Minorities
  - Definitions and Detection of Discrimination
  - Discrimination in Labor and Consumption and Lending
  - Affirmative Action
- NAFTA, CAFTA, GATT, WTO, Are Trade Agreements Good for the U.S.
  - The Benefits of Free Trade
  - Who Do We Need Trade Agreements
  - Trade Agreements and Institutions
  - Economic and Political Impacts of Trade
  - The Bottom Line
- Tobacco, Alcohol, Drugs and Prostitution
  - An Economic Model of Tobacco, Alcohol, Drugs and Prostitution
  - Why is Regulation Warranted
  - Taxes on Tobacco and Alcohol
  - Why are Drugs and Prostitution Illegal
- The Environment
  How Clean Is Clean Enough
  The Externalities Approach
  The Property Rights Approach
  Environmental Problems and Their Economic Solutions
- So You want to be a Lawyer: Economics and the Law
  - The Government's Role in Protecting Property and Enforcing Contracts
  - Private Property
  - Bankruptcy
  - Civil Liability
- Health Care
  - Where the Money Goes and Where It Comes form
  - Insurance in the United States
  - Economic Models of Health Care
  - Comparing the United States with the Rest of the World
- The Economics of Terrorism
  - The Economic Impact of September 11th and of Terrorism in General
  - Modeling The Economic Impact
  - Terrorism from the Prospective of the Terrorist
- If We Build It, Will They Come? And Other Sports Questions?
  - The Problem For Cities
  - The Problem for Owners
  - The Sports Labor Market
  - The Vocabulary of Sports Economics
- Antitrust
  - What's Wrong with Monopoly
  - Natural Monopolies and Necessary Monopolies
  - Monopolies and The Law
  - Examples of Antitrust Action
- Wal-Mart: Always Low Prices (and Low Wages) – Always
  - The Market Forum
  - Who Is Affected?
- Why College Textbooks Cost So Much
  - The Process
  - Textbook and Market Forms
  - Technology and The Impact of Used Books
  - When Price Matters and When It Does Not
  - So Why Do They Cost So Much and Who's To Blame
- Head Start
  - Head Start as an Investment
  - The Head Start Program
  - The Current Evidence
  - The Opportunity
- Government Provided Health Insurance, Medicaid, Medicare and the Child Health Insurance Program
  - Medicaid: What, Who and how much
  - Why Medicaid Costs so much
  - Medicare: Public Insurance and the Elderly
  - Medicare's Nuts and Bolts
  - The Medicare Trust Fund
- Economic Growth and Development
  - Growth in Already Developed Countries
  - Comparing Developed Countries with Developing Countries
  - Fostering(and Inhibiting) Development
- Illegal Immigration
  - Why do they come?
  - Can we stop them?
  - Do they benefit/hinder economic development?

- Labor Unemployment
  - Unemployment
  - Underemployment
  - What can the government do?

Assessment: District-wide final exam

Textbook: *Issues in Economics Today*, published by McGraw-Hill, © 2008

CORPORATE COMMUNICATIONS
Code: B660   (12) (1 credit) (rank weight 1.00)
Prerequisite: 3 years of English and passed the English Regents exam.

NOTE: This course satisfies a 4th English credit after passing the English Regents exam. As part of the course requirement for Corporate Communications, all students enrolled in this course are expected to read a book or books over the summer. For more information, refer to the Wappingers School Home Page (www.wappingersschools.org) Summer Reading.

Areas of Study Include:
- Communicating in Your Life
  - Communication: Its Importance and Roles in Your Life
  - Communication: Responsibilities of Participants, Forms and Barriers
  - Electronic Communication
- Communicating in a Diverse Workplace
  - Cultural Differences at Home and Abroad
  - Effective Cross-Cultural Communication
  - Diversities in the Workplace
- Nonverbal Communication
  - Nonverbal Communication on the Job
  - Listening
  - Interpersonal Skill
- The Writing Process
  - Planning and Organizing Messages
  - Choosing Words
  - Creating Concise Sentences and Complete Paragraphs
  - Editing and Proofreading
  - Publishing
- Writing Memos, E-mail, & Minutes of a Meeting
  - Uses of Internal Documents
  - Formatting and Writing Effective Internal Documents
  - Abuses of Internal Documents
  - Meetings and Internal Communications
- Writing Letters to Your Clients and Customers
  - Selecting Order and Formatting Your Letters
  - Writing Letters with a Neutral or Positive Message
  - Writing Letters with a Negative Message
- Researching and Using Information
  - Planning and Defining the Search
  - Locating Sources of Information
  - Organizing, Evaluating, and Using Information
- Developing and Using Graphic and Visual Aids
  - Purposes and Placement of Graphic Aids
  - Developing Graphic Aids
  - Using Visual Aids for Oral Presentations
- Writing Routine Reports
  - Planning Informal Reports
  - Writing Informal Reports
- Writing Formal Reports
  - Writing Formal Reports
  - Reports

- Technical Communication
  - Writing to Instruct
  - Writing to Describe
  - Writing to Persuade
- Presentations and Meetings
  - Oral Presentations
  - Effective Meetings
- Communicating with Customers
  - Customer Service
  - One-on-One Telephone Communication
- Employment Communication
  - Analyzing Yourself and the Market
  - Writing Your Resume
- Job Application and Interviewing Skills
  - Writing a Letter of Application and Completing the Application Forms
  - Interviewing Well and Writing the Follow-up Letter
- Final Exam-Portfolio Project
  - Technical Communication Document
  - Report
  - Newsletter
  - Memo
  - Business Letter or Letter of Application
  - Oral Presentation
  - Job Application
  - Resume

Assessment: District-wide portfolio project

MICROSOFT OFFICE
Code: B545   Half Year (9-12)   (½ credit)   (rank weight 1.00)
Prerequisite: Word Processing or Keyboarding Business Communications

Areas of Study Include:

MICROSOFT WORD
- Operational Characteristics
- Formatting Techniques
  - Formatting of business letters
  - Formatting of reports
  - Formatting of memorandum
  - Formatting of tables

MICROSOFT ACCESS
- Operational Characteristics
- Application and Formatting
  - Designing/creating a database
  - Editing a database
  - Sorting a database
  - Searching a database

MICROSOFT EXCEL
- Operational Characteristics
- Applications and Formatting
  - Creating a spreadsheet
  - Sorting a spreadsheet
  - Use of formulas in a spreadsheet
  - Changing a spreadsheet

MICROSOFT POWER POINT
- Operational Characteristics
- Applications and Formatting

BUSINESS EDUCATION

- Creating from a blank presentation
- Inserting clip art and text boxes
- Changing backgrounds and slide designs
- Inserting animation and sound

Assessment: District-wide portfolio project

SPORTS AND ENTERTAINMENT MARKETING
Code: B553   Full Year (9-12)   (1 credit) (rank weight 1.00)
Prerequisite: None

Areas of Study Include:
- World of Marketing
  - What is marketing
  - Economics of marketing
- Sports & Entertainment: Connections & Contrast
  - History of sports and entertainment marketing
  - Similarities in marketing
  - Differences in marketing
- Sports Marketing
  - The sports market
  - Categories of sports
  - Sports products
- Sports Marketing Mix
  - Product design
  - Pricing and strategies
- Sports Market Research and Outlets
  - The research process
  - Outlets – the place decision
- Branding and Licensing
  - Branding
  - Licensing
- Sports and Promotion
  - Planning the promotion
  - Advertising and sales promotion
  - Public relations and personal selling
- Sports Marketing Plans and Careers
  - The marketing Plan
  - Sports marketing careers
- Entertainment Marketing
  - Entertainment and marketing
  - Types of entertainment businesses
- Entertainment Products and Marketing
  - Types of entertainment products
  - Media product marketing
- Product and Price Decisions: Entertainment
  - Branding and entertainment
  - Price decisions
- Entertainment Market Research and Outlets
  - Targeting entertainment markets
  - Research methods
  - Entertainment outlets and Venues
- Images and Licensing
  - Images and merchandising
  - Licensing and royalties
- Entertainment Promotion
  - Promotional mix
  - Variety of promotional methods
- Entertainment Marketing Plans and Careers
  - Entertainment marketing plan
  - Entertainment marketing: education and careers

Assessment: District-wide final project

BUSINESS OWNERSHIP
Code: B653   Full Year (9-12)   (1 credit) (rank weight 1.00)
Prerequisite: None

Areas of Study Include:
- Should you become an entrepreneur?
  - Present & past entrepreneurs
  - Is entrepreneurship right for you?
  - Identify business opportunities and set goals
- What skills do Entrepreneurs need?
  - Communication skills
  - Math skills
  - Problem-Solving Skills
- Entrepreneurs in a Market Economy?
  - What is an economy?
  - The concept of cost
  - Government in a market economy
- Types of Ownership
  - Run an existing business
  - Own a franchise or start a business
  - Choose the legal form of your business
- Develop a Business Plan
  - Why do you need a business plan?
  - What goes into a business plan?
  - Create an effective business plan?
- Identify and meet a market need
  - The value of market research
  - How to perform market research
  - Identify your competition
- Finance, Protect and insure your business
  - Put together a financial plan
  - Obtain financing for your business
  - Theft proof your business
  - Insure your business
- Choose your location and set up for business
  - Choose a retail business location
  - Choose a location for a non-retail business
  - Obtain space and design the physical layout
  - Purchase equipment, supplies and inventory
- Market your business
  - The marketing mix – product, distribution, price
  - The marketing mix – promotion
  - Set marketing goals
- Hire and manage a staff
  - Hire employees
  - Create a compensation package
  - Manage your staff
- Record keeping and accounting
  - Set up a record keeping system
  - Understand basic accounting
  - Track your inventory
- Financial Management
  - Manage your cash flow
  - Analyze your financial performance
  - Hire experts
- Technology
  - Technology and your business
  - Learn about the internet
  - Purchase technology

- Legal, ethical and social obligations
  - Understand your legal requirements
  - Ethical issues in business
  - Meet your social responsibilities
- Growth in today's marketplace
  - Develop a strategy for growth
  - Global trends and opportunities
  - Culture and business

Assessment: District-wide final project

WORK BASED LEARNING
(BUSINESS CO-OP)
Code: B770   Full Year (11, 12)(1 credit) (rank weight 1.00)
Prerequisite: The students must have completed or be enrolled in Career and Financial Management (Introduction to Occupations) and must be enrolled in Business courses for a full year.

The Cooperative Work Experience Program strives to accomplish the following goals:
- Equip the students with employability skills, career awareness, and the framework to make mature decisions about future education and career opportunities
- Encourage the students to develop positive self-esteem, respect for others, and strive for excellence
- Provide the students with experiences that will open doors for future employment opportunities

The course includes:
- At least 300* hours of part-time work experience related to the student's course of study
- The student must have met or be in the process of meeting academic requirements for graduation
- Students must be employed under current state and federal labor laws and regulations
- Regular meetings with teacher-coordinator, both in the school and at the job site
- Supervision of work experience by the teacher-coordinator who assists in appropriate job placements in local businesses

NOTE:
- Working papers and a Social Security card are required
- A maximum of 2 credits of work experience may be earned toward graduation
- No more than 1 credit may be earned each school year
- Students must provide their own transportation to and from work

Assessment: Employer evaluation and teacher evaluation

*Students may receive ½ credit for 150 hours of work. All requirements for the Business Co-Op Work Experience must be met. Use Code B769.

DIVERSIFIED CO-OP
Code: B700   Full Year (12) (1 credit) (rank weight 1.00)
Prerequisite: None
- The student must have met or be in the process of meeting academic requirements for graduation.
- Students must be employed under current state and federal labor laws and regulations.
- This Co-Op course is for students who have never taken Career and Financial Management (Introduction to Occupations).

Course includes:
- At least 300 hours of part-time work experience.
- Opportunity to obtain job placement experience.
- A minimum of one period per week of related-in-school instruction (areas of study are listed below).
- Supervision of work experience by the teacher coordinator who assists in appropriate job placements in local businesses.

NOTE: Working papers and a social security card are required. Students will receive one elective credit. This course does not fulfill any Business Education requirements.

Areas of study during the related in-school instruction include:
- Career Assessment
  - Assessing personal interests
  - Assessing abilities, aptitudes and values
  - Identify occupations choices that match interest and abilities
- Career Development and Transition Planning
  - Communication skills
  - Leadership skills
  - Teamwork
  - Critical thinking
  - Technical knowledge and skills
- Job Search Process
  - Resume preparation
  - Cover letter
  - Interview
  - Follow-up letter
- Labor Laws and Work Safety
  - Child labor laws
  - Worker's compensation
  - Safety regulations
- Issues in the Workplace
  - Ethics in the workplace
  - Multi-tasking
  - Understanding sexual harassment
  - Conflict
- Understand Paycheck and Taxes
  - Filing taxes
- Business Etiquette
  - Manners
  - Dress for Success
  - Punctuality
  - Attendance
  - Appropriate language
  - Customer service skills
  - Stress management
- Success on the Job
  - Career ladder
  - Professional Associations
  - Proper procedures for exiting a job
- Spending and Saving Money
  - Understanding credit
  - Understanding different types of credit

Assessment: District-wide portfolio project

FAMILY AND CONSUMER SCIENCES

Courses offered by this department help to provide all students with skills required for success in daily living and family life. Additionally, for some, the courses, as offered in a sequence, provide the basis for entry into the workplace, and/or further formal training in a selected career pattern.

In all courses, practical/hands-on learning experiences are the basis of instruction, and provide the opportunity for each student to experience success, to learn to work cooperatively with others, and to develop both life and leisure skills.

SEQUENCE REQUIREMENTS

3-Unit Sequence Options

FOOD AND NUTRITION SEQUENCE

Career and Financial Management
Food Preparation

Plus Choice Of (2 credits):

International/Regional Foods
Gourmet Foods
Nutrition For Fitness/Sport
Baking & Pastry

HUMAN DEVELOPMENT SEQUENCE

Career and Financial Management
Food Preparation

Plus Choice Of (2 credits):

Adolescent Psychology
Parenting
Child Development and Psychology

5-Unit Sequence Options

The 3-Unit sequence above **PLUS**

Two Units from FAMILY AND CONSUMER SCIENCES, TECHNOLOGY OR BUSINESS EDUCATION

1 Co-op credit may be used in any 5-unit sequence.

NOTE: World of Fashion and Interior Design when taken together may be credited toward the 1 unit Art/Music requirement for **FAMILY AND CONSUMER SCIENCES** sequence students.

These half-year courses may be offered on an every other day basis for a full year to receive ½ credit.

FAMILY AND CONSUMER SCIENCES

ADOLESCENT PSYCHOLOGY
Code: H790   Half Year (9-12)   (½ credit)
Prerequisite: None

Areas of Study Include:
- Introduction to Adolescent Psychology
- Fundamental Transitions of Adolescence
- Essential Tasks of Adolescence
- The Adolescent in Society
- Contemporary issues in Adolescence

Students will be assessed on a regular basis. Students may be asked to demonstrate the acquisition of skills learned and apply those to real-world situations through the use of:
- Authentic assessments
- Laboratories
- Tests and quizzes
- Projects
- Observations
- Public speaking
- Written reflections
- Portfolios

This course is a vehicle through which the commencement level New York State Learning Standards for Family and Consumer Sciences (Personal Health and Fitness, A Safe and Healthy Environment, and Resource Management) can be attained. It also addresses the New York State Commencement Level Learning Standards for Career and Occupational Studies (Career Development, Integrated Learning, Universal Foundation Skills, Career Majors- Human and Public Services).

Standards delivered in the academic disciplines of Math, Science, Technology, English Language Arts, Social Studies, Languages Other Than English and the Arts are supported by the Adolescent Psychology course as it provides real-world opportunities to apply the key ideas and skills taught in those disciplines.

The Adolescent Psychology course may also be used to fulfill the New York State parenting mandate. Adolescent Psychology content topics align with the National Standards for Family and Consumer Sciences.

For a complete review of the NYS learning standards and complete NYS core curriculum, see:
http://www.emsc.nysed.gov/cte/facse/fccontent.html

CHILD DEVELOPMENT AND PSYCHOLOGY
Code: H770   Half Year (9-12)   (½ credit)
Prerequisite: None

Areas of Study Include:
- Introduction to Child Development and Psychology
- Observing Children
- Child, Family, and Community Connections
- Prenatal Development
- Postnatal Period
- Infancy
- Toddlerhood
- Preschool
- School Age
- Special Challenges for Children

NOTE: Skills are practiced in a variety of laboratory and community situations.

Students will be assessed on a regular basis. Students may be asked to demonstrate the acquisition of skills learned and apply those to real-world situations through the use of:

- Authentic assessments
- Laboratories
- Tests and quizzes
- Projects
- Observations
- Public speaking
- Written reflections
- Portfolios

This course is a vehicle through which the commencement level New York State Learning Standards for Family and Consumer Sciences (Personal Health and Fitness, A Safe and Healthy Environment, and Resource Management) can be attained. It also addresses the New York State Commencement Level Learning Standards for Career and Occupational Studies (Career Development, Integrated Learning, Universal Foundation Skills, Career Majors- Human and Public Services).

Standards delivered in the academic disciplines of Math, Science, Technology, English Language Arts, Social Studies, Languages Other Than English and the Arts are supported by the Child Development and Psychology course as it provides real-world opportunities to apply the key ideas and skills taught in those disciplines.

The Child Development and Psychology course may also be used to fulfill the New York State parenting mandate. Child Development and Psychology content topics align with the National Standards for Family and Consumer Sciences.

COOPERATIVE WORK EXPERIENCE (CO-OP) - CHILD DEVELOPMENT AND PSYCHOLOGY
Code: H694   Full Year (11-12) (1 credit)
Prerequisite: Child Development, Parenting or Adolescent Development

Code: H696   Half Year (11-12) (½ credit)
Prerequisite: Child Development and Psychology, Parenting or Adolescent Psychology

Areas of Study Include:
- At least 300 hours (150 hours for ½ year course) of part-time work experience in a job related to Child Development at a business or institution approved by the FACS department.
- Opportunity to work in a real life job setting which reinforces knowledge and skills learned in related courses.
- Work experience related to the students planned course sequence

NOTE: Working papers and a Social Security card are required. A maximum of 2 credits of work experience may be earned each school year. Only 1 credit of work experience may be applied to the 5-unit sequence for graduation.

This course provides the student an opportunity to apply, in a real world setting, the skills and practices learned in the classroom.

Assessment: Assessment is based on regular meetings with teacher/coordinator both in school and at the job site.

For a complete review of the NYS learning standards and complete NYS core curriculum, see:
http://www.emsc.nysed.gov/cte/facse/fccontent.html

FAMILY AND CONSUMER SCIENCES

PARENTING
Code: H780   Half Year (9-12)   (½ credit)
Prerequisite: None

Areas of Study Include:
- Stages of prenatal development
- Physical, emotional, intellectual and social development of the infant
- Conditions which influence parenting and their implications
- Decision-making
- Relationships
- Skills and nurturing
- Available support systems
- Family

This course focuses on the responsibility of childbearing and the caring for personal health, decision-making and the positive ways to meet the needs of the developing child.

Assessment: Assessment is based on quizzes, exams, lab assignments, daily participation and demonstrated skill.

For a complete review of the NYS learning standards and complete NYS core curriculum, see:
http://www.emsc.nysed.gov/cte/facse/fccontent.html

BAKING & PASTRY
Code: H730 Half Year (10-12) (½ credit)
Prerequisite: Food Preparation

Areas of Study Include:
- Basic techniques of pastry and baking for personal and professional experience.
- Introduction to the baking and pastry major of concentration in the culinary arts.

This course provides the student an opportunity to expand upon basic culinary skills and to move toward more complicated procedures of baking and pastry cuisine. Students will learn about the importance of food appearance, presentation, and specialized equipment.

Assessment: Assessment is based on quizzes, exams, lab assignments, daily participation and demonstrated skill.

For a complete review of the NYS learning standards and complete NYS core curriculum, see:
http://www.emsc.nysed.gov/cte/facse/fccontent.html

COOPERATIVE WORK EXPERIENCE (CO-OP) - FOODS
Code: H494   Full Year (11-12) (1 credit)
Prerequisite: Food Preparation

Code: H496   Half Year (11-12) (½ credit)
Prerequisite: Food Preparation

Areas of Study Include:
- At least 300 hours (150 hours for ½ year course) of part-time work experience in a job related to Foods at a business or institution approved by the CALS department.
- Opportunity to work in a real life job setting which reinforces knowledge and skills learned in related courses.
- Work experience related to the students planned course sequence

NOTE: Working papers and a Social Security card are required. A maximum of 2 credits of work experience may be earned each school year. Only 1 credit of work experience may be applied to the 5-unit sequence for graduation.

This course provides the student an opportunity to apply, in a real world setting, the skills and practices learned in the classroom.

Assessment: Assessment is based on regular meetings with teacher/coordinator both in school and at the job site.

For a complete review of the NYS learning standards and complete NYS core curriculum, see:
http://www.emsc.nysed.gov/cte/facse/fccontent.html

FOOD PREPARATION
Code: H587   Half Year (9-12)   (½ credit)
Prerequisite: None

Areas of Study Include:
- Menu planning
- Meal management
- Food purchasing
- Food preparation
- Meal service

NOTE: This course includes content required by the State Education Department as an introduction to Family and Consumer Science and is required in all three and five unit sequences. Field trips, guest speakers and practical experience form an integral part of this useful course.

Assessment: Assessment is based on quizzes, exams, lab assignments, daily participation and demonstrated skill.

For a complete review of the NYS learning standards and complete NYS core curriculum, see:
http://www.emsc.nysed.gov/cte/facse/fccontent.html

GOURMET FOODS
Code: H750   Half Year (9-12)   (½ credit)
Prerequisite: Food Preparation

Areas of Study Include:
- Principles of food preparation
- Demonstration techniques
- Appetizers through desserts
- Menu selection
- Creative and unique food projects
- Career Options

This course provides the student an opportunity to expand upon basic preparation skills and to move toward more complicated procedures of fine cuisine. Students will learn about the importance of food appearance, presentation, and specialized equipment.

Assessment: Assessment is based on quizzes, exams, lab assignments, daily participation and demonstrated skill.

For a complete review of the NYS learning standards and complete NYS core curriculum, see:
http://www.emsc.nysed.gov/cte/facse/fccontent.html

FAMILY AND CONSUMER SCIENCES

INTERNATIONAL & REGIONAL FOODS
Code: H760   Half Year (9-12)   (½ credit)
Prerequisite: Food Preparation

Areas of Study Include:
- Foods and customs of many lands
- Cuisines of foreign lands
- Foods in a cross-cultural perspective
- Use of food equipment and terminology of countries studied

This course will provide the students an opportunity to explore a variety of culture-specific foods, as well as preparation techniques. The course will also create a framework for understanding cultural differences and an appreciation for customs, traditions and differences.

Assessment: Assessment is based on quizzes, exams, lab assignments, daily participation and demonstrated skill.

For a complete review of the NYS learning standards and complete NYS core curriculum, see:
http://www.emsc.nysed.gov/cte/facse/fccontent.html

NUTRITION FOR HEALTH, FITNESS, AND SPORTS
Code: H740   Half Year (10-12) (½ credit)
Prerequisite: Food Preparation

Areas of Study Include:s
- Scientific principles of nutrition as they relate to:
  - Fitness
  - Health
  - Competitive sports
- Menu planning
- Diet for specialized sport
- Some food preparation skills
- Nutritional pyramid and guidelines
- Lifelong nutrition
- Principles of nutrition/application
- Evaluation of :
  - Weight loss programs
  - "Fast foods"
  - Special diets

This course will help to provide all students with skills required for success in daily living and family life. It provides an in-depth study of human nutrition, as it relates to health, wellness and fitness.

Assessment: Assessment is based on quizzes, exams, lab assignments, daily participation and demonstrated skill.

For a complete review of the NYS learning standards and complete NYS core curriculum, see:
http://www.emsc.nysed.gov/cte/facse/fccontent.html

INTERIOR DESIGN
Code: H950   Half Year (9-12)   (½ credit)
Prerequisite: None

Areas of Study include:
- Careers in Interior Design
- Influences on Interior Design
  - External Environment
  - Personal Elements
  - Scope of the Decorating/Designing Plan
- Elements and Principles of Design
- Interior Housing Features
  - The Use of Space
  - Architectural Elements
  - Changing Architectural Elements
- Decorating and Furnishing an Interior
  - Decorating Themes
  - Furniture
  - Selecting a Color Scheme
  - Textiles
- Accessories

This course focuses on the interior design and decoration field, enabling students to asses their abilities to plan an interior which uses the principles of design and is acceptable to a client.

Assessment: Assessment is based on quizzes, exams, assignments, projects daily participation and demonstrated skill.

For a complete review of the NYS learning standards and complete NYS core curriculum, see:
http://www.emsc.nysed.gov/cte/facse/fccontent.html

WORLD OF FASHION
Code: H960   Half Year (9-12)   (½ credit)
Prerequisite: None

Areas of Study Include:
- Clothes and Fashion
- The Development of Fashion
- The Industry of Fashion
- Textiles
- Design and Color
- The Consumer
- Wardrobe Planning
- Careers

Students will be assessed on a regular basis. Students may be asked to demonstrate the acquisition of skills learned and apply those to real-world situations through the use of:
- Authentic assessments
- Laboratories
- Tests and quizzes
- Projects
- Observations
- Public speaking
- Written reflections
- Portfolios

ENGLISH

The study of English in the Wappingers Central School District focuses directly on the four New York State Learning Standards for English Language Arts:

1. Students will read, write, listen and speak for information and understanding.

2. Students will read, write, listen and speak for literary response and expression.

3. Students will read, write, listen and speak for critical analysis and evaluation.

4. Students will read, write, listen and speak for social interaction.

Students must take English every year in high school. All students in New York State must receive a passing grade on the Comprehensive Regents Examination in English.

In grades 9-10, English is a full year course designed to help students meet the learning standards and prepare for the Comprehensive Regents Examination in English. Students are scheduled into either a regular or Honors level class.

The Honors class in grade 11 is the Advanced Placement Course in Language and Composition.

In grade 12, students must take a full year of English, from a selection of courses that include Advanced Placement Literature and Composition, Dutchess Community College Courses, English 12: Humanities in Writing and Literature, English 12: Adventures in Writing and Literature, English 12: Contemporary Indentities in Writing and Literature.

Dual enrollment in English 11 and any English 12 course is contingent upon continuously passing both courses. At the end of the first and second marking periods, if the student is found to be failing either course, s/he will be dropped from the higher level course, regardless of which course s/he is passing. The student must be eligible to graduate at the end of the year if both courses are completed successfully.

HONORS PROGRAM IN ENGLISH LANGUAGE ARTS

The high school English honors program is an extremely rigorous course of study, designed for students capable of superior thinking, reading and writing skills. These students welcome the challenge and excitement of learning more complex and demanding material. Students are placed in honors sections based on their academic achievement along with a teacher recommendation. Students are expected to maintain an 85 overall average to remain in honors.

The profile of a true honors student is multi-dimensional. The student's work ethic is demonstrated by timely, consistent, complete, and high quality response to assignments along with consistent, active participation in classroom discussion and presentations.

Successful completion of the honors program in grades 9 and 10 prepares students for the Advanced Placement program, which serves as Honors English in grades 11 and 12. Departmental approval is required for student registration in these courses.

More information on the New York State English Language Arts Standards and Core Curriculum can be found at http://www.emsc.nysed.gov/ciai/ela/elacore.htm.

ENGLISH 9
Code: E341   Full Year (9) (1 credit)   (rank weight 1.0)
Prerequisite: Pass English 8
See English 9 Honors description

For info on the NYS English Language Arts Stds & Core Curriculum see: http://www.emsc.nysed.gov/ciai/ela/elacore.htm.

HONORS ENGLISH 9
Code: E361   Full Year (9)   (1 credit) (rank weight 1.04)
Prerequisite: Completion of ELA 8 Honors with a final average of at least 85% and recommendation of ELA 8 teacher.

NOTE: Honors classes generally incorporate more reading, writing and discussion and at a higher level; use more challenging text books and other materials; and take a different final exam from the Regents classes.

Areas of Study Include:

COURSE CONCEPT: The Journey

QUOTATION: "Not every journey takes place on the road."

ESSENTIAL QUESTION: How is one's journey a metaphor for life?

CORE LITERATURE:
   • Selections from Elements of Literature (Course 3)
   • The Giver
   • Poe Collection
   • The Miracle Worker or Monster
   • Mythology and Folklore
   • The Odyssey
   • Romeo and Juliet
   • Nector in a Sieve
   • The Book Thief (Honors)

OPTIONAL LITERATURE:
   • Grendel (Honors)
   • The Pearl
   • Speak
   • The House on Mango Street
   • Bless Me, Ultima
   • Bad Boy
   • Out from Boneville
   • The Outsiders
   • The Canterbury Tales
   • I am the Cheese
   • The Martian Chronicles
   • The Hero's Trail
   • Nectaring Sieve
   • Various essays, poetry and short stories

WRITING SKILLS/QUALITIES AND TASKS: 6 TRAIT WRITING
   • Critical Lens (Honors)
   • Journal and journal responses
   • Analytical Essay
   • Persuasive Essay
   • Personal Narrative
   • Creative Writing
   • Research
   • Project
   • Independent Reading Assignments
   • Listening activities and exercises
   • Oral Presentations
   • Literary Terms and Devices
   • Vocabulary & spelling study
   • Grammar
   • Literature Circles/Socratic Seminar

Assessment: A departmental final exam based on the content, concepts and themes in the course will be administered in June. This final will count as 10% of the students' overall grade. The completion of a literacy portfolio will also be included in the students' final exam grade. This portfolio of student work will count as 10% of the overall grade.

For info on the NYS English Language Arts Stds & Core Curriculum see: http://www.emsc.nysed.gov/ciai/ela/elacore.htm.

ENGLISH 9 LITERACY LAB
Code: E386   Full Year (9) (½ credit, class meets every other day) (rank weight 1.0)
Prerequisite: Students assigned based on Grade 8 ELA State Exam Score and Grade 8 ELA class average as well as teacher recommendation.

Course Goal: Provide academic intervention assistance to students who need additional support in ELA skills and strategies in order to meet the New York State Standards in English Language Arts.

Areas of study include but are not limited to:
   • Grammar practice
   • Vocabulary development
   • Writing process
   • Six-Trait writing
   • Research skills
   • Literary analysis
   • Literary terms
   • Listening and speaking
   • Reading skills and strategies
   • Note taking skills
   • Testing taking skills
   • Critical thinking

Texts: A variety of texts will be used to further develop students' skills and strategies.

Assessment: Periodic assessment will be given to monitor student progress.

ENGLISH 10
Code: E441   Full Year (10) (1 credit) (rank weight 1.0)
Prerequisite: Pass English 9
See Honors English 10 description

For info on the NYS English Language Arts Stds & Core Curriculum see: http://www.emsc.nysed.gov/ciai/ela/elacore.htm.

HONORS ENGLISH 10
Code: E461   Full Year (10) (1 credit) (rank weight 1.04)
Prerequisite: Passed English 9 Honors with a grade of 85% or higher and teacher recommendation.

NOTE: Honors classes generally incorporate more reading, writing and discussion and at a higher level; use more challenging text books and other materials; and take a different final exam from the Regents classes.

COURSE CONCEPTS: Prejudice and Injustice

ESSENTIAL QUESTION: What makes people unwilling to respond to injustice?

QUOTATION: "The opposite of love is not hate, but indifference."

GUIDING QUESTION: Why do we repeat our mistakes?

ENGLISH

Areas of Study Include:
CORE LITERATURE:
- Art of Styling Sentences
- Night
- Of Mice and Men
- A Raisin in the Sun
- Twelfth Night or Taming of the Shrew
- Scarlet Letter (Honors)
- To Kill A Mockingbird
- Selections from The Bedford Reader (Honors)
- Maus

OPTIONAL TITLES:
- Princess Bride
- Animal Farm
- A Tale of Two Cities (Honors)
- The Good Earth (Honors)
- Nickle and Dimed
- The Bean Trees
- Their Eyes Were Watching God

LITERARY SKILLS/QUALITIES, AND TASKS: 6 TRAIT WRITING
- Poetry
- Non-Fiction
- Critical lens
- Journal and journal responses
- Analytical Essay
- Literary letter/ author letter
- Business letter
- Creative Writing
- Research paper/project
- Genre Essay
- Other literature based essays
- Independent Reading Assignments
- Listening activities and exercises
- Oral presentations
- Literary terms and devices
- Vocabulary and spelling study
- Grammar

Assessment: A departmental final exam based on the content, concepts and themes in the course will be administered in June. This final will count as 10% of the students' overall grade. The completion of a literacy portfolio will also be included in the students' final exam grade. This portfolio of student work will count as 10% of the overall grade.

For info on the NYS English Language Arts Stds & Core Curriculum see: http://www.emsc.nysed.gov/ciai/ela/elacore.htm.

ENGLISH 11 REGENTS
Code: E540   Full Year (11) (1 credit) (rank weight 1.0)
Prerequisite: Passed English 10 or English 10 Honors

COURSE CONCEPTS: Loss of innocence, Rite of passage, Self-identity

ESSENTIAL QUESTION: What does it mean to lose one's innocence?

GUIDING QUESTION: Why are values necessary in developing an identity and sense of self?

Areas of Study Include:
CORE LITERATURE:
- Oedipus Rex
- Catcher in the Rye
- Old Man and the Sea
- Macbeth
- Poems, short stories and essays

OPTIONAL LITERATURE:
- The Great Gatsby
- A Separate Peace
- The Crucible
- A Streetcar Named Desire
- The Glass Menagerie
- Our Town
- Ethan Frome
- The Secret Life of Bees

LITERARY SKILLS/QUALITIES, AND TASKS: 6 TRAIT WRITING
- Writing essays to communicate ideas
- Research paper techniques
- Avoidance of plagiarism
- Written responses to literature, including literary analysis
- Writing a persuasive essay
- Writing a comparison/contrast essay
- Listening to follow directions
- Listening for information
- Listening to evaluate
- Reading strategies to increase comprehension
- Critical reading skills
- Critical thinking skills
- Independent Reading
- Vocabulary and spelling study
- Grammar and usage
- Oral presentations
- MLA documentation
- Avoidance of Plagiarism
- Preparation for the Comprehensive English Regents Exam
- Literature Circles

LITERACY PORTFOLIO: All students are expected to keep a literacy portfolio

Final Exam is Comprehensive Regents Exam = 50% of final exam grade, portfolio = 25% of final exam grade and research paper/project = 25% of final exam grade

For info on the NYS English Language Arts Stds & Core Curriculum see: http://www.emsc.nysed.gov/ciai/ela/elacore.htm.

ADVANCED PLACEMENT - LANGUAGE AND COMPOSITION - HONORS
Code: E563   Full Year (11) (1 credit) (rank weight 1.06) (1.04 Honors)
Prerequisite: Must have successfully completed Honors English 10 with high marks and excellent writing skills. Students are accepted only by departmental selection and approval.

COURSE CONCEPTS: Loss of innocence, Rite of passage, Self -identity

ESSENTIAL QUESTION: What does it mean to lose one's innocence?

GUIDING QUESTION: Why are values necessary in developing an identity and sense of self?

ENGLISH

Areas of Study Include:
LITERARY WORKS:
FULL LENGTH WORKS (may include, but not limited to):
- Catcher in the Rye
- Ethan Frome
- A Separate Peace
- A Streetcar Named Desire
- Narrative of the Life of Frederick Douglass
- The Bell Jar
- Our Town
- The Crucible
- The Glass Menagerie
- Beloved
- The Adventures of Huckleberry Finn
- The Great Gatsby
- Macbeth
- Oedipus Rex
- The Writing Life

ADDITIONAL TEXTS (may include, but not limited to):
- Advanced Placement Writing I (The Center for Learning)
- Everything's an Argument with Readings (Bedford)
- The Everyday Writer
- The Language of Composition (Bedford/St. Martin's)
- The Art of Styling Sentences (Barrons)

OBJECTIVES: By the end of the course, students should be able to:
- analyze and interpret samples of good writing, identifying and explaining an author's use of rhetorical strategies and techniques;
- apply effective strategies and techniques in their own writing;
- create and sustain arguments based on readings, research, and/or personal experience;
- demonstrate understanding and mastery of standard written English as well as stylistic maturity in their own writing;
- write in a variety of genres and contexts, both formal and informal, employing appropriate conventions;
- produce expository and argumentative compositions that introduce a complex central idea and develop it with appropriate, specific evidence, cogent explanations, and clear transitions; and
- move effectively through the stages of the writing process, with careful attention to inquiry and research, drafting, revising, editing, and review.

(adapted from Professional Development for AP English Language and Composition, 2005)

Assessments (may include, but not limited to):
- Rhetorical Analysis (fiction, non-fiction)
- Oral Presentations
- Argument Analysis
- Business Letter
- Synthesis Essay
- Thesis Paper
- Regents Exam Essays
- Creative Writing
- Research Paper/Project
- Book Review
- In-class Timed Essays
- College Board AP English Language and Composition Examination – May

Final Exam: NYS Comprehensive Regents Examination in January counts as 50% of final exam grade. Research paper/presentation = 25% of final exam grade. Literacy portfolio = 25% of final exam grade.

NOTE: This course, equivalent to a first year college course, is designed for the exceptional student writer who wishes to accept the challenge of a college-level writing course. Students enrolling in this course are expected to take the Advanced Placement English Language and Composition Test.

Those not taking the test will have their transcripts changed to indicate English 11 Honors rather than AP.

For info on the NYS English Language Arts Stds & Core Curriculum see: http://www.emsc.nysed.gov/ciai/ela/elacore.htm.

For info on AP English Language Arts & Composition see: http://apcentral.collegeboard.com/apc/public/courses/teachers_corner/2123.html

SENIOR ENGLISH

All senior level courses will address the New York State ELA standards and literacy competencies at the commencement level. Seniors will particularly focus on narration, description, exposition, argumentation and persuasion, as well as a reinforcement of all research skills, with a particular emphasis on MLA style. There will be a continued emphasis on close textual reading for analytical purposes.

ENGLISH 12 - DUTCHESS COMMUNITY COLLEGE ENGLISH 101/102
Code: E664   Full Year (12) (1 credit) (rank weight 1.06)
Prerequisite: Must have passed English 11 and the English Regents exam with an 85+ average and passed the DCC admissions test. Students must also have the recommendation of their grade 11 English teacher.

Areas of Study Include:
- Principles of college writing
- Narrative and expository writing
- Argumentative writing
- Traditional rhetorical modes
- Effective composing, revising and editing strategies
- MLA conventions
- Critical reading skills
- Critical thinking skills
- Using language appropriately and imaginatively
- Literature as writing models
- Critical analysis of literature
- Author's style, language, and syntax
- Development of analytical writing skills
- Deconstructing literature

TEXTS INCLUDE BUT NOT LIMITED TO:
- A Brief Sundance Reader (Heinle)
- Norton Anthology of Literature (W.W. Norton &Company)
- Hamlet
- The Things They Carried
- Death of a Salesman
- Literature: Reading Fiction, Poetry, Drama, and the Essay (McGraw-Hill)

Assessment: For each semester a research paper and or written final exam is required by Dutchess Community College.

NOTE: Successful completion of DCC 101/102 with a grade of C or higher will earn students 6 college credits.

For info on the NYS English Language Arts Stds & Core Curriculum see: http://www.emsc.nysed.gov/ciai/ela/elacore.htm.

ENGLISH 12 -
HUMANITIES IN WRITING & LITERATURE
Code: E671   Full Year (12) (1 credit) (rank weight 1.0)
Prerequisite: passed English 11

COURSE CONCEPT: Definition and development of self

ESSENTIAL QUESTION: How does art, literature, media and music through the ages influence the 21st Century American experience?

This course will explore the American experience to create an understanding of how major cultural events/movements have produced modern American culture. While the emphasis will be on literature and writing, the curriculum also addresses art, film, social movements and the historical context that shape them.

Areas of Study Include:
  • A college/personal essay
  • Research project
  • Plagiarism avoidance
  • Career unit
  • Public speaking
  • Critical thinking, reading, and writing
  • Listening activities and exercises
  • Oral presentations
  • Literary terms and devices
  • Vocabulary from literature
  • Grammar
  • Literature and art of major periods and cultural movements
  • Presentation of various projects

CORE LITERATURE:
  • Antigone
  • Hamlet
  • Death of a Salesman
  • The Things They Carried (selections)
  • A Room of One's Own
  • Various poetry, short stories and essays

OPTIONAL LITERATURE:
  • Medea
  • 1984
  • Brave New World
  • The Inferno

Assessment: A mid-term exam will be administered. A departmental final exam will be determined by the research project (50%) and the literacy portfolio (50%).

For info on the NYS English Language Arts Stds & Core Curriculum see: http://www.emsc.nysed.gov/ciai/ela/elacore.htm.

ENGLISH 12 -
ADVENTURES IN WRITING & LITERATURE
Code: E672   Full Year (12) (rank weight: 1.0)
Prerequisite: passed English 11

COURSE CONCEPT: Exploration of the journey of the human spirit in literature

ESSENTIAL QUESTION:
What do adventures teach us about ourselves?

This course will explore the boundless human spirit of adventure. As a result of adventures, whether they be the thrill-seeking variety or interior journeys, the self is developed and defined.If one circumnavigates the globe or tests his or her mettle from the comfort of an armchair, the resilience of the human spirit persists. The unlimited capacity to grow is revealed with each new challenge.

Areas of Study Include:
  • A college/personal career unit essay
  • Research project
  • Plagiarism avoidance
  • Public speaking
  • Critical thinking, reading, and writing
  • Listening activities and exercises
  • Oral presentations
  • Literary terms and devices
  • Vocabulary from literature
  • Grammar
  • Adventure literature exploring the themes of
     - Definition and development of self
     - Conformity
     - Isolation
     - Personal growth and conflict

CORE LITERATURE:
  • In the Heart of the Sea
  • Hamlet
  • Death of a Salesman
  • The Things They Carried (selections)
  • Various poetry, short stories and essays

OPTIONAL TEXTS:
  • Antigone
  • Into the Wild
  • It's Not About the Bike
  • Swimming to Antarctica
  • The Greatest Generation
  • In the Heart of the Sea
  • Lord of the Flies
  • The Maltese Falcon
  • The Hobbit
  • Selected Works from: Approaching Literature in the 21st Century
  • One Flew Over the Cuckoo's Nest
  • On the Road
  • Childhood's End

Assessment: A mid-term exam will be administered. A departmental final exam will be determined by the research project (50%) and the literacy portfolio (50%).

For info on the NYS English Language Arts Stds & Core Curriculum see http://www.emsc.nysed.gov/ciai/ela/elacore.htm.

ENGLISH 12 -
CONTEMPORARY CULTURAL IDENTITIES
Code: E673   Full Year (12) (rank weight: 1.0)
Prerequisite: passed English 11 or permission

COURSE CONCEPT:
Discovery of our identities through literature and popular culture

ESSENTIAL QUESTION:
How is twenty-first century life shaped by literary, artistic, musical, and popular cultural expressions?

This course will explore how authors, both contemporary and traditional, are telling their stories in new and inventive ways. We will explore the writings of authors from various cultures and backgrounds in an effort to define for ourselves who we are within the world around us. The role of the community in shaping the individual will also be examined.

Areas of Study Include:
- Career Unit
- A college/personal essay
- Research paper/project
- Plagiarism avoidance
- Public speaking/oral presentations
- critical thinking, reading and writing
- Listening activities and exercises
- Literary terms and devices
- Vocabulary from Literature and units of study
- Grammar
- Poetry
- Modes of Writing
- Literature Circles
- Rhetorical Modes: Narration, Exposition, Argument and Debate

CORE LITERATURE
- Hamlet
- Death of a Salesman
- The Things They Carried (selections)
- Rhetorical Modes: Narration, Exposition, Arguement, Debate

SELECTED WORKS FROM
- Approaching Literature in the 21st Century
- Literature Across Cultures

OPTIONAL LITERATURE
- Multicultual Short Stories
- Selections of Immigrant Literature
- Poetry Selections
- The Whale Rider
- Various pieces of journalism
- The Greatest Generation
- Lord of the Flies
- Dracula

Assessment: A midterm exam will be administered. A departmental final will be determined by the research paper/project (50%) and the literacy portfolio (50%).

For info on the NYS English Language Arts Stds & Core Curriculum see; http://www.emsc,nysed/gov/.ciai/ela/elacore.htm

ADVANCED PLACEMENT - LITERATURE & COMPOSITION - HONORS
Code: E681   Full Year (12)   (1 credit) (rank weight 1.06) (1.04 Honors)
Prerequisite: Must have successfully completed English 11 or English 11AP with high marks and excellent writing skills and passed the English Regents. Students are accepted only by departmental selection and approval.

Course Objectives: AP English is a college level English course. Our focus is on close, critical reading of poetry, drama, prose fiction, and expository literature from the sixteenth century to the present, written in English. Critical discussion and writing about these works will center on each writer's technique, theme, style, and tone. The overarching goal of AP English is to help develop mature habits of critical thinking as an independent reader of and writer about literature.

Areas of Study Include:
LITERATURE:
- Sound and Sense textbook
- Gulliver's Travels
- Heart of Darkness
- 1984
- Invisible Man
- All Quiet on the Western Front
- Jane Eyre
- Antigone
- Shakespeare: Hamlet, King Lear
- Notes from Underground
- Slaughterhouse Five
- Brave New World
- Waiting for Godot
- Rosecrantz and Guildenstern are Dead
- The Things They Carried
- Death of a Salesman
- Utopia
- Frankenstein
- Moby Dick
- Selected poems
- Essays and articles which enhance the understanding of principal texts
- AP examination and practice material

EVALUATION AND ASSESSMENT:
- Regular writing assignments, projects, analytical discussions
- Oral reports given approximately once or twice each quarter
- Literary Criticism Project
- College Application Essay
- Class participation
- Senior portfolio project
- The AP Examination

Final Exam: The final exam grade will be based on the student reflection and analysis project and will count as 20% of the students average.

NOTE: This course, equivalent in difficulty to a second year college English course, is designed for the exceptional student who wishes to accept the challenge of a college-level literature and writing course.

Students enrolling in this course are expected to take the Advanced Placement English Literature and Composition Test. Those not taking the test will have their transcripts changed to indicate English 12 Honors rather than AP.

For info on the NYS English Language Arts Stds & Core Curriculum see: http://www.emsc.nysed.gov/ciai/ela/elacore.htm.

For info on AP English Language Arts & Composition see: http://apcentral.collegeboard.com/apc/public/courses/teachers_corner/2123.html

SEMESTER ELECTIVE COURSES
These courses do not fulfill the English 12 graduation requirement. The following are semester courses that may be used for elective credit in grades 11 and 12. Based on enrollment and staffing, courses may not be offered.

SCIENCE FICTION AND POPULAR CULTURE
Code: E731   Half Year (11 or 12) (½ credit) (rank weight: 1.0)
Prerequisites: None

Even the most perfect world man can conceive is flawed. Students will explore the definition and characteristics of such dystopias by reading modern and classic sci-fi, investigating theories and cultural allusions behind the works, and analyzing films in the sci-fi genre. In addition, we will analyze what these pieces say about our current society and the future of the human race.

Areas of study include:
- Dystopian science fiction novels such as: 1984, Fahrenheit 451, Slaughterhouse Five, The Handmaid's Tale, and Brave New World
- Selected short stories and poems by authors like Richard Brautigan. Isaac Asimov, H.G. Wells, and Kurt Vonnegut
- Nonfiction work selections by authors like Joseph Campbell, Stephen Hawking, and Tom Wolfe
- Films such as Metropolis (1927), Star Wars (1977), Blade Runner (1982) and The Matrix (1999)
- Student generated creative writing inspired by course readings and authors' styles as well as research in related areas of interest.
- Analysis of how sci-fi pieces both reflect the society and culture of the times and look forward to the positive and negative aspects of where we are headed as a people and planet

Assessment: Students will complete various projects. A final project will count as 20% of the student's final average in the course.

SHAKESPEARE
Code: E733   Half Year (11,12) (½ credit)   (rank weight: 1.0)
Prerequisites: none

Areas of Study Include:
- Shakespeare, the man
- The Elizabethan Age
- The plays as performance pieces
- Othello
- King Lear
- The Tempest
- Measure for Measure
- Henry
- The Sonnets

Assessment: Final exam and or research project will count as 20% of the student's final grade.

NOTE: This course is excellent preparation for college English and as a supplementary course for the AP Literature Exam.

WRITERS WORKSHOP
Code: E737   Half Year (11,12) (½ credit)   (rank weight: 1.0)
Prerequisites: none

This is a course for the student who enjoys writing creatively. A writing journal is required of all students. A critical aspect of this class is reading and discussing all students' work in a supportive community of writers.

Areas of Study Include:
- Formulating ideas
- Techniques of writing poetry and prose
- Studies of appropriate models
- Drafting and revising
- Preparing for publication

Assessment: Students will complete various projects. A final project will count as 20% of the student's final average in the course.

MEDIA WRITING & COMMUNICATION
Code: E738   Half Year (11,12) (½ credit)   (rank weight: 1.0)
Prerequisites: none

This course will focus on writing for different types of media including television, film and print. Students will be required to master appropriate speaking techniques and writing styles and apply those to the production of television broadcasts, short films, commercials, and news articles. Participation in various production projects that will necessitate out of class involvement will be required. There will also be several readings by leaders in the field of visual and print media.

Areas of Study Include:
- Media theory
- Mass communication
- Media ethics
- Writing for the camera
- Broadcast news
- Journalistic writing

Assessment: Students will complete various projects. A final project will count as 20% of the student's final average in the course.

ELA SKILLS AND INTERVENTIONS

ENGLISH LANGUAGE ARTS SKILLS I
Code: E640 (10) (½ credit) (full year every other day)
Prerequisite: Must have passed English 9

This course is intended for identified students who need to further develop their literacy skills in order to be successful in their course work. An emphasis will be placed on essential skills and strategies to help students read, write, listen, think, and speak effectively.

Areas of study Include but are not limited to:
- Reading ,writing, listening and speaking for information
- Reading, writing, listening and speaking for critical analysis
- Listening and note taking skills
- Evaluation of different literary genres
- Use of standard English for effective communication
- Tools for reading, writing, and thinking
- Test taking strategies
- Writing workshop
- Six-Trait writing

Texts: A variety of texts will be used to further develop students' skills and strategies.

ENGLISH LANGUAGE ARTS SKILLS II
Code: E740 (11) (½ credit) (full year every other day)
Prerequisite: Must have passed English 10

This course is intended for identified students who need to further develop their literacy skills in order to be successful in their course work and the English Regents exam. An emphasis will be placed on essential skills and strategies to help students read, write, listen, think, and speak effectively.

Areas of Study Include but are not limited to:
   • Reading ,writing, listening and speaking for information
   • Reading, writing, listening and speaking for critical analysis
   • Listening and note taking skills
   • Evaluation of different literary genres
   • Use of standard English for effective communication
   • Tools for reading, writing, and thinking
   • Test taking strategies
   • Writing workshop
   • Six-Trait writing

Texts: A variety of texts will be used to further develop students' skills and strategies.

Assessment: Completion of class projects and assignments. Periodic progress monitoring will assess each student's skill development.

HOLOCAUST STUDIES
Code: E782 (D782)   Half Year (11 or 12)(½ credit) Rank Weight 1.0
Prerequisites: none

This course will deal with the uniqueness and universality of this momentous event in the history of mankind. It will examine the causes as well as the events of the Holocaust. Participants will study its effect on the course of humanity during the five subsequent decades. The class will consist of historical readings, fictional accounts, films and guest speakers. There will be a variety of written assignments as well as a research project.

Areas of Study Include:
   • Understanding of Terminology
   • History of Anti-Semitism
   • Factors Leading Up to World War II
   • Rise of Hitler and Nazism - 1921 - 1933
   • Hitler's Dictatorship
   • WWII and the Holocaust

Assessment: Students will complete various projects. A final project will count as 20% of the student's final average in the course.

THEATRE COURSES

THEATRE I
Code: E810   Full year (9-12)   (1 Credit)(rank weight 1.0)
Prerequisite: None

ESSENTIAL QUESTIONS: Why have human beings throughout the ages produced theatre? What can we discover about ourselves as individuals by producing theatre?

This course is an introduction to theatre arts. It is a participatory course in which students will learn basic stage movement and voice training, introductory acting and improvisational techniques as well as back stage elements such as lighting and costuming. It is intended for both the student who has always wanted to try her/his hand at the stage as well as the student who has had a real interest in performing

Areas of Study Include:
   • Forms and purposes of the theatre throughout various stages of history
   • Production process
   • Performance workshops
   • Emergence of the theatre
   • The rise of public theatre
   • Contemporary theatre

Assessment: Evaluation will be ongoing. It will be based on participation, grades, acting exercises, written projects, reading assignments, final projects and tests

NOTE: This course may be used to meet the 1 unit Regents Art/Music graduation requirement.

THEATRE II
Code: E820   Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Must have successfully completed Theatre I or have permission of the instructor.
This course is a continuation of Theatre I for the advanced student.

Areas of Study Include:
PLAY ANALYSIS:
   • Active reading of scripts
   • Structure
   • Given circumstances
   • Four Clues to Characterization

THEATRE HISTORY:
   • Historical figures in theatre (Checkov, Brecht, Stanislavsky, Shakespeare, etc.)
   • Epochs in theatre history

PRODUCTION WORK:
   • Set design
   • Costume design
   • Prop plan
   • Lighting and sound

PERFORMANCE:
   • Dramatic interpretation
   • Working with stage directions
   • Technical acting skills
   • Students take on the roles of actors and directors

CRITICISM:
   • Written critiques of in-class productions
   • Written critiques of school plays and professional productions (viewed on DVD)
   • Read professional criticism of Broadway plays
   • Leadership in the theatre:

Assessment: Evaluation will be ongoing. It will be based on participation grades, acting exercises, written projects, reading assignment, final projects and tests.

FINE AND PERFORMING ARTS

Part 100 of the Regulations of the Commissioner of Education requires all students to complete one full credit of art, one full credit of music, or ½ credit of each (art/music) before graduating. Art Workshop and/or Music Workshop are the recommended courses for meeting this basic requirement. One credit can be earned by taking any full year course in art or music (note prerequisites).

For those majoring in art, Studio-In-Art comprehensive foundation courses provide the first of the minimum of three credits required in a sequence. It is strongly recommended that students earn a grade of 75 or better to insure success in next level courses.

Students majoring in music have the following minimum requirements:

1. Participation in a major ensemble for four years.
2. Registering for two music electives over a three year span - one of which must be Music Theory.

Highly recommended but not mandatory:

1. Registering for Applied Music study for a minimum of two years.
2. Instrumentalists make every effort to register for Chorus.
3. The "every day" option be elected in courses that have three day and five day sections.

The creation of musical compositions/art work is an integral component of many art and/or music courses. Student work may be used during courses for instruction, promotion/publicity and/or publication. Ownership and/or copyright will be retained by the student.

SEQUENCES COMBINING ART AND MUSIC COURSES

Three Unit Sequence in Fine Arts
Studio-In-Art (or Studio-In-Art/Ceramics/3-D Design/Photomedia/Communications Systems)
- 1 credit in a Musical Knowledge course (Music Workshop Full Year or Music Theory I)
- 1 credit in Music or Visual Arts

Five Unit Sequence in Fine Arts
Studio-In-Art (or Studio-In-Art/Ceramics/3-D Design/Photomedia/Communications Systems)
- 1 credit in a Musical Knowledge course (Music Workshop Full Year or Music Theory)
- 3 credits in Music or Visual Arts

SEQUENCES IN VISUAL ARTS

Three Unit Sequence in Art Education (Comprehensive Visual Arts)
Studio-In-Art (or Studio-In-Art/Ceramics/3-D Design/Photomedia/Communications Systems)
- 2 credits in Advanced Art, observing prerequisites

Five Unit Sequence in Art Education
Studio-In-Art (or Studio-In-Art/Ceramics/Photomedia/Communications Systems)
- Additional credits in Art courses, observing prerequisites.

SEQUENCES IN MUSIC

Three Unit Sequence in Music Education
- 3 credits with representation in both the areas of Musical Knowledge (full year courses) and Skill Development (see flow chart).

Five Unit Sequence in Music Education
- 5 credits with representation from areas of Musical Knowledge (full year courses) and Skill Development. Both areas represented by a minimum of two units of credit.

FINE AND PERFORMING ARTS

Skill Development Courses:

BAND

CHORUS

STRING ORCHESTRA

SYMPHONY ORCHESTRA

Musical Development Courses:

LEVEL 1
(no pre-requisite course required)

LEVEL 2
(Level 1 pre-req. course required)

Music Workshop
Music In Our Lives

(Full Credit or 1/2 credit)

→ Music Theory I

Music Theory I

→ Music Theory II

Advanced Placement
Music Theory

ART: Full Year Sequences:

LEVEL 1 → **LEVEL 2** → **LEVEL 3** → **LEVEL 4** →

PHOTOGRAPHY & PHOTOMEDIA

F635 SIA / Photomedia → **F615** *(Pre-req: F635)* Media Arts II → **F631** *(Pre-req: F635, F615 AND F622)* Media Arts III

F622 *(Pre-req: F635)* Photography II → **F630** *(Pre-req: F635, F615 AND F622)* Photography III

F626 Broadcast Arts *(Pre-req: Any FY Art -- no art credit)*

DRAWING, PAINTING & PRINTMAKING

F587 Studio-In-Art → **F596** *(Pre-req: F587)* Advanced Art I → **F597** *(Pre-req: F596)* Advanced Art II → **F642** *(Pre-req: F597)* AP Studio Art (Drawing Portfolio)

F640 *(Pre-req: F597)* Portfolio Development

COMMUNICATIONS & DESIGN

I-100 SIA / Communication Systems → **F590** *(Pre-req: I-100 or F587)* Advertising Design

CERAMICS

F591 SIA / Ceramics → **F592** *(Pre-req: F591)* Ceramics II → **F632** *(Pre-req: F592)* Ceramics III

F594 SIA / Sculpture *(Pre-req: F591, F607 or F587)* → **F638** *(Pre-req: F594)* Sculpture II

SCULPTURE & 3-D DESIGN (CRAFTS)

F607 SIA / 3-D Design (Crafts) → **F608** *(Pre-req: F607)* 3-D Design II → **F637** *(Pre-req: F608)* 3-D Design III

ART: Full Year Electives (non-sequence):

F644 AP Art History *(recommended for juniors & seniors)*

F626 Broadcast Arts *(Pre-req: Any FY Art course; doesn't count for art credit)*

F613 DesignWorks – Full Year

ART: Half Year Courses:

F611 DesignWorks A – 1st Semester

F612 DesignWorks B – 2nd Semester *(Pre-req: F611 DesignWorks A)*

F735 SIA Photomedia – Half Year

F707 SIA 3-D Design – Half Year

F791 SIA Ceramics – Half Year

STUDIO-IN-ART

Code: F587   Full Year (9-11)   (1 credit) (rank weight 1.0)
Prerequisite: Recommendation of Art Staff

This course is a demanding, full-year foundation course designed to meet the Art/Music graduation requirement for art majors. It is the first course in the Drawing, Painting, and Printmaking sequence and is the prerequisite for Advanced Art I and Advertising Design.

Areas of Study Include:
- Drawing skills developed as a basis for work in:
  - Painting
  - Printmaking
  - Three-dimensional design
- Perceptual skills development
- Elements & principles of Art and Design
- Career options
- Portfolio development

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from district assessments and objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook assignments, and the WCSD Portfolio Assessment results.

For the complete NYS Core Curriculum for the Arts, see:
http://www.emsc.nysed.gov/ciai/arts.html

STUDIO-IN-ART/COMMUNICATIONS SYSTEMS

Code: I100   Full Year (9-12)   (1 credit) (rank weight 1.0)
Prerequisite: None

NOTE: This foundation course can be used for Technology credit and to meet the Art/Music graduation requirement.

Students will spend a year exploring visual and technical concepts as they apply to contemporary communication systems. Students will document all work and maintain a digital portfolio for course assessment. This course is taught collaboratively by the departments of Technology and Fine Arts.

Areas of Study Include:
- Development and role of communication systems
- Digital photography
- Tradition/Computer illustration and printing processes
- Sound and radio applications
- Fiber optics
- News writing and communication graphics
- Digital video applications
- Career options

Assessment: Student evaluation is reflected in the numerical grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in projects, written critical analysis of art work, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see:
http://www.emsc.nysed.gov/ciai/cores

STUDIO-IN-ART/3-DIMENSIONAL DESIGN

Code: F607   Full Year (9-12)   (1 credit)
F707   Half Year (9-12)   (½ credit)   (rank weight 1.0)
Prerequisite: None

This course is a demanding foundation course designed to meet the Art/Music graduation requirement. Students will develop studio skills, including drawing skills, while creating functional as well as aesthetic art. It is a prerequisite for 3-D Design/Crafts II and Studio-In-Sculpture.

Areas of Study Include:
- An introduction to a wide variety of art experiences through:
  - Design and production of 3-D objects utilizing various materials which may include: metal, plaster, clay, wire, and/or glass
  - Portfolio Development
  - Sketchbooks
- Career options

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from district assessments and objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook assignments, and the WCSD Portfolio Assessment results.

For the complete NYS Learning Standards for the Arts, see:
http://www.emsc.nysed.gov/ciai/arts.html.

STUDIO-IN-ART/CERAMICS

Code: F594   Full Year (9-12)   (1 credit)
F791   Half Year (9-12)   (½ credit)   (rank weight 1.0)
Prerequisite: None

This course is a demanding foundation course designed to meet the Art/Music graduation requirement. Several weeks of the Full Year course are spent on developing skills on the potter's wheel. It is a prerequisite for Ceramics II and Studio-in-Sculpture.

NOTE: Students who take the ½ year class (F791) and wish to continue, must then take F594.

Areas of Study Include:
- An introduction to a wide variety of art experiences including:
  - Ceramic hand building techniques including pinch, coil, slab and sculpture
  - Glazing and painting
- Development of drawing skills
- Portfolio Sketchbooks
- Historic and contemporary ceramic work and traditions
- Digital Portfolio (as computers are available)
- Career options

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from district assessments and objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook assignments, and the WCSD Portfolio Assessment results.

For the complete NYS Learning Standards for the Arts, see:
http://www.emsc.nysed.gov/ciai/arts.html.

STUDIO-IN-ART/PHOTOMEDIA

Code: F635   Full Year (9-12)   (1 credit)
F735   Half Year (9-12)   (½ credit)   (rank weight 1.0)
Prerequisite: None

NOTE: All students are required to maintain a portfolio of their work. A 35mm camera is needed for this course. Students are also required to purchase film and photography paper.

This course is a demanding foundation course designed to meet the Art/Music graduation requirement. It is a prerequisite for Photography II and Media Arts II.

Areas of Study Include:
- An introduction to a wide variety of art experiences through:
  - Fundamentals of photography
  - Black & White film processing
  - Printing from Black & White negatives
  - Composition exercises using a variety of materials
  - A journal that includes illustrations, resource materials and writing
  - Elements of art and principles of design as applied to photography and computer art
  - Portfolio development
- Career options
- Full-year course includes:
  - Computer art
  - Use of light in studio setting for portrait product and still-life photography
  - Multi-media learning experiences
  - Experimental darkroom processes

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from district assessments and objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook assignments, and the WCSD Portfolio Assessment results.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

STUDIO-IN-ART/DESIGNWORKS A

(Previously titled Studio-In-Art/Art Workshop A)
Code: F611   1st Semester (9-12) (½ credit) (rank weight 1.0)
Prerequisite: None

STUDIO-IN-ART/DESIGNWORKS B

(Previously titled Studio-In-Art/Art Workshop B)
Code: F612   2nd Semester (9-12)   (½ credit) (rank weight 1.0)
Prerequisite: Studio-In-Art/DesignWorks A

STUDIO-IN-ART/DESIGNWORKS - FULL YEAR

(Previously titled Studio-In-Art/Art Workshop – Full Year)
Code: F613   Full Year (9-12)   (1 credit) (rank weight 1.0)
Prerequisite: None

NOTE: For students desiring an art sequence, enrollment in Studio-In-Art (F587) is suggested.

This course is a demanding foundation course designed to meet the Art/Music graduation requirement for non-art majors. Art making in a variety of media will be explored, visual learning capacities will be identified and developed, and interdisciplinary connections will be utilized. After the successful completion of DesignWorks, students may elect to advance to a foundation level Studio-In-Art class in Ceramics (F594), Photomedia (F635), 3-D Design (F607), or Drawing & Painting (F587).

Areas of Study Include:
- An introduction to a wide variety of art experiences through:
  - Sculpture (modeling clay work, constructions)
  - Print making (monoprints, collagraphs)
  - Design (2-D, 3-D exercises with art elements)
  - Painting (exploring basic color theory)
  - Drawing (exercises in improving drawing skills)
- Portfolio Development
- Sketchbooks
- Career Options

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from district assessments and objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook assignments, and the WCSD Portfolio Assessment results.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

BROADCAST ARTS

Code: F626   Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Any full year art or music course or with permission of instructor (including 9th grade students)

This course will cover the various facets of video production and sound production, editing, and broadcast journalism. Students produce news segments to be aired on "WCSD On The Air". It does not satisfy the one credit foundation course graduation requirement; however, it can be applied as an elective credit in a sequence.

Areas of Study Include:
- Audio-video recording methods and techniques
  - Prepare broadcast ready pieces
  - Record, edit and mix sound
- The art of interviewing
- Story board design
- Copyright laws and their application
- Portfolio development
- Career options

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

3-D DESIGN/CRAFTS II

(Previously titled Advanced Creative Crafts)
Code: F608   Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Studio-In-Art/3-D Design, full year

This course is designed to develop in students the advanced techniques and skills of the studio crafts media, while creating functional as well as aesthetic art.

Areas of Study Include:
- Development of advanced skills and techniques in:
  - Design and production of advanced 3-D objects utilizing various materials which may include metal, plaster, clay, wire, and/or glass
  - Portfolio development
  - Sketchbooks
- Career options

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

FINE AND PERFORMING ARTS - ART

CERAMICS II
(Previously titled Advanced Ceramics)
Code: F592   Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Studio-In-Art/Ceramics, full year

This course is designed to develop in students the advanced techniques and skills of the studio ceramics medium.

Areas of Study Include:
- Development of advanced skills and techniques in:
  - Wheel-throwing of clay
  - Hand-building of clay
- Glaze technology and application
- An analysis of various ceramic traditions, historical/cultural
- Drawing skills
- Sketchbook
- Sculpting in clay (with wheel and hand)
- Portfolio (including a digital portfolio as technology is available)
- Career options

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

STUDIO-IN-SCULPTURE
Code: F594   Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Studio-In-Art/3-D Design or Studio-in-Art/Ceramics, or permission of the instructor

This course is designed to develop in students the aesthetic and technical experience to understand, create and appreciate sculpture.

Areas of Study Include:
- Development of advanced dexterity, sensitivity and technique to control a variety of media which may include: wood, clay, wire, metal, stone, plaster, and/or recycled materials
- Self-expression in advanced three-dimensional forms
- Development of drawing skills
- Portfolio development
- Career options

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

PHOTOGRAPHY II
(Previously titled Advanced Photography)
Code: F622   Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Studio-In-Art/Photomedia, full year with a final average of 80 or higher.

This course is designed to develop in students advanced techniques and skills of photography. Assignments are aimed at enriching the expressive use of the camera and darkroom. A research paper, portfolio, oral report, and critique may be required.

Areas of Study Include:
- Development of advanced skills and techniques in areas such as:
  - Color film use and printing
  - Experimental film (high contract infrared)
  - Copy-stand work and macro photography
  - Mixed media processes
  - Technology (computer, digital camera, software applications)
  - Studio and environmental portraiture
  - Still life/Advertising photography
- 4 x 5 camera usage
- Portfolio development
- Career options

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

MEDIA ARTS II
(Previously titled Advanced Media)
Code: F615   Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Studio-In-Art/Photomedia,full year with a final average of 80 or higher.

NOTE: Availability of equipment, student experience, and interest will determine the area of greatest concentration.

This course is designed to develop in students the advanced techniques and skills of the media arts.

Areas of Study Include:
- Development of advanced skills and techniques in areas such as:
  - Electronic imaging
  - Video production
  - Copier art
  - Creative sound
  - Computer graphics
  - Image transfer techniques
  - Animation (computer, stop-motion, claymation)
  - Portfolio development
- Career options

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

FINE AND PERFORMING ARTS - ART

ADVERTISING DESIGN
Code: F590　Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Studio-In-Art, F587

This course is an introduction to advertising design and commercial art. Learning situations will incorporate ad clients from the school and community. Computer and video equipment will be used as available.

Areas of Study Include:
- Basic design concepts and skills:
  - Layout
  - Lettering
  - Composition pasteup
  - Color separation
  - Mechanicals
- Product and package design
- Portfolio development
- Computer and Video technology (as available)
- Career options

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

ADVANCED ART I – DRAWING AND PAINTING
Code: F596　Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Studio-In-Art, F587

This course is designed to develop in students skills from a study of criteria-based design and drawing techniques as a foundation for advanced work. Visual problem-solving skills will be developed through the examination and analysis of artists' work. The combined emphasis on skills and concepts will enable students to begin to develop personal statements in their work. This is the second course in the Drawing & Painting sequence and is the prerequisite for Advanced Art II. Students are recommended into this course by their art instructor based on their performance in prior art courses.

Areas of Study Include:
- Advanced painting
- Print making
- Mixed media
- Three-dimensional work
- Portfolio development
- Career options

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

ADVANCED ART II – DRAWING AND PAINTING
Code: F597　Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Advanced Art I

This course is designed to provide continued emphasis in the development of visual observation, critical analysis and problem-solving skills through instruction and exploration of two-dimensional materials and techniques. Students will begin to explore potential topics and themes that will provide direction and work for personal, college and Advanced Placement portfolios. Career topics will be explored in the context of interdisciplinary potential as well as personal development. This is the third course in the Drawing & Painting sequence and is the prerequisite for Advanced Placement Studio Art. Students are recommended into this course by their art instructor based on performance in prior art courses.

Areas of Study Include:
- Advanced painting
- Printmaking
- Mixed media
- Portfolio development
- Career options
- Portfolio construction
- Contemporary themes in art
- Critical analysis of works

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

ADVANCED PLACEMENT STUDIO ART
Code: F642　Full Year (10-12) (1 credit) (rank weight 1.06)
Prerequisite: Advanced Art II or permission from instructor

NOTE: The fee set by the College Board is the responsibility of the student.

Advanced Placement Studio Art is a College Board certified course designed to provide instruction that culminates in a portfolio submission to the AP College Board for foundation level college credit. The focus of the course is the development of perceptual, problem-solving, and critical thinking skills to meet this goal. Observational work in two-dimensional media is required for this portfolio submission. Students are also required to formulate work that reflects personal investigation of thematic content and visual strategies for a concentration portion of their portfolio. This is the final course in the Drawing & Painting sequence. Students are recommended into this course by their art instructor based on their performance in prior art courses.

Areas of Study Include:
- Advanced painting
- Printmaking
- Mixed media
- Portfolio development
- Career options
- Portfolio construction
- Contemporary themes in art
- Critical analysis of works

FINE AND PERFORMING ARTS - ART

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

PORTFOLIO DEVELOPMENT
Code: F640   Full Year (11-12) (1 credit) (rank weight 1.0)
Prerequisite: Advanced Art II or permission from instructor

This course is recommended for art majors who are in the process of completing their art course sequence. They will continue to develop the advanced skills and techniques initiated in Advanced Art I and II. Portfolios will be developed that reflect personal ideas and skill in several media.

Areas of Study Include:
- Development and recording of a comprehensive college, entry level portfolio
- College/employment application process
- Career options and training opportunities

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in art work, written critical analysis of art work, sketchbook, portfolio, and other assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

ADVANCED PLACEMENT ART HISTORY
Code: F644   Full Year All Days (11-12)   (1 credit) (rank weight 1.06)
Prerequisite: None

NOTE: Students may earn college credit based on the results of the AP exam. The fee set by the College Board is the responsibility of the student.

This course is a chronological study, covering both Eastern and Western art from Prehistory to the present. There is an emphasis on major artists, styles, themes, issues, and cultural influences on art.

Areas of Study Include:
- Discussion and writing about art using art vocabulary
- A multi-media review of art movements
- Field trips to local museums to apply art history knowledge and observation skills
- Power point research of art periods and artists
- Oral presentations

Assessment: Student evaluation is reflected in the art grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including oral presentations, research and other projects, and written critical analysis of art work.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

ADVANCED COURSE OFFERINGS IN VISUAL ARTS

These upper level offerings are for the student who has successfully completed all courses in the discipline of choice. The following criteria must also be met:
- Students must be able to work independently
- Students must be open to criticism and suggestions
- Students must possess a mature work ethic
- Students will develop goals with the art instructor and work toward higher levels of creative development through portfolio creation and public exhibition of their work
- Students must complete all prerequisites
- Students must submit a portfolio
- Students must maintain a minimum average of 85 for all prerequisites

For the complete NYS Core Curriculum for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html

PHOTOGRAPHY III
(Previously titled Advanced Studies in Photography)
Code: F630   Full Year (11-12) (1 credit) (rank weight 1.0)
Prerequisites: Studio-In-Art/Photomedia, Photography II

MEDIA ARTS III
(Previously titled Advanced Studies in Media Arts)
Code: F631   Full Year (11-12) (1 credit) (rank weight 1.0)
Prerequisites: Studio-In-Art/Photomedia, Media Arts II

CERAMICS III
(Previously titled Advanced Studies in Ceramics)
Code: F632   Full Year (11-12) (1 credit) (rank weight 1.0)
Prerequisites: Studio-In-Art/Ceramics, Ceramics II

3-D DESIGN/CRAFTS III
(Previously titled Advanced Studies in Three-Dimensional Design)
Code: F637   Full Year (11-12) (1 credit) (rank weight 1.0)
Prerequisites: Studio-In-Art/3-D Design, 3-D Design/Crafts II

SCULPTURE II
(Previously titled Advanced Studies in Sculpture)
Code: F638   Full Year (11-12) (1 credit) (rank weight 1.0)
Prerequisites: Studio-In-Art/3-D Design or Studio-In-Art/ Ceramics, Studio-In-Sculpture

FINE AND PERFORMING ARTS - MUSIC

NINTH GRADE BAND

Code: N654   Full Year (9)   (1 credit) All days   (rank weight 1.0)
Prerequisites: Demonstrated performance ability on one of the traditional band instruments and the successful completion of the instructional sequence of the earlier bands or permission of the instructor.

NOTE: Members are expected to participate in concerts and rehearsals held after school hours, as well as in in-school rotational lesson classes on their major instrument.

Areas of Study Include:
- Skills, habits, and techniques necessary for fine band performance
- Performances of ensemble music of a variety of styles
- Knowledge of and an appreciation for various styles of music
- Performance in many public concerts throughout the year
- Career options

Assessment: Student evaluation is reflected in the music grade, a composite of a student's achievement and performance in lesson and ensemble classes. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in performance, home assignments, and District-wide assessment results.

For the complete NYS Learning Standards for the Arts, see:
http://www.emsc.nysed.gov/ciai/arts.html.

CONCERT BAND

Code: N635   Full Year (10-12) (1 credit) All days
(rank weight 1.0)
Prerequisite: Successful completion of Ninth Grade Band or permission of the instructor

NOTE: Members are expected to participate in concerts and rehearsals held after school hours, as well as in in-school rotational lesson classes on their major instrument.

Areas of Study Include:
- Performance of compositions of varied difficulties and styles
- Skills, habits, and techniques necessary for fine band performance
- Performance in many public concerts throughout the year
- Career options

Assessment: Student evaluation is reflected in the music grade, a composite of a student's achievement and performance in lesson and ensemble classes. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in performance, home assignments, and District-wide assessment results.

For the complete NYS Learning Standards for the Arts, see:
http://www.emsc.nysed.gov/ciai/arts.html.

SYMPHONIC BAND (JJ)

Code: N632   Full Year (10-12) (1 credit) All days
(rank weight 1.0)
Prerequisite: A high degree of proficiency as an instrumentalist.

WIND ENSEMBLE (RCK)

Code: N649   Full Year (10-12) (1 credit) All days   (rank weight 1.0)
Prerequisite: A high degree of proficiency as an instrumentalist

NOTE: Membership is gained by audition or permission of the instructor. These groups are in great demand for performance both in school and the community, and members must be willing to give the mandatory extra time. Students are expected to participate in concerts and rehearsals held after school hours, as well as in in-school rotational lesson classes on their major instrument.

Areas of Study Include:
- Skills, habits, and techniques necessary for fine band performance
- Performance of highly challenging compositions of a wide variety of styles
- Knowledge of and an appreciation for various styles of music
- Performance in many public concerts throughout the year
- Career options

Assessment: Student evaluation is reflected in the music grade, a composite of a student's achievement and performance in lesson and ensemble classes. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in performance, home assignments, and District-wide assessment results.

For the complete NYS Learning Standards for the Arts, see:
http://www.emsc.nysed.gov/ciai/arts.html.

ORCHESTRA

Code: N655   Full Year (9-12)   (1 credit) All days
N656   Full Year (9-12)   (½ credit)   Every other day
(rank weight 1.0)
Prerequisites: Demonstrated performance ability on one of the traditional orchestral instruments and successful completion of the instructional sequence of the earlier orchestras or permission of the instructor

NOTE: String Orchestra students should enroll in N655 Full Year. Permission of the instructor is required for N656 (every other day). Symphony Orchestra wind and percussion students may enroll in N656 every other day with permission of the instructor. Students are expected to participate in concerts and rehearsals held after school hours, as well as in in-school rotational lesson classes on their major instrument.

Areas of Study Include:
- Skills, habits, and techniques necessary for fine orchestra performance
- Performance of a wide variety of styles of music
- Knowledge of and an appreciation for various styles of music
- Performance in many public concerts throughout the year
- Career options

Assessment: Student evaluation is reflected in the music grade, a composite of a student's achievement and performance in lesson and ensemble classes. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in performance, home assignments, and District-wide assessment results.

For the complete NYS Learning Standards for the Arts, see:
http://www.emsc.nysed.gov/ciai/arts.html.

FINE AND PERFORMING ARTS - MUSIC

Please note that membership in any of the performing organizations requires attendance at concerts and rehearsals that may be held beyond the school day.

MIXED CHORUS
Code: N643   Full Year (9-12)   (1 credit) All days
N646   Full Year (9-12)   (½ credit)   Every other day
(rank weight 1.0)
Prerequisite: None

NOTE: The every other day option may be selected only with permission of the instructor. Students are expected to participate in concerts and rehearsals held after school hours. Students desiring a singing role in the musical productions are encouraged to be members of the chorus.

Areas of Study Include:
- Skills, habits and techniques necessary for fine choral performance
- Performance of choral music of all styles
- Knowledge of and appreciation for various styles of music
- Performing in many public concerts throughout the year
- Career options

Assessment: Student evaluation is reflected in the music grade, a composite of a student's achievement and participation in ensemble classes. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in performance and home assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

MUSIC THEORY I
Code: N651   Full Year (9-12)   (1 credit) (rank weight 1.0)
Prerequisite: Ability to read music (treble clef) or permission of the instructor

NOTE: The full year course can be used in Music or Fine Arts sequences. This course is designed to meet the Art/Music graduation requirement.

Areas of Study Include:
- Aural skills
- Listening exercises
- Sight-singing skills
- Performance exercises
- Written skills through written exercises
- Compositional skills and creative exercises
- Analytical skills and analytical exercises
- Composition

Assessment: Student evaluation is reflected in the music grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in performance and home assignments.

For the complete NYS Core Curriculum for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

MUSIC THEORY II
Code: N658   Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Music Theory I

NOTE: The full year course can be used in Music or Fine Arts sequences.

Areas of Study Include:
- Aural skills
- Listening exercises
- Sight-singing skills
- Performance exercises
- Written skills through written exercises
- Composition

Assessment: Student evaluation is reflected in the music grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in performance and home assignments.

For the complete NYS Core Curriculum for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

ADVANCED PLACEMENT MUSIC THEORY
Code: N664 Full Year (10-12) (1 credit) (rank weight 1.06)
Prerequisite: Music Theory I

NOTE: This provides the opportunity for advanced music students to develop a deeper sense of musical values and the necessary skills for involved musical expression. The option of AP credit in Music Theory II (on the recommendation of the instructor) is for the mature, self-directed student. The fee set by the College Board is the responsibility of the student. The full year course can be used in Music or Fine Arts sequences.

Areas of Study Include:
- Aural skills
- Listening exercises
- Sight-singing skills
- Performance exercises
- Written skills through written exercises
- Composition
- Melodic and harmonic dictation
- Composition of a bass line for a given melody, implying appropriate harmony
- Realization of a figured bass
- Realization of a Roman numeral progression
- Analysis of repertoire, including melody, harmony, rhythm, texture and form
- Sight-singing

Assessment: Student evaluation is reflected in the music grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in performance and home assignments.

For the complete NYS Core Curriculum for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

FINE AND PERFORMING ARTS - MUSIC

MUSIC WORKSHOP

Code: N659   Full Year (9-12)   (1 credit)
**   N700   Half Year (9-12)   (½ credit)   (rank weight 1.0)**
Prerequisite: None

NOTE: May be offered every other day, all year. The full year course can be used in Music or Fine Arts sequences. The half year course is not for students in a music sequence or for music majors.

This course is designed to meet the Art/Music graduation requirement. It will offer "hands-on" music-making experiences with various instruments (as available): computers, keyboards, guitars, dulcimers, percussion instruments.

Areas of Study Include:
- Composition
- Basic Theory
- Musical styles
- Performance
- Musical Theater
- Music Technology
- Career options

Assessment: Student evaluation is reflected in the music grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in performance and home assignments.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

APPLIED MUSIC OR PRIVATE MUSIC STUDY

Code: N267   (9-12)   (no credit)
Prerequisite: Two years of private lessons

If a student takes private music lessons in voice, piano, or another musical instrument acceptable to the department, they are eligible to have this documented on the high school transcript.

Requirements:
- Candidates for N627 must be regularly registered as high school students.
- Before being admitted, the student must have completed at least 2 years in private study. It is highly recommended that the student have more than 2 years of study.
- The pupil must practice a minimum of 5 hours a week, keeping a record of such practices on a form provided by the department.
- Materials must be of appropriate difficulty, challenging, and be of acceptable musical value.
- No composition below NYSSMA Manual Grade 3 in difficulty will be acceptable.
- The student must play for a school examiner at the close of each semester.
- The approval of the Applied Music instructor and the selection of the examiner is the responsibility of the Coordinator for Fine and Performing Arts.

NOTE: It is important that the parent and/or student speak with the school music teacher in September. The WCSD Fine and Performing Arts Applied Music application form must be submitted with the required information and signatures.

For the complete NYS Learning Standards for the Arts, see: http://www.emsc.nysed.gov/ciai/arts.html.

HEALTH

HEALTH EDUCATION

Code: J441   1st Semester
J442   2nd Semester (10-12) (½ credit)
Prerequisite: None

Areas of Study Include:
- Consumer Health
- Disease Prevention
- Healthy Relationships
- Drug Awareness/Prevention
- Mental Health
- AIDS Education
- Alcohol Education
- Nutrition and Exercise
- Stress Management
- Tobacco Education
- Decision Making
- Environmental Health
- Safety
- Human Growth and Development
- Wellness

NOTE: This course is State mandated and the credit is necessary for graduation.

This curriculum empowers the students with the knowledge and skills needed to examine and make health-related decisions. Knowledge in the areas of environmental, social, physical and medical sciences assist students in making responsible and informed decisions regarding healthy behaviors.

Assessment: A department final exam based on the content, concepts and themes in this curriculum.

For a complete review of the NYS Health Standards, see: http://emsc33.nysed.gov/guides/health/partI1.pdf, pp. 6-11

For the complete NYS core curriculum for Health, see: http://emsc33.nysed.gov/guides/health/partI1.pdf, pp. 21-30

LIBRARY MEDIA CENTER

The School Library Media Center is at the core of academic excellence. Librarians collaborate with classroom teachers to interweave thinking and research skills into assignments. They also provide a wide array of materials for students' informal and recreational needs.

Today's school libraries are centers of print and non-print resources. Books, media, and electronic references are chosen to supplement and complement curriculum, and stimulate students interests.

It is the library's responsibility to foster a love of reading and learning while providing equal access to all students to the information they need to be successful in school and in life.

MATHEMATICS

The Department of Mathematics provides all students with courses of study required to meet the State's standards. Our objective is to develop in each student an understanding of mathematics that lasts a lifetime and grows to meet changing demands.

As an alternative to the Integrated Algebra, Geometry, Algebra 2 and Trigonometry, or Mathematics B Regents examinations, students may use any of the exams listed below.

**MINIMUM ACCEPTABLE SCORES FOR APPROVED ALTERNATIVES
TO REGENTS EXAMINATIONS IN MATHEMATICS**

ALGEBRA

Approved Alternative Examination	Minimum Acceptable Score
Advanced International Certificate of Education (AICE) Mathematics Examination	E
Advanced Placement Calculus AB Examination	3
Advanced Placement Calculus BC Examination	3
International Baccalaureate Mathematics Studies Standard Level Examination	4
International Baccalaureate Mathematics Methods Standard Level Examination	4
International Baccalaureate Mathematics Higher Level Examination	3
International General Certificate of Secondary Education (IGCSE)	A
SAT II Mathematics Level IC	470
SAT II Mathematics Level IIC	510
MATHEMATICS B, ALGEBRA 2 and TRIGONOMETRY	
Advanced placement Calculus AB Examination	3
Advanced placement Calculus BC Examination	3
SAT II Mathematics Level IIC	550

A commencement level course in technology education may be used as third unit of credit in mathematics or science but not both.

CALCULATOR RECOMMENDATIONS

The TI-83/84 family Graphing Calculator is recommended for all math classes. Additionally, the TI-89 is recommended for AP Calculus AB and BC. Calculators are used daily in classroom activities.

MATHEMATICS

REGENTS DIPLOMA FOR STUDENTS ENTERING 9th GRADE IN 2007 AND THEREAFTER

<table>
<tr><th colspan="3">3 YEARS REQUIRED</th><th colspan="2">RECOMMENDED 4th/5th YR. OF MATH</th></tr>
<tr>
<td>Algebra H →
(8th grade)
(see note below)</td>
<td>Geometry H →
(9th grade)</td>
<td>Algebra 2 & Trig H →
(10th grade)</td>
<td>AP Calculus BC →
(11th grade)</td>
<td>Multivariable Calculus
Linear Algebra or AP Statistics
(12th grade)</td>
</tr>
<tr>
<td>Algebra →
(9th grade)</td>
<td>Geometry →
(10th grade)</td>
<td>Algebra 2 & Trig →
(11th grade)</td>
<td colspan="2">Pre-Calculus or AP Calculus AB or AP Statistics
(12th grade)</td>
</tr>
<tr>
<td>Algebra 1A→
(9th grade)</td>
<td>Algebra 1B →
(10th grade)</td>
<td>Geometry N →
(11th grade)</td>
<td colspan="2">Algebra 2N
(12th grade)</td>
</tr>
<tr>
<td>Algebra 1A→
(9th grade)</td>
<td>Algebra 1B →
(10th grade)</td>
<td>Financial Math
(11th grade)</td>
<td colspan="2"></td>
</tr>
</table>

ALL students must pass the NYS Algebra Regents exam. This exam will be given in June each year following the Algebra course.

*Important Note: In keeping with the NYS Commissioner of Education's Part 100.4 regulations, the following criteria will be used to determine accelerated high school credits using the Algebra Honors course and the Integrated Algebra **Regents examination:**

- Students accelerated in grade eight who pass the Algebra H course and pass the NYS Integrated Algebra Regents exam in June of their 8th grade year, will receive one high school credit.
- If a student passes the Algebra H course but fails the NYS Integrated Algebra Regents exam, no high school credit for grade eight will be awarded.
- Students who fail the Algebra H course will receive no credit regardless of whether they pass or fail the Integrated Algebra Regents exam.

ADVANCED REGENTS DIPLOMA

In addition to passing the NYS Algebra Regents exam, students seeking an advanced Regents diploma must pass the NYS Geometry and NYS Algebra 2 & Trigonometry Regents exams with at least a 65%.

MATHEMATICS

ALGEBRA 1A

Code: M331   Full Year (9)   (1 credit) (rank weight 1.00)
Prerequisite: None
Recommendation: For those with less than a 70% average in Math 8.

NOTE: This is the first year of a two-year program that prepares students for the NYS Algebra Regents exam. This course is designed for students who work at a slower pace.

Areas of Study Include:
- Pre-Algebra
  - Plotting Points on the Coordinate Plane
  - Rounding, Estimating, Place Value
  - Operations with Fractions, Equivalent Fractions, Proportions
  - Absolute Value
  - Operations with Signed Numbers
  - Properties of Real Numbers, Closure
  - Order of Operations
  - Evaluating Algebraic Expression
- Operations with Algebraic Expressions
  - Adding Algebraic Expressions
  - Subtracting Monomials
  - Subtracting Polynomials
  - Multiplying Powers with the Same Base
  - Multiplying Monomials
  - Multiplying a Monomial by a Polynomial
  - Multiplying Binomials
  - Dividing Powers with the Same Base
  - Zero and Negative Exponents
  - Scientific Notation
  - Dividing a Monomial and a Polynomial by a Monomial and a Polynomial
- Solving Linear Equations and Inequalities
  - Translating Verbal Phrases
  - Letters to Represent Variables
  - Writing Algebraic Expressions
  - Solving All Types of Linear
  - Equations in One Variable
  - Solving Literal Equations
  - Solving Verbal Problems
  - Solving Algebraic Proportions
  - Solving Linear Inequalities
  - Solving Verbal Inequality Problems
- Euclidean Geometry
  - Perimeter and Area of Polygons
  - Circumference and Area of a Circle
  - Reasoning with Area and Perimeter, Shaded Area
  - Volume of Rectangular Solid and Cylinder
  - Surface Area of Rectangular Solid and Cylinder
- Measurement, Proportions and Percents
  - Converting Fractions, Percents and Decimals
  - Introduction to Ratio and calculate rate using appropriate units
  - Verbal Problems involving Ratio
  - Proportion, Direct Variation
  - Percent and Percentage Problems
  - Percent of Increase and Decrease
  - Relative Error in Measuring Square and
  - Cubic Units when there is an Error in Linear Measure
  - Solve Problems Involving Conversions Within Measurement Systems, Given the Relationship Between Units

- Graphing Linear Functions
  - Graphing Linear Functions Using Their Solutions
  - Graphing a Line Parallel to an Axis
  - The Slope of a Line
  - Slopes and Parallel Lines
  - The Intercepts of a Line
  - Graphing Linear Functions Using Their Slopes
  - Graphing Direct Variation
  - Graphing First Degree Inequalities in Two Variables
- Solving Systems of Equations and Inequalities
  - Writing the Equation of a line
  - Writing and Equation Given Intercepts
  - Graphing Systems of Linear Equations
  - Solving Systems Algebraically
  - Using Systems of Equations to Solve Verbal Problems
  - Graphing Systems of Inequalities
- Statistics
  - Collecting Data/Organizing Data
  - Classify as Univariate, Bi-variate, Quantitative, Qualitative
  - Sampling Bias
  - Histograms
  - Mean/Median/Mode/Range
  - Linear Transformation of Univariate data affecting the measures of Central Tendency
  - Measures of Central Tendency
  - Quartiles, Percentiles, & Cumulative Frequency
  - Box & Whisker
  - Scatter Plot
  - Types of Relationships
  - Line of Best Fit
  - Writing an Equation
  - Interpolate/Extrapolate
  - Difference Between Correlation & Causation

Assessment: Algebra 1A students will take a district-wide exam at the end of the 2nd quarter and a district-wide final exam in June. They will take the NYS Algebra Regents exam after completing Algebra 1B.

For the complete NYS Core Curriculum for Algebra, see page 90 of: http://www.emsc.nysed.gov/3-8/MathCore.pdf

ALGEBRA 1B

Code: M431   Full Year (10) (1 credit) (rank weight 1.00)
Prerequisite: Algebra 1A

Areas of Study Include:
- Radicals
  - Rational and Irrational Numbers
  - Principal Square Roots and Simplifying
  - Add/Subtract Radicals
  - Multiplying Radicals
  - Dividing Radicals
- Factoring
  - Factors and Factoring
  - Common Monomial Factoring
  - Square of a Monomial
  - Multiplying the Sum and Difference of Two Terms
  - Difference of Two Perfect Squares
  - Multiplying Binomials
  - Factoring Trinomials
  - Factoring completely

MATHEMATICS

- Fractions
    - What is an Algebraic Fraction?
    - Simplifying Fractions
    - Multiplying Fractions
    - Dividing Fractions
    - Multiplying and Dividing Fractions
    - Add/Subtract with Common Denominators
    - Add/Subtract with Uncommon Denominators (monomials only)
    - Solving Equations with Fractional Coefficients
    - Solving Inequalities with Fractional Coefficients
    - Solving Fractional Equations
- Quadratics
    - Solving Quadratic Equations by Factoring
    - Quadratic Proportions
    - Using Quadratic Equations to Solve Problems
    - Graph of a Quadratic Function
    - Graphing the Equation of a Circle
    - Graphic Solution of a Quadratic/Linear System
    - Algebraic Solutions
    - Exponential Growth and Decay
    - Graphing Exponential Functions
    - Graphing Absolute Value
    - Determininng when a Relation is a Function
- Right Triangle Trigonometry
    - Pythagorean Theorem
    - Tangent Ratio
    - Tangent Problems
    - Sine Ratio
    - Sine Problems
    - Cosine Ratio
    - Cosine Problems
    - Mixing Sine/Cosine/Tangent Problems
- Probability
    - Sets, Set Notation, Venn Diagrams, Interval Notation
    - Empirical, Theoretical, Simple
    - And, Or, Not
    - Counting Principal
    - With and Without Replacement
    - Two or More Events
    - Permutations

Assessment: Algebra 1B students will take a district-wide exam at the end of the 2nd quarter and the NYS Algebra Regents Examination in June. This Regents exam will be the final examination for the course.

For the complete NYS Core Curriculum for Algebra, see page 90 of: http://www.emsc.nysed.gov/3-8/MathCore.pdf

GEOMETRY N
Code: M441   Full Year (10, 11, 12) (1 credit) (rank weight 1.00)
Prerequisite: Algebra with a final average of <75% or Algebra 1B

Areas of Study Include:
- Logic
    - Sentences, Statements & Truth Values
    - Connectives in Logic
    - Truth Tables, Tautologies, & Logically Equivalent Statements
    - Law of the Contrapositive
- Introducing Geometry & Geometric Properties
    - Undefined Terms & Lines & Segments
    - Angles
    - Pairs of Angles
    - Perpendicular Lines
    - Triangles

- Triangle Proofs
    - SAS
    - ASA
    - SSS
    - AAS
    - HL
- Triangle Inequalities
    - Triangle Inequalities (lengths of sides)
    - Triangle Inequalities (exterior angle)
    - Triangle Inequalities (sides & angles)
    - Exterior Angles of Triangles
    - Interior & Exterior Angles of Polygons
- Quadrilaterals
    - Parallelograms
    - Rectangles
    - Rhombus
    - Squares
    - Trapezoids
- Coordinate Plane
    - Distance
    - Midpoint
    - Slope, Parallel & Perpendicular Lines
    - Proofs
    - Areas of Polygons
    - Graphing/Writing Linear Equations
    - Center-Radius Form
    - Graphing Circles
    - Graphing $y = ax^2 + bx + c$
    - Graphic Solutions of Quadratic Equations
    - Graphic Solutions of a Quadratic/Linear System
- Locus
    - Fundamental Loci
    - Coordinate Locus
    - Compound Loci
- Basic Constructions & Applications
- Transformational Geometry
    - Line reflections/symmetry
    - Point reflections/symmetry
    - Translations
    - Rotations
    - Dilations
    - Transformations as Functions
    - Compositions/Symmetries
- Circles
    - Arcs and Angles
    - Arcs and Chords
    - Inscribed Angles
    - Tangents and Secants
    - Angles of Tangents, Secants and Chords
    - Segment Measures
- Volume
    - Pyramid
    - Cylinder
    - Cone
    - Sphere
- Surface Area
    - Pyramid
    - Cylinder
    - Cone
    - Sphere

Assessment: Geometry N students will take a district-wide exam at the end of the 2nd quarter and a district-wide final exam in June.

MATHEMATICS

ALGEBRA 2N
Code: M541   Full Year (11, 12)(1 credit) (rank weight 1.00)
Prerequisite: Geometry with a final average of <75% or Geometry N

Areas of Study Include:
- Radical Expressions
  - Roots and Radicals
  - Simplifying a Radical
  - Add and Subtract Radicals
  - Multiply Radicals
  - Divide Radicals
  - Rationalizing a denominator
  - Solving Radical Equations
- Exponential Functions
  - Laws of exponents
  - Rational exponents
  - Exponential functions
  - Equations with rational exponents
  - Exponential equations
- Logarithmic Functions
  - Exponential functions and their inverses
  - Logarithmic form of an equation
  - Logarithmic relationships
  - Common logarithms-Exponential and logarithmic equations
- Factoring
  - Factoring: GCF, Difference of Squares
  - With a >1
  - Add with supplements:
  - Solving polynomial equations by
  - Factoring and/or Quad formula
- Complex Numbers
  - Imaginary numbers-Complex numbers
  - Add and Subtract complex numbers
  - Multiply complex numbers
  - Divide complex numbers & complex conjugates
  - Quadratic equations w/and w/o imaginary roots
  - Nature of the roots –Discriminant
  - Product/Sum of the Roots
- Rational Expressions
  - Simplifying rational expressions (Undefined)
  - Multiplying rational expressions
  - Dividing rational expressions
  - Add and Subtract rational expressions-same denominator
  - Add and Subtract rational expressions-different denominator
  - Simplifying Complex Fractions
  - Solving Rational Equations
- Relations & Functions
  - Relations & Functions
  - Function notation
  - Types of Functions
  - Compositions
  - Circles
  - Inverse Variation
- Trig Functions
  - The right triangle
  - Angles as rotations
  - Sine and cosine functions
  - Tangent function, values of special angles
  - Reference angles
  - Radian measure
  - (Arc length)
  - Reciprocal functions

- Trig Graphs
  - Unit circle, graphs of sine and cosine
  - Graph $y = \sin x$
  - Graph $y = \cos x$
  - Amplitude and Period
  - Sketching graphs
  - Graph $y = \tan x$
  - Graphs of reciprocal functions
  - Supplement when needed.

OPTIONAL TOPICS:
As time permits, add another optional topic, or review for final.
- Stats
  - Sigma notation, Measures of central tendency
  - Measures of dispersion (no mean abs. Dev.)
  - Standard deviation
  - Normal distribution
  - Grouped data
- Probability
  - Permutations & Combinations
  - Probability
  - Two outcomes (Bernouli)

Assessment: Algebra 2N students will take a district-wide exam at the end of the 2nd quarter and a district-wide final exam in June.

HISTORY OF MATHEMATICS
Code: M520   Full Year (11,12) (1 credit) (rank weight 1.00)
Prerequisite: Successful completion of 2 years of math

Areas of Study Include:
- Ancient Mathematics 1800bc-200bc
  - Egypt 1800bc
  - Babylonia 1700bc
  - India 500bc
  - China 200bc
- Beginning of Math in Greece
  - Pythagoras (572 – 497bc)
  - Plato (429 -347bc)
  - Aristotle (384 – 322bc)
- Euclid and The Elements
- More Math in Greece
  - Archimedes (287 – 212bc)
  - Apollonius (250 – 175bc)
  - Ptolemy (100 – 178ad)
  - Hypatia (370 – 415ad)
- Medieval China and India, Islam
  - Surveying and Astronomy
  - Solving Equations
  - Trigonometry
  - Algebra
  - Hindu-Arabic Decimal System
  - Math words with an Arabic base
- Math in Medieval Europe
  - Leonardo di Pisa (1170 -1240 ad)
  - Induction and Algebra
  - Jordanos De Nemore
  - Ratios
- Renaissance
  - Algebraic Symbolism and Techniques
  - Cardano (1501 – 1576)
  - Bombelli (1526 – 1572)

MATHEMATICS

- Viete (1540 – 1603)
- Stevin (1548 – 1620)
- John Napier (1550 – 1617)
- Mercator
- Logs and Astronomy
• Galileo (1564 – 1642)
• The 17th Century
  - Fermat (1601 -1665)
  - Descartes (1596 – 1650)
  - Girard, Fundamental Theorem of Algebra
  - Pascal (1623 – 1662)
• Calculus
  - Newton (1642 – 1727)
  - Leibniz (1646 – 1716)
• The 18th Century
  - The Bernoulli Brothers
  - Euler (1707 – 1783)
  - Lagrange (1736 – 1813)
  - Banneker (1731-1806)
• The 19th Century
  - Gauss (1777 – 1855)
  - Germaine (1776 – 1831)
  - Galois (1811 – 1832)
  - Boole (1815 – 1864)
  - Kovalerskaya (1850 – 1891)
  - Riemann (1826 – 1866)
• The 20th Century to Now
  - Noether (1882 – 1931)
  - Ramanyan (1187 – 1920)
  - Fermat's Last Theorem
  - John Nash
• *Flatland: A Romance of Many Dimensions by Edwin Abbott*

Assessment: Students will take a district-wide exam or complete a project in January and June.

INTRODUCTION TO COLLEGE MATH
Code:M645 Full Year(12)(1 credit)
Prerequisite: Algebra 2N
Recommendation: For those students who desire a 4th credit in math but who are not seeking an Advanced Regents diploma. (rank weight 1.00)

Areas of Study Include:
• Statistics
  - Sigma Notation
  - Measures of Central Tendency and Spread (including Standard Deviation)
  - Normal Distribution
  - Grouped Data
  - Linear Regression
• Probability
  - Counting Principle
  - "At Most" / "At Least"
  - Permutations and Combinations
  - Bernouli Trials
• Functions
  - Relations and Functions
  - Domain and Range
  - Function Notation
  - Types of Functions
  - Compositions
  - Special Relations and Functions
  - Inverse Functions

• Review of Factoring
  - GCF
  - Trinomials with a=1
  - Trinomials with a>1
  - Difference of Squares and Perfect Square Trinomials
• Advanced Factoring
  - By Grouping
  - Sum/Difference of Perfect Cubes
  - Quadratic Form
• Polynomial Functions and Operations
  - Synthetic Division
  - Rational Roots Theorem
  - Graphing Polynomial Functions
• Transformations of Functions
  - Ex. Sketch y=f(x). What does y =-f(x) look like?
  - Reflections
  - Vertical and Horizontal Stretching/Shrinking
  - Vertical and Horizontal Shifting
• Trigonometric Functions
  - Review of Right Triangle Trigonometry
  - Angles as Rotations
  - Sine and Cosine Functions
  - Tangent Function, Values of Special Angles
  - Reference Angles (No Interpolation)
  - Radian Measure
  - Reciprocal Functions
  - Pythagorean Identities
  - Find Remaining Trigonometric Function Values When One Is Known
• Trigonometric Applications
  - Law of Cosines
  - Area of a Triangle
  - Law of Sines
  - Forces
  - Solving Triangles
• Trigonometric Identities and Equations
  - Types of Equations
  - Basic Trigonometric Identities
  - Proving Trigonometric Identities
  - First Degree Trigonometric Equations
• Radical Expressions
  - Simplifying a Radical
  - Adding and Subtracting Radicals
  - Multiplying Radicals
  - Dividing Radicals
  - Rationalizing a Denominator
• Complex Numbers
  - Imaginary Numbers
  - Complex Numbers
  - Adding and Subtracting Complex Numbers
  - Multiplying Complex Numbers
  - Multiplicative Inverses and Dividing Complex Numbers
  - Solving Quadratic Equations with Imaginary Roots
• Optional: Conic Sections
• Optional: Matrices
  - Scalar Multiplication
  - Addition
  - Multiplication

Assessment: Students will take a district-wide exam/project in January and a district-wide final/project examination in June.

Textbook: *Integrated Mathematics Course III*, published by Amsco, ©1991

MATHEMATICS

ALGEBRA HONORS

Code: M371   Full Year (rank weight 1.04)
Prerequisite: Math 8 with an average of 92% or better and teacher recommendation

Areas of Study Include:
- Pre-Algebra
  - Absolute Value
  - Operations with Signed Numbers
  - Properties of Real Numbers, Closure
  - Evaluating Algebraic Expressions using Signed Numbers
  - Order of Operations
- Algebraic Expressions, Geometric Formulas, and Open Sentences
  - Translating Verbal Phrases
  - Letters to Represent Variables
  - Writing Algebraic Equations
  - Perimeter and Area of Polygons
  - Reasoning with Area and Perimeter
  - Shaded Area
  - Volume of Rectangular Solid and Cylinder
  - Surface Area of a Rectangular Solid and Cylinder
- Operations with Algebraic Expressions
  - Adding Algebraic Expressions
  - Subtracting Monomials
  - Subtracting Polynomials
  - Multiplying Powers with the Same Base
  - Multiplying Monomials
  - Multiplying a Monomial by a Polynomial
  - Multiplying Binomials
  - Dividing Powers with the Same Base
  - Zero and Negative Exponents
  - Scientific Notation
  - Dividing a Monomial by a Monomial
  - Dividing a Polynomial by a Monomial
- Solving Linear Equations and Inequalities
  - Preparing to Solve an Equation
  - Solving One Step Equations
  - Solving Equations in One Variable
  - Solving Literal Equations
  - Solving Verbal Problems
  - Solving Linear Inequalities
  - Solving Verbal Inequality Problems
- Measurement, Proportions, and Percents
  - Converting Fractions, Percents, and Decimals
  - Calculating Rate using Appropriate Units
  - Solving Problems Involving Conversions within Measurement Systems
  - Proportion
  - Percent and Percentage Problems
  - Percent of Increase and Decrease
  - Relative Error in Measuring Square and Cubic Units
  - Direct Variation
- Coordinate Geometry
  - Solutions of Open Sentences in Two Variables
  - Graphing Linear Functions Using Their Solutions
  - Graphing a Line Parallel to an Axis
  - The Slope of a Line
  - Parallel and Perpendicular Lines
  - The Slope-Intercept Form of an Equation
  - Graphing Linear Functions Using Their Slopes
  - Writing an Equation of a Line
  - Graphing First Degree Inequalities in Two Variables
- Systems of Linear Open Sentences in Two Variables
  - Using a Graph, Addition, and Substitution Methods to Solve a System of Linear Equations
  - Using Systems of Equations to Solve Verbal Problems
  - Graphing the Solution Set of a System of Inequalities
- Special Products and Factors
  - Factors and Factoring
  - Common Monomial Factors
  - The Square of a Monomial and Multiplying the Sum and the Difference of Two Terms
  - Factoring the Difference of Two Squares
  - Multiplying Binomials and Factoring Trinomials
  - Factoring a Polynomial Completely
- Algebraic Fractions, and Equations and Inequalities Involving Fractions
  - The Meaning of an Algebraic Fraction and Reducing
  - Fractions to Lowest Terms
  - Multiplying Fractions
  - Dividing Fractions
  - Adding and Subtracting Fractions
  - Solving Equations with Fractional Coefficients
  - Solving Fractional Equations
- Operations with Radicals
  - Radicals and Rational & Irrational Numbers
  - Finding the Principle Square Root of a Monomial
  - Simplifying a Square-Root Radical
  - Addition and Subtraction of Radicals
  - Multiplication of Square-Root Radicals
  - Division of Square-Root Radicals
- Quadratic Equations
  - The Standard Form of a Quadratic Equation
  - Solving a Quadratic Equation by Factoring
  - Solving Incomplete Quadratic Equations
  - Quadratic Proportions
  - Using Quadratic Equations to Solve Problems
  - The Graph of a Quadratic Function
  - Graphic Solution of Quadratic-Linear Systems
  - Algebraic Solutions
  - Exponential Growth and Decay
  - Graphing Exponential Functions
  - Graphing Absolute Value
- Right Triangle Trigonometry
  - Pythagorean Theorem
  - Direct and Indirect Measurements
  - Sine, Cosine, Tangent, and Applications
  - Trigonometric Ratios
  - Using the Trigonometric Ratios to Solve Problems
- Probability
  - Empirical and Theoretical Probability
  - Simple Probability Rules
  - And, Or, Not
  - Counting Principle
  - Two or More Events
  - Factorials
  - Permutations
- Statistics
  - Collecting Data/Organizing Data
  - Classify as Univariate, Bi-variate, Quantitative, Qualitative
  - Stem and Leaf Plot
  - Sampling Bias

- Histograms
- Mean, Median, Mode, Range
- Measures of Central Tendency
- Quartiles, Percentiles, Cumulative Frequency, and Cumulative Frequency Histogram
- Box & Whisker
- Scatter Plot
- Types of Relationships
- Line of Best Fit
- Writing an Equation
- Interpolate/Extrapolate
- Difference Between Correlation and Causation
- Linear Transformation of Univariate
- Data Affecting Range, Mean, Median and Mode

Assessment: Students will take a district-wide exam at the end of the 2nd quarter and the NYS Algebra Regents Examination in June. This Regents exam will be the final examination for the course and will count as 20% of the final course average.

For the complete NYS Core Curriculum for Algebra, see page 87 of: http://www.emsc.nysed.gov/3-8/MathCore.pdf

ALGEBRA

Code: M351   Full Year (9)   (1 credit) (rank weight 1.00)
Prerequisite: Math 8 with a >75% final average

NOTE: Algebra students will take the NYS Algebra Regents Examination in June. This Regents exam will be the final examination for the course.

Areas of Study Include:
- Pre-Algebra
  - Absolute Value
  - Order of Operations
  - Operations with Signed Numbers
  - Evaluating Algebraic Expressions using Signed Numbers
  - Properties of Real Numbers, Closure
  - Sets, Set Builder Notation, Interval Notation
  Venn Diagrams
- Algebraic Expressions and Operations
  - Translating Verbal Phrases
  - Letters to Represent Variables
  - Writing Algebraic Expressions
  - Adding Algebraic Expressions
  - Subtracting Monomials
  - Subtracting Polynomials
  - Multiplying Powers with the Same Base
  - Multiplying Monomials
  - Multiplying a Monomial by a Polynomial
  - Multiplying Binomials
  - Dividing Powers with the Same Base
  - Zero and Negative Exponents
  - Scientific Notation
  - Dividing a Monomial and Polynomial by a Monomial and a Polynomial
- Solving Linear Equations and Inequalities
  - Preparing to Solve an Equation
  - Solving One Step Equations
  - Solving Equations in One Variable
  - Solving Literal Equations
  - Solving Verbal Problems
  - Solving Linear Inequalities
  - Solving Verbal Inequality Problems
  - Using Formulas to solve Problems
  - Shaded Area Problems

- Surface Area of Rectangular Solids and Cylinder
- Volume of Rectangular Solids and Cylinder
- Measurement, Proportions, and Percents
  - Converting Fractions, Percents, and Decimals
  - Calculating Rate using Appropriate Units
  - Solving Problems Involving Conversions within Measurement Systems
  - Proportion/Direct Variation
  - Percent and Percentage Problems
  - Percent of Increase and Decrease
  - Relative Error in Measuring Square and Cubic Units
- Graphing Linear Functions and Relations
  - Sets, Relations, Functions
  - Solutions of Open Sentences in Two Variables
  - Graphing Linear Functions Using Their Solutions
  - Graphing a Line Parallel to an Axis
  - The Slope of a Line
  - Slopes and Parallel Lines
  - The Slope-Intercept Form of an Equation
  - Graphing Linear Functions Using Their Slopes
  - Graphing Direct Variation
  - Graphing First Degree Inequalities in Two Variables
  - Graphs Involving Absolute Values
  - Graphs Involving Exponential Functions (growth and decay problems)
- Writing and Solving Systems of Linear Equations
  - Writing the Equation of a Line
  - Writing an Equation given the intercepts
  - Using a Graph, Addition, and Substitution Methods to Solve a System of Linear Equations
  - Using Systems of Equations to Solve Verbal Problems
  - Graphing the Solution Set of a System of Inequalities
- Special Products and Factors
  - Factors and Factoring
  - Common Monomial Factors
  - The Square of a Monomial and Multiplying the Sum and the Difference of Two Terms
  - Factoring the Difference of Two Squares
  - Multiplying Binomials and Factoring Trinomials
  - Factoring a Polynomial Completely ($a>1$ only if a is the GCF)
- Algebraic Fractions, and Equations and Inequalities Involving Fractions
  - The Meaning of an Algebraic Fraction and Reducing
  - Fractions to Lowest Terms
  - Multiplying Fractions
  - Dividing Fractions
  - Adding and Subtracting Fractions
  - Solving Equations with Fractional Coefficients
  - Solving Fractional Equations
- Operations with Radicals
  - Radicals and Rational & Irrational Numbers
  - Finding the Principle Square Root of a Monomial
  - Simplifying a Square-Root Radical
  - Addition and Subtraction of Radicals
  - Multiplication of Square-Root Radicals
  - Division of Square-Root Radicals
- Quadratic Equations
  - The Standard Form of a Quadratic Equation
  - Solving a Quadratic Equation by Factoring
  - Quadratic Proportions

- Using Quadratic Equations to Solve Problems
- The Graph of a Quadratic Function
- Graphic Solution of Quadratic-Linear Systems
- Algebraic Solutions
• Right Triangle Trigonometry
- Pythagorean Theorem
- Sine, Cosine, Tangent Ratios and Applications
- Using the Trigonometric Ratios to Solve Problems
• Probability
- Empirical and Theoretical Probability
- Simple Probability Rules
- And, Or, Not
- Counting Principle
- Two or More Events
- Permutations
• Statistics
- Collecting Data/Organizing Data
- Classify as Univariate, Bi-variate, Quantitative, Qualitative
- Sampling Bias
- Histograms
- Measures of Central Tendency (including Linear Transformations of the data)
- Quartiles, Percentiles, and Cumulative Frequency
- Box & Whisker
- Scatter Plot
- Types of Relationships
- Line of Best Fit
- Writing an Equation
- Interpolate/Extrapolate
- Difference Between Correlation and Causation

Assessment: Students will take a district-wide exam at the end of the 2nd quarter and the NYS Algebra Regents Examination in June. This Regents exam will be the final examination for the course.

For the complete NYS Core Curriculum for Algebra, see page 87 of:
http://www.emsc.nysed.gov/3-8/MathCore.pdf

GEOMETRY – HONORS
Code: M481   Full Year (9,10)   (1 credit) (rank weight 1.04)
Prerequisite: Algebra Honors with at least an 85% final average in Algebra Honors or a 95% average in Algebra with teacher recommendation; mastery on Algebra Regents.

NOTE: Geometry students will take the NYS Geometry Regents Examination in June. This regents exam will be the final examination for the course.

Areas of Study Include:
• Reasoning & Logic
- Inductive Reasoning
- Conditionals, Equivalence Relations, & Biconditionals
- Deductive Reasoning
- Postulates & Properties
- Direct Proofs
• Essentials of Geometry
- Undefined Terms
- Lines & Segments
- Midpoint & Distance
- Angles
- Direct Proofs

- Pairs of Angles
- Classify Polygons
- Perimeter, Circumference, Area
• Locus
- Locus
- Fundamental Loci
- Coordinate Locus
- Compound Loci
• Constructions
- Basic Constructions
- Applications
• Parallel & Perpendicular Lines, Proofs, and Equations of Circles
- Slope, Parallel, Perpendicular
- Graphing/Writing Linear Equations
- Proofs (Coordinate)
- Areas
- Center-Radius Form
- Graphing Circles
- Quadratic-Linear System
• Parallel & Perpendicular Proofs
• Triangle Proofs
- Triangle Proofs
- Exterior Angles of Triangles
- SSS
- SAS/HL
- ASA/AAS
- Triangle Segments
- CPCTC
- Isosceles & Equilateral
- Congruent Triangles
- Overlapping Triangles
- Triangle Similarity
- Right Triangle Proportions
- Pythagorean Theorem
- Triangle Inequalities
• Quadrilaterals
- Interior/Exterior Angles of Polygons
- Quadrilaterals
- Parallelogram
- Rectangle, Rhombus, Square
- Trapezoid
• Transformations
- Line Reflections/Symmetry
- Point Reflections/Symmetry
- Translations
- Rotations
- Dilations
- Transformations as Functions
- Compositions/Symmetries
- Isometries
- Special Compositions
• Surface Area & Volume
- Three Dimensional Geometry
- Prisms
- Equal Volumes/Equal Areas
- Volumes
- Pyramids
- Cylinders
- Cones
- Sphere

- Circles
  - Arcs & Angles
  - Arcs & Chords
  - Inscribed Angles
  - Tangents and Secants
  - Angles of Tangents, Secants, Chords
  - Segment Measures
  - Review

Assessment: Students will take a district-wide exam at the end of the 2nd quarter and the NYS Geometry Regents Examination in June. This Regents exam will be the final exam for the course.

For the complete NYS Core Curriculum for Geometry, see page 100 of: http://www.emsc.nysed.gov/3-8/MathCore.pdf

GEOMETRY

Code: M451   Full Year (10, 11, 12) (1 credit) (rank weight 1.00)
Prerequisite: Algebra with a >75% final average, Algebra 1B with a >90% final average and teacher recommendation, or Geometry N with >85% final average and teacher recommendation.

NOTE: Geometry students will take the NYS Geometry Regents Examination in June. This regents exam will be the final examination for the course.

Areas of Study Include:
- Logic
  - Sentence, Statements, Truth Values, Conjunctions
  - Disjunctions, Conditionals, Inverse, Converse
  - Contrapositive
  - Biconditional
  - Laws of Logic
  - Drawing Conclusions
- Introducing Geometry
  - Properties, Undefined Terms
  - Lines and Segments
  - Midpoints and Bisectors
  - Rays and Angles, Angle Definitions and Relationships
  - Classifying Triangles
- Proving Statements in Geometry
  - Inductive reasoning
  - Biconditionals
  - Deductive Reasoning
  - Direct and Indirect Proofs
  - Postulates, Theorems, and Proof
  - Substitution Postulate
  - Addition and Subtraction Postulates
  - Multiplication and Division Postulates
- Congruence of Line Segments, Angles, and Triangles
  - Postulates of Lines, Line Segments, and Angles
  - Using Postulates and Definitions in Proof
  - Proving Theorems About Angles
  - Congruent Polygons and Corresponding Parts
  - SAS
  - ASA
  - SSS
- Congruence Based on Triangles
  - Triangle Vocabulary
  - CPCTC
  - Isosceles and Equilateral
  - Two Pairs of Congruent Triangles
  - Overlapping Triangles
  - Perpendicular Bisector of a Segment

- Geometric Inequalities
  - Basic Inequality Postulates
  - Addition and Subtraction
  - Multiplication and Division
  - Inequality Using Sides of Triangle
  - Inequality Using Exterior Angle of Triangle
  - Mix Sides and Angles
- Parallel Lines
  - Proving Lines Parallel
  - Properties of Parallel Lines
  - Triangle Sum Theorem
  - AAS
  - Converse of Isosceles Triangle Theorem
  - HL
- Ratio, Proportion, and Similarity
  - Ratio and Proportion
  - Proportions with Line Segments
  - Similar Polygons
  - Proving Polygons Similar
  - Similar Triangle Relationships
  - Centroid
  - Right Triangle Proportions
  - Pythagorean Theorem
  - Distance Formula
- Transformations and the Coordinate Plane
  - Line Reflections/Symmetry
  - Coordinate Line Reflections
  - Coordinate Point Reflections
  - Coordinate Translations
  - Coordinate Rotations
  - Glide Reflections
  - Coordinate Dilations/Similarity with Dilations
  - Transformations as Functions, Compositions, Special Compositions
- Slopes and Equations of Lines
  - Slope and Equation of a Line
  - Midpoint
  - Parallel Lines
  - Perpendicular Lines
  - Coordinate Proof with Triangles
  - Orthocenters
  - Quadratic-Linear Systems
- Quadrilaterals
  - Interior and Exterior Angles of Polygons
  - Parallelogram
  - Proving Parallelogram
  - Rectangle
  - Rhombus
  - Square
  - Trapezoid
  - Area of Polygons
- Circle Geometry
  - Arcs and Angles
  - Arcs and Chords
  - Inscribed Angles
  - Tangents and Secants
  - Angles of Tangents, Secants, and Chords
  - Segments Measures
  - Circles in the Coordinate Plane
  - Tangents and Secants in the Coordinate Plane
- Three Dimensional Geometry

- Points, Lines, and Planes
- Perpendicular Lines and Planes
- Parallel Lines and Planes
- Surface Area of a Prism
- Volume of a Prism
- Pyramids
- Cylinders
- Cones
- Spheres
• Locus and Constructions
  - Basic Constructions
  - Constructing Parallel Lines
  - Locus
  - Fundamental Loci
  - Coordinate Locus-Points
  - Coordinate Locus-Lines

Assessment: Students will take a district-wide exam at the end of the 2nd quarter and the NYS Geometry Regents Examination in June. This Regents exam will be the final exam for the course.

For the complete NYS Core Curriculum for Geometry, see page 100 of: http://www.emsc.nysed.gov/3-8/MathCore.pdf

MATH AIS - REGENTS PREP
Code: M401   First Semester
M402   Second Semester
(10-12) (No credit)

Academic Intervention Services (AIS) are mandated for all students who have failed the Algebra Regents exam. Students will be assigned to the course either five days a week or on an every other day basis. The student remains in the course until he/she passes the required Regents exam.

MATH AIS - FOR ALGEBRA
Code: M350   (9)   (½ credit)

Academic Intervention Services (AIS) are mandated for all students who have failed to meet the minimum standard on the NYS Math 8 Assessment. Students will be assigned to the course on an every other day basis. The goal of the course is to use research validated interventions and progress monitoring to improve basic mathematics skills.

ALGEBRA 2 & TRIGONOMETRY – HONORS
Code: M581   Full Year (10,11) (1 credit) (rank weight 1.04)
Prerequisite: Geometry Honors at least 85% final average in Geometry Honors or >90% average in Geometry with teacher recommendation; mastery on the Geometry Regents examination.

Areas of Study:
• Radicals Review
  - Radicals and Irrational Numbers
  - Simplifying, Operations
  - Rationalize the denominator
  - Solve Radical Equations
• Exponents and Logs
  - Laws of exponents
  - Fractional and negative exponents, Rewriting expressions
  - Evaluating exponential expressions
  - Exponential Functions Graphs
  - Exponential Growth and Decay Word Problems
  - Compound Interest and base e
  - Evaluating expressions with base e
  - Evaluating Logarithmic expressions in any base

- Properties of Logs and applications
- Graphs of logarithmic/change of base
- Solving exponential equations with and without common bases
- Solving logarithmic by rewriting as an exponential equation
• Quadratic Functions
  - Factoring a polynomial completely (Solve by factoring)
  - Solve by Quadratic Formula
  - Solve by Completing the Square
  - Discriminant, Nature of Roots
  - Sum and Product of Roots, write an Equation Given sum and product
  - Linear Quadratic systems Algebraically and Graphically
  - Linear and Absolute Value Inequalities
  - Quadratic Inequalities in one and two variable
• Complex Numbers
  - Writing square roots of negative numbers in terms of i, Simplifying powers of i
  - Operations with i , a+bi form
  - Conjugate of a complex number, Rationalize the denominator
  - Graphing Complex Numbers
• Functions and Function Notation
  - Functions/function notation, Defining a relation as a function, Determining if a relation is a function
  - Domain and Range
  - Evaluating functions within a given domain
  - Properties/Operations/Compositions on Functions
  - One to one, onto, or both
  - Define Inverse functions (1)
  - Determine inverse and use composition to justify
  - Direct and Inverse Variation
• Relations, Transformations with Functions and Relations
  - Equations of circles in center radius form, writing equations (given center and a point on the circle, from the graph)
  - Equations of Ellipses and Hyperbolas in Standard Form
  - Transformations with functions and relations Translation, Reflections, Dilation
• Polynomial Functions
  - Operations with Polynomial expressions with rational and irrational coefficients
  - Polynomial Functions: Factoring/Synthetic Division
  - Fundamental Theorem: Factor, Remainder, Rational Root, Complex and Irrational Roots
  - Graphing, various functions, extreme values
  - Approximations of solutions of higher degree by inspecting the graph
• Rational Expressions
  - Factoring Simplifying
  - Multiplying Dividing Rational Expressions
  - Adding and Subtracting with like and unlike denominators
  - Simplifying Complex Fractions
  - Solving Rational Equations and Inequalities
• Trigonometric Functions
  - Right Triangle Trig., Angle as Rotation, Sine and Cosine as Coordinates
  - Angles as Rotations, Radian measure, Conversions
  - Arc Length, Sectors of circles
  - Unit Circle, Exact Values
  - Sine, Cosine, and Tangent Functions (graphs)
  - Transformations with functions, Translation, Reflections, Dilation

MATHEMATICS

- Write equation given a graph without calculator
- Reference angles, Values based on Terminal Side
- Co-functions, Reciprocal Functions, Values
- Graphs of Reciprocal Trig Functions
- Inverse trig functions, Graphs, Restricted domains
- Determine trig functions of any angle using Technology
- Modeling Periodic Behavior Equations, Word Problems, Equations needing the calculator
• Trigonometric Equations and Identities
  - Simple trigonometric Equations
  - Pythagorean Identities
  - More Difficult Equations
  - Trigonometric Identity Proofs
• Trigonometric Applications
  - Solving Right Triangle
  - The Law of Sines, Law of Cosines
  - Area of a Triangle and Parallelogram, Applications of Trigo-nometry (vector type)
  - Ambiguous Case
  - Angle Sum and Difference Formulas
  - Double and Half Angle Formulas
• Statistics, Regressions
  - Different Types of Studies, Factors that affect outcome of a survey
  - Measures of Central Tendency, Frequency Distribution
  - Calculate Measures of Dispersions for samples and popula-tions
  - Normal Distribution
  - Scatter-plots and Regressions (all types)
  - Functions from regression model, interpolate and extrapo-late
  - Linear Correlation Coefficient and others
• Probability
  - Review Simple Probability
  - Differentiate between Permutations and Combinations
  - Calculating Permutations (by hand and calculator)
  - Calculating Combinations (by hand and calculator)
  - Counting principle, permutations, combinations, sample space
  - Calculating Theoretical Probabilities including geometrical applications
  - Calculating Empirical Probabilities
  - Binomial Probability Formula, exactly, at least, at most
  - Normal Distribution and an approximation for binomial probabilities
• Sequences and Series
  - Sigma Notation and Applications
  - Identify Arithmetic and Geometric Sequences
  - Common Difference in Arithmetic Series
  - Common Ratio in a Geometric Series
  - Determine a Specified Term in a sequence
  - Specify terms of a sequence, given its recursive definition
  - Represent the sum using Sigma Notation
  - Sum of first n terms
  - Binomial theorem to expand a binomial
  - Determine a specific term of a binomial expansion

Assessment: Students will take a district-wide exam at the end of the 2nd quarter and the NYS Algebra 2 & Trigonometry Regents Examination in June. This Regents exam will be the final exam for the course.

For the complete NYS Core Curriculum for Algebra 2 & Trigonometry, see page 113 of:
http://www.emsc.nysed.gov/3-8/MathCore.pdf

ALGEBRA 2 & TRIGONOMETRY
Code: M551   Full Year (11, 12)(1 credit) (rank weight 1.00)
Prerequisite: Geometry with a >75% final average, or Algebra 2N with >85% final average and teacher reccomendation.

Areas of Study:
• Real Numbers and Exponents
  - Operations with radical expressions (+,-,*, /)
  - Solving radical equations
  - Laws of exponents, Negative exponents
  - Rational exponents
  - Graphing Exponential equations
  - Solving exponential equations
  - Solving exponential word problems
  - Base e
• Logarithmic Functions
  - Exponential equations and their inverses
  - Evaluate logarithmic expressions
  - Properties of logarithms
  - Graphing logs using inverse of function
  - Logarithmic form of an equation
  - Solving logarithmic equations
  - Solving logarithmic equations
  - Common logarithms
  - Natural logarithms
• Quadratic Functions and Complex Numbers
  - Factoring
  - Imaginary unit and its powers
  - Absolute value equations and inequalities
  - Methods for solving quadratic equations (factoring, complet-ing the square and quadratic formula)
  - Operations with complex numbers $(+,-,*, \div ,$ magnitude $)$
  - Solving quadratic equations with imaginary roots
    - Nature of the roots of a quadratic equation
  - Sum and product of the roots of a quadratic equation
  - Quadratic inequalities
• The Rational Numbers and Rational Expressions
  - Operations with polynomials
  - Solve rational equations
  - Complex Fractions
  - Solving fractional equations
  - Direct variation
  - Inverse Variation
• Relations and Functions
  - Notation, Domain and Range
  - Operations $(+,-,*, \div ,$ compositions, onto, inverse)
  - Equation and graph of circle
  - Inverse Functions (algebraically and graphically)
  - Solving systems – equations and inequalities
    - Solve higher degree polynomials (factoring and/or qua-dratic formula)
  - Solve higher order polynomials by inspecting graphs
  - Transformation of functions $f(x+a)$, $f(x)+a$, $f(-x)$, $-f(x)$, $af(x)$
• Sequence and Series
  - Sigma notations
  - Arithmetic sequences
  - Geometric Sequences
  - Arithmetic Series
  - Geometric Series
  - Recursion

MATHEMATICS

- Trigonometry
  - Angle measures: radians, degrees, and revolutions
  - Unit circle and right triangle trig. and ratios definitions
  - Special angles and reference angles
  - Trig formulas: sum, dif, double, halves
  - Graphs and their key features: wave axis, amplitude, period, phase shift
  - Inverse trig functions and their graphs
  - Simplifying trig expressions and proving trig identities
  - Solving trig equations graphically and algebraically
  - Area of a triangle
  - Using sin and cosine laws to solve triangles, ambiguous case
  - Radian Measure
  - Reciprocal Trig functions
  - Graphing Reciprocal Trig functions
- Statistics and Regressions
  - Sigma notation
  - Measure of central tendencies and dispersions
  - Normal distributions and applications
  - Types of studies: survey, observation, controlled experiment
  - Finding equation of best fit: Linear, exponential, logarithmic, power, polynomial
  - Using regression equations to interpolate trends
- Probability
  - Binomial expansions
  - Permutations and combinations
  - Counting Principle
  - Geometric applications of theoretical probability
  - Empirical Probability - Bernoulli experiment
  - Binomial probability exactly, at least, and at most
  - Normal distribution approximations for binomial probabilities

Assessment: Students will take a district-wide exam at the end of the 2nd quarter and the NYS Algebra 2 & Trigonometry Regents Examination in June. This Regents exam will be the final exam for the course.

For the complete NYS Core Curriculum for Algebra & Trigonometry, see page 113 of:
http://www.emsc.nysed.gov/3-8/MathCore.pdf

PRE-CALCULUS

Code: M644 Full Year (12) (1 credit) (rank weight 1.00)
Prerequisite: Algebra 2 and Trigonometry with >75% average.

NOTE: This course is intended for students who wish to further their understanding of mathematical structure and analysis.

Areas of Study Include:
- Linear and Quadratic Functions
    Linear Functions and Models
    Quadratic Functions and Their Graphs
    Quadratic Models
- Polynomial Functions
  - Graphing Polynomial Functions
  - Finding Maximums & Minimums of Polynomial Functions
  - Using Technology to Approximate Roots of Polynomial Functions
  - Solving Polynomial Equations by Factoring
  - General Results for Polynomial Equations
- Functions
  - Functions
  - Operations on Functions
  - Reflecting Graphs; Symmetry
  - Periodic Functions; Sketching and Translating Graphs
  - Inverse Functions

  - Functions of Two Variables
  - Forming Functions from Verbal Descriptions
- Exponents and Logarithms
  - Growth & Decay with Integral Exponents
  - Growth & Decay with Rational Exponents
  - Exponential Functions
  - The Number e & the Function e
  - Logarithmic Functions
  - Laws of Logarithms
  - Exponential Equations; Changing Bases
- Trigonometric Functions
  - Measurement of Angles
  - Sectors of Circles
  - The Sine and Cosine Functions
  - Evaluating and Graphing Sine and Cosine
  - The Other Trigonometry Functions
  - The Inverse Trigonometry Functions
- Trigonometric Equations and Applications
    Simple Trigonometry Equations
    Sine and Cosine Curves
    Modeling Periodic Behavior
    Relationships Among Functions
    Solving More Difficult Trigonometry Equations
- Triangle Trigonometry
  - Areas of a Triangle
  - Laws of Sines
  - Laws of Cosines
  - Applications of Trigonometry to Navigation & Surveying
- Trigonometric Addition Formulas
  - Formulas for
  - Formulas for
  - Double-Angle and Half-Angle Formulas
  - Solving Trigonometry Equations
- Polar Coordinates and Complex Numbers
  - Polar Coordinates and Graphs
- Limits, Series, and Iterated Functions
  - Limits of Functions
  - Graphs of Rational Functions
- Supp: Reimann Sums
  - Using Technology to Approximate the Area Under a Curve
  - Power Series
- An Introduction to Calculus
  - The Slope of a Curve
  - Using Derivatives in Curve Sketching
  - Extreme Value Problems
  - Velocity and Acceleration
- Optional Topic if Time:
  - Matrices
  - Matrix Addition and Scalar Multiplication
  - Matrix Multiplication
  - Applying Matrices to Linnear Systems
  - Communication Matrices
  - Transition Matrices
  - Transformation Matrices

Assessment: Pre-Calculus students will complete a project or take a district-wide exam at the end of the 2nd quarter and take a district-wide final exam in June.

Textbook: *Advanced Mathematics with Pre-Calculus*, published by McDougal Littell/Houghton-Mifflin, ©2003

ADVANCED PLACEMENT CALCULUS
AB - AP LEVEL

Code: M662 Full Year (12) (1 credit)   (rank weight 1.06)
Prerequisite: Algebra 2 and Trigonometry Regents/Honors, at least a 90% average, or Pre-Calculus with teacher recommendation.

NOTE: Each student is <u>expected</u> to take the Advanced Placement AB Calculus Examination in May. The fee is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP Exam, the student's report card and transcript will reflect only a course in high school Honors Calculus at a rank weight of 1.04.

This course may be offered as a Distance Learning course between John Jay and Roy C. Ketcham High Schools.

Areas of Study Include:
- Precalculus Review
  - Simplify expressions, solve equations, transform functions, and graph functions involving the functions used in calculus.
  - Model problems by transforming functions to fit the problem
  - Use of a graphing calculator to draw a complete graph in a suitable window
- Develop an Intuitive Understanding of Limits
  - Distinguish between determinate and indeterminate limits.
  - Evaluate limits graphically, numerically and analytically.
  - Recognize the three ways a limit does not exist
  - Change variables to evaluate limits
  - Define and test for continuity graphically, and analytically
  - Find and define horizontal and vertical asymptotes using limits
  - Recognize the ways pixels can be deceiving on a graphing calculator
- Derivatives analytically, graphically, and numerically
  - Find derivatives using the limit definition of a Fermat quotient
  - Evaluate derivatives numerically, and recognize when a numerical derivative may be defined even when the exact derivative does not exist
  - Recognize the four ways a derivative does not exist
  - Understand the relationship between continuity and differentiability
  - Given the graph of a function approximate the rate of change and produce a feasible graph of the derivative of the function
  - Determine derivatives using differentiation rules and techniques for polynomial rational, radical, trigonometric, inverse trigonometric, logarithmic, exponential, absolute values, and piecewise define functions and for linear combinations, products, quotients, powers, and compositions of these functions
  - Determine derivatives of functions and their inverses using implicit differentiation
- Applications with Derivatives
  - Define a function which models the changing process
  - Find equations of tangent lines and estimate function evaluations using linearization
  - Demonstrate and apply the intermediate value theorem, extreme value theorem, Rolle's Theorem, and the mean value theorem
  - Use the first and second derivative to accurately graph a function identifying extrema, intercepts, inflection points, and regions of increase, decrease, monotonicity, positive concavity, and negative concavity
  - Use derivatives to study rates of change at a variety of phenomena including motion.
  - Use derivatives to model and solve a variety of optimization problems
  - Use derivatives to model a variety of related rates problems
- Integration Analytically, Numerically, and Graphically
  - Define a function which models the integrand
  - Find integrals using the limit definition of a Riemann Sum
  - Evaluate integrals numerically using the left, right, midpoint, and trapezoidal rules, and realize the possible errors
  - Given the graph of the function, produce a feasible graph of the antiderivative as the net accumulation of a rate of change
  - Evaluate integrals using the Fundamental Theorem of Calculus
  - Evaluate definite and indefinite integrals of various functions using integration rules and techniques based on antiderivatives including linearity, change of variable, and by parts
  - Use the Variable Limits Theorem to evaluate the derivative of an integral with variable limits
  - Approximate definite integrals using the trapezoidal rule with and without a graphing calculator
- Mathematical Modeling
  - Antidifferentiation by substitution
  - Modeling problems with separable differential equations and analytically solving them
  - Investigate differential equations with slope fields
- Applications with Integrals
  - Determine area of a region
  - Determine volumes of solids of revolution by discs and washers
  - Determine volumes of solids of known cross section
  - Determine travel distance of a particle
  - Demonstrate the mean value theorem for integrals and find the average value of a function
- Optional Post AP Topics
  - Calculus of Parametric Functions
  - Integration by parts
  - L'Hopital's Rule
  - Improper Integrals
  - Challenge problems

Assessment: Final exam or final project

For the complete AP Curriculum see:
http://apcentral.collegeboard.com/apc/Controller.jpf

ADVANCED PLACEMENT CALCULUS
BC - AP LEVEL

Code: M681 Full Year (12) (1 credit) (rank weight 1.06)
Prerequisite: Algebra 2 & Trigonometry Honors, Pre-Calculus, or AP Calculus AB.

NOTE: This full year course covers a solid year of college calculus and is considerably more intensive than Advanced Placement Calculus AB. The curriculum closely follows the Advanced Placement Program of the College Board. The syllabus has been reviewed and approved by the AP audit. Each student is <u>expected</u> to take the Advanced Placement BC Calculus Examination in May. A score of 3, 4, or 5 can result in a year's credit in coursework at many colleges. The fee for this exam is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP Exam, the student's report card and transcript will reflect only a course in high school Calculus at a rank weight of 1.04.

The content of an instructional day varies considerably. The approximate number of days allotted for each chapter is indicated in parentheses in the topic list. The actual number of days spent can vary depending on the specific needs and idiosyncrasies of the particular class. Some days,

especially at the start of a new topic, are mainly interactive presentations of the new ideas. Subsequent classes area blend of homework review and drawing connections to previous and upcoming topics. Homework is assigned for every subtopic. The homework suggested problem list for the entire year is given at the start of the school year and is posted on the teacher website. Students need not do all the problems listed, but they should attempt a reasonable assortment of the problems. It is better to do fewer problems thoughtfully than to just crunch through a large number. Students always have at least one school day to ask questions on the relevant homework before a quiz is given. The quizzes are mostly free response style questions although at times multiple choice questions are included. Some of the quizzes and homework require a graphing calculator. On some the quizzes a graphing calculator is not allowed. Supplemental problems, some much more involved or theoretical than the text problems are also assigned. Most are mode up by the teacher a few are variations of problems found in supplemental references. Students are encouraged but not required to work collaboratively on these problems. In class work, homework, supplemental problems, and quizzes students are expected to answer problems in context in writing and at times verbally.

Throughout the course on homework, quizzes and supplemental problems student are expected to solve appropriate problems with or without a graphing calculator. Students generally use the TI-89/Titanium calculators, as it has many more features suitable for this class than other calculators. A graphing calculator should be brought daily to class, and is essential for some class work, homework, quizzes, and supplemental problems. Besides learning how to use the calculator commands, students learn how to use a calculator efficiently in a problem whether it is for initial insight or for finishing off computational details. Perhaps even more basically students learn when to use of not to use a graphing calculator.

This course may be offered as a Distance Learning course between John Jay and Roy C. Ketcham High Schools.

Areas of Study Include:
- Precalculus Review
  - Simplify expressions, solve equations, transform functions, and graph functions involving the functions used in calculus including functions in parametric form.
  - Model problems by transforming functions to fit the problem
  - Use of a graphing calculator to draw a complete graph in a suitable window, finding zeros of a function, finding intersections of functions, storing functions, and performing algebraic manipulations
- Develop an Intuitive Understanding of Limits
  - Distinguish between determinate and indeterminate limits
  - Evaluate limits graphically, numerically and analytically
  - Recognize the three ways a Limit does not exist
  - Change variables to evaluate limits
  - Define and test for continuity graphically, and analytically
  - Find and define horizontal, vertical, and oblique asymptotes and end behavior models using limits
  - Recognize the ways pixels can be deceiving on a graphing calculator and using a graphing calculator to find limits numerically and graphically
- Derivatives Analytically, Graphically, and Numerically
  - Find derivatives using the limit definition of a Fermat quotient
  - Evaluate derivatives numerically, and recognize when a numerical derivative may be defined even when the exact derivative does not exist
  - Recognize the four ways a derivative does not exist
  - Understand the relationship between continuity and differentiability
  - Given the graph of a function approximate the rate of change and produce a feasible graph of the derivative of the function

- Determine derivatives using differentiation rules and techniques for polynomial rational, radical, trigonometric, inverse trigonometric, logarithmic, exponential, absolute values, and piecewise define functions and for linear combinations, products, quotients, powers, and compositions of these functions
- Determine derivatives of functions and their inverses using implicit differentiation
- Determine derivatives using logarithmic differentiation
- Efficiently use the Graphing Calculator to find derivatives especially when complicated and to interpret graphically and in context
- Applications with Derivatives
  - Define a function which models the changing process
  - Find equations of tangent lines and estimate function evaluations using linearization
  - Demonstrate and apply the intermediate value theorem, extreme value theorem, Rolles Theorem, and the mean value theorem
  - Use the first and second derivative to accurately graph a function identifying extrema, intercepts, inflection points, and regions of increase, decrease, monotonicity, positive concavity, and negative concavity
  - Use derivatives to study rates of change at a variety of phenomena including motion.
  - Use derivatives to model and solve a variety of optimization problems
  - Use derivatives to model and solve a variety of related rates problems
  - Efficiently use the Graphing Calculator in the analysis of derivative applications
- Integration Analytically, Numerically, and Graphically
  - Define a function which models the integrand
  - Find integrals using the limit definition of a Riemann Sum
  - Evaluate integrals numerically using the left, right, midpoint, and trapezoidal rules, and realize the possible errors
  - Given the graph of the function, produce a feasible graph of the antiderivative as the net accumulation of a rate of change
  - Evaluate integrals using the Fundamental Theorem of Calculus
  - Evaluate definite and indefinite integrals of various functions using integration rules and techniques based on antiderivatives including linearity, change of variable, and by parts
  - Use the Variable Limits Theorem to evaluate the derivative of an integral with variable limits
  - Approximate definite integrals using the trapezoidal rule with and without the graphing calculator
  - Efficiently use the Graphing Calculator to find and evaluate antiderivatives especially when complicated
- Mathematical Modeling
  - Antidifferentiation by substitution and by parts
  - Modeling problems involving Exponential Change including Population Problems, Newton's Law of Cooling, Continuous and Discrete Compound Interest, and Radioactivity with separable differential equations and analytically solving them
  - Modeling Social Diffusion Problems with the Logistics Equation and solving using Partial Fractions
  - Studying differential equations with slope fields and solving them by Euler's method with and without the graphing calculator

- Applications with Integrals
  - Interpreting the definite integral as an accumulation of a varying rate of change over an interval
  - Determine area of a region
  - Determine volumes of solids of revolution by washers and shells
  - Determine volumes of solids of known cross section
  - Determine travel distance of a particle
  - Demonstrate the mean value theorem for integrals and find the average value of a function
  - Solve work problems
  - Analyze motion problems
  - Determine curve length
  - Determine when to use a graphing calculator to evaluate integrals, especially when complicated, which occur in these applications
- Limits Revisited
  - Studying sequences, especially arithmetic and geometric, their graphs, and their limits, explicit and recursive definitions
  - Using L'Hopital's Rule to evaluate limits
  - Using limits to study function growth rate
  - Using limits to evaluate improper integrals
  - Efficiently using a Graphing Calculator to take limits
- Power Series
  - Identify and use geometric series to represent repeating decimals and to model discrete exponential change
  - Write the McLaurin series for common functions and then manipulate them by change of variable, differentiation, and integration to find the Taylor Series of the functions
  - Analytically find the Taylor series of a function by matching derivatives at the center
  - Use the Alternating Series Estimation Theorem and the Lagrange Remainder
  - Theorem to find an error bound for Taylor polynomials
  - Use Taylor series to represent and Taylor polynomials to estimate irrational numbers involving radicals and transcendental functions
  - Graphically estimate convergence intervals and error bounds
  - Apply convergence tests to determine the radius of convergence and convergence interval of a power series
  - Use power series to efficiently integrate difficult functions
  - Use a Graphing Calculator to investigate Taylor polynomial approximations and errors numerically and graphically
- Calculus with Parametrics
  - Take derivatives of parametric functions and use them to describe the parametric graph and to find tangent lines
  - Model and solve motion problems using derivatives of parametric equations
  - Use integrals to find the curve length of a parametric curve
  - Recognize polar coordinates as a special case of parametrics.
  - Take derivatives of polar functions and use them to describe the polar graph and to find tangent lines
  - Use integrals to find the curve length of a region defined by polar curves and to find a polar curve length
  - Use a Graphing Calculator in these problems especially when complicated
- Review For AP Exam

- Optional Post AP Topics
  - A geometric series example: how mortgages work.
  - Balancing chemical equations with matrices
  - Challenge problems
  - Preview to multivariable calculus and linear algebra

Assessment: Final exam or final project

For the complete AP Curriculum see:
http://apcentral.collegeboard.com/apc/Controller.jpf

MULTIVARIABLE CALCULUS & LINEAR ALGEBRA - AP LEVEL
Code: M691   Full Year (12) (1 credit) (rank weight 1.06)
Prerequisite: Advanced Placement Calculus

NOTE: This course extends the calculus techniques to two and three dimensions. It is the standard third semester calculus course offered by most colleges. The linear algebra portion complements the calculus portion by developing methods applicable to discrete as opposed to the continuous systems studied in calculus. It follows a standard college introductory matrix applications based linear algebra course. Throughout the course challenging problems and projects involving relevant applications require much more extensive use of a graphing calculator. This course has been approved for three college credits each semester from Marist College. There is a fee for Marist credit.

This course may be offered as a Distance Learning course between John Jay and Roy C. Ketcham High Schools.

Areas of Study Include:
MULTIVARIABLE CALCULUS
- Spatial Analytic Geometry and Curve Parametrizations in Three Dimensions
  - Describe with equations and graphs, lines, planes, spheres, quadric, and other three dimensional curves and surfaces
  - Use vector dot products, projections, cross products and other vector operations to find vector resultants, increments, work, and distances involving points, lines, and planes
  - Describe and transform points and equations in rectangular, cylindrical, and spherical coordinate systems
  - Model projectile motion with linear drag using parametric equations
  - Describe general particle motion in three dimensions using velocity, acceleration, directed distance, curve length, curvature, torsion, the unit tangent, the unit normal, the unit binomial, and the tangential and normal components of acceleration
- Partial Derivatives and Applications
  - For functions in the form $z = f(x, y)$ find the domain and range and sketch graphs which show intercepts and contour lines, and sketch level curve graphs
  - Evaluate limits and determine when limits do not exist by considering different approach paths
  - Determine partial derivatives analytically and by graphing calculator.
  - Use multivariable chain rules to determine partial and ordinary derivatives
  - Determine directional derivatives
  - Determine tangent planes and normal lines
  - Determine linearization and higher order Taylor polynomials in two variables and use them to approximate functions
  - Determine extrema of surfaces
  - Use Lagrange Multipliers to solve optimization problems

MATHEMATICS

- Multiple Integrals and Applications
  - Evaluate double integrals in rectangular and polar coordinate systems analytically using antiderivatives, and by graphing calculator
  - Evaluate triple integrals in rectangular, cylindrical, and spherical coordinate systems analytically using antiderivatives and by graphing calculator
  - Use substitutions involving the Jacobian to transform difficult multiple integrals to a less difficult form.
  - Determine the appropriate integrand and multiple limits which describes the integration
  - Determine area, volume, moments, moments of inertia, and centroids involving regions defined by two or three independent variables
- Vector Calculus
  - Set up and evaluate line integrals analytically and numerically
  - Use line integrals to determine mass, moment, and center of mass of objects modeled as thin wires
  - Use line integrals to determine work, flow, flux, and circulation done by a vector field
  - Determine the divergence and curl of a vector field
  - Demonstrate and apply both forms of Green's Theorem
  - Describe surfaces parametrically
  - Set up and evaluate surface integrals analytically and numerically
  - Use surface integrals to determine mass, moment and center of mass of objects modeled as thin shells
  - Demonstrate and apply the divergence theorem and Stoke's theorem and appreciate these theorems as generalizations of Green's theorems
  - Find the potential for a conservative field
  - Demonstrate and apply the Fundamental Theorem of line integrals and appreciate this theorem as a generalization of the Fundamental Theorem of Calculus

LINEAR ALGEBRA
- Vectors and Matrices
  - Use linear combinations of vectors to define regions in 2 and 3 dimensions
  - Understand planes from both a dot product and a linear combination approach
  - Set up systems of linear equations using matrices
  - Graphically and algebraically demonstrate both the dot product or row picture and the linear combinations or column picture of linear equation systems in two and three variables
  - Use the calculator to numerically solve linear equation systems quickly
- Solving Square Systems of Linear Equations with Matrices
  - Use pivots and identify singular and nonsingular, and consistent and inconsistent systems
  - Set up elimination, permutation, and augmented matrices to study Gaussian elimination
  - Multiply matrices using rows times columns, using blocks, and using columns times rows
  - Find the inverse of a matrix using the elimination matrices and by Gauss
  - Jordan Elimination
  - Perform the triangular factorization A = LU and use it with forward and backward substitution to efficiently solve linear systems

- Use permutation matrices to study row exchange
- Simplify the solution method for symmetric matrices
- Use the graphing calculator to perform matrix operations and factorizations
- Apply matrices to real problems such as design curves and mixtures
- Use of the Four Vector Subspaces to study Rectangular Systems of Linear Equations
  - Determine if a given set is a vector space
  - Determine if a vector space is a subspace
  - Convert a matrix to reduced echelon form to find the null space of a matrix
  - Find the column space and rank of a matrix
  - Determine the complete solution to a linear system
  - Determine if a set of vectors are linearly independent, span a space, and form a basis for the space
  - Find the row space and left null space of a matrix
  - Demonstrate and understand the Fundamental Theorem of Linear Algebra.
  - Apply to real problems such as balancing large chemical equations and traffic flow problems
- Orthogonality of Vector Spaces
  - Find a basis for the orthogonal complement of a vector space
  - Demonstrate that the four subspaces of a matrix form two pairs of orthogonal complements in RM and in RN
  - Project a vector onto a subspace
  - Use orthogonality and projections to perform and understand least squares approximations
  - Find an orthogonal basis using the Gramm-Schmidt process, and understand the A = QR factorization
  - Apply to real problems such as curve fitting
- Evaluation and Use of Determinants
  - Evaluate a determinant of a matrix using only the two fundamental properties: linearity and sign reversal
  - Use the two fundamental properties to determine other properties of determinants
  - Evaluate determinants by cofactors
  - Use determinants to solve linear systems by Cramer's rule, and to find the matrix inverse
  - Use determinants to find areas, volumes, and Jacobians
- Eigensystems
  - Understand the eigenproblem graphically as finding the special directions in which the matrix transformation is only a dilation
  - Understand the eigenproblem algebraically by devising and solving the characteristic equation
  - Understand special relationships between eigenvalues and eigenvectors and the matrix
  - Derive and understand the eigenproblem as a matrix diagonalization factorization AS = SA
  - Use eigenvectors to study dynamic problems involving matrix powers such as population and predator prey and to approximate the solution using dominant eigensolution
  - Determine when a matrix is not diagonalizable by calculating the algebraic and geometric multiplicities of repeated eigenvalues
  - Use eigenvalues to convert differential equations into linear algebra
  - Use eigenvalues to determine the exponential of a matrix
  - Understand the special eigenproblem properties of symmetric matrices including the spectral theorem

- Understand the special eigenproblem properties of positive definite matrices
- Understand the relationship between similar matrices
- Use the calculator to solve the eigenproblem and graph the characteristic polynomial equation
• Linear Transformations with Matrices
- Determine if a transformation is linear
- Find the transformation matrix for a given transformation
- Demonstrate and understand the singular value decomposition of a matrix
- Use the calculator to do transformations and singular value decompositions

Assessment: Final project in January and June

ADVANCED PLACEMENT STATISTICS - AP LEVEL

Code: M655 Full Year (11-12) (1 credit) (rank weight 1.06)
Prerequisite: Algebra 2 and Trigonometry Regents/Honors

NOTE: Each student is expected to take the Advanced Placement Statistics Examination in May. The fee is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP Exam, the student's report card and transcript will reflect only a course in high school Honors Statistics at a rank weight of 1.04.

This course may be offered as a Distance Learning course between John Jay and Roy C. Ketcham High Schools.

Areas of Study Include:
• Data Displays
- Displaying Distributions with Graphs: stem plots, histograms, ogives, percentiles, skewness, and outliers
- Describing Distributions with Numbers: box plots, IQR criteria for outliers, mean, and standard deviation, transforming the mean and standard deviation.
- Density Curves and Normal Distributions: probabilities, percentiles
- Normal Calculations: z-scores, standard normal distribution, empirical formula, normal probability plots
• Data Relationships
- Scatter plots: response and explanatory variables, overall pattern, linear and curved relationships, clusters, direction, strength, association, categorical variables
- Correlation: meaning
- Least Squares Regression: line of best fit, calculation of slope and intercept, predicting values, understanding r-squared using residual plots, outliers, and influential observations
- Cautions using regression: extrapolation, causation, common response, lurking variables, confounded variables
- Transforming Relationships: power, exponential, and logarithmic models
• Producing Data
- Designing Samples: population and sample, sampling and census, voluntary response, convenience, bias, undercoverage, nonresponse, simple random samples, stratified random samples, multistage samples
- Designing Experiments: subjects, treatments, factors, randomization, treatment diagrams, controls, double blind, block designs, matched pairs
- Simulating Experiments: probability model, random numbers by table and by calculator

• Probability
- Randomness: simulations
- Probability Models: sample spaces, probability rules, disjoint events, independent events, conditional probability, and tree diagrams
- Random Variables: discrete and continuous, normal distributions, expected value, rules for means, variance, rules for variances, law of large numbers
• Sampling Distributions
- Binomial Distributions: binomial setting conditions, binomial probability, cumulative distributions, binomial mean and standard deviation, normal approximation, continuity correction, simulations
- Geometric Distributions: geometric setting conditions, geometric probabilities, cumulative distributions, geometric mean standard deviation, simulations.
- Sampling Distributions: parameter and statistics, simulations, bias and variability of a statistic
- Sample Proportions: mean and standard deviation of a sample proportion, normal approximation, simulations
- Sample Means: mean and standard deviation of a sample mean, sampling distribution of a sample mean from a normal population, The Central Limit Theorem., simulations
• Inference
- Estimating with Confidence: statistical confidence, confidence interval for population means, critical values, effect of confidence level and sample size on margin of error
- Tests of Significance: Null and alternative hypotheses, one and two sided alternatives, test statistics, p-values, statistical significance, versus practical significance, one-sample z statistic, four step inference procedure
- Inference as Decision: type I and type II errors, Power of a test, increasing the power of a test
• Inference for Distributions
- Inference for the Population Mean: standard error, t-statistic, t-distributions, t-tables, one-sample t-test, t-confidence interval, matched pairs t-procedures, four step inference procedure
- Comparing Two Means: standard error, two sample t-statistic, two-sample t-test, two sample t-confidence interval, degree of freedom approximations, and pooled two-sample t-procedures
• Inference for Proportions
- Inference for a Population Proportion: standard error of p hat, confidence intervals, requirements, z-procedures, sample size and margin of error, four step procedure
- Comparing Two Proportions: standard error, pooled sample proportion, confidence intervals for comparing two proportions, z-test for two proportions
• Inference for Tables
- Relations in Categorical Data: marginal distributions, describing relations in two way tables, conditional distributions, Simpson's paradox
- Test for Goodness of Fit: chi-square distributions, degrees of freedom, p-values
- Inference for Two Way Tables: observed and expected counts, degrees of freedom, chi-square statistic, chi-square tests of homogeneity, chi-square tests of association and independence, four step procedure

- Inference for Regression
  - Inference about the Model: the regression model requirements, the true regression line, residuals, standard error about the line, degrees of freedom, confidence intervals for the regression slope, significance test for regression slope, t-statistic
  - Predictions and Conditions: confidence interval for mean response, prediction interval for a single observation, regression conditions, using residual plots
- Analysis of Variance (Post AP Exam Topic)
  - Inference for a Population Spread: cautions, F-Test for comparing two standard deviations, degrees of freedom, F statistic, F distributions
  - One-Way Analysis of Variance: multiple comparisons, analysis of variance F-test, ANOVA F statistic, degrees of freedom, ANOVA conditions, mean squares, mean square for groups, mean square for error, ANOVA tables

Assessment: Final exam or final project

For the complete AP Curriculum see:
http://apcentral.collegeboard.com/apc/Controller.jpf

COMPUTER PROGRAMMING 1
Code: M415   Half Year (9-12)   (½ credit)   (rank weight 1.00)
Prerequisite: Current placement in at least Algebra Regents level.

NOTE: Computer Programming 1 and 2 may be used for elective credit only. They cannot be used to fulfill required math credits.

Visual Basic is a graphic language used in an Integrated Development Environment (IDE). Students will learn the techniques of structured, object-oriented, and event-driven programming.

Areas of Study Include:
- Introduction to Visual Basic.net
  - Visual Basic .net
  - Object –oriented programming (OOP).
  - Integrated development environment (IDE).
  - Creating a Project.
  - The windows form
  - Label control
  - Closing and opening a project
  - Saving and running applications.
  - Main menu control
  - Program code
  - Commenting code
  - Event procedure
  - Assignment statements
  - Using autolist
  - Arithmetic operators and numeric expressions
  - Button control
- Variables and constants
  - Variables and variable assignments
  - Obtaining values from the user
  - Using named constants
  - Choosing identifiers
  - Built-in data types
  - Data types
  - Automatic type conversion
  - Scope
  - Special division operators
  - programming errors
  - errors

- debugging
  - testing
- Controlling programming flow with decision structures
  - Decision making statements and techniques
  - If…Then statement
  - If…Then…Else statement
  - If…Then…ElseIf statement
  - Select…Case statement
  - Select…Case Is statement
  - Roundoff errors
  - Generating random numbers
  - Algorithms
  - Static variables
  - Logical operators
  - Displaying a message box
  - Counter variables
  - Checkbox control
  - Line-continuation character
- Controlling program flow using looping structures
  - Looping structures
  - The Do…Loop statement
  - The For…Next statement
  - Accumulator variables
  - Using flags
  - The string class
  - String Concatenation
  - The char structure
  - Unicode
  - Comparing strings
  - The like operators
- Procedures and functions
  - Sub procedures
  - Parameters
  - Function procedures
  - Formatting numeric output
  - Math Class
  - IsNumeric( ) function
  - Trigonometric method

Assessment: District-wide final project

COMPUTER PROGRAMMING 2
Code: M416   Half Year (9-12)   (½ credit)   (rank weight 1.00)
Prerequisite: Computer Programming 1

NOTE: Computer Programming 1 and 2 may be used for elective credit only. They cannot be used to fulfill required math credits.

Areas of Study Include:
- Arrays
  - Array parameters
  - Array search
  - Arrays of objects
  - Two dimensional array
- Structures
  - Structure arrays
  - Enumerated types
- Color and Graphics
  - using color
  - using images
  - animation
  - Graphic class
  - Handling events

- Creating Classes
  - Designing
  - Class Module
  - Encapsulation
  - Field, data and property members
  - Methods
  - Constructors
  - Inheritance and polymorphism
- Using files
  - Files
  - The FileStream
  - The StreamReader
  - Reading and writing data to a file
- Sorting and Searching
  - Bubble sort
  - Selection sort
  - Insertion sort
  - Binary search
  - The DataTime Structure

Assessment: District-wide final project

AP COMPUTER SCIENCE - AP LEVEL
Code: M650   Full Year (11-12) (1 credit)   (rank weight 1.06)
Prerequisite: Algebra 2 and Trigonometry Regents/Honors, or Computer Programming 2

NOTE: Each student is expected to take the Advanced Placement Computer Science Examination in May. The fee is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP Exam, the student's report card and transcript will reflect only a course in high school Honors Computer Science at a rank weight of 1.04.

This course may be may be used for elective credit only. It cannot be used to fulfill required math credits.

Areas of Study Include:
- Introduction to Computer Science
  - History of Computers and Programming
  - The Java Programming Language
  - Compilation Process
- Introduction to Objects and Classes
  - Using and constructing objects
  - Object variables
  - Defining a class
  - Testing a class
  - Instance fields
  - Constuctors
  - Interface of public class
  - Commenting
  - Implementation of class
  - Variable types
  - Explicit and implicit method parameters
- Fundamental Data Types
  - Number types
  - Assignments
  - Constants
  - Calling Static Methods
  - Type Conversion
  - Strings
  - Reading Input
  - Characters
  - Comparing primitive types and objects

- Applets and Graphics
- Decisions
  - Decision making and Techniques
  - Comparing values
  - Boolean expressions
- Iterations
  - While Loops
  - For...Next Loops
  - Nested Loops
  - Processing Input
  - Random numbers and simulations
- Designing Classes
  - Cohesion and Coupling
  - Accessor and mutator methods
  - Preconditions and postconditions
  - Static methods and fields
  - Scope
- Marine Biology Case Study
- Testing and Debugging
  - Unit tests
  - test case evaluation
  - Regression
- Interfaces and Polymorphism
  - Reusable solutions
  - Converting data types
  - Polymorphism
  - Strategy interface for improving reusability
- Event Handling
- Inheritance
  - Introduction to inheritance
  - Hierarchies
  - instance fields and methods
  - Subclass construction
  - Converting from subclasses to superclasses
  - Access control
- Graphical User Interfaces
- Array Lists and Arrays
  - Array Lists and arrays algorithms
  - Declaring and accessing arrays
  - Copying arrays
  - Two - Dimensional arrays
- Exception Handling
  - Throwing and checking
  - Designing
- Recursion
  - Introduction to recursion
  - Recursive helper methods
  - Mutual recursions
  - Efficiency of recursion
  - Sorting and Searching
  - Selection sort and algorithm
  - Merge sort and algorithm
  - Searching
  - Binary search
  - Searching and sorting real data

Assessment: Final exam or final project

For the complete AP Curriculum see:
http://apcentral.collegeboard.com/apc/Controller.jpf

PHYSICAL EDUCATION

The goal of the Physical Education program is to provide students with the necessary skills and knowledge to live physically active and healthy lifestyles. All students will complete one year of Personal Challenge and Healthy Lifestyles, and two years of Lifetime Physical Education to provide them with the basis for an establishment of a lifestyle that includes proven concepts of wellness and fitness. Students will be challenged to grow in character, self-reliance and self discipline and improve their self image and to reach a higher level of health, vitality, and wellness.

The recommended course of study for Physical Education is:

Grade 9 - Personal Challenge

Grade 10 - Healthy Lifestyles

Grade 11 & 12 - Lifetime Physical Education

GRADUATION REQUIREMENTS
In order to satisfy the graduation requirements as set forth by the New York State Commissioners Regulations all students must take and pass Physical Education during each semester they are enrolled. There is no medical excuse from Physical Education.

Only students who fail Physical Education in grades prior to grade 12 are eligible to attend an area summer school to make up their Physical Education credit. Students will not be allowed to take additional Physical Education classes until their 12th grade year. At no time will students be allowed to take more then two (2) Physical Education classes during their school day.

PERSONAL CHALLENGE
Code: P303   Full Year (9)   (½ credit)
Prerequisite: None

Areas of Study Include:
- Activities involving risk taking/adventure
- Individual and group decision making/problem solving
- Cooperation
- Team work
- Physical fitness
- Self esteem
- Trust development
- Leadership
- Communication skills
- Overcoming individual differences

NOTE: This course is based on the principles of Project Adventure and Project Team.

There are no medical excuses for Personal Challenge. Alternative measures of class participation will be accepted in lieu of physical activity (i.e., note taking, group work, serving as data recorder, etc.)

This curriculum incorporates classroom concepts while working on issues such as socialization, cooperation, on-task behavior, coping with failure, self esteem and willingness to try. The goal is to assist each student in the development of the attitudes, skills, and knowledge of movement that will result in a lifetime of participation in physical activity.

Assessment: Assessment is based on quizzes, exams, participation, effort, demonstrated skill on topics being covered quarterly.

For a complete review of the NYS learning standards, see pp. 12-15 http://eservices.nysed.gov/vls/pdf/HPEFCSStandards.pdf

For the complete NYS core curriculum for Physical Education, see pp. 31-44 http://eservices.nysed.gov/vls/pdf/HPEFCSStandards.pdf

PHYSICAL EDUCATION

HEALTHY LIFESTYLES

Code: P313   Full Year (10) (½ credit)
Prerequisite: None

Areas of Study Include:
- The basic understanding of the anatomy and physiology of the systems of the human body
- The components of fitness
- The relationship to health
- Measurement and assessment
- Flexibility
- Cardiovascular fitness
- Muscular strength and power
- Muscular endurance
- Body composition
- Nutrition
- Training for sports
- Personal goal setting and program design
- Stress management
- Possible CPR

There are no medical excuses for Healthy Lifestyles. Alternative measures of class participation will be accepted in lieu of physical activity (i.e., note taking, group work, serving as data recorder, etc.)

This curriculum incorporates classroom concepts while working on issues such as socialization, cooperation, on-task behavior, coping with failure, self esteem and willingness to try. The goal is to assist each student in the development of the attitudes, skills, and knowledge of movement that will result in a lifetime of participation in physical activity.

Assessment: Assessment is based on quizzes, exams, homework assignments, notebooks, participation, effort, demonstrated skill on topics being covered quarterly.

For a complete review of the NYS learning standards, see pp. 12-15 http://eservices.nysed.gov/vls/pdf/HPEFCSStandards.pdf

For the complete NYS core curriculum for Physical Education, see pp. 31-44 http://eservices.nysed.gov/vls/pdf/HPEFCSStandards.pdf

LIFETIME PE

Code: P333   1st Semester (11-12)   (1/4 credit)
**   P334   2nd Semester (11-12) (1/4 credit)**
Prerequisite: None

Areas of Study Include:
- Golf
- Tennis
- Racquetball
- Personal fitness
- Jogging/Walking
- Aerobics
- Weight training
- Bowling
- Badminton
- Volleyball
- Archery
- Recreational games
- LaCrosse
- Team Handball
- European Handball
- "Teaching Games"

NOTE: The above activities will be chosen quarterly.

There are no medical excuses for Lifetime PE. Alternative measures of class participation will be accepted in lieu of physical activity (i.e., note taking, group work, serving as data recorder, etc.)

This curriculum incorporates classroom concepts while working on issues such as socialization, cooperation, on-task behavior, coping with failure, self esteem and willingness to try. The goal is to assist each student in the development of the attitudes, skills, and knowledge of movement that will result in a lifetime of participation in physical activity.

Assessment: Assessment is based on quizzes, exams, participation, effort, demonstrated skill on topics being covered quarterly.

For a complete review of the NYS learning standards, see pp. 12-15 http://eservices.nysed.gov/vls/pdf/HPEFCSStandards.pdf

For the complete NYS core curriculum for Physical Education, see pp. 31-44 http://eservices.nysed.gov/vls/pdf/HPEFCSStandards.pdf

SCIENCE

The goal of the Science Department is to insure that all students are equipped to the best of their ability not only to survive in an ever changing technologically orientated society, but also to manage their life experiences effectively. With this in mind, we must enable students to develop and utilize the following:

A. Intellectual curiosity and eagerness for life-long learning.

B. A positive self-image as a reasoning human being.

C. Skills of computation and communication.

D. The ability to think and evaluate constructively and creatively.

E. Self-discipline including effective work habits and responsible behavior.

F. Ethical and moral behavior based on respect and appreciation for human values, beliefs and rights of others.

G. Problem solving techniques with understanding and ability to apply the scientific method to problems.

H. Organizing raw data, concepts and theory so that it is manageable and meaningful in solving problems.

I. Ability to understand concepts based on specific data.

J. The use of technological learning tools.

We would recommend and encourage all students to take four years of Science in order to prepare for personal, academic and occupational pursuits.

CORE REQUIREMENT FOR GRADUATION

Special education students will be able to take the Science RCT as a safety net for a local diploma. These students will be able to take the RCT until June 2012.

General Education Regents Diploma Science Requirements
- Advanced Diploma
  - 3 years of science, at least 2 regents courses; one must be Living Environment; another must be a Physical Science (Earth; Chemistry or Physics)
  - 2 regents examinations—passed with 65; one must be Living Environment
- Regular Diploma
  - 3 years of science; one must be Living Environment
  - 1 regents examination passed with a 65

SCIENCE

THE PHYSICAL SETTING EARTH SCIENCE

Code: S341   Full Year (10-12) (1 credit) (rank weight 1.0)
Prerequisite: Successful completion of Living Environment

Areas of Study Include:
- Planet Earth
  - Shape of the Earth
  - Structure of Earth
  - Locating Positions on Earth
  - Latitude/Longitude
  - Drawing isolines, topographic maps, gradient and profiles
  - Terrestrial Navigation – Polaris
- Minerals, Rocks and Resources
  - Define and identify minerals using minerals physical properties
  - Identify and classify rocks
  - Understand and utilize rock cycle
  - Recognize renewable and non-renewable resources and understand their use and management
- The Dynamic Crust
  - Locate plate boundaries, earthquake zones, volcanoes and mountain chains
  - Analyze P and S wave arrival time data to locate epicenters and determine origin times
  - Describe the internal structure of the earth
  - Recognize evidences of continental drift, plate tectonics, seafloor spreading, and crustal movement
  - Understand the driving force of plate tectonics
  - Understand the different types of plate boundaries
  - Earthquake and volcano preparedness
- Weathering, Erosion, Deposition and Landscapes
  - Distinguish between two types of weathering, the conditions under which they occur and describe examples of each
  - Factors that affect rate of weathering, deposition and erosion
  - Formation and conservation of soils
  - Difference between transported and residual soils
  - Compare the agents of erosion and their effects on the Earth's surface
  - NYS erosion history and development of landscape features
  - Glaciers and coastal features
- Interpreting Earth's History
  - Reconstructing geologic past using principal of uniformitarianism, superposition, correlation, original horizontality, cross cutting relationships, unconformities and fossil evidence
  - Geologic time scale
  - Evolution of life
  - Relative and Absolute dating
  - Radioactive Dating
  - Origin and change of the atmosphere
- Properties of the Atmosphere
  - Structure of the atmosphere
  - Air pressure and factors that affect it
  - Humidity and factors that affect it
  - Relative humidity and Dew point
  - Wind and factors that affect it
  - Sea breeze and Land breeze
  - Jet Stream and Coriolis Effect
  - Formation of clouds and types of precipitation
  - How weather variables are related
- Weather Systems
  - How energy enters the atmosphere
  - Plot and interpret station models
  - Air masses
  - High and low pressure and weather associated with each
  - Identify, explain and forecast major weather systems using weather maps.
  - Compare and contrast severe weather storms: Tornado, Hurricane and thunderstorms
  - Severe weather preparedness
- The Water Cycle and Climates
  - Hydrologic cycle
  - Explain the relationship of porosity, permeability, and capillarity to ground water
  - Factors that affect storage and movement of groundwater
  - Watersheds, how they are used and affected by people
  - How heat energy travels: Conduction, Convection and Radiation
  - Angle, reflection and duration of Insolation and how they affect climate
  - Greenhouse effect
  - Climates and factors that affect climate
- The Earth in Space
  - Motions of celestial objects
  - Heliocentric and Geocentric models
  - Apparent motions of the sun
  - Reason for the seasons
  - Latitude and angle of the sun
  - Duration of daylight
- Beyond Planet Earth
  - Phases of the moon
  - Eclipses of the moon and sun
  - Angular diameter of celestial objects
  - Tides
  - Geometry of orbits
  - Gravitational forces
  - Solar System data
  - Evolution of the universe: red shift and blue shift
  - Asteroids, Meteors, and Comets
- Environmental Awareness
  - Technology's affect's on the environment
  - Pollution
  - Managing resources

Assessment: All Earth Science students who complete the required 1200 minutes of labs will take the two part Physical Setting Earth Science Regents Exam in June.

For the complete NYS Core Curriculum for Physical Setting/Earth Science, see: http:www.emsc.nysed.gov/ciai/pub/earthsci.pdf

HONORS EARTH SCIENCE

Code: S361   Full Year (9)   (1 credit) (rank weight 1.04)
Prerequisite: Average of 90 or above in Living Environment and 85 or above in Algebra I

Areas of Study Include:
- The content covered in S341 - The Physical Setting Earth Science
- In addition, the students will submit projects and cover activities that emphasize higher order critical thinking skills

Assessment: All Honors Earth Science students who complete the required 1200 minutes of labs will take the two part Physical Setting Earth Science Regents Exam in June.

For the complete NYS Core Curriculum for Physical Setting Earth Science, see:
http:www.emsc.nysed.gov/ciai/pub/earthsci.pdf

SCIENCE

SCIENCE ACROSS THE SPECTRUM

Code: S321   Full Year (9)   (1 Credit)   (Rank Weight 1.0)
Prerequisite: Completion of 8th grade Science

*Not for students who passed a Science Regents Examination.

Areas of Study Include:
- Living Systems: Organisms
  - study of life processes which include nutrition, respiration, transportation, excretion, regulation, and growth
  - comparison of plant and animal cells and function of their structures
  - photosynthesis
  - microorganisms and their harmful affects
  - Lab skill: microscope
  - Process skill: studying experimental design
- Living Systems: Ecosystems
  - defining ecosystems
  - adaptations of organisms within an ecosystem
  - ecological succession
  - producers, consumers and decomposers
  - food chain
  - exchange of food, water, oxygen and wastes within an ecosystem
  - Process Skill: Interpreting results from an experiment
- Living Systems: Biological Diversity and Heredity
  - classifying organisms
  - mitosis/meiosis
  - using Punnett Squares
  - mutations
  - Process Skills: Interpreting information in a table, interpreting the results of an experiment, and interpreting diagrams
- Living Systems: Human Systems
  - Tissues and organs and how they carry out life process
  - blood, bone, muscle, nerve, and skin
  - skeletal, muscular, nervous, endocrine, digestive, circulatory, respiratory, excretory, and reproductive systems
  - Laboratory Skills: conducting an experiment
- Earth's Surface
  - mineral's physical properties
  - mineral and rock identification
  - study of fossils in determining past environments and climates
  - rock cycle
  - relative dating
  - topographic maps
  - latitude and longitude coordinate system
  - Laboratory Skills: identifying minerals using a flowchart
  - Process Skill: how rocks change from one type to another, interpreting diagrams in relative dating
- Forces that Change Earth's Surface
  - External forces associated with weathering and erosion
  - Internal forces associated with faulting and volcanism to shape earth's surface
  - physical agents of erosion
  - erosion
  - interaction of earth's lithosphere, hydrosphere, and atmosphere
  - plate tectonics
  - sea-floor spreading
  - continental drift
  - Process Skill: Predicting an experimental result

- Weather and Climate
  - properties of weather
  - properties of the atmosphere
  - affect of even heating of earth's surface
  - land breeze and sea breeze
  - properties of air masses
  - high and low pressure systems
  - reading and interpreting weather maps
  - Process Skill: weather forcasting
- Astronomy
  - rotation and revolution
  - seasons
  - solar system, planets
  - moon phases, tides, eclipses
  - asteroids, comets, meteoroids
  - geocentric and heliocentric
  - stars
  - Process Skill: Designing a measurement procedure, explaining relationships, determining quantitative relationships
- Matter
  - matter, elements, atoms
  - changes in matter
  - density
- Motion and Machines
  - force, mass, and motion
  - laws of motion
  - simple machines, efficiency of machines
- Energy
  - Basics of energy, kinetic and potential
  - law of conservation of energy
  - magnetism and electricity
  - fossils fuels
  - sources of energy, solar, hydroelectric, nuclear, solar, wind and their advantages and disadvantages
  - conservation
- Relationship of Science and Technology

This course is for students who are in jeopardy of not passing a Regents Science examination as identified by the middle school science assessment.

LIVING ENVIRONMENT - REGENTS

Code: S441 (S340)   Full Year (9,10)   (1 credit) (rank weight 1.00)
Prerequisite: Completion of Science 8R and Math 8R

Areas of Study Include:
- Science of Biology
  - What is science? What does Biology study?
  - How does Science work? – The Scientific Method & Experimental Design
  - The Tools of Biology, including the Metric System & Microscopes
- The Chemistry of Life
  - Basic Chemistry
  - Biochemistry
  - Carbohydrates
  - Lipids
  - Nucleic Acids
  - Proteins
  - Enzymes
- Cellular Biology
  - Cell Structure & Function

SCIENCE

- The cell theory
- Organelles
- Comparing prokaryotes and eukaryotes
- Comparing Plant & Animal Cells
- The plasma membrane & membrane transport: Diffusion/Osmosis/Active Transport
• Photosynthesis
  - Key Idea: Light Energy to Chemical Energy
  - Key Idea: Inorganic carbon (carbon dioxide) to organic carbon (glucose)
  - Occurs in chloroplasts of plant cells (and many single-celled organisms)
• Cellular Respiration
  - Key Idea: Sugars are converted to universal energy molecule, ATP
  - Glucose is converted to inorganic carbon dioxide
  - Aerobic respiration (=36 ATP) is better than anaerobic respiration (= 2 ATP)
  - Occurs in mitochondria of ALL cells, and occurs 24/7
  - Mitochondria are likely descendants of ancient prokaryotes
• Cell Growth & Division
  - Why do Cells Divide? Comparing surface area and volume
  - Mitosis: one diploid cell splits into two identical cells, & mitosis = nuclear division
  - Cancer = mitosis that is out-of-control
  - Examination of mitosis in onion cells and whitefish cells
  - Cancer research projects in library
  - Meiosis: formation of gametes in the gonads
  - One diploid cell forms four haploid cells
  - Comparing Mitosis & Meiosis
• Intro. To Genetics
  - What is meant by "genetics"?
  - Mendelian genetics
  - Punnett squares and assessing genetic probability
  - Difficulty of assessing probability for non-Mendelian traits
  - Genotype vs. phenotype
  - Dominant vs. recessive traits
  - Polygenic traits
  - Other modes of inheritance
  - Genetic Disease projects
• Modern Genetics: DNA & RNA
  - Discovery of shape of DNA (1953)
  - DNA as a polymer of nucleotides
  - Role of DNA in transmission of genetic material
  - Protein Synthesis: DNA to mRNA to protein
  - Mutations and their significance
  - DNA and cancer
  • Genetic Engineering
  - What is genetic engineering?
  - What are some uses for genetic engineering?
  - How is genetic engineering done?
  - Ethical issues in genetic engineering
• The Human Genome
  - The Human Genome Project
  - DNA fingerprinting
  - Gene therapy
  - Other uses of genetic technology
  - Fact vs. Fiction in "Jurassic Park", and other films/media
  - Ethical issues in genetic technology
• Darwin 's Theory of Evolution
  - Connections that exist throughout all of Earth's life forms

- All organisms are DNA-based (except certain viruses, which are not considered to be alive – so they are not really "organisms")
- All organisms are made of different combinations of only 20 amino acids
- Nearly all organisms share various biochemical pathways
- A history of various ideas of evolution through the millennia
- Lamarckian evolution
- Charles Darwin's "Theory of Evolution by Natural Selection"
- Comprehensive notes and observations eventually led to the development of a complex, cohesive theory of organic evolution over a period of 30 years
- The significance of the term "adaptation" to biologists since Darwin
- Evidence for evolution
- Fossil evidence, including some intact fossil sequences, like that of whales and horses
- Relative dating and radioactive dating of both fossils and rock strata
- Geographic connections, e.g. fossils and geology support continental drift
- Similarities in the structures (and functions) of various organisms
- Biochemical similarities
- Darwin's theory
- All organisms possess inheritable variations, and some variations are better than others for obtaining and using resources – these are ADAPTATIONS
- Overproduction of offspring
- A struggle for existence – competition for insufficient resources
- Organisms with the best adaptations are MORE LIKELY to survive and reproduce
- Species alive today are descended, with modifications, from previous species
- All organisms on Earth are therefore descended from common ancestors
• Evolution of Populations
  - Modern theories of evolution
  - Populations evolve, individuals do not
  - Evidence for evolution from the Galapagos finches
  - Antibiotic resistance as evidence for evolution
• The History of Life
• Classification
• **Human Evolution, if time**
• Animal Maintenance
• Digestion & Excretion
  - Adaptations for Maintenance
  - Diseases
• Circulation & Respiration
  - Adaptations for Maintenance
  - Diseases
• The Immune System
  - Adaptations for Maintenance
  - Diseases
• Skeleton & Muscles
  - Adaptations for Maintenance
  - Diseases
• Nervous & Endocrine Systems
  - Adaptations for Maintenance
  - Diseases

- Reproductive Systems
  - Adaptations for Maintenance
  - Diseases
  - Sexual vs. Asexual Reproduction
  - Reproductive Technology
- Plants
  - Roots, Stems, & Leaves
  - Reproduction of Seed Plants
  - Plant Responses & Adaptations
- Ecology & Environmental Science
  - The Biosphere
  - Ecosystems & Communities
  - Humans Impact on the Biosphere

Assessment: All Living Environment students who complete the required 1200 minutes of labs will take the Living Environment Regents Exam in June.

For the complete NYS Core Curriculum for Living Environment, see: http://www.emsc.nysed.gov/ciai/mst/pub/livingen.pdf

BIOLOGY - HONORS
Code: S461   Full Year (9-10)   (1 credit) (rank weight 1.04)
Prerequisite: Participation in the eighth grade Earth Science program with a minimum final average of 85%, or by permission of a district coordinator. Enrolled in Geometry.

Areas of Study Include:
- Biology as a Science
  - Scientific Method
  - Tools of Science
  - Microscope
  - Safety
- Unity and Diversity Among Living Things
  - Concept of Life
  - Historical Perspective
  - Cytology
  - Taxonomy
  - Chemistry of Living Things: Organic & Inorganic
  - Enzymes
- Life Processes in Living Things
  - Nutrition
  - Chemistry of Photosynthesis
  - Transport
  - Respiration
  - Chemistry of Cellular Respiration
  - Excretion
  - Chemical and Nervous Regulation
  - Locomotion
- Human Diseases by Topic
- Reproduction and Development
  - Asexual Reproduction in Organisms
  - Mitosis and Cytokinesis: Cellular Reproduction
  - Vegetative Propagation
  - Sexual Reproduction in Humans, Animals, and Plants
  - Gametogenesis and Meiosis
  - Fertilization, Early Development, Embryo Development, Birth
  - Reproductive Technology
- Transmission of Traits through Generations
  - Historical Perspective
  - Classical Mendelian Genetics

- Incomplete Dominance, Codominance, Multiple Alleles
  - Gene Linkage, Sex Linkage, Pedigrees
  - Genetic Disorders
  - Mutations
  - Modern Genetics
  - Watson, Crick, and Franklin
  - DNA; Nucleotides, Transcription, and Replication
  - DNA Fingerprinting, Electrophoresis
  - Genetic Engineering
  - Protein Synthesis
  - Population Genetics
  - Bioethics
- Evolution
  - Organic Evolution
  - The Heterotroph Hypothesis
  - Supporting Evidence for Evolution
  - Lamarck, Darwin, Oparin, Stanley, Hardy-Weinberg
  - Sources of Variation
  - Adaptation and Natural Selection
  - Gradualism and Punctuated Equilibrium
  - Speciation
- Ecology
  - Populations, Communities, Ecosystems, Biosphere
  - Abiotic and Biotic Factors
  - Nutritional Relationships: Autotroph, Heterotroph
  - Symbiotic Relationships; Mutualism, Commensalism, Parasitism
  - Energy Flow in an Ecosystem
  - Food Webs, Food Chains
  - Nitrogen Cycle, Carbon Cycle, Water Cycle
  - Ecological Succession
  - Biomes
  - Human Impact on the Environment
  - Endangered Species
  - Pollution

Assessment: The final examination is the NY State prepared Living Environment Biology Regents if lab requirement is met.

NOTE: Students should have an above average reading grade level. Stress is placed on individual achievement.

PHYSICAL SETTING - CHEMISTRY
Code: S541   Full Year (10, 11)(1 Credit)(rank weight 1.00)
Prerequisite: Average of 75 or Better In A Regents Science Course. Successful Completion of Geometry and Concurrently Enrolled In Algebra 2 and Trigonometry. Students enrolled in 2N need permission from the district coordinator.

Areas of Study Include:
- Scientific Method
- Measurements
  - Using Measurement Equipment
  - Metric Units
  - Significant Figures
  - Scientific Notation
  - Percent Error
  - Density
- Matter And Energy
  - Physical And Chemical Properties Of Matter
  - Substances, Compounds, Elements And Mixtures
  - Temperature Scales, S.T.P. & Absolute Zero
  - Kinetic Molecular Theory

- Charles' Law, Boyle's Law & Combined Gas Law
- Rates Of Diffusion
- Heating / Cooling Curves - Phase Changes
- Vapor Pressure
- Forms Of Energy
- Law Of Conservation Of Energy
- Structure Of The Atom
  - Parts Of The Atom
  - History Of Models Of The Atom
  - Electron Configuration
  - Mass Number, Atomic Number, Isotopes
  - Valence Electrons, Oxidation Numbers
  - Energy Levels - Spectral Lines
  - Natural Radioactivity - Types Of Radiation
  - Half Life
- Periodic Table
  - Periodic Trends
  - Periodicity
- Bonding
  - Electronegativity
  - Ionic, Covalent, Metallic & Network Bonds
  - Molecular Polarity
  - Lewis Dot Structure
  - Intermolecular Forces
  - Formula Writing and Reviewing Compounds
- Solutions
  - Concentration Units – Molarity, Percent By Mass, Parts per Million
  - Dilution
  - Solubility
  - Boiling Point Elevation, Freezing Point Depression
- Kinetics And Equilibrium
  - Collision Theory – Reaction Rate
  - Potential Energy Diagrams – Endothermic / Exothermic
  - Catalysts
  - Enthalpy, Entropy & Spontaneity
  - LeChatelier's Principle
- Acids & Bases
  - Arrhenius & Alternate Acid-Base Theory
  - Properties Of Acids & Bases
  - Ph
  - Neutralization Reactions
  - Titration – Indicators
- Oxidation – Reduction
  - Electrochemical Cells
  - Electrolysis
  - Activity Series
  - Assigning Oxidation States
  - Half Reactions
  - Balancing Redox Equations
  - Identify Species Oxidized / Species Reduced
- Nuclear
  - Types of Radioactivity
  - Natural & Artificial Transmutations
  - Half Life
  - Benefits and Risks of Radioactivity
- Organic
  - Homologous Series Of Hydrocarbons
  - Functional Groups
  - Isomers
  - Organic Reactions

- Chemical Math
  - Mole Calculations
  - Gram Formula Mass
  - Avogadro's Number
- Stoichiometry
  - Types of Reactions
  - Writing and Balancing Equations

Assessment: All Chemistry students who complete the required 1200 minutes of labs will take the Physical Setting – Chemistry Regents Exam in June.

For the complete NYS Core Curriculum for Physical Setting/Chemistry, see: http:www.emsc.nysed.gov/ciaai/mst/pub/chemist.pdf

CHEMISTRY - HONORS
Code: S561   Full Year (10-12) (1 credit) (rank weight 1.04)
Prerequisite: Honors Biology (average of 85% or better) or Regents Biology (average of 90% or better). Geometry H (average of 85% or better) or Geometry (average of 90% or better) and concurrently enrolled in Algebra 2 and Trigonometry.

Areas of Study Include:
- Meaurement
  - Metric Units
  - Significant Figures
  - Scientific Notation
  - Percent Error
  - Density
- Matter and Energy
  - Physical and Chemical Properties of Matter
  - Substances, Elements, Compounds and Mixtures
  - Temperature Scales, STP, Absolute Zero
  - Kinetic Molecular Theory of Gases
  - Charles' Law, Boyle's Law and Combined Gas Law
  - Rates of Diffusion
  - Heating / Cooling Curves - Phase Changes
  - Vapor Pressure
  - Forms of Energy
  - Law of Conservation of Energy
- Structure of the Atom
  - Parts of the Atom
  - History of Models of the Atom
  - Electron Configuration
  - Mass Number, Atomic Number, Isotopes
  - Valence Electrons, Oxidation Numbers
  - Energy Levels – Spectral Lines
- Periodic Table
  - Periodic Trends
  - Periodicity
- Bonding
  - Electronegativity
  - Ionic, Covalent, Metallic, and Network Bonds
  - Molecular Polarity
  - Lewis Dot Structures
  - VSEPR Theory – Shapes of Molecules
  - Intermolecular Forces
- Chemical Composition
  - Writing Formulas
  - Naming Compounds
  - Math of Chemical Formulas
- Chemical Equations and Stoichiometry
  - Types of Chemical Reactions

- Balancing Equations
- Stoichiometry
• Solutions
   - Concentration Units – Molarity, Percent by Mass
   - Dilution
   - Solubility
   - Colligative Properties
• Kinetics and Equilibrium
   - Collision Theory – Reaction Rates
   - Potential Energy Diagrams – Endothermic / Exothermic
   - Catalysts
   - Enthalpy, Entropy, Spontaneity
   - Le Chatelier's Principle
   - Common Ion Effect
• Acids and Bases
   - Arrhenius and Alternate Acid-Base Theory
   - Properties of Acids and Bases
   - pH
   - Neutralization Reactions
   - Titration – Indicators
• Oxidation-Reduction
   - Electrochemical Cells
   - Electrolysis
   - Activity Series
   - Oxidizing Agent
   - Reducing Agent
   - Half Reactions
   - Balancing Redox Reactions
• Nuclear
   - Natural and Artificial Transmutations
   - Fission and Fusion
   - Half Life
   - Natural Radioactivity - Type of Radiation
• Organic
   - Homologous Series of Hydrocarbons
   - Functional Groups
   - Isomers
   - Organic Reactions
• Additional Optional Topics
   - Ideal Gas Law
   - Dalton's Law of Partial Pressures
   - Graham's Law of Diffusion
   - Quantum Numbers
   - Conjugate Acid-Base Pairs
   - Lewis Acids and Bases
   - Nernst Equation
   - Hess's Law
   - Hybridization
   - Phase Diagrams
   - Resonance

Assessment: All Chemistry students who complete the required 1200 minutes of labs will take the Physical Setting – Chemistry Regents Exam in June.

PRACTICAL CHEMISTRY - NON-REGENTS
Code: S538   Full Year (11, 12)(1 Credit)(Rank Weight=1.00)
Prerequisite: Passing grades on at least one Science Regents exam

Recommendation: None

Practical Chemistry is a course that combines traditional chemistry concepts with applications in the real world. The first half of the course involves study in specific areas of chemistry with a focus on chemical reactivity and qualitative analysis while the second half of the course applies those base concepts with practical concepts integral to students' lives and futures.

Areas of Study Include:
• Scientific Calculation and Measurement
   - Lab Safety
   - Scientific Method
   - Graphing
   - Use of computer software (spreadsheets, etc.)
   - Problem solving techniques
• Matter and Energy
   - Laws of Conservation
   - Physical & chemical properties and changes
   - Intermolecular vs. intramolecular forces
   - Particle arrangement
   - Phases of matter
   - Atomic Structure
   - Elements and compounds
   - Periodic Table
   - Naming of compounds
   - Equation writing and balancing
• Atmospheric Chemistry
   - Global Warming
   - Comparison of different atmospheres
   - Ozone Depletion
   - Acid Rain
   - Science of Space and Vacuum
• Acids and Bases
   - Definitions
   - Strong vs. Weak
   - Concentrated vs. Dilute
   - Reactions involving acids and bases
   - pH scale
   - Titrations and Hydrolysis
• Electrochemistry
   - Oxidation and Reduction
   - Voltaic and electrolytic cells
• Organic Chemistry
   - Study of aliphatic and aromatic hydrocarbons
   - Reactions involving them
   - Drawing the structures of the compounds
   - Polymer chemistry
   - Chemical reactions
• Food & Drugs
   - Structure of food macromolecules (protein, carbohydrates, etc.)
   - Legal vs. Illegal drugs
   - Interactions of food & drugs with the human body
• Forensic Science
   - Dactyloscopy
   - Trace evidence collection
   - Different areas of forensics
   - Overview of latest forensic cases
• Consumer Chemistry
   - Comparison of products that are used everyday (gasoline, cleaners, etc.

Assessment: School final exam in addition to a comprehensive course project.

SCIENCE

PHYSICAL SETTING - PHYSICS

Code: S641   Full Year (11-12) (rank weight 1.00)
Prerequisite: Successful completion of Geometry with an average of 75, concurrently enrolled in Algebra 2 and Trigonometry and an average of 75 in a Regents Science course.

Areas of Study Include:
- Physics And Measurement
  - Si Units – (Length, Mass, Time); Dimensional Analysis; Significant Figures; Problem Solving; Estimations, Error, And Error Analysis
- Motion In One Dimension
  - Displacement, Velocity, Speed; Instantaneous Velocity, Speed; Acceleration; Kinematic Graphics; Free Fall
- Vectors
  - Coordinate Systems; Vectors And Scalars; Vector Addition And Subtraction; Vector Components; Conditions For Equilibrium
- Motion In Two Dimensions
  - Two Dimensional Motion With Constant Acceleration; Motion In A Plane and Projectiles; Uniform Circular Motion; Relative Motion
- The Laws Of Motion
  - Concept Of Force; Newton's First Law And Inertial Frames; Mass, Newton's Second Law; Application Of Newton's 2nd Law To Systems Of Bodies; Force And Gravity, Friction
- Circular Motion And Applications Of Newton's Laws
  - Circular Motion; Centripetal Force
- The Law Of Gravity
  - Newton's Universal Law Of Gravitation; Free Fall And Gravitational Force; Kepler's Laws; Gravitational Potential Energy; Energy Considerations In Planetary And Satellite Motion
- Linear Momentum And Collisions
  - Linear Momentum And Its Conservation; Impulse And Momentum; Collisions In One Dimension
- Work And Kinetic Energy
  - Work Done By A Constant Force; Scalar Product; Work Done On A Spring; Energy and The Work-Energy Theorem; Power
- Potential Energy And Conservation Of Energy
  - Potential Energy; Conservative And Non-conservative Forces; Conservative Forces And Potential Energy; Conservation of Mechanical Energy
- Oscillatory Motion
  - Simple Harmonic Motion; The Block And Spring System; Energy Of A Simple Harmonic Oscillator; The Pendulum; Simple Harmonic Motion And Uniform Circular Motion
- Wave Properties
  - Waves And Energy Transfer; Transverse And Longitudinal Waves; Wave Properties; Law Of Superposition
- Wave Phenomena
  - Speed Of A Wave In A Uniform Medium; Reflection; Refraction; Interference; Diffraction (Ripple Tanks)
- Sound
  - Properties of Sound; Speed Of Sound; Resonance; Doppler Effect; Harmonics
- Electrostatics
  - Properties Of Charges; Insulators And Conductors; Coulomb's Law; Conservation Of Charge
- Electric Fields
  - Direction And Magnitude; Electric Potentials; Field Lines; Mapping
  - Electric Fields

- Current Electricity
  - Resisitivity And Resistance; Requirements For Current Flow; Ohm's Law; Electric Energy And Power
- Series And Parallel Circuits
  - Electric Potential, Current, And Resistance In Series And Parallel Circuits; Galvanometer, Voltmeter, And Ammeter; DC Power Supplies; Power Consumption In DC Circuits; Household Circuits And Electrical Safety
- Magnetic Fields
  - The Magnetic Field; Mapping Magnetic Fields; Magnetic Force On A Current-Carrying Conductor; Motion Of A Charged Particle In A Uniform Magnetic Field; Magnetic Field Strength And Magnetic Force; Right-Hand Rules
- Magnetic Force
  - Magnetic Force Between Two Parallel Conductors; Magnetic Flux; The Earth's Magnetic Field; Right-Hand Rules
- Electromagnetic Induction
  - Electromagnetic Induction; Lenz's Law; Motors And Generators; Ac Current; Solenoids
- Light
  - Electromagnetic Nature Of Light; Light As A Wave; Speed Of Light; Properties of Light; Polarization; Doppler Effect
- Modern Physics
  - Wave-Particle Duality Of Light; Quantum Theory; Bohr Model Of The Atom; Energy Transitions In The Hydrogen Atom; Continuous, Emission, And Absorption Spectra; Compton Effect
- Standard Model
  - Investigation Of Sub-Atomic Particles; Standard Model Of Particle Physics; Quarks And Leptons; Classification Of Matter

Assessment: All Physics students who complete the required 1200 minutes of labs will take the Physical Setting – Physics Regents Exam in June.

For the complete NYS Core Curriculum for Physical Setting/Physics, see: http://www.emsc.nysed.gov/mst/pub/phycoresci.pdf

PHYSICS - HONORS

Code: S661   Full Year (11-12) (rank weight 1.04)
Prerequisite: Successful completion of geometry with 85 or better, concurrently enrolled in Algebra 2 and trig. An 85 or better on a previous Science and Mathematics regents exam.
- Physics And Measurement
  - Si Units – (Length, Mass, Time); Dimensional Analysis; Significant Figures; Problem Solving; Fermi Problems estimations, Error, And Error Analysis
- Motion In One Dimension
  - Displacement, Velocity, Speed; Instantaneous Velocity, Speed; Acceleration; Kinematic Graphics; Free Fall
- Vectors
  - Coordinate Systems; Vectors And Scalars; Vector Addition And Subtraction; Vector Components; Conditions For Equilibrium—static and dynamic
- Motion In Two Dimensions
  - Two Dimensional Motion With Constant Acceleration; Motion In A Plane And Projectiles; Uniform Circular Motion; Relative Motion;
- The Laws Of Motion
  - Concept Of Force; Newton's First Law And Inertial Frames; Mass, Newton's Second Law; Application Of Newton's 2nd Law To Systems Of Bodies; Force And Gravity, Friction

- Circular Motion And Applications Of Newton's Laws
  - Circular Motion; Centripetal Force; Torque;
- The Law Of Gravity
  - Newton's Universal Law Of Gravitation; Free Fall And Gravitational Force; Kepler's Laws; Gravitational Potential Energy; Energy Considerations In Planetary And Satellite Motion
- Linear Momentum And Collisions
  - Linear Momentum And Its Conservation; Impulse And Momentum; Collisions
- Work And Kinetic Energy
  - Work Done By A Constant Force; Scalar Product; Work Done On A Spring; Kinetic Energy And The Work-Energy Theorem; Power
- Potential Energy And Conservation Of Energy
  - Potential Energy; Conservation Of Mechanical Energy
- Fluid Physics Archimedes Principle, Bernoulli's Principle
- Thermal Physics
  - Temperature Scales; Heat Transfer; Laws of Thermodynamics
- Wave Properties
  - Waves And Energy Transfer; Transverse And Longitudinal Waves; Wave Properties; Law Of Superposition
- Wave Phenomena
  - Speed of A Wave In A Uniform Medium; Reflection; Refraction; Interference; Diffraction [Ripple Tanks]
- Sound
  - Properties Of Sound; Speed Of Sound; Resonance; Doppler Effect;
- Electrostatics
  - Properties Of Charges; Insulators And Conductors; Coulomb's Law; Conservation Of Charge
- Electric Fields
  - Direction And Magnitude; Electric Potentials; Field Line Mapping
- Electric Potential & Electric Potential Energy; Series And Parallel Circuits
- Current Electricity
  - Resistivity and Resistance; Requirements For Current Flow; Ohm's Law; Electric Energy & Power
- Series & Parallel Circuits
  - Electric Potential, Current, Resistance In Series And Parallel Circuits; Galvanometer, Voltmeter, And Ammeter; DC Power Supplies; Power Consumption In DC Circuits; Household Circuits And Electrical Safety
- Magnetic Fields
  - The Magnetic Field; Mapping Magnetic Fields, Magnetic Force On A Current-Carrying Conductor; Motion Of A Charged Particle In A Uniform Magnetic Field; Magnetic Field Strength And Magnetic Force; Right-Hand Rules
- Magnetic Force
  - Magnetic Force Between Two Parallel Conductors; Magnetic Flux; The Earth's Magnetic Field; Right-Hand Rules
- Electromagnetic Induction
  - Electromagnetic Induction; Lenz's Law; Motors And Generators; AC Current; Transformers
- Light
  - Electromagnetic Nature Of Light; Light As A Wave; Speed Of Light; Refraction; Dispersion; Properties Of Light; Polarization; Doppler Effect
- Mirrors & Optics
  - Plane Mirrors; Spherical Mirrors; Ray Tracing; Thin Lenses

- Modern Physics
  - Wave-Particle Duality Of Light; Quantum Theory; Bohr & Rutherford Models Of The Atom; Energy Transitions In The Hydrogen Atom; Continuous, Emission & Absorption Spectra; Compton Effect; Photoelectric Effect; Radioactivity;
- Standard Model
  - Investigation of Sub-Atomic Particles; Standard Model Of Particle Physics; Hadrons, Mesons, Quarks And Leptons; Classification Of Matter; Four Fundamental Forces Of Nature

For the complete NYS Core Curriculum for Physical Setting/Physics, see: http://www.emsc.nysed.gov/ciai/mst/pub/phycoresci.fdf

CONCEPTUAL PHYSICS - NON-REGENTS

Code: S639   Full Year (11-12) (rank weight 1.00)
Prerequisite: Two years of math and science, and a grade of 65 or better on at least one Math and one Science Regents Exam.

Areas of Study May Include:
PREDICTIONS
- Reality And Illusions
  - Measurement & Data Collection; Accuracy Of Measurements; Patterns In Data To Make Predictions; Theoretical and Experimental Probability; Nature of Scientific Discovery; The Atom and Radioactive Decay
- Magic And Motion
  - Newton's Laws Of Motion; Force; Friction; Speed & Acceleration; Relationship Between Force, Mass and Acceleration; Circular Motion (Centripetal Acceleration And Force)
- Patterns And Predictions
  - Magnetic Fields; Light Intensity And Newton's Law Of Universal Gravitation; Inverse Square Relationship; Scientific Modeling; Waves; Energy Transfer In Waves; Wave Interference; Frames Of Reference; Speed Of Light; Relativity; Special Relativity

TRANSPORTATION
- Driving The Roads
  - Response Time; Speed, Distance And Time Relationships; Acceleration; Average and Instantaneous Speed; Inertia; Force And Friction; Gravity; Circular Motion
- Safety
  - Effect Of Forces On Motion; Inertia; Force And Pressure; Newton As A Unit of Force Measurement; Impulse And Momentum; Acceleration; Collisions
- Journey to the Moon and Beyond
  - Physical Properties Of Matter; Effect Of Forces On Motion; Acceleration Due To Gravity; Free Fall; Inertial And Gravitational Mass; Newton's Laws of Motion; Photosynthesis; Fermi Problem; Sound Waves; Speed Of Radio And Sound Waves

SPORTS
- The Track & Field Championships
  - Relationship Between Speed, Distance And Time; Kinetic Energy; Using Data To Make Predictions; Average And Instantaneous Speed; Acceleration; Projectile Motion; Trajectories; Gravity; Free Fall; Gravitational Potential Energy; Transfer Of Mechanical Energy; Conservation Of Energy
- Physics In Action
  - Newton's First Law Of Motion And Galileo's Principle Of Inertia; Newton's Second Law 0f Motion (Relationship Between Mass, Force And Acceleration); Newton's Third

Law 0f Motion; Gravity; Center Of Mass; Potential And Kinetic Energy; Work; Momentum And Conservation Of Momentum; Circular Motion (Centripetal Acceleration and Force)

- Sports On The Moon
  - Newton's Laws Of Motion; Properties Of Matter On Earth And In Space; Effect Of Forces On Motion; Gravity And Mass On The Earth And Moon; Relationship Between Gravity And Free Fall; Effect Of Gravity On The Trajectory In Projectile Motion; Effect Of Gravity On Friction; Collisions; Coefficient Of Restitution; Momentum; Pendulum Motion

Assessments: Final exam is given in class over a two-day period

CHEMISTRY - AP

Code: S682   Full Year (11-12) (1 credit) (rank weight 1.06)
Prerequisite: Honors or Regents Chemistry (average of 85% or better). Successful completion of Algebra 2 & Trigonometry (average of 85% or better). Approval by District Science Coordinator.

Seniors: Concurrent course in physics recommended.

Areas of Study Include:
- Atomic Structure
  - History
  - Structure of the Atom
  - Mass Number, Atomic Number, Isotopes
  - Natural Radioactivity
- Stoichiometry
  - Average Atomic Mass
  - Mole Conversions
  - Percent Composition, Empirical and Molecular Formulas
  - Balancing Equations
  - Stoichiometry, Including Limiting Reagent
  - Theoretical and Percent Yields
- Chemical Reactions
  - Electrolytes
  - Concentration Units - Dilution
  - Precipitation, Neutralization, Redox
- Gases
  - Charles', Boyle's and Avogadro's Laws
  - Ideal Gas Law
  - Dalton's Law of Partial Pressures
  - Kinetic Molecular Theory of Gases
  - Graham's Law of Diffusion
  - Van der Waal's Equation for Real Gases
- Energy
  - PV Work
  - Calorimetry - Hess's Law
  - Standard Heat of Formation, Bond Energy
  - Entropy
  - Gibb's Free Energy - Spontaneity
- Atomic Structure
  - Electromagnetic Radiation
  - Dual Nature of Light and Matter
  - Electron Configurations - Aufbau Principle
  - Quantum Numbers
  - Orbitals
  - Periodic Trends
- Bonding
  - Electronegativity
  - Ionic, Covalent, Metallic, and Network Bonds
  - Molecular Polarity - Dipole Moments
  - Lewis Structures, Resonance
  - VSEPR Theory - Hybridization
  - Bond Order - Sigma and Pi Bonds
  - Intermolecular Forces
  - Vapor Pressure - Phase Diagrams
  - Boiling Point Elevation, Freezing Point Depression, Osmotic Pressure
- Kinetics
  - Collision Theory - Reaction Rates
  - Rate Law, Integrated Rate Law
  - Reaction Mechanisms
  - Potential Energy Diagrams
  - Activation Energy, Catalysts
- Equilibrium
  - Mass Action Expression
  - Gaseous Equilibria, Solubility Equilibria
  - Common Ion Effect
  - Complex Ion Equilibria
  - Le Chatelier's Principle
  - Acids and Bases and Salts
  - Acid – Base Equilibria
  - Conjugate Acid-Base Pairs
  - pH, pOH, Kw
  - Titration Curves
  - Buffers
- Oxidation-Reduction
  - Galvanic Cells
  - Electrolytic cells
- Nuclear
  - Natural and Artificial Transmutations
  - Mass Defect – Binding Energy
  - Fission and Fusion
  - Half Life
  - Organic
  - Homologous Series of Hydrocarbons
  - Functional Groups
  - Isomers
  - Organic Reactions

Assessment: Each student is expected to take the AP Chemistry Exam in May. The fee is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP Exam, the student's report card and transcript will reflect only a course at the honors-type level.

For the complete AP Curriculum see:
http://apcentral.collegeboard.com/apc/Controller.jpf

ADVANCED GEOLOGY

Code: S685   Full Year (11-12) (1 credit) (rank weight 1.06)
Recommendation: Completion of Earth Science and Geometry. Juniors are encouraged to have taken or be taking a course in Chemistry. Seniors are encouraged to have taken or be taking a course in Physics.

Areas of Study Include:
- Overview of the Dynamic Earth
  - Formation of our solar system
  - Internal Structure of Planet Earth
  - External Structure of Planet Earth
  - External and Internal Structure Interactions
  - Geologic Time Scale

SCIENCE

- Minerals of the Earth
  - Minerals and Their Chemistry
  - Crystal Structure and States of Matter
  - Properties of Minerals and Their Identifications
  - Rock Forming Minerals
  - Economic Minerals
  - Formation of Ore Deposits
  - Economic and Environmental Factors
  - Renewable and Non-Renewable Resources
- Petrology
  - Igneous Rocks
  - Magma and Magmatic Rocks
  - Lava, and Volcanic Features
  - Igneous Rock Identification
  - Structure of Plutons
  - Origin of Magma
  - Bowen's Reaction Series
  - Sedimentary Rocks
  - Origin of Sediments
  - Lithification and Diagenesis
  - Sedimentary Rock Identification
  - Depositional Environments
- Metamorphic Rocks
  - Factors Controlling Metamorphism
  - Metamorphic Structures
  - Types of Metamorphism
  - Metamorphic Rock Identification
  - Plate Tectonics and Metamorphism
- Evolution of Landforms and Landscapes
  - Weathering and Soils
  - Mass Wasting
  - Groundwater
  - Glaciers and Glaciation
  - Deserts and Winds
  - Ocean Margin Features
- Dynamic movements of the Earth's Crust
  - Deformation of Rock
  - Evidence of Former Deformation
  - Earthquakes
  - Plate Tectonics
  - Internal Structure of Earth
  - Gravity anomalies and Isosostacy
  - Global Tectonics
- Stratigraphy
  - Relative Dating and Correlation
  - Radioactive Dating
  - Magnetic Reversals
  - Fossils and Fossil Preservation
  - Fossil Identification Project
  - Geologic Maps
  - Our Changing Planet
- Geology of New York State
  - Plate Tectonic History of New York
  - Bedrock Geology of New York State
  - Surficial Geology
  - Present Day New York

Assessment: School final exam.

ADVANCED PLACEMENT - PHYSICS C
Code: S686   Full Year (12)   (1 Credit)   (rank weight 1.06)

Prerequisite: Current or previous enrollment in a Calculus course required. Successful completion of Regents Physics and strong history in other Regents Math and science courses. This course is intended as a second year Physics course.

Areas of Study Include:
- Physics And Measurement
  - Si Units – (Length, Mass, Time); Dimensional Analysis; Significant Figures; Problem Solving; - Estimations, Error, And Error Analysis
- Motion In One Dimension
  - Displacement, Velocity, Speed; Instantaneous Velocity, Speed; Acceleration; Kinematic Graphics; Free Fall
- Vectors
  - Coordinate Systems; Vectors And Scalars; Vector Addition And Subtraction; Vector Components; Unit And I-J-K Vectors
- Motion In Two Dimensions
  - Two Dimensional Motion With Constant Acceleration; Motion In A Plane And Projectiles; Uniform Circular Motion; Relative Motion
- The Laws Of Motion
  - Concept Of Force; Newton's First Law And Inertial Frames; Mass, Newton's Second Law; Application Of Newton's 2nd Law To Systems Of Bodies; Force And Gravity, Friction
- Circular Motion And Applications Of Newton's Laws
  - Circular Motion; Centripetal Force; Non-uniform Circular Motion; Motion In A Resistive Medium
- Work And Kinetic Energy
  - Work Done By A Constant Force; Scalar Product; Work Done By A Variable Force; Work Done On A Spring; Kinetic Energy And The Work-Energy Theorem; Power And Efficiency
- Potential Energy And Conservation Of Energy
  - Potential Energy; Conservative And Non-conservative Forces; Conservative Forces and Potential Energy; Conservation Of Mechanical Energy; Potential Energy Function
- Linear Momentum And Collisions
  - Linear Momentum And Its Conservation; Impulse And Momentum; Collisions In One Dimension; Collisions In Two Dimensions; Center Of Mass; Rocket Propulsion
- Rotation Of A Rigid Object About A Fixed Axis
  - Angular Displacement, Velocity, And Acceleration; Rotational Kinematics; Angular And Linear Quantities; Rotational Energy; Calculations Of Moments Of Inertia; Torque and Angular Acceleration; Work, Power, and Energy In Rotational Motion
- Rolling Motion And Angular Momentum
  - Rolling Motion Of A Rigid Body; Kinetic Energy Of A Rolling Body; Angular Momentum of A Particle; Angular Momentum Of A Rolling Rigid Body; Conservation Of Angular Momentum
- Static Equilibrium And Elasticity
  - Conditions For Equilibrium; First Condition Of Equilibrium; Second Condition For Equilibrium; Cranes Ladders And Other Systems, Thermal Expansion, Elasticity
- Oscillatory Motion
  - Simple Harmonic Motion; The Block And Spring System; Energy Of A Simple Harmonic Oscillator; The Pendulum; Simple Harmonic Motion And Uniform Circular Motion; Damped Oscillations

- The Law Of Gravity
  - Newton's Universal Law Of Gravitation; Measuring The Gravitational Constant; Free Fall and Gravitational Force; Kepler's Laws; Gravitational Potential Energy; Energy Considerations In Planetary And Satellite Motion
- Electrical Fields
  - Properties Of Charges; Insulators And Conductors; Coulomb's Law, Electrical Fields, Electrical Fields Of Continuous Charge Distribution; Electrical Field Lines; Motion Of Charged Particles In A Uniform Electrical Field.
- Gauss' Law
  - Electric Flux; Gauss' Law; Application Of Gauss' Law To Charged Insulators; Conductors In Electrostatic Equilibrium
- Electrical Potential
  - Potential Difference And Electric Potential; Potential Differences In A Uniform Electric Field; Electrical Potential And Potential Energy Due To Point Charges; Relating Electric Potential To The Electric Field; Electric Potential Due To A Continuous Charge Distribution; Electric Potential Due To A Charged Conductor; The Millikan Oil-Drop Experiment; Applications Of Electrical Potential-
- Capacitance And Dielectics
  - Capacitance; Calculating Capacitance; Combinations Of Capacitors; Energy Stored In A Charged Capacitor; Capacitors With Dielectrics; Equivalent Capacitance; Electric Dipole In An Electric Field
- Current And Resistance
  - Electric Current; Resistance And Ohm's Law; A Model Of Electric Conductivity; Resistance And Temperature; Electrical Energy And Power.
- Direct Current Circuits
  - Emf; Resistors In Series, Parallel, And Combination; Ohm's Law For An Entire Circuit; Kirchhoff's Rules; Rc Circuits; Voltmeters, Ammeters, And Galvanometers; Household Circuits And Electrical Safety
- Magnetic Fields
  - The Magnetic Field; Magnetic Force On A Current-Carrying Conductor; Torque On A Current Loop In A Uniform Magnetic Field; Motion Of A Charged Particle In A Uniform Magnetic Field; Magnetic Field Strength And Magnetic Force
- Sources Of Magnetic Fields
  - The Biot-Sarvart Law; Magnetic Force Between Two Parallel Conductors; Ampere's Law; Magnetic Flux; Gauss' Law For Magnetism' Displacement Current And Ampere's Law; The Earth's Magnetic Field
- Faraday's Law
  - Faraday's Law Of Induction; Motional Emf; Lanz's Law; Induced Emf; Motors And Generators; Maxwell's Equations
- Inductance
  - Self Inductance; Rl Circuits; Energy In A Magnetic Field; Mutual Inductance; Lc Circuits

Assessment: Students Will Be Prepared For The Advanced Placement Exam In May. Each Student Is Expected To Take The Advanced Placement Exam In May. The Fee Is Determined By The College Board And Is The Responsibility Of The Student. In The Event That The Student Does Not Take The AP Exam, The Student's Report Card And Transcript Will Reflect Only A Course At An Honors-Type Level.

For the complete AP Curriculum see:
http://apcentral.collegeboard.com/apc/Controller.jpf

ADVANCED PLACEMENT - ENVIRONMENTAL SCIENCE

Code: S687   Full Year (12) (1 credit) (rank weight 1.06)
Prerequisite: Earth Science and Living Environment

Recommendation: Student must achieved a final average 85% or higher in Earth Science and Living Environment; Chemistry preferred or taking concurrently.

Students are expected to take the AP Environmental Science exam in May. Any student who does not take the AP exam will be re-registered into a non-AP level course number.

Areas of Study Include:
- Earth Systems and Resources
  - Earth Science Concepts (Geologic time scale; plate tectonics, earthquakes, volcanism; seasons; solar intensity and latitude)
  - The Atmosphere (Composition; structure; weather and climate; atmospheric circulation and the Coriolis Effect; atmosphere-ocean interactions; ENSO)
  - Global Water Resources and Use (Freshwater/saltwater; ocean circulation; agricultural, industrial, and domestic use; surface and groundwater issues; global problems; conservation)
  - Soil and Soil Dynamics, Rock cycle; formation; composition; physical and chemical properties; main soil types; erosion and other soil problems; soil conservation)
- The Living World
  - Ecosystem Structure (Biological populations and communities; ecological niches; interactions among species; keystone species; species diversity and edge effects; major terrestrial and aquatic biomes)
  - Energy Flow (Photosynthesis and cellular respiration; food webs and trophic levels ecological pyramids)
  - Ecosystem Diversity (Biodiversity; natural selection; evolution; ecosystem services)
  - Natural Ecosystem Change (Climate shifts; species movement; ecological succession)
  - Biogeochemical Cycles (Carbon, nitrogen, phosphorus, sulfur, water, conservation of matter)
- Population
  - Population Biology Concepts (Population ecology; carrying capacity; reproductive strategies) Human Population
  - Human population dynamics (Historical population sizes; distribution; fertility rates; growth rates and doubling times; demographic transition; age-structure diagrams)
  - Population size (Strategies for sustainability; case studies; national policies)
  - Impacts of population growth (Hunger; disease; economic effects; resource use; habitat destruction)
- Land and Water Use
  - Agriculture
  - Feeding a growing population (Human nutritional requirements; types of agriculture; Green Revolution; genetic engineering and crop production; deforestation; irrigation; sustainable agriculture)
  - Controlling pests (Types of pesticides; costs and benefits of pesticide use; integrated pest management; relevant laws)
  - Forestry (Tree plantations; old growth forests; forest fires; forest management; national forests)
  - Rangelands (Overgrazing; deforestation; desertification; rangeland management; federal rangelands)

- Other Land Use
  - Urban land development (Planned development; suburban sprawl; urbanization)
  - Transportation infrastructure (Federal highway system; canals and channels; roadless areas; ecosystem impacts)
  - Public and federal lands (Management; wilderness areas; national parks; wildlife refuges; forests; wetlands)
  - Land conservation options (Preservation; remediation; mitigation; restoration) Sustainable land-use strategies
  - Mining (Mineral formation; extraction; global reserves; relevant laws and treaties)
  - Fishing (Fishing techniques; overfishing; aquaculture; relevant laws and treaties) Global Economics Globalization; World Bank; Tragedy of the Commons; relevant laws and treaties) Energy Resources and Consumption
- Energy Concepts (Energy forms; power; units; conversions; Laws of Thermodynamics)
  - Energy Consumption
  - History (Industrial Revolution; exponential growth; energy crisis)
  - Present global energy use
  - Future energy needs
  - Fossil Fuel Resources and Use (Formation of coal, oil, and natural gas; extraction/purification methods; world reserves and global demand; synfuels; environmental advantages/disadvantages)
- Nuclear Energy (Nuclear fission process; nuclear fuel; electricity production; nuclear reactor types; environmental advantages/disadvantages; safety issues; radiation and human health; radioactive wastes; nuclear fusion)
  - Hydroelectric Power (Dams; flood control; salmon; silting; other impacts)
  - Energy Conservation (Energy efficiency; CAFE standards; hybrid electric vehicles; mass transit)
- Renewable Energy (Solar energy; solar electricity; hydrogen fuel cells; biomass; wind energy; mall-scale hydroelectric; ocean waves and tidal energy; geothermal; environmental advantages/disadvantages).
- Pollution
- Pollution Types
  - Air pollution (Sources-primary and secondary; major air pollutants; measurement units; smog; acid deposition-causes and effects; heat islands and temperature inversions; indoor air pollution; remediation and reduction strategies; Clean Air Act and other relevant laws)
  - Noise pollution (Sources; effects; control measures)
  - Water pollution (Types; sources, causes, and effects; cultural eutrophication; groundwater pollution; maintaining water quality; water purification; sewage treatment/septic systems;
  - Solid waste (Types; disposal; reduction
  - Impacts on the Environment and Human Health
  - Hazards to human health (Environmental risk analysis; acute and chronic effects; dose response relationships; air pollutants; smoking and other risks)
  - Hazardous chemicals in the environment (Types of hazardous waste; treatment/disposal of hazardous waste; cleanup of contaminated sites; bio-magnification; relevant laws)
  - Economic Impacts (Cost-benefit analysis; externalities; marginal costs; sustainability)

- Global Change
  - Stratospheric Ozone (Formation of stratospheric ozone; ultraviolet radiation; causes of ozone depletion; effects of ozone depletion; strategies for reducing ozone depletion; relevant laws and treaties
  - Global Warming (Greenhouse gases and the greenhouse effect; impacts and consequences of global warming; reducing climate change; relevant laws and treaties)
  - Loss of Biodiversity
  - Habitat loss; overuse; pollution; introduced species; endangered and extinct species
  - Maintenance through conservation
  - Relevant laws and treaties

ADVANCED PLACEMENT BIOLOGY
Code: S688   Full Year (11-12*)   (1 credit) (rank weight 1.06)
Prerequisite: Honors or Regents Biology and honors or Regents Chemistry. All others approval by the district coordinator. Students are expected to have at least an 85% average in previous science courses.

NOTE: This course can include labs with dissection components. The final exams are approved by Dutchess Community College. Successful completion of these exams can result in up to eight college credits issued by Dutchess Community College. Each student is expected to take the Advanced Placement in May. The fee is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP exam, the student's report card and transcript will reflect only a course at an Honors level.

Areas of Study Include:
- Molecules and Cells
  - Chemistry of Life
  - Water
  - Organic molecules in organisms
  - Free energy changes
  - Enzymes
  - Prokaryotic and eukaryotic cells
  - Membranes
  - Subcellular organization
  - Cell cycle and its regulation
- Cellular Energetics
  - Coupled reactions
  - Fermentation and cellular respiration
  - Photosynthesis
- Heredity and Evolution
  - Heredity
  - Meiosis and gametogenesis
  - Eukaryotic chromosomes
  - Inheritance patterns
- Molecular Genetics
  - RNA and DNA structure and function
  - Gene regulation
  - Mutation
  - Viral structure and replication
  - Nucleic acid technology and applications
- Evolutionary Biology
  - Early evolution of life
  - Evidence for evolution
  - Mechanisms of evolution

- Organisms and Populations
  - Diversity of Organisms
  - Evolutionary patterns
  - Survey of the diversity of life
  - Microbial Diversity
  - Phylogenetic classification
  - Evolutionary relationships
- Structure and Function of Plants and Animals
  - Reproduction, growth, and development
  - Structural, physiological, and behavioral adaptations
  - Response to the environment
- Ecology
  - Population dynamics
  - Communities and ecosystems
  - Global issues

Assessment: The final exams are approved by Dutchess Community College. Successful completion of these exams can result in up to eight college credits issued by Dutchess Community College. Each student is expected to take the Advanced Placement in May. The fee is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP exam, the student's report card and transcript will reflect only a course at an Honors level.

For the complete AP Curriculum see:
http://apcentral.collegeboard.com/apc/Controller.jpf

MARINE SCIENCE

Code: S531   Full Year (11-12) (1 credit) (rank weight 1.00)
Prerequisite: Successful completion of two years of Math and Science, and a 65 or better on one Math and Science Regents Exam.

Areas of Study Include:
- Exploring the Oceans
  - What is Marine Science?
  - What are the Oceans?
  - History of ocean exploration
- Marine Scientists at Work
  - Marine Science today
  - The scientific method
  - Measurement
- The World of Water
  - The water plant
  - The water budget
  - Water as a solvent
  - The salty sea
- Bacteria and Unicellular Algae
  - Classification
  - Bacteria
  - Diatoms
- Marine Algae and Plants
  - Marine Algae
  - Beach plants
  - Marine grasses
  - Marine trees
- Intro to Marine Animals
  - Nutrition in animals
  - Zooplankton
  - Protozoans
  - Rotifers, sponges and Bryozoans
- Animals with stinging tentacles
  - Jellyfish
  - Sea anemones
  - Coral
  - Hydroids
- Marine worms
  - Flatworms/ribbon worms
  - Roundworms/segmented worms
  - Giant tube worms/arrow worms
- Soft Bodied animals
  - Bivalves
  - Gastropods
  - Cephalopods
  - Other mollusks
- Animals with armor
  - Crustaceans (lobsters and crabs)
  - Diversity among the crustaceans: the shrimp
  - Diversity among the arthropods
- Spiny-skinned animals
  - Sea stars
  - Adaptations in the sea star
  - Sea urchins and sand dollars
  - Eccentric echinoderms
- The Fishes
  - Protochordates and jawless fishes
  - Cartilaginous fishes
  - Bony fishes
  - Unusual adaptations in fish
- Marine reptiles and birds
  - Marine reptiles
  - Marine birds
- Marine mammals
  - Whales
  - Dolphins
  - Whale adaptations and behaviors
  - Seals and other marine mammals
  - The diving response
- Marine environments
  - Marine life zones
  - The sandy beach environment
  - The rocky coast environment
  - The estuary environment
  - The coral reef environment
- Geology of the Ocean
  - Origin of the Ocean and the continents
  - Plate tectonics
  - Ocean floor
  - Coasts and reefs in profile
- Climate and the Ocean
  - Ocean temperature and wind
  - Moisture in the air
  - Stormy weather (Special Feature: Catastrophic Hurricanes)
- Ocean temperature and pressure
  - Kinetic energy and heat in the ocean
  - Temperature variations in the ocean
  - Pressure under water
  - Osmotic pressure and aquatic adaptations
- Light and sound in the sea
  - Light and water
  - Light and life in the sea
  - Sound in the sea
- The restless sea
  - The tides
  - Ocean waves (Special feature: The Tsunami)
  - Ocean currents

- Interdependence in the ocean
  - Cycles in the sea
  - Food relationships in the sea
  - Symbiosis in the ocean
  - Succession in marine environments (Special feature: Ocean wreckages)
- Pollution in the ocean
  - Sewage pollution
  - Toxic chemicals
  - Clean, clear water
- Conservation of marine resources
  - Marine resources
  - Farming the sea (Special Feature: Marine Law in History)
- The ocean and astrobiology
  - The ocean as an extreme extraterrestrial environment analog
  - Aliens of the deep
  - Oceans on other worlds

Assessment: School generated Final Exam

ASTRONOMY: A STUDY OF "OUR SPACE"
Code: S640   Full Year (11-12) (1 credit) (rank weight 1.0)
Prerequisite: Successful completion of two years of Math and Science and a 75 or better on one Math and Science Regents Exam

Areas of Study Include:
- The Celestial Sphere
  Shape of the sky
  Measuring distances and directions on the sky
  Objects "on" the sky
  Constellations
  Viewing the sky (telescopes)
- History of Astronomy
  The observers and borrowers (using the sky to pace daily life)
  The theorists (seeking to explain through observation)
  The discoverers (building off of Newtonian mechanics to predict celestial activity)
- The Scale of the Universe
  Light years
  Orders of magnitude
  Sizes of objects
- The Sun and Stars
  Star types
  Stellar evolution
  Sol (our sun)
- The Solar System
  Formation of our solar system
  Inner planets (with asteroids, meteors, and meteorites)
  Outer planets
  Kuiper belt and Oort cloud
- Our Space Missions
  "Thousands of years worth of dreams and fantasy"
  The Rocket
  Sputnik / NASA
  Project Mercury
  Gemini
  Apollo (esp. 11)
  Space Shuttle
  Robotic missions

- The Galaxies and Universe
  Big Bang
  Galaxies
  Cosmology
- The Future
  Space economy / tourism
  The search for life
  Colonization and beyond

Assessment: School generated Final Exam

FORENSIC SCIENCE - PROJECT ADVANCE CHEMISTRY 113 - (Syracuse University Concurrent Enrollment)
Code S714   Full Year (12) 1 credit   (rank weight 1.06)
Prerequisite: Successful completion of three years of Regents science including Chemistry and Living Environment as well as successful completion of at least three years of Regents math. Student must be recommended by the previous year's science teacher. Coordinator approval required.

4 college credits available from Syracuse University (Additional fee payable directly to college)

Areas of Study

Forensic Science, is focused upon the application of scientific methods and techniques to crime and law. The scientific methods specifically relevant to crime detection and analysis will be presented with emphasis placed upon the techniques used in evaluating physical evidence. Topics included are crime scene investigation, introduction to law of evidence, blood analysis, organic and inorganic evidence analysis, microscopic investigations, hair analysis, DNA, drug chemistry and toxicology, fiber comparisons, paints, glass compositions and fragmentation, fingerprints, soil comparisons, and arson investigations, as well as introduction to forensic pathology, entomology and anthropology. Laboratory exercises will include techniques commonly employed in forensic investigations.

As a concurrent enrollment with Syracuse University students would obtain four college credits for their work in this course at a very reasonable cost. These credits would transfer to the student's college of choice thereby providing the families with savings towards their total college costs.

SECOND LANGUAGE

SECOND LANGUAGE

The goal of the Foreign Language program is to develop in each student the ability to understand and communicate verbally, as well as to read and write in the foreign language. Students develop a knowledge of vocabulary, a knowledge of the structure of the language, the ability to read the language at sight, and the appreciation of the contributions to our culture of the people whose language is being studied. The students are aided in speaking and in understanding the target language through frequent use of video and audio recordings and authentic materials.

GRADUATION REQUIREMENTS

1) In order to satisfy the minimum graduation requirements for any New York State diploma, unless specifically exempted by an Individualized Education Plan (I.E.P.), all students must earn one (1) unit of foreign language credit by either a) completing two (2) years of foreign language study and passing a Proficiency Exam at the junior high school level, or b) passing one (1) high school foreign language course. Students exempted from this requirement by an I.E.P. must substitute one (1) credit in another subject area in place of the foreign language credit.

2) In order to qualify for an Advanced Regents Diploma, unless specifically exempted by an I.E.P., all students must complete a sequence of three (3) credits and pass the NYS Regents Exam in a foreign language. Students exempted from this requirement by an I.E.P. must substitute three (3) credits in some other subject area(s) in place of the foreign language sequence.

(**NOTE:** A sequence of five (5) credits in Art, Music, Business, Technology or Vocational Education may be substituted for the requirement for the Advanced Regents Diploma, but the minimum requirement of one (1) foreign language credit must still be satisfied.)

JUNIOR HIGH SCHOOL FOREIGN LANGUAGE PROGRAM

In Wappingers, all students (except those classified students whose I.E.P.s exempt them), begin a foreign language in grade 7. With sufficient enrollment and availability of staff, grades 7 and 8 *Language for Communication* is offered in French, Italian and Spanish. This is a 2-year introductory Level I program. At the end of grade 8, students take a second Language Proficiency Examination. Students who pass this exam are eligible to receive one unit of high school Regents credit. Grade 7 and grade 8 foreign language are the equivalent of a level I course.

All Foreign Language courses are full-year courses.

SECOND LANGUAGE

ITALIAN 1
Code: L313

SPANISH 1
Code: L513   (9-12)   (1 credit) (rank weight 1.0)
Prerequisite: None

This course is intended as a first experience in the target language and prepares students to meet the NYS Education Department's Languages Other Than English (LOTE) Checkpoint A proficiency level. Students learn to speak and understand the language using basic vocabulary within the context of everyday situations, use grammatical structures within the context of topics, and work with vocabulary lists, original dialogues, notes and letters related to the topics.

Areas of Study Include:
TOPICS
- Personal identification
- Family life
- Education
- House and home
- Leisure
- Shopping
- Community neighborhood
- Meal taking/food/drink
- Physical environment
- Travel
- Health and welfare
- Earning a living
- Public and private services
- Services - repairs
- Current events

(Every topic may not be studied in depth.)

FUNCTIONS
- Socializing
- Providing and obtaining information
- Expressing personal feelings
- Getting others to adopt a course of action (Persuasion)

SITUATIONS
- Listening
- Speaking
- Reading
- Writing

Assessment: A Department final exam will be administered in June. The final exam counts as 20% of the final course average. Passing this course meets the minimum graduation requirement in foreign language.

For a complete review of the NYS Learning Standards for Languages Other Than English (LOTE), see:
http://www.emsc.nysed.gov/ciai/lote/pub/lotelea.pdf

For a complete core curriculum for LOTE, see (especially pp. 12 – 19)
http://emsc32.nysed.gov/guides/lote/partI1.pdf

CULTURAL LANGUAGE
Code: L510   (9-12)   (1 credit) (rank weight 1.0)
Prerequisite: None

This course is open to all students who lack the one credit language requirement for graduation, but who do NOT intend to pursue the 3 credit sequence in foreign language that is required for an advanced Regents diploma designation. This course is intended as a first experience in the target language and prepares students to meet the NYS Education Department's Languages Other Than English (LOTE) Checkpoint A proficiency level. Depending on the availability of staff, this course may be offered in French, German, Italian and/or Spanish.

The Cultural Language course is an option for students who did not meet the New York State foreign language requirement at the junior high level. The goals of this course include:
- Compliance with NYSED foreign language requirements for graduation
- Meeting requirements of Checkpoint A proficiency
- Providing alternative instructional methods and strategies

Students who take this course will NOT be able to continue into Level 2 language. It is meant as an alternative to, not a substitute for, Level 1 language at the High School. If a student decides that he/she wants to pursue a sequence, Level 1 language would have to be taken the following year. This is a voluntary option, and both students and parents need to be aware of the objectives and guidelines of the course before it is scheduled.

Areas of Study Include:
TOPICS
- Personal identification
- Family life
- Education
- House and home
- Leisure
- Shopping
- Community neighborhood
- Meal taking/food/drink
- Physical environment
- Travel
- Health and welfare
- Earning a living
- Public and private services
- Services - repairs
- Current events

(Every topic may not be studied in depth.)

FUNCTIONS
- Socializing
- Providing and obtaining information
- Expressing personal feelings
- Getting others to adopt a course of action (Persuasion)

SITUATIONS
- Listening
- Speaking
- Reading
- Writing

Assessment: A teacher-created final exam or culminating project will be included and counted as 20% of the final course average. Passing this course meets the minimum graduation requirement in foreign language.

For a complete review of the NYS Learning Standards for Languages Other Than English (LOTE), see:
http://www.emsc.nysed.gov/ciai/lote/pub/lotelea.pdf

For a complete core curriculum for LOTE, see (especially pp. 12 – 19)
http://emsc32.nysed.gov/guides/lote/partI1.pdf

SECOND LANGUAGE

FRENCH 2
Code: L123

GERMAN 2
Code: L223

ITALIAN 2
Code: L323

SPANISH 2
Code: L523   (9-12)   (1 credit) (rank weight 1.0)
Prerequisite: Must have passed the same foreign language in Grade 8 or Level 1.

In level 2, students move beyond the State Education Department's LOTE Checkpoint A proficiency level and begin preparing in earnest for the Regents exam at the end of level 3 (Checkpoint B). Topics, functions and situations remain the same as in the previous level, but are approached in a broader and deeper manner. Expanding vocabulary and an increasing understanding of more complicated verb forms and grammatical concepts allow the students to communicate more effectively and understand the target language in authentic situations.

Areas of Study Include:
TOPICS
- Personal identification
- Family life
- Education
- House and home
- Leisure
- Shopping
- Community neighborhood
- Meal taking/food/drink
- Physical environment
- Travel
- Health and welfare
- Earning a living
- Public and private services
- Services - repairs
- Current events

(Every topic may not be studied in depth.)

FUNCTIONS
- Socializing
- Providing and obtaining information
- Expressing personal feelings
- Getting others to adopt a course of action (Persuasion)

SITUATIONS
- Listening
- Speaking
- Reading
- Writing

Within the contexts of the topics, students will:
- Expand their vocabulary in the second language within the context of everyday situations
- Use grammatical structures which build upon those learned in prerequisite courses in order to express more complex thoughts and ideas
- Read and comprehend short stories and essays
- Socialize and carry on simple conversations in social situations relevant to young students
- Provide and obtain information in daily social interaction
- Express personal feelings
- Persuade others to act or not act in many different situations
- Write short essays and dialogues relevant to the above areas of study
- Listen to and comprehend the second language when spoken in authentic situations

Assessment: A Department final exam will be administered in June. The final exam counts as 20% of the final course average. Passing this course meets the minimum graduation requirement in foreign language.

For a complete review of the NYS Learning Standards for Languages Other Than English (LOTE), see:
http://www.emsc.nysed.gov/ciai/lote/pub/lotelea.pdf

For a complete core curriculum for LOTE, see (especially pp. 12–19)
http://emsc32.nysed.gov/guides/lote/partI1.pdf

FRENCH 3
Code: L133

GERMAN 3
Code: L233

ITALIAN 3
Code: L333

SPANISH 3
Code: L533   (9-12)   (1 credit) (rank weight 1.0)
Prerequisite: Must have passed the same foreign language in Level 2.

This is the final course preparing students for NYS Education Department's Checkpoint B proficiency (the Regents exam). Topics, functions and situations remain the same as in the previous levels, but are approached in a broader and deeper manner. Expanding vocabulary and an increasing understanding of more complicated verb forms and grammatical concepts allow the students to communicate more effectively and understand the target language in authentic situations.

Areas of Study Include:
TOPICS
- Personal identification
- Family life
- Education
- House and home
- Leisure
- Shopping
- Community neighborhood
- Meal taking/food/drink
- Physical environment
- Travel
- Health and welfare
- Earning a living
- Public and private services
- Services - repairs
- Current events

FUNCTIONS
- Socializing
- Providing and obtaining information
- Expressing personal feelings
- Getting others to adopt a course of action (Persuasion)

SECOND LANGUAGE

SITUATIONS
- • Listening
- • Speaking
- • Reading
- • Writing

Assessment: All students in this course level take the NYS Regents exam (if offered) in the foreign language in June. The Regents exam is also the final exam for the course, which counts as 20% of the final course average. Students must pass this course and the Regents exam in order to qualify for an Advanced Regents Diploma.

For a complete review of the NYS Learning Standards for Languages Other Than English (LOTE), see:
http://www.emsc.nysed.gov/ciai/lote/pub/lotelea.pdf

For a complete core curriculum for LOTE, see (especially pp. 12 – 19)
http://emsc32.nysed.gov/guides/lote/partI1.pdf

FRENCH 4 - HONORS*
Code: L145

GERMAN 4 - HONORS*
Code: L245

ITALIAN 4 - HONORS*/COLLEGE CREDIT**
Code: L345

SPANISH 4 - HONORS*
Code: L545   (9-12) (1 credit) (rank weight 1.04)
Prerequisite: Must have passed the same foreign language in Level 3.

* This course is intended for the accelerated/honors student who is prepared to meet the rigorous academic demands of advanced placement work, as it is the first part of a two-year sequence that prepares students to meet the challenges of the College Board's Advanced Placement exam at the end of Level 5. As an honors-level course, grades are weighted. There is no Advanced Placement exam in Italian.

**Students of Italian 4 have the option of enrolling with SUNY Albany to receive four (4) credits for successful completion of the course (equivalent to SUNY Albany's Intermediate Italian 1). There is a fee for students who wish to participate in this college program.

Areas of Study Include:
In accordance with Checkpoint C of the New York State Learning Standards for Languages Other than English (LOTE), throughout the course, students will:
- • expand their ease in listening comprehension, in order to understand more readily native speakers as they present a variety of topics, in various situations
- • refine and widen their own use of the spoken language as they interact with others to communicate their thoughts, needs and wants in the target language
- • learn more advanced grammar in order to express deeper thoughts about topics of interest
- • be exposed to the written language as found in contemporary media and in carefully-selected literary works
- • be able to write reports that are factual and analytical as well as opinion-based essays
- • continually develop an appreciation for the customs of the target culture as well as their artistic expression by learning about the creative arts, traditional and current music and the culture of cinema

Topics will include, but not be limited to:
- • self and others
- • family and interpersonal relations
- • the community and societal customs
- • education and preparing for the future
- • jobs and professions; leisure

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average.

For more information on the Advanced Placement program, see: http://apcentral.collegeboard.com/apc/public/courses/descriptions/index.html

For a complete review of the NYS Learning Standards for Languages Other Than English (LOTE), see:
http://www.emsc.nysed.gov/ciai/lote/pub/lotelea.pdf

For a complete core curriculum for LOTE, see (especially pp. 12 – 19)
http://emsc32.nysed.gov/guides/lote/partI1.pdf

SECOND LANGUAGE

FRENCH 5 - ADVANCED PLACEMENT*
Code: L156

GERMAN 5 - ADVANCED PLACEMENT*
Code: L256

ITALIAN 5 - COLLEGE CREDIT**
Code: L356

SPANISH 5 - ADVANCED PLACEMENT*
Code: L556   (9-12) (1 credit) (rank weight 1.06)
Prerequisite: Must have passed the same foreign language in Level 4.

*This course is intended for the accelerated/honors student who is prepared to meet the rigorous academic demands of advanced placement work, as it is the final part of a two-year sequence that prepares students to meet the challenges of the College Board's Advanced Placement exam. As an Advanced Placement-level course, grades are weighted.

**Students of Italian 5 have the option of enrolling with SUNY Albany to receive four (4) credits for successful completion of the course (equivalent to SUNY Albany's Intermediate Italian 2). There is a fee for students who wish to participate in this college program. There is no Advanced Placement exam in Italian.

Areas of Study Include:
In accordance with Checkpoint C of the New York State Learning Standards for Languages Other than English (LOTE), throughout the course, students will:
- continue to refine their listening comprehension skills as they learn to recognize nuances, subtleties and humor in the language of a native speaker
- be able to expand their own level of communication in the target language through the use of more specific vocabulary and idiomatic expressions
- be able to comprehend and appreciate the content of a variety of authentic print texts – from newspapers and magazines to contemporary short stories.
- be able to express feelings and opinions on a broad range of topics through the written form.

Topics will include, but not be limited to:
- the environment and ecological issues
- travel and cultural exchanges
- the work place
- societal roles and current events
- Italy, the US and the world community

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average. Except for Italian, students in this course are also expected to take the Advanced Placement exam in the applicable language in May. There is fee for this exam which is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP exam, the student's report card and transcript will reflect only a course in Honors.

For more information on the Advanced Placement program, see: http://apcentral.collegeboard.com/apc/public/courses/descriptions/index.html

For a complete review of the NYS Learning Standards for Languages Other Than English (LOTE), see:
http://www.emsc.nysed.gov/ciai/lote/pub/lotelea.pdf

For a complete core curriculum for LOTE, see (especially pp. 12 – 19)
http://emsc32.nysed.gov/guides/lote/partI1.pdf

ENGLISH AS A SECOND LANGUAGE (ESL)

In accordance with NYS Education Department regulations, all new students registering in the Wappingers Central School District are screened for English language proficiency and, if necessary, tested with the Language Assessment Battery – Revised (LAB-R). Students who test as Proficient do not need ESL services. Students who test at the Beginning, Intermediate or Advanced levels are considered Limited English Proficient (LEP) or English Language Learners (ELLs). Students who test at the Beginning level are assigned three ESL classes (G10X) every day. Students at the Intermediate level are assigned two ESL classes (G20X) every day. Students at the Advanced level are assigned one ESL class (G30X) every day.

NOTE: ESL is offered at Roy C. Ketcham only. John Jay students who require ESL attend Ketcham.

BEGINNING ESL
Code: G101 - 102 - 103 (9-12) (1 credit) (rank weight 1.0 when credit is granted)
Prerequisite: None

Students generally do not take English in addition to this course.

INTERMEDIATE ESL
Code: G201 - 202 (9-12) (1 credit) (rank weight 1.0 when credit is granted)
Prerequisite: None

(One local credit at the high school level in lieu of a regular English course.)

One Intermediate class can be counted for English credit.

ADVANCED ESL
Code: G301 - 302 (9-12) (No Credit) (rank weight Not Applicable)
Prerequisite: None

Students take English for credit in addition to this course.

Areas of Study Include:
General areas are listed below. The actual content and level of instruction change based on the needs of the individual students in class.
- Conversation skills
- Vocabulary development
- Grammar
- Reading comprehension
- Writing improvement
- Cultural awareness

Assessment: As required under SED regulations, all ESL students take the New York State English as a Second Language Test (NYSESLAT) in May of each school year. In order to test out of ESL, students must test as Proficient. Students who test as Beginning, Intermediate or Advanced, will continue to be assigned ESL classes as indicated above.

LEP/ELL students must meet the same graduation and diploma requirements as all other students.

For more information about the New York State Learning Standards for ESL, see:
http://www.emsc.nysed.gov/biling/resource/ESL/standards.html

For more information about ESL requirements, testing and other resources, see:
http://www.emsc.nysed.gov/biling/nysben.html

SOCIAL STUDIES

All students are required by New York State to take four years of Social Studies in high school. Students must pass New York State Regents examinations in Global History & Geography and in United States History & Government in order to graduate.

Required courses are:
    Global History and Geography - Grades 9 and 10
    United States History and Government - Grade 11
    Economics and Participation in Government - Grade 12

Students may also elect to take the courses listed below. First priority is given to seniors. Except for AP World History, elective courses in Social Studies are generally not available to students in grade 9 or grade 10. However, if space allows, grade 10 students may be permitted to take an elective course, with the recommendation of the previous year's Social Studies teacher, the permission of the elective teacher and the approval of the Department Coordinator. Unless otherwise noted, electives are half-year courses.

African Studies	AP World History (2 full years)	Law and the Individual
American Civil War	Holocaust Studies	Psychology
AP Economics	Human Rights Issues	Society and Culture
AP European History (full year)	Latin American Studies	World at War
AP P.I.G./American Government		

Electives are offered subject to sufficient enrollment and the availability of staff, and may not be available at both high schools.

- **Students may not take more than one required Social Studies course in any given academic year** except as noted herein. During their senior year, students who request permission from the District Social Studies Coordinator to take United States History & Government and a required grade 12 Social Studies course simultaneously may be permitted to do so if they meet the following requirements:

  - the student would be eligible to graduate at the end of that year if both courses were completed successfully
  - the student must maintain passing grades for both courses.

At the end of the first and third quarters of instruction, when grades are reviewed, if the student is not passing both courses, s/he will be dropped from the higher level course, regardless of which course s/he is passing.

SOCIAL STUDIES

GLOBAL HISTORY & GEOGRAPHY I - REGENTS
Code: D347   Full Year (9) (1 credit)   (rank weight 1.0)
Prerequisite: None

GLOBAL HISTORY & GEOGRAPHY I - HONORS
Code: D367   Full Year (9)   (1 credit)   (rank weight 1.04)
Prerequisite: 1. Completion of Grade 8 Honors Social Studies with a final average of at least 85% or Grade 8 Regular Social Studies with a final average of at least 90%; and 2. Recommendation of the previous year's Social Studies teacher.

NOTE: Honors classes generally incorporate more reading, writing and discussion and at a higher level; use more challenging instructional materials; and take more challenging tests throughout the year and a different final exam.

GLOBAL HISTORY & GEOGRAPHY II - REGENTS
Code: D447   Full Year (10) (1 credit) (rank weight 1.0)
Prerequisite: Must have passed Global History & Geography I

GLOBAL HISTORY & GEOGRAPHY II - HONORS
Code: D467   Full Year (10) (1 credit)   (rank weight 1.04)
Prerequisite: 1. Completion of Global History & Geography I Honors with a final average of at least 85% or Global History & Geography I Regents with a final average of at least 90%; and 2. Recommendation of the previous year's Social Studies teacher.

NOTE: Honors classes generally incorporate more reading, writing and discussion and at a higher level; use more challenging instructional materials; and take more challenging tests throughout the year.

The Global History and Geography core curriculum is a two-year program (grades 9 and 10) based on the five New York State Social Studies Learning Standards. It is designed around eight historical units and focuses on common themes that recur across time and place.

Areas of Study Include:

GRADE 9
- Ancient World – Civilizations and Religions (4000 BCE/BC – 500 CE/AD)
- Expanding Zones of Exchange and Encounter (500-1200)
- Global Interactions (1200-1650)
- The First Global Age (1450-1770)

GRADE 10
- An Age of Revolution (1750 - 1914)
- A Half-Century of Crisis and Achievement (1900 - 1945)
- The Twentieth Century Since 1945
- Global Connections and Interactions

This curriculum provides students with the opportunity to explore what is happening in various regions and civilizations at a given time. In addition, it enables students to investigate issues and themes from multiple perspectives and make global connections and linkages that lead to in-depth understanding. For each historical era, students will investigate global connections and linkages, including:
- Cultural Diffusion (Ideas/Technology/Food/Disease)
- Migrations
- Multi-Regional Empires
- Belief Systems
- Trade
- Conflict

Assessment: In Global I (grade 9), a Department final exam based on the content, concepts and themes in this curriculum and modeled after the NYS Global History and Geography Regents examination will be administered in June. The final exam counts as 20% of the final course average. Students must pass this course in order to graduate.

In Global II (grade 10), all students take the NYS Global History and Geography Regents examination in June based on two years of material. The Regents exam is also the final exam for the course and counts as 20% of the final course average. Students must pass this course and the Global History and Geography Regents exam in order to graduate.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

For the complete NYS core curriculum for Global History and Geography, see: http://www.emsc.nysed.gov/ciai/socst/pub/sscore2.pdf (pp. 89-120)

ADVANCED PLACEMENT WORLD HISTORY I (HONORS)
Code: D377   Full Year (9)   (1 credit) (rank weight 1.04)
Prerequisite: 1. Completion of Grade 8 Honors Social Studies with a final average of at least 90% or Grade 8 Regular Social Studies with a final average of at least 95%; and 2. Recommendation of the previous year's Social Studies teacher.

NOTE: This course replaces Global History and Geography I. This is a college-level course. It is academically demanding and requires a significant commitment on the part of the student.

ADVANCED PLACEMENT WORLD HISTORY II
Code: D477   Full Year (10) (1 credit) (rank weight 1.06)
Prerequisite: 1. Completion of Advanced Placement World History I with a final average of at least 85%; and 2. Recommendation of the previous year's Social Studies teacher.

NOTE: This course replaces Global History and Geography II. This is a college-level course. It is academically demanding and requires a significant commitment on the part of the student.

Advanced Placement World History I/II is a two-year Advanced Placement program (grades 9 and 10). The Advanced Placement Program offers a course and exam in World History to qualified students who wish to complete studies in secondary school equivalent to an introductory college course in world history. The purpose of this course is to develop greater understanding of the evolution of global processes and contacts in interaction with different human societies. This understanding is advanced through a combination of selective factual knowledge and appropriate analytical skills. The course highlights the nature of changes in international frameworks and their causes and consequences, as well as comparisons among major societies. It emphasizes relevant factual knowledge used in conjunction with leading interpretive issues and types of historical evidence.

Areas of Study Include:

Core topics begin with the Foundation period of prehistory to 1000 CE, which will serve as the basis during the rest of the program for a more in-depth study of global history and civilization of the past 1,000 years. This course also covers the material outlined in the course description for Global History and Geography I and II.

SOCIAL STUDIES

Assessment: For Advanced Placement World History I, a Department final exam based on the content, concepts and themes in this curriculum and modeled after the World History Advanced Placement exam will be administered in June. The final exam counts as 20% of the final course average. Students must pass this course in order to graduate.

For Advanced Placement World History II, all students take the NYS Global History and Geography Regents examination in June. The Regents exam is also the final exam for the course and counts as 20% of the final course average. Students must pass this course and the Global History and Geography Regents exam in order to graduate. Students in this course are also expected to take the Advanced Placement World History exam in May. There is fee for this exam which is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP exam, the student's report card and transcript will reflect only a course in Honors.

For more information about the Advanced Placement curriculum, see: http://apcentral.collegeboard.com/apc/public/courses/teachers_corner/4484.html

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

For the complete NYS core curriculum for Global History and Geography, see: http://www.emsc.nysed.gov/ciai/socst/pub/sscore2.pdf (pp. 89-120)

ACADEMIC INTERVENTION SERVICES (AIS) - GRADE 9

Code: D910   Full Year (9)   (½ credit, class meets every other day) (rank weight 1.0)

AIS is a program to assist at-risk students in meeting their educational needs. Students are scheduled for AIS based on their junior high school social studies grades and teacher recommendation. Students must remain in the AIS program until they achieve a passing score on the New York State Global History and Geography Regents at the end of grade 10. Since there is no Social Studies State assessment at the end of grade 9, a student <u>may</u> be taken out of the AIS class at the end of grade 9 and placed on "progress monitoring" based on the student's grade 9 average, final exam score and the recommendation of the grade 9 Social Studies teacher. Students may also be placed into AIS based on a teacher's or guidance counselor's recommendation if there is room in a class.

Students meet with their regular grade 9 Social Studies teachers every-other day for an additional class of individualized instruction or in small classroom groups. Target areas to improve student instruction include reading comprehension, map skills, vocabulary, test-taking skills, working with primary documents, and essay writing (Thematic and Document-Based Questions). Students receive a numerical grade for the class. Work done in AIS class is separate from work done in the student's regular Social Studies class. Work in AIS is expected to augment lessons or target learning skills.

For more information about AIS, see: http://www.emsc.nysed.gov/top/AISQAweb.pdf

UNITED STATES HISTORY & GOVERNMENT - REGENTS

Code: D547   Full Year (11) (1 credit) (rank weight 1.0)
Prerequisite: Must have passed Global History and Geography II

UNITED STATES HISTORY & GOVERNMENT - HONORS

Code: D567   Full Year (11) (1 credit) (rank weight 1.04)
Prerequisite: 1. Completion of Global History and Geography II Honors or Advanced Placement World History II with a final average of at least 85%, or Global History and Geography II Regents

with a final average of at least 90%; and 2. Recommendation of the previous year's Social Studies teacher.

NOTE: Honors classes generally incorporate more reading, writing and discussion and at a higher level; use more challenging instructional materials; and take more challenging tests throughout the year.

The United States History and Government core curriculum is organized into seven historical units based on the five New York State Learning Standards. It covers the history of this great experiment in representative democracy, while empha-sizing government and basic constitutional principals so that students can take on their roles as citizens.

Areas of Study Include:
- Geography
- Constitutional Foundations
- Industrializations of the United States
- The Progressive Movement
- At Home and Abroad: Prosperity and Depression
- The United States in an Age of Global Crisis: Responsibility and Cooperation
- A World in Uncertain Times: 1950 to the Present

Assessment: All students take the NYS United States History and Government Regents examination in June. The Regents exam is also the final exam for the course and counts as 20% of the final course average. Students must pass this course and the United States History and Government Regents exam in order to graduate.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

For the complete NYS core curriculum for United States History and Government, see: http://www.emsc.nysed.gov/ciai/socst/pub/sscore2.pdf (pp. 121-155)

ADVANCED PLACEMENT UNITED STATES HISTORY

Code: D587   Full Year (11) (1 credit) (rank weight 1.06)
Prerequisite: 1. Completion of Advanced Placement World History II with a final average of at least 85%, or Global History and Geography II Honors with a final average of at least 90%, or Global History and Geography II Regents with a final average of at least 95%; and 2. Recommendation of the previous year's Social Studies teacher.

NOTE: This course replaces U. S. History and Government. This is a college-level course. It is academically demanding and requires a significant commitment on the part of the student.

The AP program in United States History is designed to pro-vide students with the analytical skills and factual knowledge necessary to deal critically with the problems and materials in United States history. The program prepares students for inter-mediate and advanced college courses by making demands upon them equivalent to those made by full-year introductory college courses. Students should learn to assess historical materials - their relevance to a given interpretive problem, their reliability, and their importance - and to weigh the evidence and interpretations presented in historical scholarship. This course develops the skills necessary to arrive at conclusions on the basis of an informed judgment and to present reasons and evidence clearly and persuasively in an essay format.

SOCIAL STUDIES

Areas of Study Include:
See the course description for U. S. History and Government.

Assessment: All students take the NYS U. S. History and Government Regents examination in June. The Regents exam is also the final exam for the course and counts as 20% of the final course average. Students must pass this course and the United States History and Government Regents exam in order to graduate. Students in this course are also expected to take the Advanced Placement U. S. History exam in May. There is fee for this exam which is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP exam, the student's report card and transcript will reflect only a course in Honors.

For more information about the Advanced Placement curriculum, see: http://apcentral.collegeboard.com/apc/public/courses/teachers_corner/3501.html

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

For the complete NYS core curriculum for United States History and Government, see: http://www.emsc.nysed.gov/ciai/socst/pub/sscore2.pdf (pp. 121-155)

PARTICIPATION IN GOVERNMENT
Code: D605   Half-Year (12) (½ credit)   (rank weight 1.0)
Prerequisite: Must have passed United States History and Government

Students studying participation in government in grade 12 should experience a culminating course that relates the content and skills of the entire social studies curriculum throughout the previous school years to the individual student's obligation and ability to act as a responsible citizen.

Areas of Study Include:
- Interaction between citizens and government
- Analysis of current political issues
- Participation in the United States political system
- Comparison/contrast concept of justice in societies
- Criminal and civil justice systems
- Key court decisions at various levels

Learning activities include:
- Oral presentations
- Research of issues
- Community service

Assessment: Students are required to complete ten hours of community service for this course. In addition, a teacher-created final exam or culminating project will be included and counted as 20% of the final course average. Students must pass this course in order to graduate.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

For the complete NYS core curriculum for Participation in Government, see: http://www.emsc.nysed.gov/ciai/socst/partgov.pdf

ADVANCED PLACEMENT PARTICIPATION IN GOVERNMENT (AP UNITED STATES GOVERNMENT & POLITICS)
Code: D700   Half-Year (12) (½ credit)   (rank weight 1.06)
Prerequisite: 1. Completion of United States History and Government Honors or Advanced Placement U. S. History with a final average of at least 85%, or United States History and Government Regents with a final average of at least 90%; and 2. Recommendation of the previous year's Social Studies teacher.

NOTE: This course replaces Participation in Government. This is a college-level course. It is academically demanding and requires a significant commitment on the part of the student.

The AP United States Government & Politics course provides an analytical perspective on government and politics in the United States. This course involves both the study of general concepts used to interpret United States politics and the analysis of specific case studies. It also requires familiarity with the various institutions, groups, beliefs, and ideas that constitute United States political reality.

Areas of Study Include:
- Constitutional Underpinnings of United States Government
- Political Beliefs and Behaviors
- Political Parties, Interest Groups, and Mass Media
- Institutions of National Government: The Congress, the Presidency, the Bureaucracy, and the Federal Courts
- Public Policy
- Civil Rights and Civil Liberties

Assessment: Students are required to complete ten hours of community service for this course. In addition, a teacher-created final exam or culminating project will be included and counted as 20% of the final course average. Students must pass this course in order to graduate. Students in this course are also expected to take the Advanced Placement U. S. Government and Politics exam in May. There is fee for this exam which is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP exam, the student's report card and transcript will reflect only a course in Honors.

For more information about the Advanced Placement curriculum, see: http://apcentral.collegeboard.com/apc/public/courses/teachers_corner/2259.html

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

For the complete NYS core curriculum for Participation in Government, see: http://www.emsc.nysed.gov/ciai/socst/partgov.pdf

ECONOMICS
Code: D655   Half-Year (12) (½ credit)   (rank weight 1.0)
Prerequisite: Must have passed United States History and Government

Areas of Study Include:
- Economic concepts & understandings
- Economics decision making
- United States Economic system compared to/contrasted with others
- Global economic issues & trends

Learning activities include:
- Simulated Stock Exchange & International Market activities
- Oral presentations
- Research of topics
- Role playing and active participation
- Individual and/or group projects

Assessment: Students take a final exam based on the content, concepts and themes in this curriculum project at the end of the semester. The final exam counts as 20% of the final course average. Students must pass this course in order to graduate.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

For the complete NYS core curriculum for Economics, see: http://www.emsc.nysed.gov/ciai/socst/pub/economics.pdf

SOCIAL STUDIES

ADVANCED PLACEMENT ECONOMICS (AP MICROECONOMICS)

Code: D650 Half-Year (12) (½ credit) (rank weight 1.06)
Prerequisite: 1. Completion of United States History and Government Honors or Advanced Placement U. S. History with a final average of at least 85%, or United States History and Government Regents with a final average of at least 90%; and 2. Recommendation of the previous year's Social Studies teacher.

NOTE: This course replaces Economics. This is a college-level course. It is academically demanding and requires a significant commitment on the part of the student.

The purpose of this AP course in Microeconomics is to provide a thorough understanding of the principles of economics that apply to the functions of individual decision makers, both consumers and producers, within the larger economic system. It places primary emphasis on the nature and functions of product markets, and includes the study of factor markets and of the role of government in promoting greater efficiency and equity in the economy. General topics include:

Areas of Study Include:
- Basic Economic Concepts
- The Nature and Functions of Product Markets
- Factor Markets
- Market Failure and the Role of Government

Assessment: Students take a final exam based on the content, concepts and themes in this curriculum project at the end of the semester. The final exam counts as 20% of the final course average. Students must pass this course in order to graduate. Students in this course are also expected to take the Advanced Placement Microeconomics exam in May. There is fee for this exam which is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP exam, the student's report card and transcript will reflect only a course in Honors.

For more information about the Advanced Placement curriculum, see: http://apcentral.collegeboard.com/apc/public/courses/teachers_corner/2121.html

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

For the complete NYS core curriculum for Economics, see: http://www.emsc.nysed.gov/ciai/socst/pub/economics.pdf

ELECTIVES

NOTE: Unless otherwise noted, electives are half-year courses. Electives are offered subject to sufficient enrollment and the availability of staff, and may not be offered each semester or at both high schools.

AFRICAN STUDIES

Code: D785 Half-Year (11-12) (½ credit) (rank weight 1.0)
Prerequisite: None

This course will deal with the history, people, politics, culture, economy, geography and current events of Africa. It will expand the students' basic knowledge of the African continent and its countries beyond the framework and level of mastery established in Global History and Geography. This course will broaden the students' perspective and understanding regarding Africa. At the conclusion of the course, students will be able to think critically about Africa, demonstrate knowledge of the region and reflect an in-depth understanding of major issues related to Africa. The course will include group study and discussion, focus films, guest speakers, fictional and non-fictional literary works, lecture and research.

Areas of Study Include:
- Geography of the African Continent
- Early history and society
- European contact/the scramble for Africa
- African slave trade
- Modern Africa: politics, economics, international relations

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

AMERICAN CIVIL WAR

Code: D760 Half-Year (11-12) (½ credit) (rank weight 1.0)
Prerequisite: None

The purpose of this course is to offer students the opportunity to examine the issues, personalities and the legacy of this single-most important event in American history. The course will attempt to help students understand the magnitude of the issues, the degree of personal sacrifice, and the war's subsequent impact in shaping the modern American nation.

Areas of Study Include:
- Causes of the war
- Major events and battles as the war unfolds
- The issues and personalities of the war
- The legacy of the conflict

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

SOCIAL STUDIES

EUROPEAN HISTORY - ADVANCED PLACEMENT

Code: D780   Full Year (11-12) (1 credit) (rank weight 1.06)
Prerequisite: 1. Completion of previous year's Honors or Advanced Placement Social Studies course with a final average of at least 85%, or a Regents-level course with a final average of at least 90%; and 2. Recommendation of the previous year's Social Studies teacher.

NOTE: This is a college-level course. It is academically demanding and requires a significant commitment on the part of the student.

The study of European history since 1450 introduces students to cultural, economic, political and social developments that played a fundamental role in shaping the world in which they live. In addition to providing a basic narrative of events and movements, the goals of the AP program in European History are to develop (a) an understanding of some of the principal themes in modern European History, (b) an ability to analyze historical evidence and historical interpretation, and (c) an ability to express historical understanding in writing.

Areas of Study Include:
  • Movement of European history from the Renaissance to the present
  • Political, social and economic conflicts of this era
  • Intellectual background
  • Artistic, literary, economic and philosophical movements
  • Analyzing historical documents
  • Developing an awareness of the many influences forming history

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average. Students in this course are also expected to take the Advanced Placement European History exam in May. There is fee for this exam which is determined by the College Board and is the responsibility of the student. In the event that a student does not take the AP exam, the student's report card and transcript will reflect only a course in Honors.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

For more information about the Advanced Placement curriculum, see: http://apcentral.collegeboard.com/apc/public/courses/teachers_corner/2122.html

HOLOCAUST STUDIES

Code: D782   Half-Year (11-12) (½ credit)   (rank weight 1.0)
Prerequisite: None

This course will deal with the uniqueness and universality of this momentous event in history. It will examine the causes and events of the Holocaust, as well as its effect on the course of humanity. The course will begin with a history of the Jews and early examples of anti-Semitism and conclude with current issues in the Middle East, utilizing historical readings, fictional accounts, films and guest speakers.

Areas of Study Include:
  • Defining the Holocaust and the reasons for studying it
  • Anti-Semitism before, during and after Hitler's time in power
  • The foreign reaction to the Holocaust
  • The legacy of the Holocaust
  • The Middle East today

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

HUMAN RIGHTS ISSUES

Code: D784   Half-Year (11-12) (½ credit)   (rank weight 1.0)
Prerequisite: None

This course will deal with the struggle of all people to achieve and maintain human rights. Students will study various documents of human rights, violations of human rights and hate groups which attempt to curtail human rights. Particular emphasis will be given to events and documents relating to the history of the United States. The class will include projects that help teach tolerance and respect for all people. Focus films, guest speakers and fictional and non-fictional literary works will be included.

Areas of Study Include:
  • The history of Human Rights theory
  • The Universal Declaration of Human Rights
  • The contemporary Human Rights movement
  • Contemporary Human Rights issues

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

LATIN AMERICAN STUDIES

Code: D783   Half-Year (11-12) (½ credit)   (rank weight 1.0)
Prerequisite: None

This course will focus on the history, people, politics, culture, economy, geography and current events of Latin America, Central America, South America and the Carribean. It will expand the students' basic knowledge of Central and South America beyond the framework and level of mastery established in Global History and Geography, and broaden the students' perspective and understanding regarding this region. The course will include group study and discussion, focus films, guest speakers, fictional and non-fictional literary works, lecture and research. At the conclusion of the course, students will be able to think critically about Latin America, demonstrate knowledge of the region and reflect an in-depth understanding of major issues related to Latin America.

Areas of Study Include:
  • Geography
  • Traditional People: Mypuran-Arawaks, Tupi-Guarani, Yanomami, Kayapo, Olmec, Toltec, Maya, Aztec, Inca.
  • Colonization
  • Slave Trade
  • Nationalism and Revolutions, Liberalism vs. Conservatism - Haiti, Colombia, Brazil, Mexico, Cuba
  • United States Imperialism - Relations, "Paternalistic Neglect"
  • Country Case Studies in the 20th Century: Brazil, Mexico, Cuba, Guatemala, Chile, et al.
  • Cold War and Latin America
  • Women's Issues
  • Contemporary Issues

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

SOCIAL STUDIES

LAW AND THE INDIVIDUAL

Code: D710   Half-Year(11-12) (½ credit)   (rank weight 1.0)
Prerequisite: None

This course is designed to provide students with a general understanding of their legal rights and responsibilities and knowledge of daily legal problems faced in society. The course will examine the purposes and origins of law using both criminal and civil law. A variety of other laws will be discussed, including individual rights and freedoms, family law and consumer law. There will be extensive use of current events and issues.

Areas of Study Include:
- Introduction to law and legal systems
- Individual rights and responsibilities
- Criminal law and judicial procedure
- Civil law
- Family law
- Consumer law
- Tort law

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

PSYCHOLOGY

Code: D720   Half-Year(11-12) (½ credit)   (rank weight 1.0)
Prerequisite: None

This is a general survey course designed to provide students with an understanding of the basic concepts and techniques of modern psychology. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others. Each student will be expected to contribute to class discussions and to suggest projects and topics for study.

Areas of Study Include:
- Introduction to psychology, the study of human nature
- Personality development
- Behavior disorders
- The nature of consciousness
- Growth and development
- Understanding intelligence
- How people learn
- The individual and society

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

SOCIETY AND CULTURE IN TWENTIETH CENTURY AMERICA

Code: D770   Half-Year 11-12) (½ credit)   rank weight 1.0)
Prerequisite: None

The goal of this course is to assess the major developments which shaped the social and cultural values of the American people in the twentieth century. This is a course in social history that examines the way ordinary Americans lived and what they believed as reflected in their music, art, literature and popular institutions. To gain a better understanding of what it means to be an American today, we will examine how previous generations of Americans went about their daily lives and what was important to them.

Areas of Study Include:
- Fundamental trends in modern American life from the early 1900s to the present
- People in relation to culture and social organizations
- Family, religion, education
- American culture as expressed
- In art, literature, film and music
- Social change, social problems

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

WORLD AT WAR

Code: D740   Half-Year(11-12) (½ credit)   (rank weight 1.0)
Prerequisite: None

This course is designed to give students an in-depth look at World War I World War II, as well as other military conflicts of the thentieth century. The course will be lecture-driven, highlighted by historical-based videos, group discussions, readings and analysis, and essay writing. The goal of the course is the analysis of the events that occurred and the decisions that were made leading up to and throughout the war, trying to answer the question of "why," and not just a survey of who, what, where and when.

Areas of Study Include:
- World War II and its effects on the modern world
- The origins of the wars
- The people and events of the wars
- Battles and strategies
- The development of the Cold War
- Related contemporary problems and events

NOTE: At Roy C. Ketcham High School, a broader approach to this course is followed, starting with a more formal survey of World War I and the period between the Wars as the background for World War II.

Assessment: A teacher-created final exam, term paper or culminating project will be included and counted as 20% of the final course average.

For a complete review of the NYS Social Studies Learning Standards, see: http://www.emsc.nysed.gov/ciai/socst/pub/sslearn.pdf

SPECIAL EDUCATION

The Wappingers Central School District has a commitment to provide a comprehensive education for all students. In keeping with this commitment, the District provides a continuum of special education services to those students who have been identified by the Committee on Special Education as students with disabilities. Services provided may include related services, consultant teacher, resource room, integrated co-teaching, and special classes. The program and services are specified in the student's Individualized Education Program. The instructional program for these students, where appropriate, is based on the same instructional objectives as the general education program. Necessary modifications in materials, curriculum, teaching strategies, and grading are made as appropriate. Supplementary aids and services are also used as per each student's Individualized Education Program (IEP) to allow access to regular education curriculum in the least restrictive environment.

Special Education students may be eligible to earn Regents, Advanced Regents, Local Diploma, or an Individualized Education Program (IEP) diploma. The appropriate diploma option is determined through transition planning and the Committee on Special Education (CSE) review process.

Indirect Consultant Teacher
Indirect consultant teacher services are consultation provided by a special education teacher to regular education teachers to assist them in adjusting the learning environment and/or modifying their instructional methods to meet the individual needs of a student with a disability who attends their classes.

Direct Consultant Teacher
Specially designed instruction provided to an individual student with a disability or a group of students with disabilities by a special eduation teacher to aid the student(s) to benefit from the general education class instruction.

Special Education Programs
Resource Room - Resource room is specialized supplementary instruction in a small group setting for a portion of the school day.

Integrated Co-Teaching
Iintegrated co-teaching is the provision of specially designed instruction and academic instruction provided to a group of students with disabilities and non-disabled students.

Special Class
Special class means a class consisting of students with disabilities who have been grouped together because of similar individual needs for the purpose of being provided specially designed instruction.

1-12-1 Credit Bearing Self Contained Classes are self contained classes where students are working towards a Regents Diploma.

1-12-1 IEP Self Contained Classes are self contained classes where students are working towards an IEP diploma.

Special Education Alternative (Project SEA)
Students who participate in this program have varying disabilities and have an average or above average IQ. They require close supervision and a structured learning environment due to intense learning and behavioral needs. The program is structured to provide support to students who have difficulty maintaining focus and working independently. Students in this program have basic academic skills and the potential to earn a high school diploma. However, behavioral and emotional needs have interfered with the learning process and their ability to successfully integrate within the building mainstream. Within the program, academic skills will be consistent with the established outcomes for each curriculum area and the goals and objectives on each student's IEP. To help students function appropriately at school, support personnel for the program include social workers, guidance counselors, school psychologists and teaching assistants, individual and group counseling would be provided consistent with the IEP. Students who attend Project SEA may be eligible to earn a Regents or Local Diploma.

TECHNOLOGY

Technology Education has always been strongly committed to experienced-based education with respect to the teaching of a wide range of technological subject matter. Courses will be offered based on teacher availability, student interest, and room availability. Students are evaluated on written work, lab work, and performance. A good attendance record is necessary for successful completion of the course.

TECHNOLOGY EDUCATION COURSES

SEMESTER COURSES

Materials Processing (Woods or Metals)

Electricity/Electronics

Technical Drawing

Communication Systems

Computer Applications

Computer Graphics

Construction Systems

Computer Aided Design/Drafting (CAD)

Manufacturing Systems

Web Design

FULL YEAR COURSES

Communication Systems/Studio-Art*

Transportation Systems

PROJECT LEAD THE WAY

Project Lead the Way (PLTW) is a national program forming partnerships among public schools, higher education institutions and the private sector to increase the number of qualified high school students that complete a four- or two-year college engineering or engineering technology program.

PLTW has developed a four-year sequence of courses which, combined with regents mathematics and science courses, introduces students to the scope, rigor and discipline of engineering prior to entering college. When PLTW is fully implemented there are five courses that comprise the program. Below is listed the courses available.

Design and Drawing for Production

Digital Electronics

Advanced Principles of Engineering

Civil Engineering and Architecture

Engineering Design and Development

Upon application:
A grade of 85 or higher and a 70 or higher on the RIT assessment can result in course credit at Rochester Institute of Technology

*These courses may be used to meet the 1 credit Regents Art/Music requirement for all students, as well as being used for Technology credit.

TECHNOLOGY

STUDIO-IN-ART/COMMUNICATIONS SYSTEMS

Code: I100   Full Year (9-12)   (1 credit) (Rank Weight: 1.0)
Prerequisite: None
Recommendation: 9th Grade

NOTE: This foundation course can be used for Technology credit and to meet the Art/Music graduation requirement. John Jay students will have access to the John Jay Television Network. Students will spend a year exploring different audio, visual, audio/visual, and electronic communication systems. Concepts as they apply to contemporary communication systems. Students will document all work and maintain a digital portfolio for course assessment. This course is taught collaboratively by the Department of Technology Education and Fine Arts.

Areas of Study Include:
- Development and role of communication systems and societal impacts
- Digital photography and videography
- Tradition/computer illustration and printing processes
- Sound and radio applications
- Audio Mixing and Editing
- Fiber optics
- News writing, reporting, and communication graphics
- Digital video applications
- Digital video and image editing programs
- Career options

Assessment: Student evaluation is reflected in the numerical grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in projects, written critical analysis of art work, portfolio, and other assignments.

For the complete NYS Learning Standards, see:
http://www.emsc.nysed.gov/ciai/cores

COMMUNICATION SYSTEMS

Code: T710   Half Year (9-12) (½ credit)   (Rank Weight: 1.0)
Recommendation: None

Communication Systems is half-year course taught by the Department of Technology. Students will spend a year exploring different audio, visual, audio/visual, and electronic communication systems. This course is used for TECHNOLOGY CREDIT ONLY. Student who wish to meet the NYS Art/Music requirement are encouraged to take the full year I100 Studio-In-Art/Communication Systems course.

Areas of Study Include:
- Development and role of communication systems and societal impacts
- Digital photography and videography
- Tradition/computer illustration and printing processes
- Audio Mixing and Editing
- News writing, reporting, and communication graphics
- Digital video and image editing programs
- Career options

Assessment: Student evaluation is reflected in the numerical grade, a composite of a student's participation and achievement in assignments and assessments. The grade may be derived from objective and subjective teacher evaluations and observations, including students' demonstration of criteria-based skills and techniques in projects, written critical analysis of art work, portfolio, and other assignments.

TRANSPORTATION SYSTEMS

Code T720 Full Year (9-12) (1 credit)   (Rank Weight: 1.00)
Prerequisite: None

Areas of Study Include:
- Identify and evaluate components of the systems model as it relates to transportation systems.
  - Correctly identify components of the system model (input, process, feedback, and output)
  - List resources needed to perform processes
- Identify skills necessary for careers in land, air, and marine transportation systems.
  - Distinguish major careers in transportation
  - Explain job requirements for one or more jobs associated with transportation systems
- Understand technical advances in land, air, and marine transportation systems.
  - Relate latest developments in transportation
- Understand the impacts of land, air, and marine transportation systems
  - Identify vehicle subsystems.
  - Describe the functions of each system
- Understand human and machine monitor/control devices in transportation systems
  - Differentiate between human and automatic monitoring and control devices
  - Observe simple instrumentation attached to an engine or vehicle and make adjustments
- Identify and use information resources in land, air, and marine transportation systems
  - Consult and apply information from manuals, charts, maps, books, and computer data bases
- Describe and/or model various modes of land transportation systems
  - Explain/Describe the differences between three modes of land transportation
  - Fixed route: mass transit, railroad trains, etc.
  - Random route: bicycle, auto, RV
  - Stationary conveyance: pipeline, conveyor, elevator
- Understand the laws, regulations, and safety procedures related to transportation systems.
  - Be able to use safe and proper procedures while working in the lab setting
  - List basic safety rules applied in lab work
  - Understand applicable laws governing land, air, and marine transportation systems

Assessment: School final exam or project.

CONSTRUCTION SYSTEMS
Code: T723   Half Year (9-12) (½ credit)   (Rank Weight 1.00)
Prerequisite: None

Recommendation: Materials Processing Wood would provide a good background.

Areas of Study Include:
- How construction technology affects society
  - Houses, Roads, Dams
- Planning a construction site
- Safety
- Surveying and mapping a construction site
- Clearing the site
- Residential construction
  - Foundation systems
  - Floor framing
  - Wall framing
  - Fasteners
  - Roofing
  - Mechanical systems
  - Finish carpentry
  - Repair and maintenance
- Commercial construction
  - Steel Buildings
- Estimation of costs
- O.S.H.A. health and safety standards

Assessment: School final exam and/or project.

BASIC ELECTRICITY/ELECTRONICS
Code: T725 Half Year (9-12) (½ credit)   (Rank Weight: 1.00)
Recommendation: None

Areas of Study Include:
- Current, voltage, resistance
- Parallel Circuits
- Series Circuits
- Ohm's Law
- Kirchoff's Law
- Watt's Law
- Ac/DC Current
- Residential Wiring demo
- Residential wiring project
- Resistor color codes
- Voltage dividers
- Soldering
- Etching
- AC Measurement
- RC/RL Currents
- Voltage Regulators

Assessment: School final exam or project.

TECHNICAL DRAWING
Code: T735   Half Year (9-12) (½ credit)   (Rank Weight: 1.00)
Recommendation: None

Areas of Study
- The proper use and care of drafting tools
- Dimensioning techniques

- Measurements
  - Precise measurements using tools such as dial calipers and micrometers
  - Scale
  - Engineers scale
  - Architects scale
- Orthographic Multi View Drawings
- Pictorial Drawings
  - Sketching and Mechanical Drawings in the following categories
  - Oblique
  - Isometric
  - Perspective
- Section View drawing
- Auxiliary Views
- Basic Architectural Drawings

Assessment: Portfolio of work and/or final exam.

WEB DESIGN AND PRODUCTION
Code: T742   Half Year - Spring Semester (9-12)   (½ credit each)
(Rank Weight: 1.00)
Prerequisite: Computer Graphics

Topics Include:
- History and current trends in Web production
- Using the World Wide Web
- Making Web Pages
- Designing for the Web
- Color, Graphics, Type and Video
- Web programming: HTML, JavaScript, Action Script, Cascading Style Sheets (CSS)
- Cascading Style Sheets (CSS)
- Web Authoring
- Interactivity and Animation
- Creating Web Sites for Business vs. Personal use
- Maintaining Websites (John Jay School Site)
- Types of Careers related Web Design
- Other courses related to Web at John Jay

Assessment: Final website project and/or final exam

COMPUTER GRAPHICS
Code: T743   Half Year - Fall Semester (9-12)   (½ credit each)
(Rank Weight: 1.00)
Recommendation: None

Topics Include:
- Desktop Printing
- Commercial Printing
- Process Color Printing
- Computer Applications
- Color Modes and File Formats
- Digital Imaging and Resolutions
- Computer Animation
- Scanner and Printer Technology
- Bitmap and Vector Image Production

NOTE: This course and Web Design and Production make an excellent full year combination

Assessment: Final Project and/or Final Exam

TECHNOLOGY

CAD - COMPUTER AIDED DESIGN

Code: T745 Half Year (9-12) (½ credit each) (Rank Weight: 1.00)
Recommendation: Technical Drawing.

Areas of Study Include:
- Use computers and computer peripherals in a proper and considerate manner.
  - Determine and use proper options, controls, and know how to setup – essential features when using the CAD program
  - Perform specified tasks using proper commands to obtain a set goal
  - Identify and use different types of lines (object, hidden, dimension, extension, center)
- Possess an understanding of two dimensional drawing
  - Use commands to create an object (line, arc, rectangle, circle, parallel, polygon)
  - Modify an object (trim first, trim double, trim divide, break)
- Understanding of 3 view (orthographic projection) drawing
  - Identify and create 3 common views of an object (front, top, side)
  - Identify width, depth, and height for each of the given views
- Understand the importance of dimensioning an object
  - Dimension horizontal and vertical objects with linear dimensions
  - Dimension arcs (radius), circles (diameter), and fillets (radius)
  - Dimension location of circles and holes in an object
  - Change and set dimension note height
- Understand an Isometric drawing and what its main purpose is
  - Identify an isometric drawing – one that shows realistic views of an object
  - Create an isometric drawing using a 30-degree axis
- Understand and be able to use rendering tools
  - Identify and decide how each view should be rendered (front, top, and side views using dashed lines to show hidden areas of an object and the isometric view to show multiple views of an object
  - Use solid modeling tools to show completed isometric drawing as an actual object
- Understand and be able to complete an entire drawing
  - Create front, top, side, and isometric views on one screen
  - Create a title block and use it on all completed drawings
  - Dimension views so that objects could be reproduced using given measurements
  - Print objects using appropriate equipment (plotter, laser printer)
- Understand the process of recreating objects using CAD
  - Create complete drawings of objects that already exist (ball point pen, flashlight, c-clamp)
  - Use precise measuring equipment to create an accurate duplication of an object (micrometers, Vernier calipers, and dial indicators)

Assessment: School final exam and/or project.

MATERIALS PROCESSING (WOOD)

Code: T753 Half Year (9-12) (9-12) (Rank Weight: 1.00)
Recommendations: None

Areas of Study Include
- Use proper and safe procedures with tools, equipment, and materials
  - Determine proper tool adjustments, and use tools for their intended purposes
  - Perform tasks according to accepted commercial safety standards
- Understand how to read and make a plan of materials, drawings, and patterns
  - Interpret plans, specifications, and sectional views from blueprints, charts, graphs, and tables
  - Identify key factors affecting decisions (money, space, time, skills, materials)
  - Make accurate computations (area, volume, and estimate materials, time, and costs)
  - Make simple sketches and plans
  - Make a bill of materials
- Understand safe and proper procedures and methods in assembling projects
  - Identify and use appropriate materials to complete a job properly and safely
  - Understand and apply common assembly methods including various fasteners
  - Develop and follow a plan of procedure
  - Identify and use basic joints in construction processes
- Understand and use multiple machines and techniques to construct projects
  - Determine and follow correct sequences of operations
  - Use proper conservation methods
  - Use proper techniques for preparing materials and assembling parts
- Understand and use finishing materials and tools to complete projects
  - • Select the proper finish for durability, safety, compatibility, and aesthetics
  - Properly apply various finishes
  - Use proper finishing procedures, knowing and applying all safety and clean-up procedures
- Possess a general knowledge of the lumber industry and its' environmental implications
  - Know about current related careers (benefits, responsibilities, requirements, lifestyles)
  - Research current job market information
  - Know the effects the lumber industry has on the environment and ways to reduce the negative impacts

Assessment: Final exam and/or project.

TECHNOLOGY

ADVANCED MATERIALS PROCESSING (WOOD)
Code: T754   Half Year (9-12)   (½ credit)   (Rank Weight: 1.00)
Prerequisite: Have taken Materials Processing Wood

Areas of Study Include:
- Design projects using the principles of design.
  - Design a box that is functional, practical, and aesthetically pleasing.
  - Interpret as well as draw working drawings.
  - Estimate materials, time and cost of the designed project.
  - Formulate and follow the most efficient plan for the construction of said project.
  - Lay out stock efficiently while maintaining structural integrity and design criteria.
- Understand various types of wood and materials available to build projects and utilize them to effectively meet the needs of the project.
  - Determine if a species is a hardwood or softwood.
  - Select the best material for a project. (hard/softwood, plastic laminate, veneer, plywood, etc.)
  - Qualities of different materials and why different materials would be suitable for certain projects.
- Proper and safe procedures with tools, equipment, and materials related to advanced woodworking.
  - Determine proper attire as well as the appropriate machines for the task.
  - Perform tasks and operate machinery safely and effectively.
  - Utilize proper safety procedures when applying finishes.
- Proper assembly procedures and wood joinery.
  - Select the proper wood joint for a project, and select suitable adhesives for the task.
  - Choose proper mechanical fasteners for the project.
- Wood finishing tools, application processes and properties of different wood finishes.
  - Properly prepare a project for finishing.
  - Select the proper finish for the project based on the function of the piece.
  - Choose the proper finish application process to obtain optimum results.

Assessment: School Final Exam and/or Project

MATERIALS PROCESSING (METAL)
Code: T759   Half Year (9-12)   (½ credit)   (Rank Weight: 1.00)
Recommendation: None

Areas of Study Include
- Complete major projects from a set of drawings
  - Read, interpret, and draw technical drawings and layouts utilizing specifications, charts, tables, and manuals.
  - Apply basic mathematics from a set of drawings to complete a major
  - Estimate materials, time, and costs in completing a major project
  - Use formulas related to machine tool speed and feed computational -
- Complete major projects in the following:
  - Sheet metal fabrication
  - Heat treatment of steel
  - Band iron forming and brazing
  - Foundry and casting processes
  - Machine tool operation (lathe and milling machines)
  - Basic welding processes

- Understand the various use of metals
  - Know and identify common ferrous and non-ferrous metals and alloys
  - Know and apply the various properties of metals (hardness, tensile strength, elasticity, machineability, compressive strength, ductile strength, malleability, brittleness, toughness, and corrosion resistance)
- Safely use metalworking tools, machines, equipment, and materials properly
  - Be able to determine proper attire, maintain proper tool adjustment, and use tools for their intended purposes
  - Be able to perform tasks according to acceptable safety standards
- Identify and safely use a variety of metal processes used to fabricate metal products
  - Identify and perform basic forming processes
  - Bending
  - Pressing
  - Casting
  - Forging
  - Extruding
  - Identify and perform basic separating processes
  - Sawing
  - Drilling
  - Shearing
  - Grinding
  - Shaping
  - Turning
  - Identify and perform basic combining processes
  - Mechanical Fasteners
  - Welding
  - Soldering
  - Coating
  - Identify and perform basic conditioning processes
  - Heat treatment
  - Chemical Conditioning
- Use a variety of finishing tools, materials, and processes used to finish and protect metal to improve its' appearance
  - Painting
  - Buffing
  - Polishing

Assessment: School final Exam and/or Project

DESIGN AND DRAWING FOR PRODUCTION (PROJECT LEAD THE WAY)
Code: T750   Full Year (9-12)   (1 credit) (Rank weight: 1.00)
Recommendation: 75% or better in Math 8.

Areas of Study Include
- Express ideas through graphic representation
  - Use appropriate drawing tools (T-Squares, triangles, compasses, scales, lead, erasers)
  - Select appropriate drawing medium (paper, vellum, illustration board)
- Determine, represent and project drawings orthographically and create and assemble working drawings through view relationships.
  - Use appropriate line weights to complete drawings.
  - Letter quickly and legibly according to industry standards. The students will be able to use standard drawing symbols to designate objects, details, and other appropriate information.
  - Read and interpret technical drawing

- Mathematical principles necessary for design and drawing.
  - Calculate area, perimeter, volume, weight, and angles; and convert between fractions, decimals, English and metric units
  - Use geometric construction procedures to divide lines, arcs, and circles
  - Construct parallels, perpendiculars, and tangent lines; and circles, curves, ellipses, and polygons
- Specific criteria when analyzing or producing a design
  - The relationships made possible by drawings of industrial plans, processes, and organizations.
  - The impact of environmental, sociological, and economic factors of design
  - Artistic, cultural, technological, and intellectual accomplishments
- Interpret, represent, and produce technical drawings correctly)
  - One-view drawings
  - Orthographic drawings
  - Pictorial drawings (isometric, oblique, and perspectives)
  - Renderings or technical illustrations using accepted design principles
- Interpret, and apply correct dimensioning procedures on drawings (notations, dimensions, symbols)
  - Dimension using the aligned or unidirectional system
  - Locate dimensions correctly on a drawing
  - General rules of dimensioning

Assessment: Project Lead the Way generated final exam

DIGITAL ELECTRONICS (PROJECT LEAD THE WAY)
Code: T771   Full Year (10-12) (1 Credit)(Rank weight: 1.04)
Recommendation: Design and Drawing for Production.

Areas of Study Include:
- Understand Electronic Fundamentals
  - Safety
  - Basic Electron Theory
  - Prefixes, Engineering Notation
  - Resistors
  - Laws
  - Capacitance
  - Analog and Digital Waveforms
  - Obtaining Data Sheets
- Understand Number Systems
  - Binary
  - Hex
  - Conversions
- Understand Gates
  - Logic Gates
- Understand Boolean Algebra
  - Boolean Expressions
  - Logic Simplifications
  - Duality of Logic Functions
- Understand Combinational Circuit Design
  - Paradigm for Combinational Logic Problems
  - Specific Application MSI Gates
  - Programmable Logic Devices
- Demonstrate Ability to Add
  - Binary Addition
- Understand Flip-Flops
  - Introduction to Sequential Logic
  - The J-K Flip-Flop
  - Triggers

- Flip-Flop Timing Considerations
  - Elementary Applications of Flip-Flops
- Understand Shift Registers and Counters
  - Shift Registers
  - Asynchronous Counters
  - Synchronous Counters
- Understand Digital Electronic Families and Specifications
  - Logic Families
  - Spec Sheets
- Gain Basic Knowledge of Microprocessors
  - Microcontrollers
  - Interfacing
- Complete a Student Directed Study Topic

Assessment: Project Lead the Way generated Final Exam

PRINCIPLES OF ENGINEERING (PROJECT LEAD THE WAY)
Code: T773   Full Year (10-12) (1 credit) (Rank Weight: 1.04)
Prerequisite: Algebra with a final average of 75% or greater
Recommendation: Design and Drawing for Production.

Areas of Study Include:
- Build modeling devices (Rube Goldberg)
  - Use words, pictures and mathematics to describe a simple system
  - Manipulation of models through the use of test apparatus, CAD, and prototypes
- Build systems devices (Marble Sorter)
  - Describe a system in the terms of the Universal Systems Model (Input, Process, Output)
  - Explain and demonstrate how sub-systems make up a specific system
  - Demonstrate how feedback controls a system
  - Comparison between open and closed-loop systems
- Utilize optimization concepts
  - Explain the consequences in trade-off situations
  - Set criteria in real-world decision-making
  - Explain how constraints and limitations conflict with the ability to meet the desires outcomes in decision-making situations
  - Develop the ability to use mathematics and problem-solving techniques in decision-making
  - Use cost benefit and cost effective analysis when making decisions with cost being considered as human, societal, environmental, and economic
- Interaction between Technology and Society
  - Describe the process of alternative approaches to the solution of technology/society problems. The alternatives fit into three categories:
- Education
- Legislation and Law
- Using technology as a problem solver
  - Participation in voluntary action, such as recycling
- The Design Process
  - Active participation in the design process throughout all activities
  - Consider human and environmental factors in the design of a system or device
  - Apply design principles such as form, function, color, balance, and unity in the design process
  - Select appropriate design materials

- Consider the effect of production capabilities, marketing, time, and cost
- Importance of Ethics in the Workplace
  - Consider the legal and professional responsibilities of contracts
  - Exhibit social responsibilities
  - Be aware of moral dilemmas involved in employment

Assessment: Project Lead the Way generated Final Exam.

CIVIL ENGINEERING AND ARCHITECTURE (PROJECT LEAD THE WAY)
Code: T774 Full Year (10-12) (1 credit) (Rank Weight: 1.04)
Recommendation: Design and Drawing for Production.

Area of Study Include:
- Overview of Civil Engineering and Architecture
  - The fields of civil engineering and architecture have influenced the evolution of how people live and work.
  - Making responsible decisions is important in the actions of engineers and architects, as choices will affect the lives and well-being of others.
- Introduction to Projects
  - Current Civil Engineering and Architectural common practices must be identified and utilized to develop a viable solution to a project.
  - All designs continuously evolve as they are developed.
  - Critiques and reviews are used to inform and provide suggestions for improvement.
  - A high-quality presentation of a project will determine its acceptance and support implementation.
  - Project documentation is necessary to solve complex design problems and provide accurate communication.
- Project Planning
  - A client's needs, wants, and desires are all essential components of a project.
  - The selection of a site and the project being planned are inter-related.
  - Planning of a project is essential to its success.
- Site Planning
  - Responsible designers maximize potential of the property, minimize impact on the environment, and create an attractive visual space.
  - Codes and building requirements define and constrain the location of structures, utilities, and landscape components placed on a site.
  - The use of a site defines the utilities/services needed and how they are delivered.
- Architecture
  - A responsible architectural designer takes into consideration the environment, the aesthetics, the structural integrity, and the safety and needs of occupants.
  - A good designer balances cost consideration with functionality and aesthetics.
  - Graphic communication is essential to successful communication and implementation of a design project.
  - Mathematics and physics are important tools in the design process.
  - Application of the principles and foundations of art will enhance the form and function of a design project.

- Structural Engineering
  - Structural design encompasses how a structure is to be used, the conditions of that use, the occupants or users and the geometric shapes from which it will be comprised
  - A responsible designer takes into consideration the environment, aesthetics, structural integrity, available materials and their properties, and the safety of its occupants.
  - Graphic communication is essential to successful implementation of a design project.
  - Mathematics and physics are important tools in the analysis of a design.
- Presentations and Reviews
  - The presentation of an idea determines its acceptance and potential for development.
  - Analysis of a project idea or proposal leads to opportunities to reflect on expectations, outcome, and areas for improvement.

Assessment: Project Lead the Way generated Final Exam

ENGINEERING DESIGN AND DEVELOPMENT (PROJECT LEAD THE WAY)
Code: T775 Full Year (11-12) (1 credit) (Rank Weight: 1.04)
Prerequisite: Design and Drawing for Production and one other Project Lead the Way course.

Areas of Study Include:
- Design Process
- Product Scheduling
- Patent Search
- Patent Registration and Development
- Product Life Cycle
- Presentation Techniques
- Data Collection
- Data Presentation
- Prototype Planning and Construction
- Testing and evaluation of Products
- Interview Process
- Decision Matrix Construction
- Material Price Lists
- Confidentiality/Non-disclosure Agreements
- Graphical timeline Mapping

NOTE: Engineering Design and Development (EDD) is a full year, full credit capstone course for the Project Lead The Way curriculum. This course involves extensive research in designing and constructing solutions to an open ended engineering problem. In EDD you will work in teams to research, design and construct a solutions. You will apply principles developed in the preceding courses and are guided by a community mentor. You must present progress reports, submit a final written report and defend your solutions to a panel of outside reviewers at the end of the school year.

Assessment: Final Product Presentation

BOCES PROGRAMS/SERVICES

CAREER AND TECHNICAL INSTITUTE (CTI) DUTCHESS BOCES
There is an application and admission process that takes place each spring.

All of our programs* at CTI are now offering the opportunity for students to take either one year or two years of study in a career and technical education field. We call this the "One Plus One" program. This means any student can attend CTI for one year and receive a complete education in a particular subject. If the student wants to continue his or her education in that same field, the student can return for the "plus one" year and get advanced training. But a student can also choose to come back to CTI for a different field and try out a whole new area of study. Students can attend the classes in any sequence to fit their home school's schedules. Seniors can attend CTI for one year even if they did not attend in their junior year.

I. ARTS/HUMANITIES

The Communication Technology Academy will provide the student with the opportunity to explore the exciting world of graphic arts, graphic design, multi-media and video production. Students will participate in a variety of interesting and challenging activities designed to introduce them to Multi-Media/Video Production and Graphic Arts/Design.

II. BUSINESS INFORMATION SYSTEMS

1. Fashion & Retail Marketing Design is a one plus one program where students learn the principles of fashion design, marketing and retail sales. Eligible for 6 credits at Dutchess Community College or 4.5 credits at Johnson & Wales.

2. A + Computer Repair is a one year program that focuses on computer repair techniques. The course will prepare you to take the A + Certification Examination.

3. Customer Support/HelpDesk prepares students to pursue degrees in IT Support and HelpDesk certifications.

III. ENGINEERING TECHNOLOGIES

1. Auto Body Exploratory (PM) or Auto Body Collision & Refinishing (AM) instructs in the repairing, refinishing and painting of damaged vehicles.

2. Automotive Service Bay Technician is a one year AM program designed for students pursuing an IEP/local diploma who are looking for auto-related entry level skills.

3. Basic Auto Technician is a one year AM course that studies under car services, tires, wheels, wheel alignment, brakes, belts, hoses, fluids and NYS Inspections.

4. Advanced Auto Mechanic and Technician Training is a one year AM course that studies electricity, electronics, onboard computers, OBD I & OBD II, transmissions, drive line and clutches, engine service in car and out of car, engine performance.

5. Exploratory Automotive Trades is a one year PM course where students rotate through three shops providing them with exposure to different teachers, work, equipment and tools

6. Resident Construction Wiring – This program is designed for students to develop the entry-level skills needed for residential wiring or as a second year course after Residential Wiring. Areas of Study Include: electrical safety, OSHA, electrical theory, National Electrical Code, branch circuit installation/calculations, wiring methods, and hand and power tool usage. Students are required to purchase their own hand tools, uniform, and work boots and text. Prerequisite: Math Course B or concurrent enrollment.

7. Construction Electricity – This AM program is designed for the student to develop entry level skills in residential construction wiring or as a second year course after residential wiring. Areas of Study Include: electrical safety/theory, OSHA regulations, residential/commercial wiring methods, circuit installation/calculations/loading, hand and power tool usage, and introduction to electric motor/controllers. Students are required to purchase their own hand tools, uniform, and work boots, text. Prerequisite: Math Course B or concurrent enrollment.

8. Heating Basics – This program is an intense hands-on job training program to instruct students in the basic skills needed to gain entry level employment as a Heating Apprentice. No previous work experience is needed. Students must be able to work with hand tools and power tools.

9. Plumbing Mechanic Service Technician – This program is an intense hands-on job training program to instruct students in the basic skills needed to gain entry level employment as a Plumbing Apprentice. No previous work experience is needed. Students must be able to work with hand tools and power tools.

10. Residential Construction – Is a one year program that will introduce students to the tools, methods, and materials used in the building of houses. Emphasis is placed on construction safety, theory, blueprint reading and math. Students work on a variety of projects in order to gain valuable hands-on experience.

11. Finish Carpentry – Is a one year program that will introduce students to the tools, methods, and materials used in the finish carpentry trade. Emphasis is placed on safety, theory, blueprints and math. Students will work on a variety of projects in order to gain valuable hands-on experience.

12. Small Engine Technology – This program focuses on Small Engine operation, maintenance, and repair. It is an intense "hands on" training program that will examine all five areas of two and four cycle engine operations. Students will be introduced to the following skills: shop safety, hand and power tool management, engine rebuilding, and troubleshooting techniques.

13. Turf Equipment and ATV Maintenance – This program focuses on the operation, maintenance, and repair of Lawn and Garden Equipment and Recreational Vehicles. This program will give students the necessary skills to pursue a number of different college opportunities which can lead to a career in the outdoor power equipment or recreational vehicle industry.

14. Welding Fabrication – This program is an introductory course that will prepare students for a career in the welding and steel fabrication industry. The goal of this program is to provide students with an opportunity to experience the hands-on day to day operation of a fully equipped modern steel fabrication and welding shop.

IV. HEALTH SCIENCES

1. Introduction to Health Occupations – Is an exploratory course in health professions; upon completion, may progress to Pre-Nursing or Licensed Practical Nurse Program.

2. Pre-Nursing/Certified Nurse Assistant – Is a one year course approved by the New York State Education Department. This program is taught half days over one academic year. This course will be available to high school seniors who will be taught to function within the various levels of patient care. The local community hospitals, nursing homes or state hospitals may be used for clinical experience. Upon successful completion, the pre-nursing student will be prepared for the New York State Assistant Exam (separate fee required).

3. Licensed Practical Nursing I – Practical Nursing I is a one year course, approved by the New York State Education Department. This 500 hour program is taught half days over one year. This course is open to high school seniors who have successfully completed Introduction to Health Occupations with a grade of 75. This course is available to young men and women who will be taught to function appropriately within various levels of patient care, encompassing supportive, preventative, curative and rehabilitative aspects of different health care settings throughout Dutchess County. The local community hospitals, nursing homes and state hospitals are used for clinical patient experiences. Upon successful completion of the program the Practical Nursing I student is eligible for entry into the Practical Nursing II course the following year as an adult learner.

4. Human Services – Is designed to teach the IEP/local diploma students basic entry level skills in the health care setting. This one year program exposes students to a wide variety of health care roles that do not generally involve direct patient care.

V. HUMAN & PUBLIC SERVICES

1. Food Service Basics is a one year program for the IEP/local diploma student. It focuses on food safety, sanitation, food prep and presentation.

2. Cosmetology – Cosmetology is a two-year program providing instruction in practical skills and theory necessary for employment in the field. This includes care of hair, skin, nails and all related services offered in a salon. Equipment used in the cosmetology laboratory is equivalent to that found in a modern salon. Students must fulfill the requirement of 1,000 instructional hours to qualify for the New York Sate Licensing Examination. Must purchase cosmetology kit.

3. Culinary Arts & Restaurant Management – This 1 + 1 program is an intense hands-on job training and/or college prep program to instruct students in the skills needed to gain entry level employment or higher education as a Culinary/Hospitality professional. No previous experience needed. Students will gain the skills necessary to be able to work in a professional kitchen and dining room.

4. Early Childhood Education – Early Childhood Education is a one or two year program designed to provide an understanding of the physical, social, emotional and cognitive development of children. Students are placed in pre-school and elementary classrooms from September to June. This is for college bound students with an interest in Elementary or Early Childhood Education.

5. Security and Law Enforcement – This one or two-year program is designed to provide training to 11th and 12th grade students in the fields of Security, Corrections, and Law Enforcement. In addition to the theory and practical working experience the student will receive working experience in and around the Career and Technical Institute campus. Field trips and guest speakers will supplement the course.

VI. NEW VISIONS

1. New Visions in Education – The New Visions in Education exploration is designed for seniors in high school who are anticipating careers in the field of education. Students will be exposed to a variety of education careers and have the opportunity to explore a variety of roles on both the instructional and administrative level. Experiences will reflect all levels of education from pre-school through graduate school.

2. New Visions in Health Care – New Visions in Health Care is an in-depth study of the U.S. Health care system. Students observe staff in their actual work situations. This concept allows students to explore a variety of health career professions while integrating their academic knowledge with the experience of working in a hospital. Students spend half day in either department rotations throughout the hospital or in a traditional classroom setting. BOCES offers this program in partnership with Vassar Brothers Hospital and St. Francis Hospital.

3. New Visions in Law – is a one year honors-level course for seniors with a career interest in law. Through daily involvement with legal professionals, students will learn what is required of a law professional on a daily basis and how their high school education can be applied in real-world settings. They will gain a better understanding of the professional demands of a busy, technical environment and learn how to work together as a team to bring justice and law to the community.

The Dutchess Academy of Environmental Studies is a one or two year field based high school to college to workplace bridge program to prepare high school seniors for education and careers in ecology and the natural sciences.

COURSE SELECTION WORKSHEET

NAME _____   DATE _____   GRADE _____   COUNSELOR _____

ART Full Year
- ☐ I100 Studio-In-Art/Communications Systems
- ☐ F587 Studio-In-Art
- ☐ F590 Advertising Design
- ☐ F591 Studio-In-Art/Ceramics
- ☐ F592 Ceramics II
- ☐ F594 Studio-In-Sculpture
- ☐ F596 Advanced Art I - Drawing and Painting
- ☐ F597 Advanced Art II - Drawing and Painting
- ☐ F607 Studio-In-Art/3-D Design
- ☐ F608 3-D Design/Crafts II
- ☐ F613 Design Works - Full Year
- ☐ F615 Media II
- ☐ F622 Photography II
- ☐ F626 Broadcast Arts
- ☐ F627 Drawing & Painting III
- ☐ F630 Photography III
- ☐ F631 Media Arts III
- ☐ F632 Ceramics III
- ☐ F635 Studio-In-Art/Photomedia
- ☐ F637 3-D Design/Crafts III
- ☐ F638 Sculpture II
- ☐ F640 Portfolio Development
- ☐ F642 AP Studio Art
- ☐ F644 AP Art History

ART Half Year
- ☐ F611 Design Works A - 1st Sem
- ☐ F612 Design Works B - 2nd Sem
- ☐ F735 Studio-In-Art/Photomedia
- ☐ F707 Studio-In-Art/3-D Design
- ☐ F791 Studio-In-Art/Ceramics

BUSINESS EDUCATION Full Year
- ☐ B415 Financial Math
- ☐ B451 Keyboarding-Business Communications
- ☐ B452 Accounting 1
- ☐ B553 Sports & Entertainment Marketing
- ☐ B610 Business Law
- ☐ B652 College Accounting DCC Accounting 101 & 102
- ☐ B653 Business Ownership
- ☐ B660 Corporate Communications
- ☐ B700 Diversified Co-op
- ☐ B770 Work Based Learning (Business Co-op)

BUSINESS EDUCATION Half Year
- ☐ B545 MicroSoft Office
- ☐ B620 Sports Law
- ☐ B630 Entertainment Law
- ☐ B655 Business Economics
- ☐ B656 College Business Economics DCC 105
- ☐ 0700 Career and Financial Management
- ☐ B730 Wordprocessing

FAMILY AND CONSUMER SCIENCES Full Year
- ☐ H494 Co-op Work Experience/Foods
- ☐ H597 Food Production & Service
- ☐ H694 Co-op Work Experience/ Child Development

FAMILY AND CONSUMER SCIENCES Half Year
- ☐ H496 Co-op Work Experience/Foods
- ☐ H587 Food Prep/Nutrition
- ☐ H696 Co-op Work Experience/ Child Development
- ☐ H730 Baking and Pastry
- ☐ H740 Nutrition for Health, Fitness & Sports
- ☐ H750 Gourmet Foods

FAMILY AND CONSUMER SCIENCES Half Year
- ☐ H760 International/Regional Foods
- ☐ H770 Child Development and Psychology
- ☐ H780 Parenting
- ☐ H790 Adolescent Psychology
- ☐ H950 Interior Design
- ☐ H960 World of Fashion

ENGLISH Full Year
- ☐ E341 English 9
- ☐ E361 Honors English 9
- ☐ E386 English 9 Literacy Lab
- ☐ E441 English 10
- ☐ E461 Honors English 10
- ☐ E540 English 11 Regents
- ☐ E563 AP - Language & Composition
- ☐ E640 English Language Arts Skills I
- ☐ E664 English 12 - DCC 101/102
- ☐ E671 English 12 - Humanities in Writing & Lit.
- ☐ E672 English 12 - Adventures in Writing & Lit
- ☐ E673 English 12- Contemp. Ident. in Writing & Lit.
- ☐ E740 English Language Arts Skills II
- ☐ E681 AP - Literature & Composition
- ☐ E911 Academic Intervention Services

ENGLISH Half Year
- ☐ E731 Science Fiction & Popular Culture
- ☐ E732 Monsters & Marvel in Literature
- ☐ E733 Shakespeare
- ☐ E737 Writers Workshop
- ☐ E738 Media Writing & Communications
- ☐ E740 English Language Arts Skills
- ☐ E774 Contemporary Short Story
- ☐ E782(D782) Holocaust Studies

THEATRE Full Year
- ☐ E810 Theatre I
- ☐ E820 Theatre II

ENGLISH/SOCIAL STUDIES Half Year
- ☐ E782/D782 Holocaust Studies (not offered at JJHS '10-'11)

HEALTH Half Year
- ☐ J441 Health Education - 1st Sem
- ☐ J442 Health Education - 2nd Sem

MATHEMATICS Full Year
- ☐ M331 Algebra 1A
- ☐ M351 Algebra
- ☐ M371 Algebra Honors
- ☐ M431 Algebra 1B
- ☐ M441 Geometry N
- ☐ M451 Geometry
- ☐ M481 Geometry Honors
- ☐ M520 History of Mathematics
- ☐ M541 Algebra 2N
- ☐ M551 Algebra 2 & Trigonometry
- ☐ H581 Algebra 2 & Trigonometry Honors
- ☐ M644 Pre-Calculus
- ☐ M645 Introduction to College Math
- ☐ M650 AP Computer Science
- ☐ M655 AP Statistics
- ☐ M662 AP Calculus AB
- ☐ M681 AP Calculus BC
- ☐ M691 Multiv Calculus & Lin Algebra Honors

MATHEMATICS Half Year
- ☐ M350 Math AIS for Algebra
- ☐ M401 Math AIS Regents Prep - 1st Sem
- ☐ M402 Math AIS Regents Prep - 2nd Sem
- ☐ M415 Computer Programming 1
- ☐ M416 Computer Programming 2

COURSE SELECTION WORKSHEET
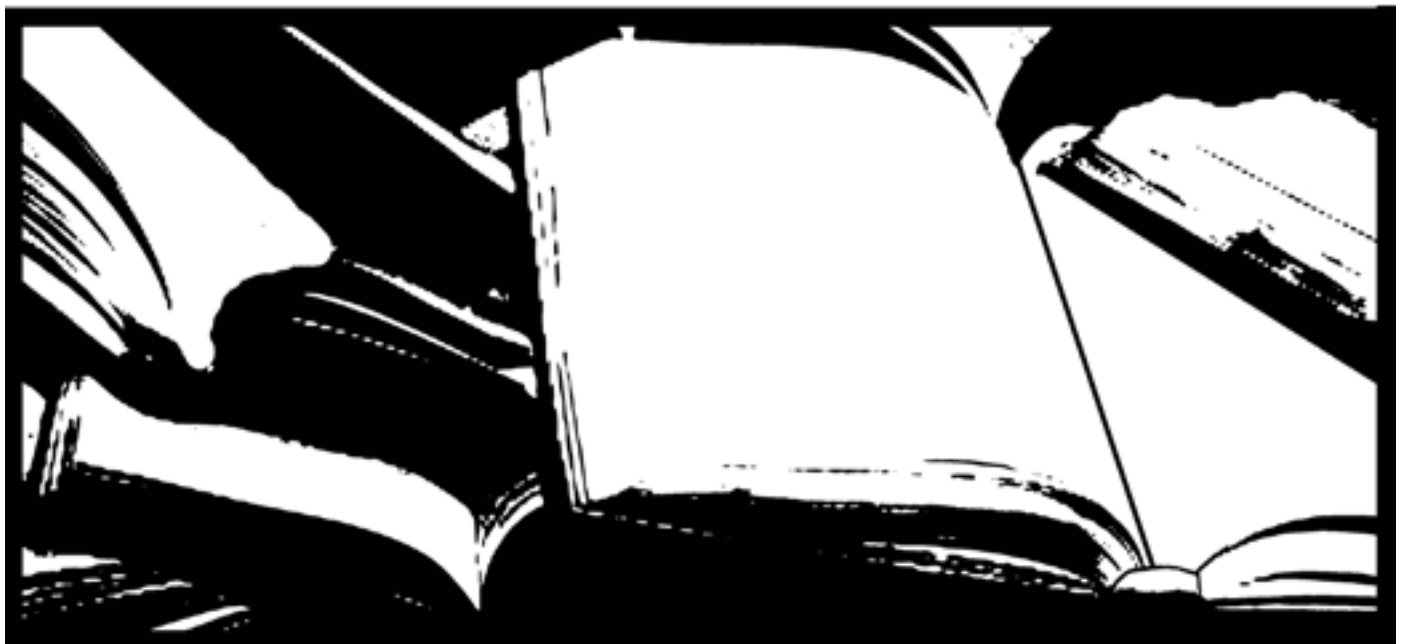
MUSIC Full Year

- ☐ N627 Applied Music
- ☐ N632 Symphonic Band (JJ all days)
- ☐ N635 Concert Band - All days
- ☐ N643 Mixed Chorus (All days)
- ☐ N646 Mixed Chorus (Every other day)
- ☐ N649 Wind Ensemble (RCK all days)
- ☐ N651 Music Theory I
- ☐ N654 Ninth Grade Band
- ☐ N655 Orchestra (All days)
- ☐ N656 Orchestra (Every other day)
- ☐ N658 Music Theory II
- ☐ N659 Music Workshop
- ☐ N664 AP Music Theory

MUSIC Half Year

- ☐ N700 Music Workshop Semester

PHYSICAL EDUCATION Full Year

- ☐ P303 Personal Challenge - Grade 9
- ☐ P313 Healthy Lifestyles - Grade 10
- ☐ P333 Lifetime P.E. - Grades 11-12 - 1st Sem
- ☐ P334 Lifetime P.E. - Grades 11-12 - 2nd Sem

SCIENCE Full Year

- ☐ S321 Science Across the Spectrum
- ☐ S340 Living Environment 9 - Regents
- ☐ S341 Physical Setting - Earth Science Regents
- ☐ S361 Earth Science - Honors
- ☐ S441 Living Environment - Regents
- ☐ S461 Living Environment - Honors
- ☐ S531 Marine Science
- ☐ S538 Practical Chemistry - Non-Regents
- ☐ S541 Physical Setting - Chemistry Regents
- ☐ S561 Chemistry - Honors
- ☐ S639 Conceptual Physics - Non-Regents
- ☐ S640 Astronomy
- ☐ S641 Physical Setting - Physics Regents
- ☐ S661 Physics - Honors
- ☐ S682 AP Chemistry
- ☐ S685 Advanced Geology
- ☐ S686 AP Physics C
- ☐ S687 AP Environmental Science
- ☐ S688 AP Biology
- ☐ S714 Forensic Science

SECOND LANGUAGE Full Year

Foreign Language

- ☐ L123 French 2
- ☐ L133 French 3
- ☐ L145 French 4 H
- ☐ L156 French 5 AP
- ☐ L223 German 2
- ☐ L233 German 3
- ☐ L245 German 4 H
- ☐ L256 German 5 AP
- ☐ L313 Italian 1
- ☐ L323 Italian 2
- ☐ L333 Italian 3
- ☐ L345 Italian 4 H
- ☐ L356 Italian 5 H

SECOND LANGUAGE Full Year

- ☐ L513 Spanish 1
- ☐ L506 Spanish 1B
- ☐ L510 Cultural Language
- ☐ L523 Spanish 2
- ☐ L533 Spanish 3
- ☐ L545 Spanish 4 H
- ☐ L556 Spanish 5 AP

English as a Second Language Full Year (RCK only)

- ☐ G101 ESL - Beginner A
- ☐ G102 ESL - Beginner B
- ☐ G103 ESL - Beginner C
- ☐ G201 ESL - Intermediate A
- ☐ G202 ESL - Intermediate B
- ☐ G301 ESL - Advanced A
- ☐ G302 ESL - Advanced B

SOCIAL STUDIES Full Year

- ☐ D347 Global History I Regents
- ☐ D367 Global History I Honors
- ☐ D377 AP World History I
- ☐ D447 Global History II Regents
- ☐ D467 Global History II Honors
- ☐ D477 AP World History II
- ☐ D547 United States History Regents
- ☐ D567 United States History Honors
- ☐ D587 AP United States History
- ☐ D780 AP European History
- ☐ D910 Academic Intervention Services (AIS) Grade 9
- ☐ D911 Academic Intervention Services (AIS) Grade 10

SOCIAL STUDIES Half Year

- ☐ D605 Participation in Government
- ☐ D650 AP Economics
- ☐ D655 Economics
- ☐ D700 AP P.I.G./Government
- ☐ D710 Law and the Individual
- ☐ D720 Psychology
- ☐ D740 World at War
- ☐ D760 The American Civil War
- ☐ D770 Society & Culture in 20th Cent America
- ☐ D782 Holocaust Studies
- ☐ D783 Latin American Studies
- ☐ D784 Human Rights Issues
- ☐ D785 African Studies

TECHNOLOGY Full Year

- ☐ I1100 Studio-In-Art/Communications Systems
- ☐ T720 Transportation Systems
- ☐ T750 Design & Drawing for Production
- ☐ T771 Digital Electronics
- ☐ T773 Principles of Engineering
- ☐ T774 Civil Engineering & Architecture
- ☐ T775 Engineering Design & Development

TECHNOLOGY Half Year

- ☐ T710 Communication Systems
- ☐ T723 Construction Systems
- ☐ T725 Basic Electricity/Electronics
- ☐ T735 Technical Drawing
- ☐ T742 Web Design and Production
- ☐ T743 Computer Graphics
- ☐ T745 Computer-Aided Design
- ☐ T753 Materials Processing (Wood)
- ☐ T754 Advanced Woodworking
- ☐ T759 Materials Processing (Metal)

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