Middle and High School Course Offerings

A Program of Study for Grades 6-12: A Planning Guide for Students and Parents

Division of Instruction
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INTRODUCTION

This guide has been prepared to assist students and parents with course selections and with long-term program planning. Students and parents are encouraged to familiarize themselves with this publication and to use it as a resource guide. Counselors, in cooperation with parents and teachers, will assist each student in planning a program of study and in selecting courses for next year.

In addition to required courses, this guide contains a complete list of electives offered in the Chesterfield Schools. Not all electives are available at each high school. Each school publishes a separate list of elective offerings available at that school based on student interest and any specialized programming. For all courses listed in the school's offerings, however, this guide contains the course description and the listing of all prerequisites.

The selection of courses for the upcoming year is an opportunity for each student to think carefully about his or her interests, achievement, and educational and career goals. It is an opportunity for the student to think carefully about how the world is changing, how the workplace is changing, and how the job market is changing. It is an opportunity to visit the College and Career Center at school to learn more about jobs, about post-secondary education, and to think broadly and creatively about the future.

GROUPING FOR INSTRUCTION

Grouping students on the basis of achievement is standard procedure in most required courses and in some elective courses. The purpose of grouping is to place students in classes where they will be able to work most successfully.

The high school relies heavily on a student's grades, standardized test scores, and teacher recommendations to determine their placement in courses. For grouping purposes, achievement is considered in each individual subject area. Students are not automatically grouped in all classes of the same level. For example, a student could be in an honors level mathematics class and a comprehensive level English class.

GROUPING SYMBOLS

Grouping symbols used to indicate levels of instruction are as follows:

- **H** Classes for those students who have been placed in an advanced/honors program based on their having met specific criteria
- **Z** Classes for students who are meeting or exceeding grade level expectations
- **Y** Classes for students who are meeting fundamental grade level expectations
- **X** Classes for students who need more instruction in basic skill
- **C** Comprehensive classes preparatory for higher education or employment upon graduation. This designation is used when Z and Y levels are grouped together for instruction
  - Classes in which students are not grouped by achievement and ability levels
1. Weighting of letter grades is used for High School Grade Point Average (GPA) and class rank only.
2. Beginning with the class of 2013, Weighting of Letter Grades will change as follows:

<table>
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<tr>
<th>Letter Grade</th>
<th>Numerical Range</th>
<th>Comprehensive &amp; Progressing Levels</th>
<th>Honors Level</th>
<th>Advanced Level AP/IB industry certification*</th>
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</thead>
<tbody>
<tr>
<td>A+</td>
<td>97-100</td>
<td>4.5</td>
<td>5.0</td>
<td>5.5</td>
</tr>
<tr>
<td>A</td>
<td>90-96</td>
<td>4.0</td>
<td>4.5</td>
<td>5.0</td>
</tr>
<tr>
<td>B+</td>
<td>86-89</td>
<td>3.5</td>
<td>4.0</td>
<td>4.5</td>
</tr>
<tr>
<td>B</td>
<td>80-85</td>
<td>3.0</td>
<td>3.5</td>
<td>4.0</td>
</tr>
<tr>
<td>C+</td>
<td>76-79</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>C</td>
<td>70-75</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>D+</td>
<td>66-69</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>D</td>
<td>60-65</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td>F</td>
<td>below 60</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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</tbody>
</table>

*only specific industry certification courses
EN006 STUDY SKILLS 6
9 WEEKS
This course is designed for students who need reinforcement in learning skills. Course objectives provide specific learning strategies to assist students in improving classroom practices such as test taking and note taking abilities as well as increasing comprehension and refining organizational skills. Additionally, accessing and utilizing resource materials and mastering effective oral and written communication in a wide variety of subject areas will be included.

EN061 STRATEGIC READING
Strategic Reading offers students the chance to learn and practice reading strategies through teacher modeling, cooperative learning, and independent practice. This strategy-based course helps to improve fluency, reading comprehension, vocabulary, and listening comprehension. Writing is also a component of this class. Target areas include vocabulary and sentence structure. This course lays a foundation for CCPS' English 6 curriculum.

EN091 ART AND LANGUAGE ARTS WORKSHOP
Year
Suggestive Grade Level(s) 6-8
This class is designed to build connections between English and the Visual Arts. Each project incorporates both the Art and English curriculum. We strive for an equal blend of studio time, with the goal of improving their artistic skills, and English lessons, with the goal of improving their reading and writing skills. (This is not a replacement for English- it is an elective class.)

EN106 LANGUAGE ARTS 6
Language Arts 6 is a literature-based curriculum integrating reading, writing, oral communication, and research. Students develop techniques needed for reading, analyzing, studying, writing, and presenting information. Students learn to use grammar, spelling, and vocabulary correctly in all forms of communication. Literature includes short stories, novels, plays, poems, essays, and student-generated writing.

EN106 LANGUAGE ARTS 6 HONORS
Language Arts 6 Honors is an expanded literature-based curriculum integrating reading, writing, oral communication, and research. Students apply strategies necessary to read, analyze, and synthesize information. All subject areas are correlated through activities requiring students to use critical thinking skills in problem solving. Student decision-making involves planning, researching, developing, presenting, and evaluating oral and written final products. Students are accountable for using grammar, spelling, and vocabulary correctly in forms of communication.

EN107 LANGUAGE ARTS 7
Language Arts 7 emphasizes the structure of language through the study of literature, writing, research, and oral communication skills. Students will be introduced to a variety of literature and literary devices through guided and independent reading. In addition, by modeling and with practice, students will expand the use of writing for appropriate audiences. Research will incorporate the use of organizational skills, source materials, and process-oriented products. Communication skills will also be emphasized regularly as part of the curriculum; this includes listening and speaking skills as well as vocabulary development. Students are expected to exercise reading, writing, and communication skills independently and with teacher direction.

EN107 LANGUAGE ARTS 7 HONORS
Language Arts 7 Honors develops and integrates basic a higher level thinking skills within the core curricula. In this course, students will experiment with a variety of writings. In their writing, students will emphasize audience and purpose; develop their own personal styles; and incorporate complexity, depth, and creativity. Through the study of literature, students will explore universal themes, the interconnection of ideas, and many points of view. Also, the appreciation, interpretation, and modeling of literary techniques will encourage the development of the students’ self-understanding and production of new ideas. These new ideas will be supplemental with the process of research that incorporates organizational, analytical, and critical thinking, reading, writing, and learning skills through self-initiated and teacher-directed areas of study.

EN108 LANGUAGE ARTS 8
English 8 emphasizes skill development in writing, vocabulary, oral communication, and literature. Applying the writing process, students will practice various forms of written and oral expression for a variety or audiences and purposes. To enhance clarity of communication, students will augment vocabulary, manipulate word choice, employ correct usage, use proper grammatical structure, and utilize effective editing skills. By studying various genre and literary elements, students will examine novels, short stories, poetry, drama, and nonfiction.

EN108 LANGUAGE ARTS 8 HONORS
English 8 Honors emphasizes skill development in writing, vocabulary, oral communication, literature, and critical thinking. In addition to application of the writing process, students will be actively involved in the selection, planning, organization, refinement, and evaluation of various forms of written and oral expression. Students will direct writing toward specific audiences and purposes. To enhance clarity of communication, students will manipulate word choice and
sentence structure, employ correct usage, and use proper grammatical strategies. Students will develop a vocabulary which reflects a more complex and sophisticated thinking. Students will analyze various literary genres to identify theme and literary elements, recognize character motivation, discern author’s purpose and style, articulate possible universal concepts, and effectively present a synthesized critical response.

EN193 STUDY SKILLS 7 Semester
This course is designed for students who need reinforcement in learning skills. Course objectives provide specific learning strategies to assist students in improving classroom practices such as test taking and note taking abilities as well as increasing comprehension and refining organizational skills. Additionally, accessing and utilizing resource materials and mastering effective oral and written communication in a wide variety of subject areas will be included.

EN194 STUDY SKILLS 8
This course is designed for students who need reinforcement in learning skills. Course objectives provide specific learning strategies to assist students in improving classroom practices such as test taking and note taking abilities as well as increasing comprehension and refining organizational skills. Additionally, accessing and utilizing resource materials and mastering effective oral and written communication in a wide variety of subject areas will be included.

MATHEMATICS

MA301, MA302, MA303  FAST MATH I, II, III
FAST MATH is a mathematics program designed for non-native speakers of English who are two or more years behind in math and have limited experiences in formal educational settings. FAST Math not only provides mathematics instruction for students, but also builds their competence in English with the kinds of language they specifically need to succeed in math classes. FAST Math I and II are designed to address elementary and middle school content. FAST Math III is designed to assist students in developing pre-algebra concepts and skills, preparing them for success in algebra and geometry.

MA306 MATHEMATICS 6 HONORS
Mathematics 6 Honors provides increased opportunities for students to experience applications-oriented problem solving. Enrichment activities allow students to make mathematical connections to the constantly changing world in which we live. The curriculum focuses upon the properties of the real number system and data analysis techniques. Topics including estimation, number theory, geometry, pre-algebra, measurement, and probability and statistics form the foundation for the study of advanced mathematics. Students investigate and analyze a host of mathematical topics using activities which foster critical thinking skills while gaining self-confidence in identifying mathematics as a tool for everyday living and lifelong learning.

MA307 MATHEMATICS 7 HONORS
The rigorous pre-algebra nature of the seventh grade honors mathematics curriculum is designed to prepare students for a demanding first year algebra course. It embellishes traditional topics to provide a challenging treatment of arithmetic, geometric, algebraic, and statistical topics. Students explore and develop concepts related to variable expressions, equations and inequalities, geometry, rational numbers, probability, formulas, and percents. Students are also exposed to solving problems which require higher order thinking skills and the ability to reason and communicate mathematically. Connections of mathematical concepts to other disciplines and real-world applications allow students to develop the mathematical power and self-confidence that are essential elements for dealing with the daily challenges of the world in which we live.

MA320 ALGEBRA 1
The standard Algebra 1 course incorporates all of the foundation skills that are necessary for students to pursue college preparatory mathematics in high school. The properties of and operations on numbers are extended to include the development of the real number system. Sets, equations, inequalities, exponents, polynomials, functions, graphing, systems of equations, and quadratics are the major topics of study. Additionally, the ability to make comparisons of one-variable data sets using statistical techniques including measures of central tendency, range, stem-and-leaf plots, and box-and-whisker graphs is an expectation for all students in the Algebra 1 program. Integration of algebra topics to other disciplines is encouraged. Instruction in the use of and the development of proficiency with graphing calculators provides students with the visual models that complement the learning of algebraic concepts. Other existing and emerging technologies are used as tools to facilitate the problem solving process, data analysis techniques, and graphing.

MA320 ALGEBRA 1 HONORS
The Honors Algebra 1 program incorporates all of the foundation skills that are necessary for students to pursue the study of rigorous advanced mathematics. The arithmetic properties of numbers are extended to include the development of the real number system. Sets, equations, inequalities, polynomials, functions, graphing systems of
MA324 ALGEBRA 1 PART 1
This course is designed to support and promote student success in mathematics coursework necessary to fulfill graduation requirements. While strengthening prerequisite skills in the areas of operations with whole numbers, fractions, decimals, percentages, integers, and rational numbers, students will solidify algebraic concepts through modeling and the use of manipulatives, graphing calculators, and computer software where appropriate. A concentration on improving problem solving and communication in mathematics coupled with an emphasis on standardized test preparation will build mathematical confidence.

MA330 GEOMETRY
The Honors Geometry course is a unified study of plane, solid, and coordinate geometry. The curriculum includes the study of lines, planes, congruencies, geometric inequalities, perpendicularity of lines and planes in space, parallel lines and planes, polygons, polyhedral, area, volume, similarity, coordinate and transformational geometry, circles, and spheres. Formal and informal deductive reasoning skills are developed and applied to the construction of formal proof. Every effort is made to incorporate advanced technology into the curriculum through the use of calculators and computers. The intent of this course is to frame a curriculum that ensures the development of broad mathematical power and which cultivates students’ abilities to explore, conjecture, reason logically, formulate and solve problems, and communicate mathematically.

MA330 GEOMETRY HONORS
Geometry is a unified study of plane, solid, and coordinate geometric concepts which provides students with the prerequisite skills that will facilitate the study of advanced mathematics. Investigations of lines, planes, congruencies, similarities, geometric inequalities, parallelism, perpendicularity, polygons, areas, volumes, circles, and three-dimensional figures are incorporated to provide a complete course of study. Formal and informal deductive reasoning skills are developed and applied to the construction of formal proof. Opportunities are provided for discovery learning through hands-on activities and experiences that allow for utilizing computer software to explore major concepts and develop problem solving skills. An emphasis will be placed on proofs throughout the course including 2-column, paragraph, and coordinate proofs. Included will be a continued emphasis on more challenging multi-step problem solving, applications, and review of algebraic concepts incorporating geometry problems that involve quadratic equations and systems of linear equations.

MA340 ALGEBRA 2
Algebra 2 extends the concepts that student have encountered in Algebra 1 and Geometry and provides a thorough treatment of advanced algebraic concepts. Emphasis will be placed on practical applications, logic of procedures and interpretation of results. Graphing calculators and computers will enhance the students’ understanding. Students will be expected to communicate and practice mathematical ideas appropriately.

MA340 ALGEBRA 2 HONORS
The Algebra 2 Honors curriculum extends the concepts that students have encountered in Algebra 1 and Geometry, provides a thorough treatment of advanced algebraic concepts, and includes additional content. This additional content is noted in italics. Emphasis will be placed on practical applications, logic of procedures and interpretation of results. Graphing calculators and computers will be utilized to enhance the students’ understanding and provide a powerful tool for solving and verifying solutions. Students will be expected to communicate and practice mathematical ideas appropriately. Opportunities are provided for discovery learning through activities, applications, and experiences that foster exploration of major concepts and develop problem solving skills. Other existing and emerging technologies are used as tools to facilitate the problem solving process, data analysis techniques, and graphing.

MA377 MS MATHEMATICS 1
Middle School Mathematics 1 is the first of two courses in middle school preparing students for the study of algebra. The two-year sequence logically connects content found in traditional three-year pre-algebra programs and compacts it into two years with daily extended time periods in mathematics. Problem solving, proportional reasoning, and mathematical applications are emphasized throughout the two-year sequence. Problem solving is integrated throughout all areas of study so students can develop a wide range of skills and strategies for solving a variety of problem types. Emphases will be placed on problems involving consumer applications, proportional reasoning, and computation with integers. Opportunities for the student to acquire the specialized vocabulary and language patterns of mathematics are provided throughout each strand.

MA378 MS MATHEMATICS 2
Middle School Mathematics 2 is the second of two courses in middle school preparing students for the study of algebra.
The two-year sequence logically connects content found in traditional three-year pre-algebra programs and compacts it into two years with daily extended time periods in mathematics. Problem solving, proportional reasoning, and mathematical applications are emphasized throughout the two-year sequence. Problem solving is integrated throughout all areas of study so students can develop a wide range of skills and strategies for solving a variety of problem types. Emphases will be placed on problems involving consumer applications; proportional reasoning, relationships between different representations of real numbers, and an in-depth look at relations and functions. Opportunities for the student to acquire the specialized vocabulary and language patterns of mathematics are provided throughout each strand.

**MA393 MATH REINFORCEMENT**
Mathematics Reinforcement is a course designed for eighth grade students who need additional support in mathematics. The focus of this course will be on preparing students for Algebra 1. Students will review and extend concepts and skills learned in mathematics and prepare them for abstract concepts in algebra. Students will explore problem solving, algebraic thinking, number and number sense, computation and estimation, measurement and geometry, and probability and statistics. While learning mathematics, students will be actively engaged using concrete materials and appropriate technologies such as graphing calculators and computers. Students will ultimately become more confident in their abilities to do mathematics and become better mathematical problem solvers.

**MA394 MATHEMATICS ENHANCEMENT**
Mathematics Enhancement is for eighth grade students who want to explore mathematics more deeply. A wide variety of applications and connections in mathematics will be visited including historical connections, patterns and functions, topics in discrete mathematics, statistics and probability, logical reasoning, and investigation into algebra. Calculators, computers, spreadsheets, and graphing utilities (graphing calculators or computer graphing simulators) will be used as tools to assist in problem solving. Throughout the course, students will be encouraged to communicate and reason mathematically and become better mathematical problem solvers.

**SC406 SCIENCE 6**
Sixth grade science builds on the scientific concepts, skills, and processes acquired in kindergarten through fifth grade. Students will experience the richness and excitement of scientific discovery and the natural world as they study the role of the sun’s energy on the Earth’s systems, air and atmosphere, human interactions as they affect watershed systems, and basic chemistry concepts. The concept of change is explored through the study of transformations of energy and matter. A more detailed understanding of the solar system and space exploration takes students on a collaborative quest for knowledge and understanding. Emphasis is placed on development and use of an experimental design in scientific inquiry, use of the language of science to communicate understanding, and investigation of phenomena using technology. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts.

**SC407 LIFE SCIENCE 7**
The seventh grade life science program is a laboratory-based program whose content incorporates basic concepts as scientific investigation, sources of energy, matter properties and characteristics of water, properties of air and the Earth’s atmosphere, watershed systems, the solar system and environmental issues. Technology and career awareness are also incorporated into the program. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. In middle school science honors classes, inquiry and discovery are central to instruction within the context of experimental design and application of the science process skills. Honors students at this level will be able to differentiate between manipulated and responding variables and begin working independently and/or collaborating on simple investigations. As they carry out these investigations, students will engage in scientific writing and reporting.
career awareness. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. In middle school science honors classes, inquiry and discovery are central to instruction within the context of experimental design. Honors students at this level will apply the concepts of experimental design using research skills, incorporating the collection, analysis, and interpretation of quantitative data and will use such skills to draw connections between the subject matter and real-life situations. Research activities may be done independently or cooperatively. Students will recognize and understand applications of technology to scientific inquiry.

SC408 PHYSICAL SCIENCE 8
The Physical Science course stresses a more in-depth understanding of the nature and structure of matter and the characteristics of energy. The course places considerable emphasis on the technological application of physical science principles. Major areas covered include: the periodic table; physical and chemical changes; nuclear reactions; temperature and heat; sound; light; electricity and magnetism; and work, force, and motion. The Physical Science course continues to build on skills of systematic investigation with a clear focus on variables and repeated trials. Validating conclusions using evidence and data becomes increasingly important in this course. Students will plan and conduct research involving both classroom experimentation and literature reviews from written and electronic resources. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts.

SC408 PHYSICAL SCIENCE 8 HONORS
The eighth grade physical science program is a laboratory-based program whose content includes the characteristics properties of matter; atomic structure and theory; energy; electricity and magnetism; work, force, and motion; science, technology, and society; and career awareness. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study to key concepts. For middle school science honors classes, inquiry and discovery are central to instruction within the context of experimental design. Honors students at this level will be able to design and implement investigations independently and/or collaboratively and student investigations will result in some product whose scope is to be determined by the teacher.

SC416 INTEGRATED SCIENCE 6
Integrated 6th grade science is an inquiry-based course introducing major concepts in and relationships among the four science disciplines—chemistry, physics, life science, and earth/space science. Introductory principles of matter, energy, and forces are studied and related. Students investigate relationships between earth/space systems and living things. Topics include the Earth’s atmosphere, watersheds, and astronomy. Natural resources management and its relation to public policy and cost/benefits trade-offs are analyzed. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts.

SC416 INTEGRATED SCIENCE 6 HONORS
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SC417 INTEGRATED SCIENCE 7
Integrated 7th grade science is an inquiry-based course emphasizing a more complex understanding of change, cycles, patterns, and relationships. Students develop these concepts by exploring the cellular organization and classification of living organisms. Structural integrity and force are demonstrated through applications of Newton’s Laws and energy-matter interactions. Watersheds and ecosystems are studied in detail. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts.

SC417 INTEGRATED SCIENCE 7 HONORS
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Integrated 8th grade science is an inquiry-based course under the applications of technology to scientific inquiry. Students will recognize and understand the concepts of experimental design using research skills, incorporating the collection, analysis, and interpretation of quantitative data. Research activities may be done independently or collaboratively. Students will apply discovery are central to instruction within the context of experimental design. Honors students at this level will apply the concepts of experimental design using research skills, incorporating the collection, analysis, and interpretation of quantitative data. Research activities may be done independently or collaboratively. Students will recognize and understand applications of technology to scientific inquiry.

### SC418 INTEGRATED SCIENCE 8
Integrated 8th grade science is an inquiry-based course exploring important life processes such as genetics. Students will build on basic physical science principles by investigating in-depth the nature and characteristics of energy and matter. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts.

### SC418 INTEGRATED SCIENCE 8 HONORS
Integrated 8th grade science is an inquiry-based course exploring important life processes such as genetics. Students will build on basic physical science principles by investigating in-depth the nature and characteristics of energy and matter. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. For middle school science honors classes, inquiry and discovery are central to instruction within the context of experimental design. Honors students at this level will be able to design and implement investigations independently and/or collaboratively and student investigations will result in some product whose scope is to be determined by the teacher.

### SC420 EARTH/SPACE SCIENCE 1 HONORS
Earth/space science course connects the study of Earth’s composition, structure, processes, and history; its atmosphere, fresh water, and oceans; and its environment in space. The course emphasizes historical contributions in the development of scientific thought about Earth and space. Earth Science stresses the interpretation of maps, charts, tables, and profiles; the use of technology to collect, analyze, and report data; and science skills in systematic investigation. Problem solving and decision making are an integral part of the course, especially as they relate to the costs and benefits of utilizing Earth’s resources. Major topics of study include plate tectonics, the rock cycle, Earth history, the oceans, the atmosphere, weather and climate, and the solar system and universe. Students are expected to use the scientific method to discover scientific principles. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts.

### SOCIAL STUDIES

#### SS206 SOCIAL STUDIES 6 United States History to 1865
Students will use skills of historical and geographical analysis to explore the early history of the United States and understand ideas and events that strengthened the union. This course of study follows the history of the United States from pre-Columbian times until 1877. Students will continue to learn fundamental concepts in civics, economics, and geography as they study United States history in chronological sequence and learn about change and continuity in our history. They also will study documents and speeches that laid the foundation of American ideals and institutions and will examine the everyday life of people at different times in the country’s history through the use of primary and secondary sources.

#### SS207 SOCIAL STUDIES 7 United States History: 1865 to the Present
Students will continue to use skills of historical and geographical analysis as they examine American history since 1877. This course of study follows the history of the United States from the end of the Reconstruction era to the present. Students continue to learn fundamental concepts in civics, economics, and geography within the context of United States history. Political, economic, and social challenges facing the nation reunited after civil war will be examined chronologically as students develop an understanding of how the American experience shaped the world political and economic landscape.

#### SS208 SOCIAL STUDIES 8 Civics and Economics
Civics and Economics examines the roles citizens play in the political, governmental, and economic systems in the United States. Students examine the constitutions of Virginia and the United States; identify the rights, duties, and responsibilities of citizens; and describe the structure and operation of government at the local, state, and national levels. Students investigate the process by which decisions are made in the American market economy and explain the government’s role in it. The standards identify personal character traits, such as patriotism, respect for the law, and a sense of civic duty, that facilitate thoughtful and effective participation in the civic life of an increasingly diverse democratic society. Civic education must emphasize the intellectual skills required for responsible citizenship. Students practice these skills as they extend their understanding of the essential knowledge defined by the standards for Civics and Economics.
WORLD LANGUAGES

WL066 INTERNATIONAL STUDIES 6 EXPLORATORY
Nine Weeks
Four of the six languages offered in Chesterfield County—Mandarin, French, Spanish, German, Latin and Japanese—are introduced to the students through quarter-long thematic units. Each thematic unit has a common core of vocabulary: greetings and salutations, introductions, the alphabet, basic colors numbers one through twenty, days, months, seasons and basic questions words. Each unit integrates practice with study skills through the use of interactive notebooks, language decoding strategies and graphic organizers. The use of technology is encouraged to implement and enhance the students’ connection to the world.

WL063 INTERNATIONAL STUDIES
Semester
WL063H INTERNATIONAL STUDIES
Year
WL064 INTERNATIONAL STUDIES
Year
WL065 INTERNATIONAL STUDIES
Year
Four of the six languages offered in Chesterfield County—Chinese, French, Spanish, German, Latin and Japanese—are introduced to the students through quarter-long thematic units. Each thematic unit has a common core of vocabulary: greetings and salutations, introductions, the alphabet, basic colors numbers one through twenty, days, months, seasons and basic questions words. Each unit integrates practice with study skills through the use of interactive notebooks, language decoding strategies and graphic organizers. The use of technology is encouraged to implement and enhance the students’ connection to the world.

WL065H INTERNATIONAL STUDIES HONORS
Year
All high school credit languages offered in Chesterfield County—French, German, Japanese, Latin and Spanish—are introduced to the students with coordinating cultural information and experiences relating to food, customs, clothing, music, art, geography, history, holidays, life-styles, and recognized contributions to the world through thematic units. Schools may offer an additional thematic unit on Mandarin if student interest is sufficient. The use of technology is encouraged to implement and enhance the student’s study.

WL501 FRENCH 1A
No credit
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with a Novice-Low Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in French. Students will increase their cultural awareness through various thematic units; i.e., school, family, pastimes, and friends. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed. Students must complete WL501 (French I A) and WL502 (French I B) to continue to the second level of French. After successful completion of French 1A and 1B, students will earn one full credit.

WL502 FRENCH 1B
One credit
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in French. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed. Students must complete WL501 (French I A) and WL502 (French I B) to continue to French II (WL512)

WL503 GERMAN 1A
No credit
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with a Novice-Low Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in German. Students will increase their cultural awareness through various thematic units; i.e., school, family, pastimes, and friends. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed. Students must complete WL503 (German I A) and WL504 (German I B) to continue to the second level of German. After successful completion of German 1A and 1B, students will earn one full credit.

WL504 GERMAN 1B
One credit
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in German. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed. Students must
complete WL503 (German I A) and WL504 (German I B) to continue to German II (WL522).

**WL505 LATIN 1A**  
No credit  
This academic elective focuses on Presentational Writing and Interpretive Reading in Latin. Successful students will exit the course with a Novice-High/Intermediate-Low Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale for Presentational Writing. Students will increase their cultural awareness through three thematic units. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed. Students must complete WL505 (Latin I A) and WL506 (Latin I B) to continue to Latin II (WL532).

**WL506 LATIN 1B**  
One credit  
This academic elective focuses on Presentational Writing and Interpretive Reading in Latin. Successful students will exit the course with a Novice-High/Intermediate-Low Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale for Presentational Writing. Students will increase their cultural awareness through three thematic units. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed. Students must complete WL505 (Latin I A) and WL506 (Latin I B) to continue to Latin II (WL532).

**WL507 SPANISH 1A**  
No credit  
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in Spanish. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed. Students must complete WL507 (Spanish I A) and WL508 (Spanish I B) to continue to Spanish II (WL542).

**WL508 SPANISH 1B**  
One credit  
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in French. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed. Students must complete WL507 (Spanish I A) and WL508 (Spanish I B) to continue to Spanish II (WL542).

**WL511 FRENCH 1**  
One credit  
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in French. Students will increase their cultural awareness through various thematic units; i.e. school, family, pastimes and friends. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed.

**WL512 FRENCH 2**  
One credit  
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with a Novice-High Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in French. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. Students at this level can generally be understood by a sympathetic audience. **Pre-requisite French 1**

**WL513 FRENCH 3**  
One credit  
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. The speaker can generally be understood by a sympathetic audience. French 3 classes are conducted almost entirely in French. **Pre-requisite: French II**
WL521 GERMAN 1
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in German. Students will increase their cultural awareness through various thematic units; i.e. school, family, pastimes, and friends. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed.

WL522 GERMAN 2
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with a Novice-High Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in German. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. This course with a Novice-High Proficiency level on the ACTFL scale for Presentational Speaking and Writing. Successful students will exit the course with nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed.

WL523 GERMAN 3
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. Students at this level can generally be understood by a sympathetic audience. Pre-requisite: German 2

WL531 LATIN 1
This academic elective focuses on Presentational Writing and Interpretive Reading in Latin. Successful students will exit the course with a Novice-High Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale for Presentational Writing. Students will increase their cultural awareness through seven thematic units. The use of technology is encouraged to implement and enhance the students’ studies.

WL532 LATIN 2
The second level of Latin offers a continuing study and review of grammar previously introduced. Most of the formal grammar necessary for the reading of Latin literature will be presented. Readings continue to focus on daily life. Legendary history and mythology complement the integrated language approach to translation. The use of technology is encouraged to implement and enhance the students’ studies. Successful students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with a Novice-High Proficiency level on the ACTFL scale for Presentational Writing. The students’ composition can generally be understood by a sympathetic reader. Pre-requisites: WL531 Latin 1 Pre-requisite: Latin 1

WL533 LATIN 3
(May be taken in 3rd, 4th, or 5th year) The third level reviews and completes the study of grammar. Additional vocabulary is introduced through the readings. Latin prose reading selections, featuring the Republic and the Empire, include such authors as Cicero, Caesar, Entropies, Augustus, and Petronius. The use of technology is encouraged to implement and enhance the students’ studies. Upon completion of the DEVELOPING STAGE, students are able to recognize and understand most grammatical structures found in Latin prose. With enhanced vocabulary, students are able to read passages from the works of selected authors. Successful students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale for Presentational Writing. The use of technology is encouraged to implement and enhance the students’ studies. Pre-requisite Latin 2

WL541 SPANISH 1
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in Spanish. Students will increase their cultural awareness through various thematic units; i.e. school, family, pastimes, and friends. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed.

WL542 SPANISH 2
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with a Novice-High Proficiency
level on the ACTFL scale in the areas of listening, speaking, reading, and writing. As much as possible, the class is conducted in Spanish. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. Students at this level can generally be understood by a sympathetic audience. Pre-requisite: Spanish 1

WL543 SPANISH 3 One credit
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. Their efforts at communication are comprehensible to a sympathetic audience. Spanish 3 classes are conducted almost entirely in Spanish. Pre-requisite: Spanish 2

WL551 JAPANESE 1 One Credit
Students begin to acquire skills in understanding and speaking the Japanese language. Basic grammar and vocabulary used in daily living, practical conversations, and discussions of Japanese culture are studied. Hiragana, the Japanese syllabify writing system, and katakana, the Japanese syllabify for foreign words, are taught. A limited number of kanji characters, are also introduced. Through the language, students study history, geography, culture, and customs of the country. These goals will be accomplished through individual and paired activities, reading authentic basic Japanese, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate and teacher created strategies. This is an academic elective that requires regular study, homework, memorization and practice. Pre-requisites: WL551 Japanese 1

WL561 NATIVE SPEAKING AND GRAMMAR 1 One credit
The course is intended for students whose dominant spoken language is Spanish, but who lack expertise in reading and writing in their native language. Concentration is placed on the problem areas of native speakers and will include the study of Spanish grammar, selection of short stories by renowned Spanish and Latin American authors through thematic units that mirror AP themes. The use of technology is encouraged to implement and enhance the students’ studies. Pre-requisites: Intermediate-Mid Interpersonal Speaking Proficiency (ACTFL Scale) in Spanish, Novice-Low Interpersonal Writing Proficiency (ACTFL Scale) in Spanish, and Novice-Low Interpretive Reading Proficiency (ACTFL Scale) in Spanish.

WL562 NATIVE SPANISH LANGUAGE 2 AND HERITAGE One credit
The course is intended for students whose dominant spoken language is Spanish, but who lack expertise in reading and writing in their native language. Concentration is placed on the problem areas of native speakers and will include the study of Spanish grammar, selection of short stories by renowned Spanish and Latin American authors through thematic units that mirror AP themes. Students will learn more about the diversity of Hispanic cultures and will explore themes of interest to Hispanic students. The use of technology is encouraged to implement and enhance the students’ studies. Pre-requisite:WL561 Native Spanish Language 1 or Intermediate-High Interpersonal Speaking Proficiency (ACTFL Scale) in Spanish, Novice-High Interpersonal Writing Proficiency (ACTFL Scale) in Spanish, and Novice-High Interpretive Reading Proficiency (ACTFL Scale) in Spanish.

BUSINESS AND INFORMATION TECHNOLOGY

IT006 INTRODUCTION TO COMPUTERS 6 Nine Weeks
Suggested Grade Level 6
Students learn to the basics of computer use and develop skills in touch keyboarding and the correct manipulation of the keyboard. Emphasis is placed on the development of the skill of entering alphabetic and numeric information on a keyboard and how multimedia and telecommunications tools work in conjunction with each other.

IT020 COMPUTER AND VIDEO GAME DESIGN Semester
Suggested Grade Level 7 and 8
Video Game Design is a class for those students who already possess a foundation in computer literacy and who wish to develop their skills in the field of video game design. This course involves collaboration, critical and inventive thinking and is not designed to be a class where students simply play video games. Students must possess the ability to think independently, problem solve, design, and build using computers and software.

**IT101 COMPUTER APPLICATIONS**  
18 Weeks  
Suggested Grade Level(s): 8  
One half Credit  
Students are introduced to the world of business using the computer as a problem-solving tool. Emphasis is placed on using basic touch keyboarding skills to complete a variety of projects incorporating word processing, database, presentation, and spreadsheet software. Basic Internet safety and computer maintenance issues are important components of this course.

**IT102 COMPUTER APPLICATIONS**  
One Credit - 36 Weeks  
Suggested Grade Level: 8  
Students develop or review correct keyboarding techniques and gain a basic knowledge of word processing, spreadsheet, database, graphics, and telecommunications applications. Students demonstrate an understanding of computer concepts through application of knowledge. Students learn to use software packages and local and worldwide network communications systems.

**IT100 COMPUTER SOLUTIONS**  
18 Weeks  
Suggested Grade Level(s): 7, 8  
Students are introduced to the world of business using the computer as a problem-solving tool. Emphasis is placed on using basic touch keyboarding skills to complete a variety of projects incorporating word processing, database, presentation, and spreadsheet software. Basic Internet safety and computer maintenance issues are important components of this course.

**IT105 INFORMATION TECHNOLOGY FUNDAMENTALS**  
Suggested Grade Level: 8;  
One Credit  
36 weeks  
Students can receive high school credit  
Information Technology (IT) Fundamentals introduces the essential technical and professional skills required for students to pursue programs leading to professional careers and IT certifications. Students investigate career opportunities and technologies in four major IT areas: Information Services and Support, Network Systems, Programming and Software Development, and Interactive Media. Students will evaluate the impact of IT on other career clusters. The focus of the IT Fundamentals course is the introduction of skills related to information technology basics, Internet fundamentals, network systems, computer maintenance/upgrading/troubleshooting, computer applications, programming, graphics, Web page design, and interactive media. Students explore ethical issues related to computers and Internet technology and develop teamwork and communication skills that will enhance their employability.

**IT200 KEYBOARDING**  
Nine Weeks  
Suggested Grade Level: 6  
Students learn to the basics of computer use and develop skills in touch keyboarding and the correct manipulation of the keyboard. Emphasis is placed on the development of the skill of entering alphabetic and numeric information on a keyboard and how multimedia and telecommunications tools work in conjunction with each other.

**IT201 KEYBOARDING**  
18 weeks  
Suggested Grade Level: 8  
One Half Credit  
This course is designed for secondary school students to develop and enhance touch skills for entering alphabetic, numeric, and symbol information on a keyboard. Students learn to produce simple technical and non-technical documents.

**IT202 KEYBOARDING APPLICATIONS**  
Suggested Grade Level: 8  
One Credit  
36 weeks  
Students develop skills for entering alphabetic, numeric, and symbol information on a keyboard. Students apply keyboarding skills to produce a variety of personal and business documents.

**HEALTH AND PHYSICAL EDUCATION**

**HP701 HEALTH/SPECIAL PHYSICAL EDUCATION 6-8**  
This is a diversified program of developmental activities suited to needs, capabilities, and limitations of students who may not safely, successfully or with personal satisfaction engage in activities included in the regular physical education program. Through carefully designed movement experiences students should gain knowledge about skills, fitness, and the application to their lives.

**HP706 HEALTH AND PHYSICAL EDUCATION 6**  
36 Weeks  
**HP707 HEALTH AND PHYSICAL EDUCATION 7**  
36 Weeks  
**HP708 HEALTH AND PHYSICAL EDUCATION 8**  
36 Weeks  
Students will experience a developmentally designed program of skill and fitness. Emphasis is placed on students learning basic skills and acquiring competence and confidence necessary to participate in and enjoy physical activity. Students are provided with learning experiences that help them acquire current health information and practice essential skills for making healthy decisions.

**HP778 FIT FOR LIFE**  
Suggested Grade Level: 8  
Semester
Course will provide students with the knowledge and skills to make good personal physical activity choices. Students will assess their present level of physical fitness, set realistic and appropriate goals, and develop and manage a plan to reach those goals. The plan developed and implemented by the student will be personal fitness plan which will include physical activity and diet and nutrition. Students will realize the benefits of developing their own unique exercise plan and be able to explain the relationship between sleep, exercise, nutrition, self esteem, academic performance, and avoidance of substance abuse to achieving and maintaining good physical fitness.

HP780 FIT FOR LIFE 36 Weeks
Suggested Grade Level: 8
Course will provide students with the knowledge and skills to make good personal physical activity choices. Students will assess their present level of physical fitness, set realistic and appropriate goals, and develop and manage a plan to reach those goals. The plan developed and implemented by the student will be personal fitness plan which will include physical activity and diet and nutrition. Students will realize the benefits of developing their own unique exercise plan and be able to explain the relationship between sleep, exercise, nutrition, self esteem, academic performance, and avoidance of substance abuse to achieving and maintaining good physical fitness.

HP782 PHYSICAL EDUCATION 8 Semester
Students will experience a developmentally designed program of skill and fitness. Emphasis is placed on students learning basic skills and acquiring competence and confidence necessary to participate in and enjoy physical activity. Students are provided with learning experiences that will expose them to a variety of lifetime activities.

HP785 ADVENTURE RECREATION & SPORTS MANAGEMENT
Sports Management/Adventure Recreation offers students the opportunity to be active in a blend of traditional and adventure-based activities that challenge the student personally and socially while at the same time having classroom-based opportunities to look at the diverse and expanding field of sports and recreation. Recreation-based instruction may include learning skills for biking, fishing, archery, geocaching, Frisbee golf, and other non-traditional sports. The classroom curriculum will provide a comprehensive look at the organizational structures found in the sports industry and the foundations of managerial and leadership concepts.

PA104 THEATRE ARTS 7 Year Long
This course is designed as an introduction to the study of theatre history, dramatic literature and theatrical production.

PA109 THEATRE ARTS 8 Year Long
This course prepares students for the further theatrical study and the acquisition of concepts, content and skills in theatre arts.

PA105 SPEECH/DRAMA 8 Semester
This is a year-long course designed to give students the opportunity to be involved in two or more stage productions and to read and study two three-act plays. Students will have intense work in pantomime, improvisation, dialogue writing, videotaping, and public speaking. Emphasis is placed on concentration and other skills which help students gain self-confidence. Opportunities to participate in a variety of classroom presentations help each student gain an awareness and appreciation of self, others, and the surrounding environment through the use of imagination, movement, and verbal skills. Pre-requisite: Drama teacher recommendation

PA107 SPEECH/DRAMA 7 Semester
This is an elective course which focuses on communication skills learned through pantomime, dialogue writing, memorization of written material, speech making, and oral reading. Improvisation and role playing emphasize concentration and other skills which help students gain self-confidence. Opportunities to participate in a variety of classroom presentations help each student gain an awareness and appreciation of self, others, and the surrounding environment through the use of imagination, movement, and verbal skills.

PA108 SPEECH/DRAMA 8 Semester
This is a semester course designed to give students intense work in pantomime, improvisation, stage geography, character development, and vocal projections and expressiveness. Students will be involved in a stage production and will work on various public speaking activities. Emphasis is placed on concentration and other skills which help students gain self-confidence. Opportunities to participate in a variety of classroom presentations help each student gain an awareness and appreciation of self, others,
and the surrounding environment through the use of imagination, movement, and verbal skills.

**PA301 BEGINNING BAND**  Year Long
Beginning Band provides the opportunity for students to learn a band instrument (brass, woodwind, percussion) and completes Level 1 as specified in the band curriculum. This class helps students appreciate the relationships among music, other arts, and society. Appropriate instrument selection will be accomplished during the first two weeks of school. Instruments may be rented or purchased from local music dealers. At the discretion of the band teacher, the music department may provide larger instruments such as tubas, baritone saxophones, bassoons, etc., if they are available. Performances are mandatory and are part of the overall grade in this class. Special attire may be required for performances. **Student must provide their own instruments and method book.**

**PA302 INTERMEDIATE BAND**  Year Long
Intermediate Band completes Level 2 as specified in the band curriculum. This class helps students appreciate the relationships among music, other arts, and society. At the discretion of the band teacher, the music department may provide larger instruments such as tubas, baritone saxophones, bassoons, etc., if they are available. Performances are mandatory and are part of the overall grade in this class. Special attire may be required for performances. **Prerequisite: Band teacher recommendation Students must provide their own instruments and method book.**

**PA303 ADVANCED BAND**  Year Long
This class completes Level 3 as specified in the band curriculum and helps students appreciate the relationships among music, other arts, and society. At the discretion of the band teacher, the music department may provide larger instruments such as tubas, baritone saxophones, bassoons, etc., if they are available. Performances are mandatory and are part of the overall grade of this class. Special attire may be required for performances. **Pre-requisite: Band teacher recommendation Students must provide their own instruments and method book.**

**PA401 BEGINNING CHORUS**  Year Long
Beginning chorus completes Level 1 of the vocal curriculum by teaching the mechanics of music notation and music reading. This class fosters skills which help students become better singers and appreciate the relationships among music, other arts, and society. Learning the art of singing and enjoying the enrichment in the classroom promote student achievement, positive self-esteem, a spirit of cooperation, stage presence and etiquette, and career awareness. Performances are mandatory and are a part of the overall grade in this class. Special attire may be required for performances.

**PA402 INTERMEDIATE CHORUS**  Year Long
Intermediate Chorus completes Level 2 of the vocal curriculum by teaching music production. Solely at their discretion, vocal teachers may evaluate and select students by voice classification for designated groups. This course fosters skills which help students become better singers and appreciate the relationships among music, other arts, and society. Learning the art of singing and enjoying the enrichment in the classroom promote student achievement, positive self-esteem, a spirit of cooperation, stage presence and etiquette, and career awareness. Performances are mandatory and are a part of the overall grade in this class. Special attire may be required for performances.

**PA403 ADVANCED CHORUS**  Year Long
Advanced Chorus completes Level 3 of the vocal curriculum. Solely at their discretion, vocal teachers may evaluate and select students by voice classification for designated groups (mixed chorus, treble chorus, select ensemble). This course fosters skills which help students become better singers and appreciate the relationships among music, other arts, and society. Learning the art of singing and enjoying the enrichment in the classroom promote student achievement, positive self-esteem, a spirit of cooperation, stage presence and etiquette, and career awareness. Performances are mandatory and are a part of the overall grade in this class. Special attire may be required for performances.

**PA404 MUSIC EXPLORATORY 6**  Nine Weeks
This general music course is designed to involve students in the development of music skills through singing, playing instruments, moving and listening. Students will explore the creative aspects of music and study various cultural/historical periods of music.

**PA405 WORLD MUSIC EXPLORATORY**  Nine Weeks
**PA406 WORLD MUSIC EXPLORATORY**  Semester
This general music course is designed as an introduction to a variety of musical styles and cultures from around the world. Students will explore the creative aspects of world music by applying music knowledge and skills.
PA515  BEGINNING MS GUITAR 6  Nine Weeks
PA526  BEGINNING MS GUITAR 6  Year Long
PA518  BEGINNING MS GUITAR 7  Semester
PA527  BEGINNING MS GUITAR 7  Year Long
PA518  BEGINNING MS GUITAR 8  Semester
PA517  BEGINNING MS GUITAR 8  Year Long

This course is designed as a foundation for the beginning guitar student. Students will learn and develop techniques and skills to play in ensembles and individually. Evaluation criteria will include attendance at performances and classroom participation. Special attire may be required for performances. Student must provide own instrument and methods books.

PA551  TECH ASSIST MUSIC 6  Nine Weeks
PA552  TECH ASSIST MUSIC 7  Year
PA553  TECH ASSIST MUSIC 8  Year
PA554  TECH ASSIST MUSIC 7  Semester
PA555  TECH ASSIST MUSIC 8  Semester
PA556  TECH ASSIST MUSIC  One Credit

This course allows student performers the opportunity to learn how to create sound maps and basic recording techniques while creating original compositions. Some basic keyboard applications will be taught. Students will learn to collaborate with others to create a production plan for performance and recordings, microphone selection and placement, explore the use of electronic and software-based instruments to create music alongside traditional acoustic instruments. Both "tracking" and "looping" techniques will be explored. Students will utilize multiple software-based tools to accomplish these objectives. Students will become active music makers, creators and responders to music.

PA601  BEGINNING ORCHESTRA  Year Long

Students enrolled in beginning orchestra will learn to play an orchestral instrument (violin, viola, cello or string bass). This class is designed to teach the basic skill development of stringed instruments and music reading. Student must provide their own instrument and methods books. During the first two weeks of school, appropriate instrument selection will be determined. At the discretion of the orchestra teacher, the music department may provide larger instruments, if they are available. Instruments may also be rented or purchased from local music dealers. Evaluation criteria will include student attendance at performances and classroom participation. Special attire may be required for performances.

PA602  INTERMEDIATE ORCHESTRA  Year Long

The primary focus of this class is the further development and expansion of basic skills learned in sixth grade orchestra. Students will study bowing technique, music reading and notation, scales and ensemble playing. At the discretion of the orchestra teacher, the music department may provide larger instruments, if they are available. Evaluation criteria will include student attendance at performances and classroom participation. Special attire may be required for performances.

PA603  CONCERT ORCHESTRA  Year Long

Concert Orchestra is an advanced performing ensemble for students playing stringed instruments. Students will continue to refine their technical skills and expand their knowledge of music expression. At the discretion of the orchestra teacher, the music department may provide larger instruments, if they are available. Evaluation criteria will include student attendance at performances and classroom participation. Special attire may be required for performances. Pre-requisite: Orchestra teacher recommendation. Students must provide their own instrument and methods books.

VISUAL ARTS

VA006  ART EXPLORATION 6  Nine weeks

Students will engage in activities designed to develop visual memory through observation. Art as a communication skill and means of personal expression will be explored. Skills in drawing and craftsmanship will be developed through the creation of artwork and the study of masterworks.

VA061  ART 6  Semester

Students begin building skills in basic art media while focusing on the elements of design as it applies to each student’s work. Students will explore the relationship among visual art, other art forms, and other subject areas.

VA070  ART 7  Semester

Students will practice building skills in basic art media such as painting, drawing, printmaking, and sculpture while focusing on the elements of design as it applies to each student’s work. Students will explore art as a part of their everyday life as they study the artwork of past artists and cultures. Students will continue to develop visual memory and observation skills as they practice working in a variety of media. Hands-on experiences that relate to a student’s current interests and environment will be emphasized.

VA071  ART 7  One Year

Students will build skills in the media of painting, drawing, print-making, sculpture, and crafts. An understanding of the elements and principles of design as it applies to each student’s work will begin to be developed. Students will explore art as a part of their everyday life as they study the artwork of past artists and cultures.
VA080  ART 8  Semester
Students will develop a further understanding of the elements and principles of design as they create artwork in traditional and experimental media. Analyzing and evaluating the work of artists who have made a contribution to society will be used as a means to further the students’ personal artistic development.

VA081  ART 8  One Year
Students will utilize the elements and principles of design as a means of personal expression in a variety of media. In-depth exploration of basic media and art history will give the student many opportunities for further development of skills and knowledge. Crafts and photography will be explored as vehicles for communication through the arts.

VA063  COMPUTER ART 6  Semester
This is a beginning level course in the use of the computer as an artistic and creative tool. Students will explore software applications that promote visual awareness. The elements and principles of design will be emphasized in the creation of digital images.

VA072  COMPUTER ART 7  Semester
This is a beginning level course in the use of the computer as an artistic and creative tool. Students will explore software applications that promote visual awareness. The elements and principles of design will be emphasized in the creation of digital images.

VA082  COMPUTER ART 8  Semester
This is a beginning level course in the use of the computer as an artistic and creative tool. Students will explore software applications that promote visual awareness. The elements and principles of design will be emphasized in the creation of digital images.

VA073  BEGINNING PHOTOGRAPHY 7/8  Semester
This course is designed to introduce students to photography as an art form and to basic darkroom procedures. Students will use various techniques and methods to create photographs and explore photography as a creative process.

VA083  BEGINNING PHOTOGRAPHY 8  Semester
This course is designed to introduce students to photography as an art form and to basic darkroom procedures. Students will use various techniques and methods to create photographs and explore photography as a creative process.

VA906  ADVANCED ART 6  Year
Students will explore a variety of art media to develop proficiency and a full understanding of the elements and principles of design. The artwork of the masters will be studied with an emphasis on the personal vision and expression of the individual. Through assigned projects, students will explore the relationship among visual art, other art forms, and other subject areas. Pre-requisite: Elementary art teacher recommendation or evaluation of student’s artwork

VA907  ADVANCED ART 7  Year
Students will continue to develop technical skills in drawing, painting, printmaking, and various sculptural/craft media. Expanded means of creating art, such as mixed media and computer-generated art forms, will be explored, incorporating further understanding of the elements and principles of design. Special projects will be completed to advance the students’ understanding of art and its importance to a culture. Pre-requisite: Art teacher recommendation

VA908  ADVANCED ART 8  Year
Students will continue to develop new skills in a variety of two-dimensional and three-dimensional medial with opportunities to focus on specific areas of interest. Photography as an art form will be introduced and studied. Career choices in the visual arts will be investigated. Students will have the opportunity to assemble a portfolio of work to be submitted for advanced placement in high school art classes. Pre-requisite: Art teacher recommendation

BUSINESS AND MARKETING

BM010  MAKE IT YOUR BUSINESS  Semester
Make it Your Business is a technology-based, interactive course for students who want to learn about the many aspects of business, marketing and economics. Students should possess an interest in studying business in high school or pursuing a career in business, and have the ability to work independently and collaboratively.

BM101  PRINCIPLES OF BUSINESS & MARKETING  One Credit
Students discover the roles of business and marketing in the free enterprise system and the global economy. Basic financial concepts of banking, insurance, credit, inheritance, taxation, and investments are investigated to provide a strong background as students prepare to make sound decisions as consumers, wage earners, and citizens. The real-world impact of technology, effective communication, and interpersonal skills is evident throughout the course. This course also supports career development skills and explores career options.

TECHNOLOGY EDUCATION

TE006  INTRODUCTION TO TECHNOLOGY  Nine Weeks
Suggested Grade Level: 6
Students first study the basic elements of all technology, including processes, energy, information, and people. They explore up to six systems of technology, including biotechnology, energy, construction, transportation, communication, and production/manufacturing. Finally, they relate the impact of technology on society, environment, and culture to future consequences and decisions.

**TE007 INVENTIONS AND INNOVATIONS**  
Semester  
Suggested Grade Level: 7  
Students make models of significant inventions that have advanced society. After studying these developments, they explore contemporary technological problems facing them, their community, or the world and apply systematic procedures to invent new products or innovations as solutions.

**TE008 TECHNOLOGICAL SYSTEMS**  
Semester  
Suggested Grade Level: 8  
Students combine resources and techniques into systems, realizing technology as a system. By simulating systems, assessing their impacts, and relating this experience to the two previous levels, students gain an insight into how to approach the problems and opportunities of a technological world in a broad sense. They also explore occupational areas and educational programs for technology-oriented careers.

**TE009 TECHNOLOGICAL SYSTEMS**  
Year Long  
Suggested Grade Level: 8  
Students combine resources and techniques into systems, realizing technology as a system. By simulating systems, assessing their impacts, and relating this experience to the two previous levels, students gain an insight into how to approach the problems and opportunities of a technological world in a broad sense. They also explore occupational areas and educational programs for technology-oriented careers.

**FAMILY AND CONSUMER SCIENCES**

**FC007 FAMILY AND CONSUMER SCIENCES 7**  
Semester  
Family and Consumer Sciences Exploratory II is one of the middle school courses that provides a foundation for managing individual, family, work, and community roles and responsibilities. In FACS Exploratory II, students focus on their individual development as well as their relationships and roles within the family unit. They learn how to maintain their living and personal environments and to use nutrition and wellness practices. Students also apply consumer and family resources, develop textile, fashion, and apparel concepts, and explore careers related to Family and Consumer Sciences. Students will be given an opportunity to take the American Red Cross Babysitting training. Time is also provided for developing education and early childhood concepts and leadership skills.

**FC008 PERSONAL DEVELOPMENT**  
18 weeks  
Suggested Grade Level(s): 8  
Family and Consumer Sciences Exploratory III is one of the middle school Family and Consumer Sciences courses that provides a foundation for managing individual, family, career, and community roles and responsibilities. In FACS III, students focus on their individual roles in the community as well as how the community influences individual development. Students develop change-management and conflict-resolution skills and examine how global concerns affect communities. In addition, students enhance their knowledge of nutrition and wellness practices and learn how to maximize consumer and family resources.

The course helps students apply textile, fashion, and apparel concepts to their daily lives and provides background on the stages of early childhood development as related to childcare. Time is provided for exploring careers in the Family and Consumer Sciences career cluster and developing job-search skills. In addition, students increase their leadership abilities and explore how volunteerism aids communities. Mathematics, science, language, social sciences, and technology are integrated throughout the course.

**FC006 FAMILY AND CONSUMER SCIENCES 6**  
Nine weeks  
Family and Consumer Sciences Exploratory I provide a foundation for managing individual, family, career, and community roles and responsibilities. In FACS Exploratory I, students focus on areas of individual growth such as personal goal achievement, responsibilities within the family, and accountability for personal safety and health. They also explore and practice financial management, clothing maintenance, food preparation, positive and caring relationships with others, and self-assessment as related to career exploration. Students apply problem-solving and leadership skills as they progress through the course. Mathematics, science, English, social sciences, fine arts, and technology are integrated throughout the course.

**FC017 INTRODUCTION TO CAREERS**  
One-half Credit  
Suggested Grade Levels: 6-8  
Semester  
Family and Consumer Sciences Exploratory I provide a foundation for managing individual, family, career, and community roles and responsibilities. In FACS Exploratory I, students focus on areas of individual growth such as personal goal achievement, responsibilities within the family, and accountability for personal safety and health. They also explore and practice financial management, clothing maintenance, food preparation, positive and caring relationships with others, and self-assessment as related to career exploration. Students apply problem-solving and leadership skills as they progress through the course. Mathematics, science, English, social sciences, fine arts, and technology are integrated throughout the course.

**FC018 CAREER PLANNING AND DECISION MAKING**  
Suggested Grade Levels: 8  
Semester  
One-half Credit  
Students will participate in a series of studies and activities that will help them define their career goals. Units of study include assessment of skills, money management, identifying essential skills for the present and future workplace, and exploring career path groups. Activities may include job...
shadowing, college orientation, utilization of career software, and completion of a research project. In addition, students will prepare high school/pos-secondary programs of study to support their career goals.

**FC019 RESOURCE MANAGEMENT** One Credit
Suggested Grade Level(s): 8, 9, 10, 11, and 12
Students enrolled in Resource Management focus on managing resources to achieve individual goals; making informed consumer choices; creating and maintaining a living environment that supports the well-being of individuals; living in a global environment; making decisions related to nutrition, clothing, and housing; and managing a household. Cooperative (on-the-job) education or other work-based learning opportunities under the supervision of the instructor are an option. Critical thinking, practical problem solving, and entrepreneurship opportunities within the area of resource management are emphasized. Teachers highlight the basic skills of mathematics, science, and communication when appropriate in content.

**ENGLISH FOR SPEAKERS OF OTHER LANGUAGES (ESOL)**

**ES100 ESOL ENGLISH 1 Newcomers Class (Level 1.0)**
This course is designed for English Learners (ELs) with an English language proficiency level of 1. Listening, speaking, reading, and writing skills are developed through the use of WIDA English Language Development (ELD) Standards. Through differentiated instruction and scaffolded support, ELs will demonstrate progress in English language development and academic achievement.

**ES101 ESOL ENGLISH 2 VGLA (Level 1-3.3 after 1 year exemption)**
This course is designed for students who are at emerging and developing levels 2 to 3 of English proficiency. Listening, speaking, reading, and writing skills are reinforced through the use of WIDA English Language Development (ELD) Standards. Through differentiated instruction and scaffolded support, ELs will advance in academic language development and achievement. This course is designed to meet the needs of a student requiring a VGLA binder in LA.

**ES120 ESOL READING 1- 6th & 7th Grade (Levels 1-2 at FCMS/Salem/Providence)**
This interdisciplinary course is designed to expose ELs who are at Developing and Expanding levels of language development to academic vocabulary. The content areas of Science, Social Studies and Language Arts will be explored through non-fiction material and presented through blended learning and differentiated interactions. Preparation for WIDA Access testing and grade-level content SOLs will be emphasized.

**ES121 ESOL READING 2-6th Grade (Levels 3.3-5.0)**
This interdisciplinary course is designed to expose ELs who are at Developing and Expanding levels of language development to academic vocabulary. The content areas of Science, Social Studies and Language Arts will be explored through non-fiction material and presented through blended learning and differentiated interactions. Preparation for WIDA Access testing and grade-level content SOLs will be emphasized.

**ES122 ESOL READING 3-7th Grade (Levels 3.3-5.0)**
This interdisciplinary course is designed to expose ELs who are at Developing and Expanding levels of language development to academic vocabulary. The content areas of Science, Social Studies and Language Arts will be explored through non-fiction material and presented through blended learning and differentiated interactions. Preparation for WIDA Access testing and grade-level content SOLs will be emphasized.

**ES123 ESOL READING 4-8th Grade (Levels 3.3-5.0)**
This interdisciplinary course is designed to expose ELs who are at Expanding and Bridging levels of language development to academic vocabulary. The content areas of Science, Social Studies and Language Arts will be explored through non-fiction material and presented through blended learning and differentiated interactions. Preparation for WIDA Access testing and grade-level content SOLs will be emphasized.

**SPECIAL EDUCATION**

Special education course offerings are for students with disabilities and require an Individualized Education Program (IEP). Some courses may not be available in every school. Many students with disabilities are expected to meet grade level curriculum standards and are able to do so in general education classes. Two options are available: general education classes with consultation provided to teachers or collaboratively taught classes which are instructed by both a general and a special educator. These teachers plan together to teach course content which includes specially designed instruction and accommodations to meet students’ learning needs as outlined in their IEPs. General education course descriptions apply to collaborative classes. Students will participate in SOL testing. Some students with disabilities require a more restrictive setting. The following classes are designed to meet unique educational needs in special education settings and are taught at the students’ instructional levels, which may be different from students’ grade levels. Students participating in special education classes will be expected to participate in SOL testing unless exempt through the IEP.
IPOO1 MULTISENSORY STRUCTURED LANGUAGE 1
This course is designed for students whose decoding and word recognition skills test below grade level, but who are able to comprehend grade level material when it is read aloud and discussed in general education classes. Reading fluency and work analysis will be emphasized using multisensory methods. Students will practice skills learned using selected content materials. This course is designed as an elective for students with disabilities who are enrolled in the following types of language arts classes; regular general education, co-taught, or modified (see below). Recent reading evaluation assessing word recognition, word attack, passage comprehension, and listening comprehension is required.

IPOO2 MULTISENSORY STRUCTURED LANGUAGE 2
This course is designed for students whose decoding and word recognition skills are two or more years below grade level, but who are able to comprehend grade level material when it is read aloud and discussed. Word analysis will be taught using multi-sensory methods. Students will practice skills learned using selected content materials. Students enrolled in this course should have successfully completed Multi-sensory Structured Language 1. This course is designed as an elective for students with disabilities who are enrolled in the following types of language arts classes: regular general education, co-taught, or modified.

SOCIAL SKILLS

IP052 SOCIAL SKILLS 7
Students will learn a variety of social skills necessary for successful interaction in all environments. They will demonstrate an understanding of appropriate adult and peer relations, conflict resolution, and problem solving strategies.

IP053 SOCIAL SKILLS 8
Students will learn a variety of social skills necessary for successful interaction in all environments. They will demonstrate an understanding of appropriate adult and peer relations, conflict resolution, and problem solving strategies.

IP054 PRE-VOCATIONAL SKILLS 6
Students will learn a variety of social skills necessary for successful interaction in all environments. They will demonstrate an understanding of appropriate adult and peer relations, conflict resolution, and problem solving strategies.

IP055 PRE-VOCATIONAL SKILLS 7
Students will learn a variety of social skills necessary for successful interaction in all environments. They will demonstrate an understanding of appropriate adult and peer relations, conflict resolution, and problem solving strategies.

HEARING IMPAIRED

IP056 PRE-VOCATIONAL SKILLS 8
Students will learn a variety of social skills necessary for successful interaction in all environments. They will demonstrate an understanding of appropriate adult and peer relations, conflict resolution, and problem solving strategies.

IP071 HEARING IMPAIRED 6
This course is designed for students with hearing impairments to provide instructional support for general education classes in which they are enrolled. The student’s IEP will determine the course content for participants.

IP072 HEARING IMPAIRED 7
This course is designed for students with hearing impairments to provide instructional support for general education classes in which they are enrolled. The student’s IEP will determine the course content for participants.

IP073 HEARING IMPAIRED 8
This course is designed for students with hearing impairments to provide instructional support for general education classes in which they are enrolled. The student’s IEP will determine the course content for participants.

IP106 FOUNDATIONS OF LANGUAGE ARTS 6
This course is designed to help students functioning two or more years below grade level learn to develop and apply language arts in real-life situations. Emphasis will be placed on building vocabulary to improve written communication skills and developing skills in word recognition, reading fluency, and comprehension.

IP107 FOUNDATIONS OF LANGUAGE ARTS 7
This course is designed to help students functioning two or more years below grade level learn to develop and apply language arts in real-life situations. Emphasis will be placed on building vocabulary to improve written communication skills and developing skills in word recognition, reading fluency, and comprehension.

IP108 FOUNDATIONS OF LANGUAGE ARTS 8
This course is designed to help students functioning two or more years below grade level learn to develop and apply language arts in real-life situations. Emphasis will be placed on building vocabulary to improve written communication skills and developing skills in word recognition, reading fluency, and comprehension.
IP109  LANGUAGE ARTS FUNDAMENTALS
This course is designed for students who need to refine basic skills in comprehension and writing. Course content emphasizes strategies to memorize vocabulary, analyze reading passages, frame concepts, and organize ideas into written paragraphs and themes using assignments from general education courses. This class is an elective credit for students with an IEP and does not meet credit requirements in any content area. Class repeats for credit.

IP114  FOCUS READING
This course focuses on instruction for the student who is reading significantly below grade level. Instruction will be individualized to meet the specific needs of each student. Word recognition, vocabulary development, comprehension, and functional reading skills will be stressed. (IP214-SECOND YEAR, IP 314-THIRD YEAR)

IP116  MODIFIED LANGUAGE ARTS 6
This course is designed for students who are expected to meet grade level curriculum standards in language arts, but who are unable to participate in general education classes due to the severity of their disability. The course will follow the description for general education Language Arts 6 as closely as possible while meeting the student’s identified emotional and/or learning needs according to the IEP.

IP117  MODIFIED LANGUAGE ARTS 7
This course is designed for students who are expected to meet grade level curriculum standards in language arts, but who are unable to participate in general education classes due to the severity of their disability. The course will follow the description for general education Language Arts 7 as closely as possible while meeting the student’s identified emotional and/or learning needs according to the IEP.

IP118  MODIFIED LANGUAGE ARTS 8
This course is designed for students who are expected to meet grade level curriculum standards in language arts, but who are unable to participate in general education classes due to the severity of their disability. The course will follow the description for general education Language Arts 8 as closely as possible while meeting the student’s identified emotional and/or learning needs according to the IEP.

IP146  STUDY SKILLS 6
This course is designed to provide instruction in specific learning strategies to assist students in the following areas: understanding content materials, taking tests effectively, organizing time and materials, accessing and utilizing resource materials for oral and written projects, and developing self-advocacy skills. Students will apply the strategies learned to general/alternative classes.

IP147  STUDY SKILLS 7
This course is designed to provide instruction in specific learning strategies to assist students in the following areas: understanding content materials, taking tests effectively, organizing time and materials, accessing and utilizing resource materials for oral and written projects, and developing self-advocacy skills. Students will apply the strategies learned to general/alternative classes.

IP148  STUDY SKILLS 8
This course is designed to provide instruction in specific learning strategies to assist students in the following areas: understanding content materials, taking tests effectively, organizing time and materials, accessing and utilizing resource materials for oral and written projects, and developing self-advocacy skills. Students will apply the strategies learned to general/alternative classes.

IP200  LEISURE/REC
This course is designed to provide instruction in how to participate in age-appropriate activities that facilitate friendship building and enhance socialization, communication, and language skills.

IP206  FOUNDATIONS OF SOCIAL STUDIES 6
Students will learn skills necessary for adult life in the community through intensive, direct, and practical instruction. Content areas may include academic, self-management, leisure/recreation, and vocational skills.

IP207  FOUNDATIONS OF SOCIAL STUDIES 7
Students will learn skills necessary for adult life in the community through intensive, direct, and practical instruction. Content areas may include academic, self-management, leisure/recreation, and vocational skills.

IP208  FOUNDATIONS OF SOCIAL STUDIES 8
Students will learn skills necessary for adult life in the community through intensive, direct, and practical instruction. Content areas may include academic, self-management, leisure/recreation, and vocational skills.

IP216  MODIFIED SOCIAL STUDIES 6
This course is designed for students who are expected to meet grade level curriculum standards in social studies, but who are unable to participate in general education classes due to the severity of their disability. The course will follow the description for general education Social Studies 6 as closely as possible while meeting the student's identified emotional and/or learning needs according to the IEP.

IP217  MODIFIED SOCIAL STUDIES 7
This course is designed for students who are expected to meet grade level curriculum standards in social studies, but
who are unable to participate in general education classes due to the severity of their disability. The course will follow the description for general education Social Studies 7 as closely as possible while meeting the student’s identified emotional and/or learning needs according to the IEP.

**IP218 MODIFIED SOCIAL STUDIES 8**
This course is designed for students who are expected to meet grade level curriculum standards in social studies, but who are unable to participate in general education classes due to the severity of their disability. The course will follow the description for general education Social Studies 8 as closely as possible while meeting the student’s identified emotional and/or learning needs according to the IEP.

**IP306 FOUNDATIONS OF MATH 6**
This course is designed for students who function two or more years below grade level. Basic computation skills will be reinforced in the context of real-life settings. Course content will include instruction and practice on basic math operations, including whole numbers, fractions, decimals, percents, and measurements.

**IP307 FOUNDATIONS OF MATH 7**
This course is designed for students who function two or more years below grade level. Basic computation skills will be reinforced in the context of real-life settings. Course content will include instruction and practice on basic math operations, including whole numbers, fractions, decimals, percents, and measurements.

**IP308 FOUNDATIONS OF MATH 8**
This course is designed for students who function two or more years below grade level. Basic computation skills will be reinforced in the context of real-life settings. Course content will include instruction and practice on basic math operations, including whole numbers, fractions, decimals, percents, and measurements.

**IP316 MODIFIED MATH 6**
This course is designed for students who are expected to meet grade level curriculum standards in mathematics, but who are unable to participate in general education classes due to the severity of their disability. The course will follow the description for general education Mathematics 6 as closely as possible while meeting the student’s identified emotional and/or learning needs according to the IEP.

**IP317 MODIFIED MATH 7**
This course is designed for students who are expected to meet grade level curriculum standards in mathematics, but who are unable to participate in general education classes due to the severity of their disability. The course will follow the description for general education Mathematics 7 as closely as possible while meeting the student’s identified emotional and/or learning needs according to the IEP.

**IP406 FOUNDATIONS OF SCIENCE 6**
This course is designed to teach students basic concepts of health, ecology, biology, and geography that can be applied to everyday living. It is appropriate for students functioning two or more years below grade level in all academic areas. It is also designed to meet the student’s identified emotional and/or learning needs according to the IEP.

**IP407 FOUNDATIONS OF SCIENCE 7**
This course is designed to teach students basic concepts of health, ecology, biology, and geography that can be applied to everyday living. It is appropriate for students functioning two or more years below grade level in all academic areas. It is also designed to meet the student’s identified emotional and/or learning needs according to the IEP.

**IP408 FOUNDATIONS OF SCIENCE 8**
This course is designed to teach students basic concepts of health, ecology, biology, and geography that can be applied to everyday living. It is appropriate for students functioning two or more years below grade level in all academic areas. It is also designed to meet the student’s identified emotional and/or learning needs according to the IEP.

**IP706 SPECIAL PE HEALTH 6**
**IP707 SPECIAL PE HEALTH 7**
**IP708 SPECIAL PE HEALTH 8**
This course is a diversified program of developmental activities addressing the needs, capabilities, and limitations of students who may not safely, successfully, or with personal satisfaction engage in activities included in a regular physical education program. Through carefully designed movement experiences students should gain knowledge about skills, fitness, and the applications to their lives. This course includes health education for half of the year and special physical education for half of the year.
HIGH SCHOOL COURSE DESCRIPTIONS

GRADE POINT AVERAGE

Only letter grades are reported on a student’s official transcript. Semester grades are averaged together to determine a student's grade point average (GPA), using points assigned to letter grades and levels.

The high school record is very important, because it is what colleges and employers examine when students make application for college admission or for employment. Grade point is a part of this and is considered closely. Students should try to do their best from the very beginning, because all high school grades in credited courses count toward their grade point average.

Just as students are required to earn a certain number of credits to meet graduation and diploma requirements, they must accumulate a certain number of credits in each grade to be promoted to the next grade level. The credit requirements for grade classification in high school are as follows:

✓ Promotion from 9th grade - 5 credits
✓ Promotion from 10th grade - 11 credits
✓ Promotion from 11th grade - Must satisfy the requirements to be a candidate for June graduation

PREPARING FOR COLLEGE

Students are encouraged to select courses in their high school program of study that prepare them for post-secondary education and/or employment opportunities immediately after graduation. As they decide on a program of study, students will want to plan in accord with their abilities, interests, past performance, and plans for the future. Students should work closely with their school counselor, teachers, and parents as they plan their program and make course selections.

Requirements for the Advanced Studies Diploma include those courses necessary to meet the suggested entrance requirements of most four-year colleges. For the most selective colleges and college majors, additional courses may be required. Students are encouraged to work with their school counselor to identify schools/majors in which they are interested and carefully check the specific requirements of each one. The admission requirements of community colleges and many two-year and four-year colleges can be met with the Standard Diploma.

Colleges prefer that students take challenging courses and pursue a full academic program all four years of high school. Students should pursue as many core academic subject credits, including math and science, as possible. Most four-year colleges require at least Algebra 1, Geometry, and Algebra 2, and at least three credits of science beyond the ninth grade level. Many colleges list a world language requirement of at least two credits and strongly recommend three or more credits. Colleges that do not list a world language requirement often indicate that at least two credits is highly desirable.

A student’s strength of program plan coupled with the grades he or she earns are the most important factors to success in college admissions and/or the work place. Students are encouraged to use their resources—e.g., teachers, counselor, parents—to make wise choices as they plan a high school program, tailored to their individual abilities, interests, and goals.
Qualifications to start employment in a career vary depending on the profession. Preference for employment is usually given to those students who have completed a preparatory program, such as those offered at one of the Chesterfield Technical Centers or through a Career and Technical Education (CTE) sequence at one of the comprehensive high schools. Yet beginning a career immediately after high school does not necessarily preclude post-secondary educational options. Because of the increasing technological complexity of many skilled professions, employers will want their employees to continue with their education after high school. In fact, if the employee has displayed good work skills, the employer may help finance the worker's continued education.

Students may visit the CCPS website at http://mychesterfieldschools.com/instruction/career-and-technical-education/ for more information on CTC and CTE options in addition to working with their school counselor on options for career training after high school.

Students must fulfill the following requirements in order to receive a diploma and graduate from a Chesterfield County public high school:

- Earn the required units of course
- Verified credits based on SOL tests as required per subject area

The standard unit of credit is based on a minimum of 140 clock hours of instruction. When a student successfully completes a yearlong course, he or she receives one unit of credit; a semester course yields one-half credit. Students may follow a regular program of studies to meet the Standard Diploma requirements, or an advanced program which meets the requirements for an Advanced Studies Diploma.

Required units and verified credits needed for different diploma options are described on the following pages.
Students may earn a Standard Diploma by meeting the minimum course requirement of 22 credits and successful completion of the verified credit testing requirements. Students earning a Standard Diploma and achieving a cumulative average of “A” or better (at the end of the first semester of their senior year) will receive a Board of Education Seal on their diplomas. The advanced mathematics and technology seal and the career and technology education seal are also available.

1 Courses completed to satisfy this requirement include at least three different course selections from among Algebra I, Geometry, Algebra Functions, Data Analysis, Algebra II, or other mathematics courses above the level of Algebra II.

2 Courses completed to satisfy this requirement shall include course selections from at least three different science disciplines from among Earth Science, Biology, Chemistry or Physics.

3 Courses completed to satisfy this requirement shall include US & VA History, US & VA Government and one course in either world history or geography or both.

4 Courses to satisfy this requirement shall include at least two sequential electives as required by the Standard of Quality.

5 A student may utilize additional tests for earning verified credit in computer science, technology, career and technical education, economics and other areas as prescribed by the board in 8 VAC 20-131-110.

6 & 7 See DOE website for specific details regarding #6 & #7.

8 Courses completed to satisfy this requirement shall include three years of one language or two years of two languages.

The Virginia Board of Education has identified substitute SOL tests in Language Arts, Math, Science, and History/Social Science. Students may choose to substitute alternate test scores such as International Baccalaureate, Advanced Placement, SAT II or Test of English for Literacy to meet graduation testing requirements. In addition, the Board has identified industry certifications and state licenses in the career and technical education field which may be used to meet the student-selected verified credit. NOTE: When students below the ninth grade complete ninth, tenth, eleventh or twelfth grade subjects, this information will appear on their transcripts, will be included in their grade point average and will count toward meeting the course and testing requirements for graduation in grades 9-12 unless they chose to waive any credits at the completion of any high school course in middle school.

NOTE: Beginning with students entering ninth grade for the first time in 2013-2014, a student must also:

- Earn a board-approved career and technical education credential to graduate with a Standard Diploma; and
- Successfully complete one virtual course, which may be non-credit bearing.

The school counselor can advise on available courses to fulfill the requirements for a Standard Diploma.
Students may earn an Advanced Studies Diploma by meeting the minimum course requirement of 26 credits and successful completion of the verified credit testing requirements. Students completing the Advanced Studies Program and achieving a cumulative average of “B” or better (at the end of the first semester of their senior year) and successfully completing at least one advanced placement (AP) or college level course will receive a Governor’s Seal on their diplomas. The advanced mathematics and technology seal and the career and technology education seal are also available.

1 Courses completed to satisfy this requirement include at least four different course selections from among Algebra I, Geometry, Algebra Functions, Data Analysis, Algebra II, or other mathematics courses above the level of Algebra II

2 Courses completed to satisfy this requirement shall include course selections from at least three different science disciplines from among Earth Science, Biology, Chemistry or Physics.

3 Courses completed to satisfy this requirement shall include US & VA History, US & VA Government and one course in either world history or geography or both.

4 Courses to satisfy this requirement shall include at least two sequential electives as required by the Standard of Quality.

5 A student may utilize additional tests for earning verified credit in computer science, technology, career and technical education, economics and other areas as prescribed by the board in 8 VAC 20-131-110.

6 & 7 See DOE website for specific details regarding #6 & #7.

8 Courses completed to satisfy this requirement shall include three years of one language or two years of two languages.

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<th>Standard Unit of Credits</th>
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</tbody>
</table>

The Virginia Board of Education has identified substitute SOL tests in Language Arts, Math, Science, and History and Social Science. Students may choose to substitute alternate test scores such as International Baccalaureate, Advanced Placement, SAT II or Test of English for Literacy to meet graduation testing requirements. In addition, the Board has identified industry certifications and state licenses in the career and technical education field which may be used to meet the student-selected verified credit. NOTE: When students below the ninth grade complete ninth, tenth, eleventh or twelfth grade subjects, this information will appear on their transcripts, will be included in their grade point average and will count toward meeting the course and testing requirements for graduation in grades 9-12 unless they choose to waive any credits at the completion of any high school course in middle school. Students who complete the IB (International Baccalaureate) Diploma requirements will also receive an IB Diploma (as well as an Advanced Studies Diploma). The IB Diploma is recognized within the United States and internationally as meeting the requirements of a strong college preparatory program of study. Only students within the schools with approved programs may receive this diploma.
MODIFIED STANDARD DIPLOMA
REQUIREMENTS FOR
FIRST TIME NINTH GRADE STUDENTS IN 2012-13

In the 2000 revision of the Standards of Accreditation the Board of Education authorized two other diploma options for students with special needs. These are the Modified Standard and the Special Diploma. The Modified Standard Diploma program is intended for certain students at the secondary level who have a disability and are unlikely to meet the credit requirements for a Standard Diploma. Eligibility and participation in the Modified Standard Diploma program are determined by the student’s Individual Education Program (IEP) team and the student, where appropriate, at any point after the student’s eighth grade year.

The Virginia Board of Education has identified substitute SOL tests in Language Arts, Math, Science, and History and Social Science. Students may choose to substitute alternate test scores such as International Baccalaureate, Advanced Placement, SAT II or Test of English for Literacy to meet graduation testing requirements. In addition, the Board has identified industry certifications and state licenses in the career and technical education field which may be used to meet the student-selected verified credit. NOTE: When students below the ninth grade complete ninth, tenth, eleventh or twelfth grade subjects, this information will appear on their transcripts, will be included in their grade point average and will count toward meeting the course and testing requirements for graduation in grades 9-12 unless they choose to waive any credits at the completion of any high school course in middle school.

The Board of Education has approved certain courses to satisfy the requirements of the Modified Standard Diploma. Courses completed to satisfy the mathematics requirement must include content from among applications of algebra, geometry, personal finance, and statistics in courses that have been approved by the board. Courses to satisfy the science requirement must include content from at least two of the following: applications of earth science, biology, chemistry, or physics in courses approved by the board. In history and social science, students must earn one unit of credit in Virginia and U. S. History and one unit of credit in Virginia and U. S. Government in courses approved by the board. For more specific information, refer to Regulations Establishing Standards for Accrediting Public Schools in Virginia (*VAC 20-131-50.D).

While verified credits are not required for this diploma, students must pass the 8th grade English (Reading, Literature and Research) and 8th grade mathematics tests to earn this diploma. If the student takes a course that has a SOL end-of-course test as part of the student’s program of studies, the student must take the test.

NOTE: The Modified Standard Diploma will not be an option for students with disabilities who enter the ninth grade for the first time beginning in 2013-2014. Credit accommodations allow students with disabilities who previously would have pursued a Modified Standard Diploma to earn a Standard Diploma. The school counselor can advise on available courses to fulfill the requirements for a Modified Standard Diploma or earning credit accommodations.

SPECIAL DIPLOMA

Students with disabilities who complete the requirements of their Individualized Education Program (IEP) and do not meet the requirements for a Standard, Advanced Studies, or Modified Standard Diploma will be awarded Special Diplomas. (Regulations Establishing Standards for Accrediting Public Schools in Virginia ([8 VAC 20-131-50.E]).

<table>
<thead>
<tr>
<th>MODIFIED STANDARD DIPLOMA</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Science</td>
<td>2</td>
</tr>
<tr>
<td>History/Social Science</td>
<td>2</td>
</tr>
<tr>
<td>Health and Physical Education</td>
<td>2</td>
</tr>
<tr>
<td>Fine and Practical Arts</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>
The core programs of the comprehensive high schools provide the strong basic skills essential in today's culture: communication, computation, scientific discovery, and historical and geographic understanding. However, the increasing needs of our rapidly changing and complex society challenge educational institutions to broaden programs and related experiences. We are committed to meeting the challenge by expanding programs and making unique opportunities available to students. Students entering grade nine are offered the opportunity to participate in "specialty centers," optional academic programs that emphasize academic rigor and higher level thinking.

Center for the Arts

The Center for the Arts located at Thomas Dale High School offers an academically sound program combined with an artistically challenging curriculum. A strong alliance with artists and arts organizations in the Richmond metropolitan area offers distinctive advantages for students to study with professional artists, actors, musicians, dancers, singers, directors and media personalities. The newly renovated facility offers a state-of-the-art auditorium, studio theater, a fully equipped dance studio, music computer lab and art gallery. Each student has an opportunity to expand his/her own intellectual and creative potential in a unique and exciting atmosphere. Students may explore and concentrate in the areas of theater, dance, instrumental music, vocal music or visual arts. The Center for the Arts courses are identified by the prefix AR.

Appomattox Regional Governor’s School for the Arts and Technology

The Appomattox Regional Governor's School provides a specialized comprehensive program for artistically gifted students in the areas of creative dance, music, technical arts, theatre, and visual arts. The program provides a challenging learning environment that promotes artistic and academic excellence. The school, located in the renovated historic Petersburg High School, serves students from thirteen school divisions in the tri-cities area.

Dual Enrollment

Dual Enrollment is a program that allows eligible juniors and seniors to earn college credit while still in high school. This program is available through the Progression through Partnership Compact, an agreement between John Tyler Community College and Chesterfield County Public School. Dual enrollment courses are offered by the college and school division and the student receives credit from both. Course descriptions are listed throughout the Guide and are preceded by the prefix DE.

Governor’s School for Government and International Studies

The Maggie L. Walker Governor’s School located in the renovated historic Maggie L. Walker High School in the City of Richmond, serves students from twelve school divisions in the Richmond metropolitan area. The program affords educational opportunities that develop gifted students understanding of world cultures and languages as well as the ability to lead, participate, and contribute in a rapidly changing global society.

Center for Humanities

The Center for Humanities at Monacan High School uses the disciplines of literature, languages, history and social science, philosophy, mathematics, science and fine arts as a lens through which human endeavors are viewed. The Center provides learning opportunities that will develop the students, powers of critical and creative thinking, enabling them to understand and evaluate the legacies of world civilizations. Humanities course descriptions are identified by the prefix HM.
The International Baccalaureate Diploma Programs (IB) offered at Midlothian and Meadowbrook High Schools are a challenging and rigorous dual-diploma program based on internationally recognized standards and requirements. In addition to the Virginia Advanced Studies Diploma, successful students are awarded the prestigious International Baccalaureate Diploma which is recognized as a standard of excellence and accepted by colleges and universities throughout the world. International Baccalaureate course descriptions are identified by the prefix PB and IB.

Center for Leadership and International Relations

The Center for Leadership and International Relations at James River High School seeks students from a broad range of ability levels and interests who want to learn about the qualities of leaders. While enhancing their own leadership styles, students develop problem solving, critical thinking, and decision-making skills that they will carry with them into their roles as future leaders of society. The Center for Leadership and International Relations courses are identified by the prefix LS.

Center for Information Technology

The Center for Information Technology is at Matoaca High School. The integration of technology into the fabric of instruction and learning is the cornerstone of the center. All students will engage in the extensive use of technologies within every classroom setting in every discipline. This school wide emphasis on appropriate technology use involves increased attention to creating activities and lessons that foster critical thinking, problem solving, communication, and research. The Center for Information Technology courses are identified by the prefix TL.

Center for Mass Communications

State of the art technology and excellent communication skills are the foundations of the news programming, interviewing, and advertisements on networks like CNN, NBC, MTV, and FOX. The Center for Mass Communications at Manchester High School will offer the skills and experiences it takes to be a part of this exciting field. Students will develop expertise in visual, written, and oral communication skills in the areas of television, radio, multimedia, print journalism, advertising, and graphic design. Utilizing the in-house television studio, editing suites, and computer labs, students will produce television shows, magazines and newspapers, and multimedia presentations. Mass Communications course descriptions are identified by the prefix MC.

Mathematics and Science High School

The Mathematics and Science High School at Clover Hill focuses on interdisciplinary experiences in English, history and social science, mathematics, and science that are planned and implemented by teams of teachers. The Center features an integrated curriculum in mathematics in which the major topics in traditional high school math courses are taught in three years via a thematic approach. Mathematics and Science High School course descriptions are identified by the prefix MS.

Virginia Governor’s Academy for Engineering Studies

The Virginia Governor’s Academy for Engineering Studies located at Lloyd C. Bird High School offers students academic and practical choices to explore the various disciplines within the field of engineering. The goal of the Center is to enhance students, awareness of the field of engineering and help them narrow their focus of study as they enter college and university programs. The program focuses on blending various core components of each area, highlighting specialized units of engineering and providing a broad understanding of this educational and career path. Pre-Engineering course descriptions are identified by the prefix PE.
Center for Spanish Immersion

The Center for Spanish Immersion (El Centro de Inmersión en Español) at Manchester High School provides motivated students the opportunity to participate in an intensive program of study where selected core courses are taught in Spanish. They may additionally qualify for Advanced Placement credit at the university level and receive special acknowledgment on their transcripts and diploma. Spanish Immersion course descriptions are identified by the prefix SP.

Center for Health Science

The Health Science Specialty Center seeks students from a broad range of ability levels wanting to prepare for careers in the healthcare industry. An AFT Healthcare Survey reports, “The [healthcare] system faces a widespread crisis in terms of hiring an adequate number of professionals to meet needs of patients.” Beginning in their first year, students will explore career choices within the healthcare system. Students will also experience some of the practical applications of healthcare, such as becoming CPR certified and learning about the legal aspects of the industry. As students progress through the program, they will be offered opportunities for internships and mentorships with local healthcare providers, such as hospitals, retirement communities, and even local doctor’s offices. Students will be guided as they select a career pathway to pursue while at the Health Sciences Center. Upper-level classes will be geared toward one of the following career pathways.

M.A.D.E - Meadowbrook Academy for Digital Entrepreneurship

The goal of the Meadowbrook Academy for Digital Entrepreneurship is to provide a rigorous curriculum to students, which will provide them with the skills necessary to pursue careers in the modern economy, as well as start their own business! Our program is centered around the students, where they take control of their education. Through innovation and collaboration, students will work together in their classes to eventually create and start their own business.

Career and Technical Center @Courthouse and @Hull

The Chesterfield Technical Center (CTC) has two campus locations: 10101 Courthouse Road, Chesterfield and 13900 Hull Street Road, Midlothian. The Chesterfield Technical Center (CTC) offers three-credit elective courses that are not available in the county’s high schools. Students in grades 9-11 may apply for admission. Applicants are selected based on grades, attendance, an acceptable behavior record, successful completion of prerequisite courses, teachers’ comments verifying the student’s ability to work independently in unstructured settings, a counselor’s evaluation, and standardized test scores. Classes meet on an alternate-day schedule that is compatible with the high schools’ timetable. Students enrolled in a CTC course may schedule as many as four other day courses at their home school. Bus transportation is provided from each high school. A lab fee is required for each course. The cost of personal tools, equipment, and uniforms varies by course.
The Visual and Performing Arts Specialty Center attracts students who are highly interested and talented in music, theatre, dance or visual arts. Students explore and expand their creative potential in an exciting and unique arts community within a fully comprehensive high school, which offers many advantages such as a wide range of academic and arts classes, clubs, sports and service organizations. The program is designed to provide a well-rounded education with excellent core academic classes suited to each student’s needs (including honors, AP, dual enrollment) coupled with a challenging honors arts curriculum in order to prepare students for excellent collegiate and professional opportunities.

- offers intensive instruction in the student’s chosen area of theatre, music, visual arts or dance
- offers accelerated courses in the arts as well as core academic areas (including AP and DE)
- high level performance opportunities for students (see website www.SpecialtyCenterArts.com)
- provides many residencies, master classes and internships for students with professional artists and arts organizations of regional and international importance

**EXPERIENCE**

State-of-the-art auditorium
Black box theatre
Soundproof music practice rooms
Art and music technology labs
Visual arts open studio
Full graphics art lab with Adobe CS6
Visual arts open studio
Full size Darkroom
Art Club
Specialty Center Reception Room
National Art Honor Society
Special English courses with arts integration
Guest artists
Theatre Production courses
Tri-M Music Honor Society
National Honors Society of Dance Arts

Variety of World Languages offered: Japanese, Latin, German, Spanish, and French
# The Center for the Arts – Proposed Course Sequence
## VISUAL ARTS
### Sample Four Year Program for Advanced Studies Diploma

<table>
<thead>
<tr>
<th>Specialty Center Required Credits</th>
<th>Ninth</th>
<th>Tenth</th>
<th>Eleventh</th>
<th>Twelfth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual Arts Foundations 1*(Honors)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art and World Cultures* (Honors)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Semester 1: 2-Dimensional Exploration*</td>
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<td></td>
</tr>
<tr>
<td>Semester 2: 3-Dimensional Exploration* (Honors)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Advanced Placement Studio Art (AP)*</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(Includes Senior Capstone Project)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Art/Graphics</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Advanced Placement Art History (AP)*</td>
<td></td>
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</tr>
<tr>
<td>Dual Enrollment: Semester 1: Drawing</td>
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</tr>
<tr>
<td>Semester 2: Painting (Honors)*</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Dual Enrollment 6 college credits earned</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual Arts Elective Choice (requirement): Computer Art/Graphics, Photography, Film and Video Production, or Independent Study</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### All Other Requirements For Advanced Diploma
All Specialty Center students have to take English 9 and English 10 Honors Core classes are taken at the level appropriate for you. An “all honors” schedule is possible

<table>
<thead>
<tr>
<th>AR109H English 9 (Honors)</th>
<th>AR110H English 10 (Honors)</th>
<th>English 11</th>
<th>English 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>Science</td>
<td></td>
<td>(or elective)</td>
</tr>
<tr>
<td>World Language</td>
<td>World Language</td>
<td>Science</td>
<td>Science</td>
</tr>
<tr>
<td>Health/PE 9 (online studies or summer school)</td>
<td>Health/PE 10 (online studies or summer school)</td>
<td>World Language (or elective)</td>
<td>World Language (or elective)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Economics &amp; Personal Finance (must be taken in open slot or online any year except 9th grade)</td>
<td></td>
</tr>
</tbody>
</table>

*Must be taken in sequence
Course offerings may be modified by the Center
Completion of Algebra 1 is a requirement for admission to the program
# Sample Four Year Program for Advanced Studies Diploma

**DANCE**

**Center for the Arts at Thomas Dale**

**Sample Four Year Program for Advanced Studies Diploma**

**Beginning Class of 2016**

<table>
<thead>
<tr>
<th>Ninth</th>
<th>Tenth</th>
<th>Eleventh</th>
<th>Twelfth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specialty Center Required Credits</strong></td>
<td><strong>Specialty Center Required Credits</strong></td>
<td><strong>Specialty Center Required Credits</strong></td>
<td><strong>Specialty Center Required Credits</strong></td>
</tr>
<tr>
<td>Dance Major 1 (Honors)*</td>
<td>Dance Major 2 (Honors)*</td>
<td>Dance Major 3 (Honors)*</td>
<td>Dance Major 4 (Honors)* (Includes Senior Capstone Project)</td>
</tr>
<tr>
<td>Dance Repertory Ensemble (Honors)</td>
<td>Dance Repertory Ensemble (Honors)</td>
<td>Dance Repertory Ensemble (Honors)</td>
<td>Dance Repertory Ensemble (Honors)</td>
</tr>
</tbody>
</table>

**All Specialty Center students have to take English 9 and English 10 Honors**

**Core classes taken at level appropriate for you. An “all honors” schedule is possible.**

<table>
<thead>
<tr>
<th>AR109H English 9 (Honors)</th>
<th>AR110H English 10 (Honors)</th>
<th>English 11</th>
<th>English 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>World History 1</td>
<td>World History 2</td>
<td>US/VA History</td>
<td>US/VA Government</td>
</tr>
<tr>
<td>Math</td>
<td>Math</td>
<td>Math</td>
<td>Math (or elective)</td>
</tr>
<tr>
<td>Science</td>
<td>Science</td>
<td>Science</td>
<td>Science (or elective)</td>
</tr>
<tr>
<td>World Language</td>
<td>World Language</td>
<td>World Language</td>
<td>World Language (or elective)</td>
</tr>
<tr>
<td>Health/PE 9 (online studies or summer school)</td>
<td>Health/PE 10 (online studies or summer school)</td>
<td>Economics &amp; Personal Finance (must be taken in open slot or online any year except 9th grade)</td>
<td></td>
</tr>
</tbody>
</table>

*Must be taken in sequence

Course offerings may be modified by the Center

Completion of Algebra 1 is a requirement for admission to the program
## MUSIC
Sample Four Year Program for Advanced Studies Diploma

<table>
<thead>
<tr>
<th>Specialty Center Required Credits</th>
<th>Specialty Center Required Credits</th>
<th>Specialty Center Required Credits</th>
<th>Specialty Center Required Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musician’s Studio 1 *(Honors)</td>
<td>Musician’s Studio 2 *(Honors)</td>
<td>Musician’s Studio 3 *(Honors)</td>
<td>Advanced Placement Music Theory *(AP)</td>
</tr>
<tr>
<td>(Honors contract)</td>
<td>(Honors contract)</td>
<td>(Honors contract)</td>
<td>(Includes Senior Capstone Project)</td>
</tr>
</tbody>
</table>

### All Other Requirements For Advanced Diploma
Core Classes taken at level appropriate for you. An “all honors” schedule is possible.

<table>
<thead>
<tr>
<th>Ninth</th>
<th>Tenth</th>
<th>Eleventh</th>
<th>Twelfth</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR109H English 9</td>
<td>AR110H English 10</td>
<td>English 11</td>
<td>English 12</td>
</tr>
<tr>
<td>World History 1</td>
<td>World History 2</td>
<td>US/VA History</td>
<td>US/VA Government</td>
</tr>
<tr>
<td>Math</td>
<td>Math</td>
<td>Math</td>
<td>Math (or elective)</td>
</tr>
<tr>
<td>Science</td>
<td>Science</td>
<td>Science</td>
<td>Science (or elective)</td>
</tr>
<tr>
<td>World Language</td>
<td>World Language</td>
<td>World Language (or elective)</td>
<td>World Language (or elective)</td>
</tr>
<tr>
<td>Health/PE 9 (online studies or summer school)</td>
<td>Health/PE 10 (online studies or summer school)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Must be taken in sequence

Course offerings may be modified by the Center
Completion of Algebra 1 is a requirement for admission to the program
## THEATRE ARTS
Sample Four Year Program for Advanced Studies Diploma  
Beginning Class of 2016

### THEATRE ARTS  
Center for the Arts at Thomas Dale  
Sample Four Year Program for Advanced Studies Diploma

<table>
<thead>
<tr>
<th></th>
<th>Ninth</th>
<th>Tenth</th>
<th>Eleventh</th>
<th>Twelfth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specialty Center Required Credits</strong></td>
<td>Actors Studio 1* (Honors)</td>
<td>Actors Studio 2* (Honors)</td>
<td>Actors Studio 3* (Honors)</td>
<td>Actors Studio 4* (Honors)</td>
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<td></td>
<td>(Include Senior Capstone Project)</td>
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<td>(Honors)</td>
<td>(Honors)</td>
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<td></td>
<td>Theatre Elective</td>
<td>Theatre Production (Honors)</td>
<td>Theatre Elective</td>
<td>Economics/Pers. Finance</td>
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<td></td>
<td>(Theatre prod (H), Musical</td>
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<td>国债 theatre workshop (H),</td>
<td>(Economics can be taken</td>
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<tr>
<td></td>
<td>theatre workshop (H), Voice</td>
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<td>Theatre History/Lit (H)</td>
<td>online grades 10-12, then</td>
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<td>&amp; Diction for actors (H),</td>
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<td>or</td>
<td>take Arts elective here)</td>
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<tr>
<td></td>
<td>Theatre History/Lit (H)</td>
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<td>other Arts Elective</td>
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<td></td>
<td>or</td>
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<td>(art, music, dance movement)</td>
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</tr>
<tr>
<td><strong>All Other Requirements For Advanced Diploma</strong></td>
<td>AR109H English 9 (Honors)</td>
<td>AR110H English 10 (Honors)</td>
<td>English 11</td>
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<td></td>
<td>Math</td>
<td>Math</td>
<td>Math</td>
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<td>Science</td>
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<td>Science (or elective)</td>
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<td>World Language</td>
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<td>World Language (or elective)</td>
<td>World Language (or elective)</td>
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<td>Health/PE 9 (online studies</td>
<td>Health/PE 10 (online studies</td>
<td>Economics &amp; Personal Finance</td>
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<td>or summer school)</td>
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<td>must be taken open slot or</td>
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<td>online any year except</td>
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<td>9th grade)</td>
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</tr>
</tbody>
</table>

*Must be taken in sequence

Course offerings may be modified by the Center  
Completion of Algebra 1 is a requirement for admission to the program
**AR109H ENGLISH 9**  
One Credit  
English 9 advances the study of written and spoken communication skills. Literature study emphasizes genre and the understanding of literary terms and vocabulary. Students will connect and integrate the visual and performing arts into their assignments and projects whenever possible.  
**Limited to Center for the Arts Students**

**AR110H ENGLISH 10**  
One Credit  
English 10 stresses refinement of skills with emphasis on effective written and oral communications. Literature emphasizes character motivation and human relations through the study of American literature. Students will connect and integrate the visual and performing arts into their assignments and projects whenever possible.  
**Limited to Center for the Arts Students and others by teacher recommendation**

**AR101H THEATRE PRODUCTION 1**  
One Credit  
This course is an introduction to the basics of technical production and stage management, safety, set, video, costume, lighting, and sound design. Plays, readings and related writings are utilized in this area of study.  
**Limited to Center for the Arts Students**

**AR102H THEATRE PRODUCTION 2**  
One Credit  
This course is a continuation of subjects explored in Theatre Production 1 with an emphasis on Stage Craft and Costume History, theory and practicum, house management, box-office, specialized lighting, and sound effects. Multi-media, such as video, film and CAD programs will be utilized and highlighted at this level.  
**Limited to Center for the Arts Students and others by teacher recommendation**

**AR103H THEATRE PRODUCTION 3**  
One Credit  
This course is a culmination of Theatre Production 1 and 2 with an emphasis on set, lighting, and costume design. Scenic painting, including faux finishing for the stage as well as specialized props will also be explored. Students of this course will design or assist in the design of main-stage, black box, concerts or other productions.  
**Limited to Center for the Arts Students and others by teacher recommendation**

**AR104H THEATRE PRODUCTION 4**  
One Credit  
The content is designed for the students who want to pursue further study in theatre. The course will include specific projects that meet the requirements for the particular student. This course differs from other theatre production courses in that the study and projects will be specific to theatre design and production management skills. A significant honors project is required.  
**Limited to Center for the Arts Students and others by teacher recommendation**

**AR131H ACTOR'S STUDIO/MOVEMENT FOR ACTORS 1**  
One Credit  
This is a theory and performance course which provides an overview of the actor's creative process. Fundamental acting techniques are presented in conjunction with exercises and text work designed to enhance concentration, vocal resonance, and projection, as well as self-confidence and communication skills. Practical application of acting concepts and techniques through reading, oral/written presentation, lecture and exploration are incorporated. Pantomime, voice and diction, scene study, improvisation, creativity, and the study of characterization are studied. Students learn to use the body to shape character and/or presence and will study the emotional/physical connection.  
Physical theatre, dance theatre and concept performance, including visualization and movement improvisation, will be employed. Students will participate in the CCP Fine Arts Festival, and TDHS stage productions.  
**Limited to Center for the Arts Students**

**AR132H ACTOR'S STUDIO/MOVEMENT FOR ACTORS 2**  
One Credit  
In this course, the emphasis of study shifts from the development of basic skills to that of skills necessary to the character actor. Concentration is on period plays from ancient Greece to the twentieth century; the emphasis is on characterization, acting styles, presentational and representational theatre. Further development of acting techniques is accomplished through scene and monologue study. The Stanislavski acting technique is introduced. Through exercise and discussion, a range of techniques and strategies essential to a number of diverse performance forms will be explored. The objective is to use the body to shape character and/or presence. Physical theatre, dance theatre and conceptual performance, including visualization and movement improvisation, will be employed. Students will participate in the CCP Fine Arts Festival and TDHS stage productions.  
**Limited to Center for the Arts Students**

**AR133H ACTOR'S STUDIO/MOVEMENT FOR ACTORS 3**  
One Credit  
This course implements an interdisciplinary framework that integrates Theatre Arts with English and History and Social Science. Students will become aware of theatre as it relates to historical and cultural development. The application of additional acting methods such as Miesner and Strasburg techniques are introduced. This course also includes an introduction to directing and playwriting. Students will participate in the CCP Fine Arts Festival and TDHS stage productions.  
**Limited to Center for the Arts Students**

**AR134H ACTOR'S STUDIO/MOVEMENT FOR ACTORS 4**  
One Credit  
**Includes Senior Capstone Project**  
This studio course prepares the student for professional development, including acting for the camera, auditioning,
techniques, one-man performance, multi-media, the "business" of acting, including finding an agent, commercial work, playwriting and directing. Acting technique development continues with an emphasis on an individual way of working that makes the actor self-sufficient. Students develop audition material and resumes and practice audition and rehearsal techniques." As part of this course students will be required to produce a senior capstone project (i.e. Technical Theatre, Directing, Performance, Children's Production, Playwright, etc.) Limited to Center for the Arts Students

AR011H THEATRE HISTORY & DRAMATIC LITERATURE
One-half Credit
This course traces theatre from its origins to the present, including music, dance, cultural and historical influences in a global context. Students will study the relationship between history and playwriting and how this has shaped theatre performance, design elements, theatre spaces and genres of theatre and TDHS stage productions. Limited to Center for the Arts Students and others by teacher recommendation

AR136H VOICE FOR THE ACTOR
One-half Credit
This course will cover the health and productivity of the vocal apparatus and the techniques required for breathing diaphragmatically. The student will gain an understanding of speaking with clarity and volume that is necessary to effectively deliver a message through text. The study of various dialects also will be included. Limited to Center for the Arts Students

AR171H MUSICAL THEATRE WORKSHOP
One Credit
This course allows students to explore the skills needed to excel in musical theatre. The student will study musical theatre acting styles and the evolution of those styles from Vaudeville to the modern musical. The course will offer vocal coaching including expression of emotion through sung dialogue and singing styles. The student will explore different styles of dance found in musical theatre (tap, jazz, ballet, modern, hip hop). The student will also learn about musical composers and lyricists. Students will participate in the CCPS Fine Arts Festival and TDHS Musical Theatre productions. Limited to Center for the Arts Students and others by teacher recommendation

AR181H OUTREACH PERFORMANCE
One Credit
This seminar course of auditioned students will perform traveling theatre in area high schools, middle schools, elementary schools and/or civic and social organizations. Subject matter will vary from year to year and will emphasize and/or reinforce core values, social values, children's theatre and/or thematic units.

AR191H THEATRE INDEPENDENT STUDY
One Credit
This course provides an opportunity for a student to pursue a limited study (acting, production, directing, and theatre management) under supervision. This is a college preparatory course for students who are applying to college theatre programs. Student must show maturity and the ability to set goals. Self-assess and work independently. Theatre staff must approve.

AR201H DANCE MAJOR 1
One Credit
Dancers develop and explore dance techniques including ballet, modern and jazz. Emphasis is placed on the anatomical structures which support alignment and the ability to recognize and self-correct using knowledge of anatomy and somatic practice. Dancers develop creative skills in improvisation and choreography; improve interpersonal and intrapersonal skills through an exploration of the kinesphere, collaborative creation and group critique processes; and increase awareness of dance and dance culture around the world. In addition, dancers gain knowledge of the historical and cultural contexts of dance. Dancers investigate options for dance related studies in higher education and the professional world, and also become familiar with the needs of dance production and administration. Dancers perform in the Jazz/Dance Concert, TDHS Musical Theatre Productions, the Senior Dance Showcase/Projects, CCPS Fine Arts Festival and the Spring Dance Showcase. Limited to Center for the Arts Students

AR202H DANCE MAJOR 2
One Credit
Dancers further refine their technical development in ballet, modern and jazz in more complicated phrase work and choreography. Somatic practices emphasizing dancer health, strength and movement efficiency are studied and integrated. Dancers continue to expand their explorations of movement invention and compositional choice as well as improvisation. Dancers continue in a study of dance history and culture, and investigate the lineages of the ballet, modern and jazz dance pioneers. Additionally, dancers use dance vocabulary to analyze, evaluate and discuss dance compositions and also to dissect the execution of movements and express a personal response to the work's aesthetics. Dancers continue to explore dance related studies and career paths, and work towards increased understandings of dance production and dance administration. Dancers perform in the Jazz/Dance Concert, TDHS Musical Theatre Productions, the Senior Dance Showcase/Projects, CCPS Fine Arts Festival and the Spring Dance Showcase. Limited to Center for the Arts Students.

AR403H DANCE MAJOR 3 HONORS
One Credit
Dancers continue in an advanced exploration of dance technique and the pursuit of creative expression while engaging in more extensive self and peer evaluation. Dancers work comprehensively in the choreographic process and document their work, explore advanced improvisational
techniques and alternative dance spaces, and analyze personal aesthetic choice. Dancers delve deeper into artistic intent as well as the link between culture and aesthetics. Dancers study current dance trends in contemporary choreography and examine the influences, which inform our present dance landscape in a consideration and evaluation of modern-day work. Dancers further develop a knowledge and ability to work in dance production by deepening their involvement in the creative processes of lighting, costuming and staging. Additionally, dancers explore in basic pedagogy and work towards the creation of personalized goals for their dance educations and careers. Dancers perform in the Jazz/Dance Concert, TDHS Musical Theatre Productions, the Senior Dance Showcase/Projects, CCPS Fine Arts Festival and the Spring Dance Showcase. Limited to Center for the Arts Students

AR404H DANCE MAJOR 4 HONORS (Includes Senior Capstone Project) One Credit
Dancers continue in an advanced exploration of dance technique and the pursuit of creative expression while engaging in more extensive self and peer evaluation. Dancers work comprehensively in the choreographic process and document their work, explore advanced improvisational techniques and alternative dance spaces, and analyze personal aesthetic choice. Dancers delve deeper into artistic intent as well as the link between culture and aesthetics. Dancers study current dance trends in contemporary choreography and examine the influences, which inform our present dance landscape in a consideration and evaluation of modern-day work. Dancers further develop a knowledge and ability to work in dance production by deepening their involvement in the creative processes of lighting, costuming and staging. Additionally, dancers explore in basic pedagogy and work towards the creation of personalized goals for their dance educations and careers. Dancers perform in the Spring Dance Showcase and CCPS Fine Arts Festival. As part of this course Senior students will be required to produce Capstone Project. Limited to Center for the Arts Students

R203H DANCE REPERTORY ENSEMBLE 1,2,3,4 One Credit
Dancers engage in project based learning to work collaboratively as project members and project leaders in topics of particular relevance for their interests in dance. This class gives students an opportunity to develop, define, and refine her/his personal dance aesthetic and goals, and to consider questions of purpose: Why do you dance? What inspires you to move and create movement? How do feel when you dance? How do you feel when you watch dance? What is your process for creating meaningful experiences in dance? What do you want to accomplish through dance? How can you connect to others in your community? Dancers complete the course with a fully realized and supported choreographic product as well as a production project based in personal interest. Dancers also compose an artistic statement, which summarizes what they've learned and valued in the Specialty Center program and sets them on a clear path towards their futures in dance. All dancers work in a repertory ensemble environment to learn and rehearse faculty and guest choreography. Dancers perform in the Jazz/Dance Concert, TDHS Musical Theatre Productions, the Senior Dance Showcase/Projects, CCPS Fine Arts Festival and the Spring Dance Showcase. Limited to Center for the Arts Students

AR291H DANCE INDEPENDENT STUDY One Credit
Honors Independent Study in Dance Performance offers independent study for highly motivated students to perform beyond the scope of the dance curriculum. This is a college preparatory course students who are applying to dance college programs. Senior Specialty Center Dance students who show maturity and the ability to set goals, self-assess and work independently may enroll with approval by the dance staff committee. Limited to Center for the Arts Students

AR301H MUSICIAN’S STUDIO 1 One Credit
This course continues Musician's Studio 1. Students will further develop their ability to read music, will learn aural perception skills (including sight singing and dictation), and gain knowledge of music terminology, history, analysis, theory and composition. Students will work with music computer lab and with artists/teachers on their specialized instrument/voice to develop maximum interpretive and technical proficiency. Students will participate in the CCPS Fine Arts Festival and TDHS Musical Theatre productions. Limited to Center for the Arts Students

AR302H MUSICIAN’S STUDIO 2 One Credit
This course continues Musician's Studio 1. Students will continue to improve their individual performances, sight singing and dictation, history and theory skills. Additionally, the course is designed to expose students to the piano keyboard and the basic performance skills that provide a fundamental understanding of harmonic and melodic structures. Students will further develop small group performance skills, and explore careers in music (e.g.: music, education, trips). Students will participate in the CCPS Fine Arts Festival and TDHS Musical Theatre productions. Limited to Center for the Arts Students

AR303H MUSICIAN’S STUDIO 3 HONORS One Credit
Students will continue to improve their individual performances and theory skills and further develop chamber music playing and singing skills. Students will develop skills in aural recognition of melodic and harmonic intervals, triadic harmonies, and rhythmic patterns. Additionally, the course is designed to expose students to the piano keyboard and the basic performance skills that provide a fundamental understanding of harmonic and melodic structures. Students study the fundamentals of “common practice” to include...
understanding of the importance of art throughout time. The philosophy of art and culture will broaden students' visual decisions. An introduction to the history and exploration will give students tools for making and evaluating structures and functions of art. Basic design rules and media will be explored in this foundations course. Students will The fundamentals that govern art and its impact on humanity, literature, humanities or advanced art are encouraged to enroll. AP Art History is developed as a college level course for high school students. Students will take the College Board's AP Art History test at the end of the year, which allows students to receive college credit from participating colleges and universities. **Limited to Center for the Arts Students and others by teacher recommendation**

**AR713H ADVANCED PLACEMENT MUSIC THEORY/One Credit** *(Includes Senior Capstone Project)*
The AP Music Theory course at Thomas Dale High School is the culmination of a four year process beginning with Musician's Studio I, II and III. Students in those classes have received instruction on the rudiments of music theory in order to prepare them for this class. The goal of AP Music Theory is to develop a student's ability to recognize, understand, and describe the fundamental materials and processes of musical composition. This is accomplished by an integrated approach to the students' development of aural skills, sight-singing, written skills, compositional skills, and analytical skills. As part of this course students will be required to complete a senior capstone project (i.e. major composition, recital performance, etc.) College credit available. **Limited to Center for the Arts Students**

**AR711H INDEPENDENT STUDY MUSIC One Credit**
Independent Study in Music Performance offers independent study for highly motivated students to perform beyond the scope of the music curriculum. This is a college preparatory course for students who are applying to music colleges and universities. Senior Specialty Center Music students, who show maturity and the ability to set goals, self-assess and work independently may enroll with approval by the music staff. **Limited to Center for the Arts Students and others by teacher recommendation**

**AR501H VISUAL ARTS FOUNDATIONS One Credit**
The fundamentals that govern art and its impact on humanity will be explored in this foundations course. Students will develop the ability to understand and manipulate the structures and functions of art. Basic design rules and media exploration will give students tools for making and evaluating visual decisions. An introduction to the history and philosophy of art and culture will broaden students' understanding of the importance of art throughout time. **Limited to Center for the Arts Students**

**VA943H ADVANCED PLACEMENT ART HISTORY One Credit**
This course is designed to introduce students to works of art. The course begins with the ancient world and continues with lectures and assignments that cover the history of art into the twentieth century. Students who have done well in history,
AR509H THREE-DIMENSIONAL EXPLORATION
One-half Credit
Practical, technical, and historical foundations in the making of three-dimensional media will be explored in depth in this semester class. Students will have the opportunity to select a media for personal exploration in addition to those selected for experimentation. Students will broaden their visual arts and descriptive vocabularies as they pertain to fine arts, aesthetics, methods, techniques, principles, and history. Both traditional and contemporary theory and practice will be explored. **Limited to Center for the Arts Students and others by teacher recommendation**

AR951H VISUAL ARTS INDEPENDENT STUDY SEMESTER
One-half Credit
This course is taken in conjunction with an advanced level course, such as Art 4/5, Crafts/3-D Design 3, or Photography 3, and with prior permission of the instructor. The objective is to allow advanced level students the opportunity to explore technique and develop proficiency in a selected medium. **Seniors only. Limited to Center for the Arts Students and others by teacher recommendation**

DE962H DRAWING
One-half Credit
Drawing develops drawing skills and understanding of visual language through studio instruction/lecture. Focuses on proportion, space, perspective, tone and composition. **VCCS Dual Enrollment credit. Limited to Center for the Arts Students and others by teacher recommendation**

DE963 COLLEGE PAINTING
One-half Credit
The course will provide lecture and studio instruction on the fundamentals, practices and related concepts of painting. Includes representational painting in acrylic or oil mediums with emphasis on value, color, composition and technique. Highly recommended for intended college art majors. **VCCS Dual Enrollment credit. Limited to Center for the Arts Students and others by teacher recommendation**

Thomas Dale High School
3626 West Hundred Road
Chester, Virginia 23831
804-768-6245

Pamela Lumsden, Principal
Sonja Mix, Specialty Center Coordinator

[www.SpecialtyCenterArts.com](http://www.SpecialtyCenterArts.com)
HEALTH & PHYSICAL THERAPY CENTER  
at Monacan High School

The Health & Physical Therapy (HPT) Center at Monacan High School provides students with academic and practical field experiences in preventative medicine and therapeutic health careers. Students will explore health care careers that focus on therapy and prevention such as: sports medicine; athletic training; physical and occupational therapy; physical education; and exercise science. The HPT Mentorship program allows students to experience health and therapy careers in clinical settings through partnerships established with the local medical community.

### Center Objectives

- Develop a strong foundation of knowledge and skills that support a healthcare career in therapeutic or preventive services
- Incorporate a focus on physical therapy, occupational therapy, sports medicine, and athletic training into traditional core courses
- Provide lab-based practical and clinical applications
- Foster professional behavior and ethical decision-making skills
- Cultivate critical thinking skills as well as the ability to apply program knowledge to real life problems
- Practice and improve communication skills including the use of appropriate medical terminology

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### Health & Physical Therapy Center courses being taught/under development:

- Introduction to Therapeutic Services
- Sports Medicine
- Nutrition/Complementary Medicine
- Emergency Medical Technician (E.M.T.)
- Exercise Science (not offered yet, but still on the table as a future elective)
- Medical Terminology
HT090 HEALTH THERAPY EXPLORATION HONORS One Credit
Health Therapy Exploration is an overview course for all Health & Physical Therapy specialty center students. This course provides an overview of the health care industry including careers, current system practices, and relevant technologies. Students are exposed to health care domains such as physical therapy skills, medical privacy practices (HIPPA), safety procedures, medical terminology, human growth and development, and legal responsibilities.

HT109 ENGLISH 9 HONORS One Credit
Health Therapy English 9 Honors is a study of nonfiction, mythology, and an introduction to classical literature with a focus on the health care topics as part of their coursework. Students study Homer, Shakespeare, Dickens, Buck, Twain, and a variety of other authors in various genre such as the short story, the novel, drama, and poetry. Students analyze literary texts, determine relationships between form and content, and go beyond an emotional reaction to an intellectual response. Students read critically, asking pertinent questions about what they have read, recognizing assumptions and implications, and evaluating ideas. This course also concentrates on expository writing, literary analysis, and oral communication skills. Students draw conclusions, appraise, and speculate independently about the elements of literature.

HT110 ENGLISH 10 HONORS One Credit
Literary selections of Health Therapy English 10 Honors include Thoreau, Hawthorne, Melville, Cather, Twain, Faulkner, Fitzgerald, and others. Students will explore various writing techniques and styles with a specific focus on technical writing in the health care field. These techniques will be used in their own expository, persuasive, and creative writings. Critiquing literary works is a major focus at this level. The fundamental elements of research will be applied directly to written and oral communications. Knowledge will be evident through oral presentations, written reports, analyses, and small/large group discussions. Additionally, students will be asked to use A.P.A. documentation as they research various topics for their discussions, presentations, and projects.

HT419O MEDICAL TERMINOLOGY One Credit
Medical Terminology is a honors level course designed to help students learn health care language. Topics are presented in logical order, beginning with each body system's anatomy and physiology and progressing through pathology, diagnostic procedures, therapeutic interventions, and finally pharmacology. Students learn concepts, terms, and abbreviations for each topic. Recommended prerequisite(s): Introduction to Health and Medical Sciences 8302

HT430 BIOLOGY HONORS One Credit
Health Therapy Honors Biology is a laboratory-based course which encompasses research design concepts introduced in the middle school. Core content will include interrelationships in ecosystems, taxonomy, cellular chemistry, genetics, microbiology, and physiology, with a specific focus on human biology. These areas are developed within a framework of the principal biological theories with an emphasis on critical thinking and science process skills and a focus on the relationships with human health care. Class team research projects will be developed using descriptive statistics techniques. If dissections are conducted in class, alternatives will be provided for students that request them.

HT440 CHEMISTRY HONORS One Credit
Health Therapy Honors Chemistry, an inquiry-based laboratory course, is a comprehensive survey of inorganic and physical chemistry. The course will emphasize problem solving and provide a thorough foundation for the college-bound student, emphasizing a quantitative approach. In addition to learning the concepts of chemistry, students will spend the majority of their time on applying their knowledge to new situations and analyzing and evaluating chemistry data. Students in this course will continue to learn and practice the skills of experimental design. Research projects will be completed by small teams of students involving the use of inferential statistics as part of

HT450H PHYSICS
Health Therapy Physics is a college preparatory course with emphasis on the analytical treatment of content, which will include kinematics, dynamics, Newtonian mechanics, conservation laws, kinetic molecular theory, waves, and the electromagnetic spectrum. Concepts involved include mechanics, thermodynamics, waves, electromagnetism, modern physics, and scientific investigation. These areas are developed within a framework of the principal physical theories with an emphasis on critical thinking and science process skills and a focus on the relationships with human health care. Student experiences center around active inquiry and experimentation. Students are required to complete an individual research paper using appropriate techniques of statistical analysis introduced in the student's prior science experiences. This course is primarily recommended for students planning to major in math or science at the college level.

HT030H INTRODUCTION TO THERAPEUTIC SERVICES
The course is designed to provide an introduction to the profession of physical and occupational therapy as well as other allied health careers. Students explore the principles and practices of therapists in the health care industry and participate in clinical skill development and observations.
Clinical skills in the areas of physical therapy enable students to gain understanding of rehabilitative care, which is practiced throughout the continuum of care and across the lifespan of individuals. This course provides a thorough and realistic overview of both the profession and the practice of physical and occupational therapy. The course introduces students to key aspects of a career in physical/occupational therapy, such as therapist roles, practice settings, laws, policies, regulations, and the practice of physical therapy. Students are also exposed to the functions, disorders, and therapies of the major organ systems.

HT463H NUTRITION THERAPY - semester course
There is a plethora of information on various diet plans, foods that prevent disease and health ailments. This course is designed to build a solid foundation in the basic principles and concepts of good nutrition. The course will clarify nutrition misconceptions and help build a healthy lifestyle through nutritional awareness.

HT020H COMPLEMENTARY MEDICINE - semester course
Students will discover the variety of methods that are practiced in complementary medicine by researching each topic, debating the pros and cons of certain types, and learning how to incorporate conventional medical practices with complementary medicine practices. The class will be research based while incorporating laboratory practices when possible.

DE947H EMERGENCY MEDICAL TECHNICIAN
This course will provide instruction in basic life support and physical assessment. This course will introduce role and responsibilities of the emergency medical technician/ambulance. Topics will also include emergency operations, anatomy and physiology, bleeding, shock, cardiopulmonary resuscitation, soft tissue injuries, fractures and dislocations, abdominal and chest injuries. This course would be required for certification as a Virginia EMT/B. Students will be REQUIRED to sit for the EMT-B Certification Exam in May as well as participate in clinicals in conjunction with the local volunteer rescue squads.

HT722H SPORTS MEDICINE
This course of studies provides students with the basic concepts and skill set for sports medicine related health careers. It introduces students to topics such as injury prevention, nutrition, first aid/CPR/AED, exercise physiology, and biomechanics. Students study basic human anatomy and physiology, medical terminology, legal and ethical issues in sports medicine, and career preparation. Course competencies have been constructed so as not to go beyond the professional scope of aide/assistant level. Mastery of the material in this course would provide students with a strong background should they wish to pursue certification in areas such as first aid, CPR, AED, and/or personal trainer.

HT723H EXERCISE SCIENCE
Students study how physical activity experiences in sport, exercise, work, rehabilitation, and daily living contribute to the understanding of the human body. This course is designed to help the student explore and understand the biological and physiological changes that occur during exercise and as a result of extreme physical training. Finally, this course defines the responsibilities and requirements of professionals in health and fitness, therapeutic exercise, teaching, coaching, and sports management.

HT100H or HT101H MENTORSHIP
Health and Physical Therapy Mentorship is designed to provide students with supervised on the job work experience related to the Health and Physical Therapy career fields. Students will be placed or will find placement in an allied health field of their interest and have practical experience in such field. This mentorship is to be completed after-school or during the summer.

Monacan High School
11501 Smoketree Drive
North Chesterfield, VA 23236

William Broyles, Principal
Marcie Ecroyd, Specialty Center Coordinator

Health & Physical Therapy Center
at Monacan High School
The Center for Humanities at Monacan High School uses the discipline of literature, languages, history and social science, philosophy, mathematics, science, and fine art as a lens through which human endeavors are viewed. The Center provides learning opportunities that will develop the student’s powers of critical and creative thinking enabling them to understand and evaluate the legacies of world civilizations.

- An enriched four-year course of advanced studies utilizing an inquiry approach emphasizing dialogue among students, faculty, community service, and scientific investigations.
- An active learning environment that incorporates texts, discussions, technology, and hands-on learning including fine arts, community service, and scientific investigations
- A theme-based learning opportunity where students will come to understand the development of civilization and learn to apply the lessons of the past to the issues of the future
- A newly constructed facility with a state-of-the-art multimedia center, access to the Internet in all classrooms, and a 200 seat forum
- Access to the electives and student activity programs available to all students of a comprehensive high school

**HUMANITIES—PROPOSED COURSE SEQUENCE**

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**HUMANITIES COURSES**

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* We further require in World Languages that students choose one of two foreign language options: One, study one language intensively through the Advanced Placement level, OR, two, choose to study two languages, one of which must be a classical language (Greek or Latin). It will be to the student’s advantage to have completed the introductory level of language during middle school.

**Math courses will be determined by student placement. Completion of Algebra 1 is a recommendation for admission to the program.
HM040 INTRODUCTION TO THE HUMANITIES HONORS
One Credit
This course serves as an introduction to humanistic studies for students not enrolled in the Center for the Humanities at Monacan High School. The course covers areas of human endeavors and achievement in literature, languages, history, social studies, philosophy, math, sciences, and fine arts with cross-curricular integration and connections to modern concerns. The class will focus on the skills needed for critical thinking, critical reading, discussion techniques, and research techniques.

HM061 PERSPECTIVES ON THE HUMAN EXPERIENCE 1 – HONORS
One Credit
This course is an introduction to humanistic studies for students in the Center for the Humanities at Monacan High School. The course integrates areas of human endeavors and achievement in literature, languages, history, social studies, philosophy, math, sciences, and fine arts from the prehistoric period through the Middle Ages. Connections will be made to modern concerns. The class will focus on the skills needed for critical thinking and reading, discussion techniques, and research techniques.

HM062 PERSPECTIVES ON THE HUMAN EXPERIENCE 2 – HONORS
One Credit
This course is an introduction to humanistic studies for students in the Center for the Humanities at Monacan High School. The course integrates areas of human endeavors and achievement in literature, languages, history, social studies, philosophy, math, sciences, and fine arts from the Renaissance to the Present. Connections will be made to modern concerns. The class will focus on the skills needed for critical thinking and reading, discussion techniques, and research techniques.

HM063 PERSPECTIVE ON THE HUMAN EXPERIENCE 3 – HONORS
One Credit
This course is the third in the sequence of required courses for students in the Humanities program. It serves as an introduction to the American humanistic studies for students in the Center for the Humanities at Monacan High School. The course integrates areas of human endeavors and achievement in American literature, history, social studies, philosophy, math, sciences, and fine arts from the settlement of early America through the twentieth century. Connections will be made to modern concerns. The class will focus on the skills needed for critical thinking and reading discussion techniques, and research techniques.

HM064 PERSPECTIVES ON THE HUMAN EXPERIENCE 4 – HONORS
One Credit
This course is the fourth in the sequence of required courses for students in the Humanities program. The course integrates areas of human endeavors and achievement in American and world literature, history, social studies, philosophy, math, sciences, and fine arts during the late nineteenth and twentieth centuries. Focus is placed on the life and artistic expression of contemporary society with all of its diversity and variety. The class will focus on the skills needed for critical thinking and reading, discussion techniques, and research techniques.  
Pre-requisites: HM061, HM062, HM063

HM109 ENGLISH 9 HONORS
One Credit
English 9 Honors is a study of nonfiction, mythology, and an introduction to classical literature. Students study a variety of authors in various genre such as the short story, the novel, drama, and poetry in world literature. Students analyze literary texts, determine relationships between form and content, and go beyond an emotional reaction to an intellectual response. Students read critically, asking pertinent questions about what they have read, recognizing assumptions and implications, and evaluating ideas. This course also concentrates on expository writing, literary analysis, and oral communication skills. Students draw conclusions, appraise, and speculate independently about the elements of literature.

HM110 ENGLISH 10 HONORS
One Credit
This course is a study in the reading and critical analysis of literature. The program of studies, based on a survey of world literature, is both reading and writing intensive. The curriculum focuses on language as a symbolic process and on literature as preserved experience. Works will be placed within their historical context.

HM114H AP LANGUAGE AND COMPOSITION -ENGLISH 11
One Credit
Students in Humanities AP English Language and Composition will engage in the careful reading of a range of American literature with an emphasis on non-fiction. Fiction works including poetry, short stories and novels will also be read and analyzed. Course readings will feature expository, personal, argumentative, and analytical texts from a diverse range of authors. Students will sharpen their awareness of language by analyzing the purpose, style, and intended audience of each piece. Writing assignments will focus on the critical analysis of prose and will include essays in exposition and argument. Demonstrating efficiency in synthesis and research skills, students will examine and respond to pieces that offer varying perspectives, synthesizing these sources to
produce a series of short essays that incorporate research. In addition, Humanities AP Lang./Comp. integrates with AP U.S. History and Perspectives on the Human Experience, III.

**HM113 AP ENGLISH LITERATURE**  One Credit
The AP Literature and Composition course develops students' interpretive skills as they read and write with increasing complexity and sophistication. This course is a year-long, college-level course for selected seniors. It will engage students in the careful reading and critical analysis of imaginative literature. Through close reading of selected texts, students shall expand their understanding of the ways writers use language to provide meaning. As they read, students shall consider a work's structure, style, and themes as well as smaller-scale elements such as the use of figurative language, imagery, symbolism, and tone. As they write and discuss, students shall express with focus and clarity their understanding of literature. In addition, Humanities AP Literature and Composition integrates with Humanities AP Government and Perspectives on the Human Experience IV.

**HM209 WORLD HISTORY/GEOGRAPHY TO 1500 A.D. HONORS**  One Credit
This program will build on the basic historical, geographic, political, and economic concepts presented to them in the K-8 program. The diversity of culture and the evolution of human history will be explored chronologically and geographically from the beginning of time until the rise of nation states in Europe. Geographical concepts will be incorporated within the context of world historical events. Students will examine the development of the world's major political, economic, and legal systems; artistic and literary movements; technological changes; trade patterns; religions; and the influential people of history. Special emphasis will be given to the five themes of geography as they relate to regional conflicts, humanity's relationships with the environment, and the foundation of democratic principles, such as citizenship. Hands-on activities and the use of available technology will be an integral part of this course. Students will critique analytical essays and continue to learn the research writing process. This course stresses complex critical thinking and problem solving. This course will be integrated with HM110 English 10 and HM110 Perspectives on the Human Experience II to complete the foundation for the complex critical thinking and problem solving skills required in subsequent humanities courses.

**HM213 AP UNITED STATES GOVERNMENT**  One Credit
This course will provide students with 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 and statistical data. It also requires familiarity with the various institutions, groups, beliefs, and ideas that constitute United States political reality. Beyond the curriculum designed by the College board, this course will incorporate the Virginia's Standards of Learning including political philosophy, economics, and state and local systems of government. Students will be eligible to take the Advanced Placement exam and may earn as much as three hours of college credit. In addition, this course will integrate the HM113 English 12 and HM064 Perspectives On the Human Experience IV course. The content of such courses emphasizes contemporary issues.

**HM214 AP UNITED STATES HISTORY**  One Credit
AP United States History is designed to prepare students for the Advanced Placement test in what is a freshman level college history course. A chronological approach is used to cover United States history from the first European exploration of the Americas to the present. The influences and contributions of individuals and groups are examined in the development of the United States and its changing role in world affairs. Students are exposed to political, social, economic, diplomatic, intellectual and cultural history. A major component of this course is the reading and interpretation of various historical documents. In addition, this course will integrate with the HM111 English 11 and the HM063 Perspectives III courses.

**HM330 GEOMETRY HONORS**  One Credit
The Humanities Geometry course is a unified study of plane, solid and coordinate geometry. The curriculum includes the study of lines, planes, congruencies, geometric inequalities, perpendicularity of lines and planes in space, parallel lines...
and planes, polygons, polyhedral, area, volume, similarity, coordinate and transformational geometry, circles, and spheres. Every effort is made to incorporate advanced technology into the curriculum through the use of calculators and computers. The intent of this course is to frame a curriculum that ensures the development of broad mathematical power and which cultivates students' abilities to explore, conjecture, reason logically, formulate and solve problems, and communicate mathematically.

**Pre-requisites: Algebra 1**

**HM430 BIOLOGY 1**  One Credit  Humanities honors biology is a laboratory-based course which encompasses research design concepts introduced in the middle school. Core content will include interrelationships in ecosystems, taxonomy, cellular chemistry, genetics, microbiology, and physiology. These areas are developed within a framework of the principal biological theories with an emphasis on critical thinking and science process skills. Class team research projects will be developed using descriptive statistics techniques. In addition, Humanities students will explore the impacts of biology on society through an assortment of means. These will include research, various types of writing, Socratic Seminars, mock hearings, and examination of wildlife through direct observation as well as through art.

**HM452 ASTRONOMY**  One Credit  This course is designed to develop student proficiency in astronomy including: observation of the night sky (constellations, moon phases, etc.) useful parts of the electromagnetic spectrum, spectroscopy, nuclear reactions, star life cycles, and origin/evolution/death of the Universe (cosmology). Cultural and historical developments in astronomy are emphasized and integrated with art and literature.

**HM961 INTRODUCTION TO MUSIC APPRECIATION**  One-half Credit  This course introduces students to the art of listening perceptively through recordings and live performances. Students will study the various styles of performance and composition throughout the stages of musical history.

Monacan High School  
11501 Smoketree Drive  
Richmond, VA 23236  
(804) 378-2480

William Broyles, Principal  
Clare Tilton, Specialty Center Coordinator
The International Baccalaureate Diploma Programs (IB) offered at Midlothian and Meadowbrook High Schools are a challenging and rigorous dual-diploma program based on internationally recognized standards and requirements. In addition to the Virginia Advanced Studies Diploma, successful students are awarded the prestigious International Baccalaureate Diploma which is recognized as a standard of excellence and accepted by colleges and universities throughout the world. International Baccalaureate

- IB offers a broad-based academic program centered on the “Theory of Knowledge” course which provides interdisciplinary connections. The IB Program requires excellence in English, world language, history and social science, science, math and an IB elective.
- A combination of required courses in two levels of intensity - a level of courses similar to the rigors and challenges of the traditional Advanced Placement courses in addition to a level of courses in specific disciplines providing a more intense and in-depth study than AP.
- Examinations developed and assessed through IB by which students may be awarded as much as a year’s college credit.
- Learning extended beyond the IB classroom integrating the student’s school life with his or her life in the community.
- Strengthened research and writing skills through an extended essay program which promotes academic independence.

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<tr>
<th>International Baccalaureate: General Course Sequence*</th>
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<tr>
<td><strong>Group</strong></td>
<td><strong>Ninth</strong></td>
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<tr>
<td>1</td>
<td>PB English 9</td>
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<tr>
<td>2</td>
<td>World Language**</td>
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<td>3</td>
<td>World History&gt;1400 or AP Human Geography</td>
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<td>4</td>
<td>Earth Science</td>
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<td>5</td>
<td>Geometry</td>
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<td>6</td>
<td>Choose from elective sequencing options offered in the IB Program</td>
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<td></td>
<td>Health and Physical Education 9</td>
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*Most courses in Pre-IB and all IB courses carry honors credit.
**Group 2 world languages requirements-4-5 years (French, German, Latin, or Spanish)
***Mandatory class (2 years) at Meadowbrook High School
and unifies the academic subjects and encourages appreciation of other cultural perspectives. This is year two of the two-year course.

**IB111 ENGLISH 11**  
One Credit  
English is the Group 1: Language A1 required by IB. This course is the first year of a two-year course offered at the HIGHER LEVEL (HL). It is designed to develop power of expression, both in oral and written communication, by emphasizing the skills involved in writing and speaking one's native language in a variety of styles and situations. Students read at least 15 texts at HL, grouped by themes and genres. These texts are chosen from a broad list of prescribed authors and works representing different literary genres and styles in the target language, as well as literature from other languages and cultures read in translation. Oral and written examinations are used to assess students' individual language skills, their ability to critically analyze and comment upon familiar and unfamiliar texts, and their ability to express a personal and independent response to literature.  
**Pre-requisites:** PB 110 English 10 Honors

**IB112 IB ENGLISH 12**  
One Credit  
English is the Group 1: Language A1 required by IB. This course is the second year of a two-year course offered at the HIGHER LEVEL (HL). It is designed to develop power of expression, both in oral and written communication, by emphasizing the skills involved in writing and speaking one's native language in a variety of styles and situations. Students read at least 15 texts at HL grouped by themes and genres. These texts are chosen from a broad list of prescribed authors and works representing different literary genres and styles in the target language, as well as literature from other languages and cultures read in translation. Oral and written examinations are used to assess students' individual language skills, their ability to critically analyze and comment upon familiar and unfamiliar texts, and their ability to express a personal and independent response to literature.  
**Pre-requisites:** IB111 English 11 Honors

**MATHEMATICS**

**PB330 PRE IB GEOMETRY**  
One Credit  
This course is a unified study of plane, solid, and coordinate geometry. The curriculum includes the study of lines, planes, congruencies, geometric inequalities, perpendicularity of lines and planes in space, parallel lines and planes, polygons, polyhedral, area, volumes, similarity, coordinate and transformational geometry, circles, and spheres. Formal and informal deductive reasoning skills are developed and applied to the construction of formal proof. Every effort is made to incorporate advanced technology into the curriculum through the use of calculators and computers. The intent of this
course is to frame a curriculum that ensures the development of broad mathematical power and which cultivates students' ability to explore, conjecture, reason logically, formulate and solve problems, and communicate mathematically.

PB340  ALGEBRA 2 One Credit
The design of this course provides students with a more rigorous treatment of Algebra 2 concepts including a more detailed study of polynomial functions, rational expressions, domain, and range. A rapid pacing allows for the inclusion of major topics in the study of triangle and circular trigonometry as well as conic sections. Frequent opportunities are provided for students to make connections between topics studied and other disciplines. Students routinely use calculators to aid in the problem-solving process.

PB352  TRIGONOMETRY/ANALYSIS One Credit
Trig Analysis allows students to extend their Algebra 2 and trigonometry skills to advanced topics including mathematical induction, matrix algebra, vectors, and the binomial expansion. A detailed treatment of function concepts deepens the students' abilities to deal concretely and abstractly with mathematical topics. Additionally, the fundamentals of triangle and circular trigonometry are presented with an emphasis on graphing, establishing identities, developing special angle formulas, utilizing the Laws of Sines and Cosines, and polar coordinates. The course of study is enhanced by making connections of the concepts presented to other disciplines. Students routinely use graphing calculators as tools for exploratory activities and for solving application problems. **Midlothian High School only**

PB353  MATH ANALYSIS One Credit
Math Analysis allows students to extend their Algebra 2 and Trigonometry skills to advanced topics including mathematical induction, matrix algebra, vectors, and the binomial expansion. A detailed treatment of function concepts deepens the students ability to deal concretely and abstractly with mathematical topics. Additionally, the fundamentals of triangle and circular trigonometry are presented with an emphasis on graphing, establishing identities, developing special angle formulas, utilizing the Laws of Sines and Cosines, and polar coordinates. The course of study is enhanced by making connections of the concepts presented to other disciplines. Students routinely use graphing calculators as tools for exploratory activities and for solving application problems.

IB304  MATHEMATICS SL 2 One Credit
This program is designed to provide the second year of a two year adventure in a realistic math course for students planning to pursue further studies in technical fields. This year will be a comprehensive course on calculus. The curriculum includes the study of such topics as functions, differentiation, applications of derivatives, integration, applications of integration, and differential equations. The skills needed to cope with the mathematical demands of a technological major in college are developed and emphasis is placed on the application of math to real-life situations.

### SCIENCE

PB420  EARTH SCIENCE One credit
Earth/space science is a laboratory course with major areas of study in astronomy, geology, meteorology, physical geography, energy, and the environment. This course, which encompasses research design concepts introduced in the middle school, uses a class team approach for developing projects using descriptive statistics.

PB430  P-IB BIOLOGY One Credit
Biology is a laboratory-based course which encompasses research design concepts introduced in the middle school. Core content will include interrelationships in ecosystems, taxonomy, cellular chemistry, genetics, microbiology, and physiology. These areas are developed within a framework of the principal biological theories with an emphasis on critical thinking and science process skills. Research projects will be developed using descriptive statistics techniques.

PB440  P-IB CHEMISTRY One Credit
This inquiry-based, laboratory course is comprehensive, emphasizes problem-solving, and provides a thorough foundation for the college-bound student. Whenever possible, a quantitative approach is emphasized. In addition to learning the concepts of chemistry, students will spend the majority of their time on applying their knowledge to new situations and analyzing and evaluating chemistry data. Students in this course will continue to learn and practice the skills of experimental design.

PB450  PHYSICS One Credit
The main emphasis of this program is to develop an understanding of experimentation, the analysis of data, and the use of reasoning and logic to evaluate evidence. The use of mathematics, including algebra and trigonometry, is important, but conceptual understanding of physical systems
remains a primary concern. Students develop basis physical science principles by exploring the nature of characteristics of energy and its dynamic interaction with matter. An appreciation of the cultural aspects of science will be facilitated through viewing the historical development of physics. Emphasis will be placed on the interdisciplinary nature of science.

IB430 SL BIOLOGY 1 One Credit
Honors biology is a laboratory-based course which encompasses research design concepts introduced in the middle school. Core content will include interrelationships in ecosystems, taxonomy, cellular chemistry, genetics, microbiology, and physiology. These areas are developed within a framework of the principal biological theories with an emphasis on critical thinking and science process skills. Class team research projects will be developed using descriptive statistics techniques. If dissections are conducted in class, alternatives will be provided for students that request them. Midlothian High School only

IB431 SL BIOLOGY 2 One Credit
This laboratory course provides an advanced survey of life science topics chosen from molecular and cellular biology, the biology of organisms and ecology. Science, technology and societal issues are incorporated throughout. If dissections are conducted in class, alternatives will be provided for students that request them. Pre-requisites: Earth/Space Science 1 and Biology 1 Midlothian High School only

IB432 HL BIOLOGY 1 One Credit
The IB Biology - Higher Level (HL) sequence is a two-year sequence that will prepare students for the HL Biology examination. The course is a rigorous, comprehensive study of biology in which laboratory analysis, mathematical application, and problem-solving skills are emphasized. In addition, students will be required to write about concepts developed and explored both in and outside of the classroom. A Group 4 project will be required and students will keep a portfolio of lab work. Midlothian High School only

IB433 HL BIOLOGY 2 One Credit
The IB Biology - Higher Level (HL) sequence is a two-year sequence that will prepare students for the HL Biology examination. The course is a rigorous, comprehensive study of biology in which laboratory analysis, mathematical application, and problem-solving skills are emphasized. In addition, students will be required to write about concepts developed and explored both in and outside of the classroom. A Group 4 project will be required and students will keep a portfolio of lab work. Midlothian High School only

IB440 HL CHEMISTRY 1 One Credit
The IB Chemistry - Higher Level (HL) is a two-year sequence that will prepare students for the HL Chemistry examination. The course is a rigorous, comprehensive study of chemistry in which laboratory analysis, math application, and problem-solving skills are emphasized. In addition, students are required to write about the concepts developed and explored both in and outside of the classroom. Midlothian High School only

IB442 HL CHEMISTRY 2 One Credit
The IB Chemistry - HL is a two-year sequence that will prepare students for the Higher Level (HL) Chemistry examination. The course is a rigorous, comprehensive study of chemistry in which laboratory analysis, math application, and problem-solving skills are emphasized. In addition, students are required to write about the concepts developed and explored both in and outside of the classroom. Midlothian High School only

HISTORY AND SOCIAL SCIENCE

PB209 WORLD HISTORY TO 1500 AD One Credit
This course will build on the basic historical, geographic, political, and economic concepts presented to students in the K-8 program. The diversity of culture and the evolution of human history will be explored chronologically and geographically from the beginning of time until the rise of nation states in Europe. Geographical concepts will be incorporated within the context of world historical events. Students will examine the development of the world's major political, economic, and legal systems; artistic and literary movements; technological changes; trade patterns; religions; and the influential people of history. Special emphasis will be given to the five themes of geography as they relate to regional conflicts, human relationships with the environment, and the foundation of democratic principles, such as citizenship. Hands-on activities and the use of available technology will be an integral part of this course. Students will critique analytical essays and begin to learn the research writing process. This course is a foundation for complex critical thinking and problem solving in subsequent social studies courses. Pre-requisite: Membership in the Pre-IB Program

PB210 WORLD HISTORY 1500 A.D. TO THE PRESENT One Credit
Students in World History/Geography 1500AD to the Present will build on the basic historical, geographical, political, and economic concepts presented to them in the first year of the program. The diversity of culture and the evolution of human history will be explored chronologically and geographically from the late Middle Ages to the present. Geographical concepts will be incorporated within the context of world historical events. Students will examine the development of the world’s major political, economic, and legal systems; artistic and literary movements; technological changes; trade
patterns; religions; and the influential people of history. Special emphasis will be given to the five themes of geography as they relate to regional conflicts, human relationships with the environment, and the foundation of democratic principles, such as citizenship. Hands-on activities and the use of available technology will be an integral part of this course. Students will critique analytical essays and continue to learn the research writing process. This course stresses complex critical thinking and problem solving.

**IB211 HISTORY OF THE AMERICAS** One Credit
Having previously studied the world from antiquity to the present, students will focus on the unique evolution of States, Canada, and Latin America and the conflicts which created them. This class allows students to appreciate their own cultural heritage, not in isolation, but in comparison to the histories of many other nations with an emphasis on those in North and South America. The course chronicles the growing interdependence of the Americas as the United States developed from a new republic to a world power. **Pre-requisites:** Membership in the IB Program.

**IB212 UNITED STATES GOVERNMENT AND TWENTIETH CENTURY WORLD HISTORY TOPICS** One Credit
The curriculum examines the structure and functions of our federal form of government. The decision-making processes at the local, state, national, and international levels are emphasized. The foundations of American government and the politics of American democracy and constitutional rights and economic systems are compared to those of other nations, with emphasis on the relationships between economic and political freedoms. Economic content includes the United States market system, supply, demand, and the role of the government in the economy. Democratic values and citizen participation are stressed throughout the course. Students will extend their study of the chronological development of the world during the twentieth century through in-depth study and analysis of selected topics in twentieth century history. The course will focus on the political, economic, diplomatic, and social movements; geographic influences, and effects of technological changes throughout the twentieth century. Upon completion of the course the students will have acquired an appreciation and understanding of history, economics, geography, comparative politics, and the impact on the individuals of the Twentieth Century. **Pre-requisites:** Membership in the IB Program.

**IB241 PSYCHOLOGY SL** One Credit
This course will introduce students to a systematic study of the human experience and behavior from four psychological perspectives: the behavioral perspective, the cognitive perspective, the humanistic perspective, and the psychodynamic perspective. Students will develop insight into the practical application of psychology and its relevance to daily life. They will also demonstrate competence in different research designs, recognizing the strengths and weaknesses, in interpreting the results of such research, and in applying research designs by executing experiments.

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<th><strong>VISUAL ARTS</strong></th>
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<td><strong>PB912 ART 2</strong></td>
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<td>In Art 2 the student will continue to develop technical skills and an understanding of why artists create. Emphasis will be placed on student involvement in making choices and expressing ideas. Through studying visual arts heritage, the student will learn about art in America. Lab fee is required. <strong>Midlothian High School only</strong></td>
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| **PB921 DESIGN CRAFTS 1** | One Credit |
| Students will explore three-dimensional and craft processes as art forms, with an emphasis on design and craft-quality. The use of journaling techniques will expand the relationship of craft/design with our cultural heritage. The following media will be introduced: fibers, ceramics, metals, glass, wood, and other materials. **Midlothian High School only** |

| **PB922 ART/DESIGN CRAFTS 2** | One Credit |
| Students will synthesize techniques and skills developed in Pre- PBA Art/Design Crafts 1 including fibers, ceramics, jewelry, stained glass and other three-dimensional processes. Focus on professional crafts persons aids students as they prepare for their personal exhibit. Journaling continues as an integral process. **Midlothian High School only** |

| **IB923 ART/CRAFTS 3** | One Credit |
| This course provides students the continuation of skill development including fibers, ceramics, jewelry, stained glass, and other three-dimensional processes. Journaling continues as an integral process. Students begin preparing for the external assessment. Crafts 3 is set up as an Art/Design 3 course with students preparing a personal exhibition of their studio work made over the two-year IB period. **Midlothian High School only** |

| **PB931 DESIGN PHOTO 1** | One Credit |
| This introductory course in black and white photography is available to students in grades 9-12. Through a study of pinhole photography, the student will explore basic photographic processes. These skills and techniques will be applied to the introduction to 35mm photography. Aesthetic and historic awareness of photography will be emphasized. A 35mm SLR camera and a lab fee are required. |

| **IB931 ART/DESIGN PHOTOGRAPHY 1** | One Credit |
| This course provides students the opportunity to explore the media of black and white photography. Students learn the basic knowledge of photographic processes and the basic |
skills and technique of pinhole and 35 mm photography while experimenting with the aesthetics and formality of the visual image. Research in the history of photography is just as important as the discovery of contemporary forms. A workbook/journal is required plus the notebook/portfolio to house negatives and prints. Midlothian High School only

IB932 ART/DESIGN PHOTOGRAPHY 2 One Credit Grades 11-12

This course allows students to perfect, refine, and advance processes and skills begun in Pre-IB Photography 1. Aspects of photography as an art form, historical statement, and commercial endeavor will be studied. Students will develop a working knowledge of digital imaging and its impact on photography. Students will continue in the workbook/journals to develop their own personal vision in photography. These IB students begin to prepare for the external assessment. Midlothian High School only

Pre-requisites: IB 931

IB933 ART/DESIGN PHOTOGRAPHY 3 One Credit Grade 12

IB Photography 3 is an advanced course for students in further exploration in black and white photography. Students explore in-depth creative approaches to solving visual problems based on knowledge from Pre-IB Art/Photography 1 and 2. Research and exploration of past and present photographers is the key of understanding in this class. An independent research journal will play an important role in in-depth research of all materials introduced in class. Midlothian High School only

Pre-requisites: IB 932

PB962 P-IB DESIGN 2 One Credit

In Computer Art and Graphics the student will have the opportunity to explore and expand creative knowledge in the field of electronic imaging and graphic communications. The student will learn the technical skills necessary for artistic problem solving using the elements and principles of design. Current and ongoing developments in the field will be addressed. Emphasis will be on approaching the computer as a creative and practical tool. Lab fee is required. Midlothian High School only

IB942 COMPUTER ART/GRAPHICS 1 One Credit

In Computer Art and Graphics the student will have the opportunity to explore and expand creative knowledge in the field of electronic imaging and graphic communications. The student will learn the technical skills necessary for artistic problem solving using the elements and principles of design. Current and ongoing developments in the field will be addressed. Emphasis will be on approaching the computer as a creative and practical tool. Lab fee is required. Midlothian High School only

IB950 COMPUTER ART/GRAPHICS 2 One Credit

This course will continue the knowledge gained from Computer Art and Graphics 1. Students will further their studies by using the computer as an art form and exploring multimedia and 3-D design. Computer Art and Graphics 2 is intended to prepare students for a future in the technology arts by exposing them to diverse creative opportunities with sophisticated hardware and software. Students will learn how to use technology as a means to achieve a creative end and appreciate the computer as a viable art form. Midlothian High School only

IB 953 COMPUTER ART/GRAPHICS 3 One Credit

Students will deepen and expand on existing understanding of computer graphics software. Students will apply knowledge of computer graphics as a tool to create fine art. Students will also apply knowledge for design/commercial applications. Midlothian High School only

PB961 DESIGN 1 One Credit

This is a basic foundation course for Pre-IB Art 2, Pre-IB Photography 1, and Pre-IB Crafts 1. The course is designed to build the student's ability to use a variety of art media and increase their awareness of the diversity of the arts. The student will conduct independent research in the areas of visual arts heritage and its relationship to the arts in world cultures. Midlothian High School only

IB117 FILM 1 One Credit

The course in film aims to develop in students the skills necessary to achieve creative and critical independence in their knowledge, experience and enjoyment of film. The aims are to promote: an appreciation and understanding of film as a complex and unique art form; an ability to formulate stories and ideas in filmic terms; the practical and technical skills of production; critical evaluation of film production by the student and by others; and knowledge of film-making traditions in more than one culture. Meadowbrook High School only.

IB 963 DESIGN STUDIO 3 One Credit

This course integrates previously acquired knowledge and skills and assists the student in strengthening personal style and increasing competency in media areas. Students keep a portfolio of artwork to monitor progress and are exposed to the aspects of both commercial and studio art. Through studying visual arts heritage, the students learn about artists and styles of art in the 20th century. IB Art students begin
Midlothian High School only

IB 964 DESIGN STUDIO 4 One Credit
IB Art 4 students will prepare a personal exhibition of their studio work made over the two-year IB period. Extensive journals will be maintained to document their visual arts heritage with their personal growth and development. Students will be able to visually and verbally articulate their ideas. Midlothian High School only

IB118 FILM 2 One Credit
IB Film 2 continues the investigation of the historical, cultural, and technical topics studied in IB Film 1, with students deepening their understanding and refining their skills. The three IB assessments, an Independent Investigation of films in a variety of cultures, an Oral Analysis of the technical and thematic elements of a film clip (film to be assigned by the International Baccalaureate Organization), and the making of an independent film and the creation of a portfolio documenting the film-making process, all take place during this second half of the IB Film course. Meadowbrook High School only

IB986 MUSIC THEORY 1 One Credit
The IB music course provides students with a broad spectrum of musical experiences that include the study of Western traditions and other world cultures. This course will provide a solid foundation of music fundamentals for the student who has a general interest in studying music further. The course of study will include basic music theory, listening skills, music history, world music, composition, and performance. Midlothian High School only

WORLD LANGUAGES

PB512 FRENCH 2 One Credit
The four linguistic skills, culture, and grammatical concepts continue to be emphasized and practiced in additional real-life situations. The goal is for students to communicate with increasing proficiency by discussing themes of weather, lodging, daily routines, health and fitness, and regions of France. Students will learn to describe past, present, and future events. Many opportunities for oral and written communication are expanded through the use and application of technology. As much as possible, the class is conducted in French.

PB513 FRENCH 3 One Credit
Linguistic skills and grammatical concepts are reviewed and strengthened, while cultural concepts are expanded to enable students to recognize cultural differences. The goal for students is to interpret authentic texts and continue to develop communicative abilities in a variety of cultural contexts. Many opportunities for oral and written communication are expanded through the use and applications of technology. French 3 classes are conducted entirely in French. Pre-requisite: PB512 French 2

PB514 FRENCH 4 One Credit
Linguistic skills continue to be polished and strengthened, enabling the student to communicate with increasing precision and accuracy. The goal is for students to develop their understanding of French in contemporary, literature, historical, and cultural contexts. Many opportunities for oral and written communication are expanded through the use and application of technology. These classes are conducted in French. The main themes for communication are groups, leisure, and change. Pre-requisite: PB513 French 3

PB515 FRENCH 5 One Credit
A comprehensive and in-depth study is presented at this advanced level. In addition, the students increase their understanding of French in contemporary, literature, historical, and cultural contexts. Many opportunities for oral and written communication are expanded through the use and application of technology. Upon completion of the EXPANDING STAGE, students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but may not be able to discuss in depth highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They may make sporadic errors when using highly complex structures, but the errors will not interfere in communicating with a native speaker. These classes are conducted entirely in French. Pre-requisites: PB514 French 4

PB522 GERMAN 2 One Credit
The four linguistic skills, culture, and grammatical concepts continue to be emphasized and practiced in additional real-life situations. The goal is for students to communicate with increasing proficiency in describing, narrating, and distinguishing the time frame of events as the student learns to order and buy food; find lodging; plan vacation trips; and discuss health, fitness, and daily routine. Many opportunities for oral and written communication are expanded through the use and application of technology. As much as possible, the class is conducted in German. Midlothian High School only

PB523 GERMAN 3 One Credit
Linguistic skills are systematically reviewed and strengthened, while cultural and grammatical concepts are deepened, enabling the student not only to survive in German-speaking societies but also to deal with complications. The goal is for students to increase their creative comprehension and communication skills in questioning, narrating, describing,
and discussing possibilities in functional activities such as organizing a travel itinerary for exploration of German-speaking countries, comparing educational options and career plans, and discussing feelings and moods. Many opportunities for oral and written communication are expanded through the use and application of technology. German 3 classes are conducted entirely in German. 

**Pre-requisite:** German 2 Midlothian High School only

**PB524 GERMAN 4** One Credit  
The basic linguistic skills continue to be polished and strengthened, enabling the student to communicate with increasing precision and accuracy. The goal is for students to increase their understanding of German in authentic contemporary cultural situations, literature, and history. Cross-cultural comparisons and authentic communication will be stressed. Many opportunities for oral and written communication are expanded through the use and application of technology. These classes are conducted in German. The main themes for communication are groups, leisure, and change. **Pre-requisite:** PB523 German 3 Midlothian High School only

**PB525 GERMAN 5** One Credit  
A comprehensive and in-depth study is presented at this advanced level. In addition, the students increase their understanding of German in contemporary, literary, historical, and cultural contexts. Many opportunities for oral and written communication are expanded through the use and application of technology. Upon completion of the EXPANDING STAGE, students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but may not be able to discuss in depth highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They may make sporadic errors when using highly complex structures, but the errors will not interfere in communicating with a native speaker. These classes are conducted entirely in German. **Pre-requisites:** PB524 German 4 Midlothian High School only

**IB526 GERMAN 6** One Credit  
Students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. The course also includes a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. **Pre-requisites:** IB525 German 5 Midlothian High School only

**PB532 LATIN 2** One Credit  
The second level of Latin offers a continuing study and review of grammar previously introduced. Most of the formal grammar necessary for the reading of Latin literature will be presented. Readings continue to focus on daily life. Legendary history and mythology complement the integrated language approach to translation. The use of technology is encouraged to implement and enhance the student’s study. **Midlothian High School only**

**PB533 LATIN 3** One Credit  
The third level reviews and completes the study of grammar. Additional vocabulary is introduced through the readings. Latin prose reading selections, featuring the Republic and the Empire, include such authors as Cicero, Caesar, Entropies, Augustus, and Petronius. The use of technology is encouraged to implement and enhance the student’s study. **Pre-requisite:** PB532 Latin 2 Midlothian High School only

**PB534 LATIN 4 (Dual Enrollment)** One Credit  
This level features Virgil’s Aeneid and the Augustan Age. The politics, history, and mythology emphasized in the Aeneid enhance the understanding of the Augustan Age and its influence. There will be a study of grammar and vocabulary peculiar to the Aeneid. The study of literary devices and meter strengthen the student’s appreciation of epic poetry. The use of technology is encouraged to implement and enhance the student’s study. **Pre-requisite:** PB533 Latin 3 Midlothian High School only

**PB535 LATIN 5 (Dual Enrollment)** One Credit  
(May be taken in 3rd, 4th, or 5th year) Since learning a foreign language is a lifelong process, students may continue to improve and expand their language skills, knowledge, and appreciation of Latin throughout their lives. During the EXPANDING STAGE, students will gain a more precise understanding of Latin grammar and more facility in reading authentic text, broaden their appreciation of both Latin and English literature, and develop more insight into their own lives through comparison with the classical world process, students may continue to improve and expand their language skills, knowledge, and appreciation of Latin throughout their lives. **Pre-requisites:** PBL534 Latin 4 Midlothian High School only

**IB536 LATIN 6 (Dual Enrollment)** One Credit  
Students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. The course also includes a practicum, an opportunity to put into practice what already has been learned and to
combine linguistic skills with other talents.

**Pre-requisites:** IB535 Latin 5 Midlothian High School only

**IB537 LATIN 7 (Dual Enrollment)**
Midlothian High School only

**PB542 SPANISH 2**
One Credit
The four linguistic skills, culture, and grammatical concepts continue to be emphasized and practiced in simulated real life situations. The goal is for students to communicate with increasing proficiency by discussing weather, lodging, daily routines, health and fitness, and Spanish speaking regions. Opportunities for oral and written communication are expanded through the use and application of technology. As much as possible, the class is conducted in Spanish.

**PB543 SPANISH 3**
One Credit
Linguistic skills are reviewed and strengthened, while cultural and grammatical concepts are expanded, enabling the student to deal with cultural differences in Spanish-speaking societies. The goal is for students to communicate with increasing proficiency about topics relating to themes of groups, leisure, and change. Opportunities for oral and written communication are expanded through the use and application of technology. Spanish III classes are conducted in Spanish. **Pre-requisite:** PB542 Spanish 2

**PB544 SPANISH 4**
One Credit
The basic linguistic skills continue to be polished and strengthened, enabling the student to communicate with increasing precision and accuracy. The goal is for students to increase their understanding of Spanish in authentic contemporary cultural situations, literature, and history. Cross-cultural comparisons and authentic communication will be stressed. Opportunities for oral and written communication are expanded through the use and application of technology. These classes are conducted in Spanish. The main themes for communication are groups, leisure, and change.

**PB545 SPANISH 5**
One Credit
The foreign language program enables the student to develop proficiency in a language in addition to English. Proficiency is the learner's ability to understand, speak, read, and write the language within an authentic cultural setting. Upon completion of the EXPANDING STAGE, students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but may not be able to discuss in depth highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They may make sporadic errors when using highly complex structures, but the errors will not interfere in communicating with a native speaker. These classes are conducted entirely in Spanish. **Pre-requisites:** PB544 Spanish 4

**IB546 SPANISH 6**
One Credit
Students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. The course also includes a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. **Pre-requisites:** IB545 Spanish 5

**IB513 FRENCH 3**
One Credit
Linguistic skills and grammatical concepts are reviewed and strengthened, while cultural concepts are expanded to enable students to recognize cultural differences. The goal for students is to interpret authentic texts and continue to develop communicative abilities in a variety of cultural contexts. Many opportunities for oral and written communication are expanded through the use and applications of technology. **Pre-requisites:** IB545 Spanish 5

**IB514 FRENCH 4**
One Credit
Linguistic skills continue to be polished and strengthened, enabling the student to communicate with increasing precision and accuracy. The goal is for students to develop their understanding of French in contemporary, literary, historical, and cultural contexts. Many opportunities for oral and written communication are expanded through the use and application of technology. **Pre-requisites:** PB 513 French 3, WL513 French 3 H, or recommendation of teacher

**IB515 FRENCH 5**
One Credit
A comprehensive and in-depth linguistic study is presented at this advanced level. In addition, the students increase their understanding of French in contemporary, literary, historical, and cultural contexts. Many opportunities for oral and written communication are expanded through the use and application of technology. **Pre-requisites:** IB514 French 4 or recommendation of teacher

**IB516 FRENCH 6**
One Credit
Students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the
language—expressing opinions, negotiating, persuading, and advising. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. The course also includes a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. **Pre-requisites:** IB515 French 5

**IB483 BUSINESS & MANAGEMENT**  
One Credit  
The Diploma Programme business and management course is designed to develop an understanding of business theory, as well as an ability to apply business principles, practices and skills. The application of tools and techniques of analysis facilitates an appreciation of complex business activities. The course considers the diverse range of business organizations and activities and the cultural and economic context in which business operates. Emphasis is placed on strategic decision-making and the day-to-day business functions of marketing, production, human resource management and finance. Links between the topics are central to the course, and this integration promotes a holistic overview of business activity.

**Meadowbrook High School**  
4901 Cogbill Road  
Richmond, VA  23234  
(804) 743-3675 ext. 6260

Andrew Mey, Principal  
Tiffany Huff, Specialty Center Coordinator

**Midlothian High School**  
401 Charter Colony Parkway  
Midlothian, VA  23114  
(804) 379-2440

Shawn Abel, Principal  
Elizabeth Baber, Specialty Center Coordinator
The Center for Leadership and International Relations at James River High School seeks students from a broad range of ability levels and interests who want to learn about the qualities of leaders. While enhancing their own leadership styles, students develop problem solving, critical thinking, and decision-making skills that they will carry with them into their roles as future leaders of society.

- Foreign exchange opportunities
- Seminars with corporate, military, religious, community, and educational leaders
- Opportunities for community service projects
- Summer orientation programs on a college campus
- Located in a United States Department of Education Blue Ribbon School of Excellence

### Leadership and International Relations

**Proposed Course Sequence**

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<tr>
<td>English 9</td>
<td>English 10</td>
<td>English 11</td>
<td>AP English Literature</td>
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<tr>
<td>World History/Geography To 1500 AD</td>
<td>AP European History Communications For Leadership and International Relations</td>
<td>AP United States History Leadership Innovation Lab: Ethics and Decision Making</td>
<td>AP United States Government</td>
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<td>Leadership and International Relations Perspectives</td>
<td>Science</td>
<td>Science</td>
<td>Leadership in Action</td>
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<td>Math</td>
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<td>World Language</td>
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<td>World Language</td>
<td>Health/PE 10</td>
<td>Econ/Personal Finance</td>
<td>World Language</td>
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<td>Health/PE 9</td>
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S012 LEADERSHIP IN ACTION  One Credit
This course requires students to synthesize the leadership information they acquired during their first three years in the Center. The curriculum first reviews leadership principles and then identifies skill sets that contribute to individual career paths. Students execute their knowledge through an internship where they experience and evaluate positive leadership in our community. Each student must also research, create, participate in, and evaluate a service learning (capstone) project. This final project requires students to apply themselves in writing, critical thinking, reflection, and analysis.

LS09 ENGLISH 9  One Credit
The English 9 study of literature will challenge students to examine themes throughout multiple literary genres in order to understand literary terms and vocabulary and to analyze and acquire skills necessary for effective leadership. This course advances the study of written and spoken communication skills. Grammar and usage concepts will be reviewed and discussed in relation to how they impact student writing. Prewriting, drafting, peer editing, and revising will be a primary focus of the school year so as to produce competent writers.

LS10 ENGLISH 10  One Credit
World Literature Cultural Encounters will provide Leadership students with an academically challenging course of study. Students will read literary texts dealing with the issues of cultural encounters so that they may attain a global perspective on issues such as racism, class and caste systems, and acculturation. Exposing students not only to diverse cultures but also to the clashes that exist among cultures will instill principles based on respect and appreciation. In addition, the international focus of this course will provide these young leaders with a sense of their responsibility within a global context. In addition to the chronological survey provided in the World Literature textbook, students will read from a variety of texts.

LS111 ENGLISH 11  One Credit
This course will provide Center for Leadership and International Relations students with a challenging study of American literature. A variety of required and supplementary literary works will be used as the foundation for literary, expository, and creative writing. Required research papers will introduce major types of criticism, and student presentations will hone public speaking skills. Students will learn in a cooperative environment in which they will be expected to assume increasingly active leadership roles, encouraging them to problem solve, take risks, and share their views with others.

LS113 AP ENGLISH LITERATURE  One Credit
The Leadership AP English Literature and Composition course engages a cohort of Center students in the careful reading and critical analysis of imaginative literature. Through the close reading of selected texts, students work collaboratively to deepen their understanding of the ways writers use language to provide both meaning and pleasure for their readers. As they read, students consider a work’s structure, style, and themes as well as such smaller-scale elements as the use of figurative language, imagery, symbolism, and tone. Writing assignments focus on the critical analysis of literature, increasing students’ ability to explain clearly, cogently, even elegantly, what they understand about literary works and why they interpret them as they do.

LS171 COMMUNICATIONS FOR LEADERSHIP AND INTERNATIONAL RELATIONS  One Credit
This course develops a variety of personal and professional communication skills that promote effective leadership and positive international relations. Individual and group activities enhance verbal and nonverbal communication skills. Students write and deliver a variety of speeches and learn to critique themselves and others. Skills for research, organization, and outlining are improved through the speech preparation process. Group activities emphasize leadership styles and critical thinking skills. Class projects include intercultural communications, political campaigning, television news production, interviewing, and policy debating. Students develop into ethical and effective communicators, whose integrity and leadership will effect positive changes locally and globally.
LS209  WORLD HISTORY/GEOGRAPHY TO 1500 A.D.
One Credit
Students in the Leadership Program will examine World History/Geography to 1500 A.D. They will build on the basic historical, geographic, political, and economic concepts presented in the K-8 program. The diversity of culture and the evolution of human history will be explored chronologically from the beginning of time until the rise of nation states in Europe. Geographical concepts will be included within the context of world historical events. An in-depth look at various leaders will allow the student to learn more about leadership styles at various times in history.

LS213  AP US/VA GOVERNMENT
One Credit
The AP course in US/VA Government and Politics will give students an analytical perspective on government and politics in the United States. This course includes both the study of general concepts used to interpret US politics and the analysis of specific examples. It also requires familiarity with the various institutions, groups, beliefs, and ideas that constitute US politics. Students should be come acquainted with a variety of theoretical perspectives and explanations for various behaviors and outcomes. This course allows Center students to work together and discuss how leaders at the various levels of government display leadership skills.

LS214  AP UNITED STATES HISTORY
One Credit
The AP program in United States History is designed to provide students with the analytic skills and factual knowledge necessary to deal critically with the problems and materials in United States history. The program prepares students for intermediate 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. An AP United States History course should thus develop the skills necessary to arrive at conclusions on the basis of an informed judgment and to present reasons and evidence clearly and persuasively. An in-depth look at various leaders will allow the student to learn more about leadership styles at various times in US history.

LS216  AP WORLD HISTORY
One Credit
This course provides students with a comprehensive and rigorous course of western and non-western history. While there are AP counterparts in Chesterfield to US/VA History and US/VA Government, there is none for world history. This provides sophomores an opportunity to gain university credit and an introduction to the AP curriculum. The course is a survey of history from 12,000 BC to the present. In keeping with the global trend at both the university and secondary levels, there is an emphasis on the history of all continents and peoples. Although Europe is still an important component of the course, more focus is placed on the non-Western world. An in-depth look at various leaders will allow the student to learn more about leadership styles at various times in history.
The Center for Information Technology is a program designed for the purpose of learning and working in a truly exciting, computer enriched learning environment. They see Matoaca High School as a unique opportunity to be taught and to learn differently.

During their 4 years in the Center, students will be required to take and pass at least one Information Technology or computer related elective annually. The students in the Center will also be required to take at least one industry certification exam associated with their course of study. Students will also have the opportunity to engage in real world business and technology experiences as well as experience community service in technology.

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<td>TL World History/Geography</td>
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<td>TL United States History</td>
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<td>TL Geometry</td>
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<td>AP World History</td>
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<td>Introduction to Information Technology</td>
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**COURSE DESCRIPTION**

**IT105  INFORMATION TECHNOLOGY FUNDAMENTALS 1**  One Credit
Introduction to Information Technology is the foundation technology elective course for specialty center students. Introduction to Information Technology introduces the essential skills needed for students to pursue specialized programs leading to technical and professional careers and certifications in the IT industry. Students have an opportunity to investigate career opportunities in four major IT areas: Information Services and Support, Network Systems, Programming and Software Development, and Interactive Media. The focus of the Introduction to Information Technology course is on introducing skills related to information technology basics. Internet fundamentals, network systems, computer maintenance/upgrading/troubleshooting, computer applications, programming, graphics, web page design, and interactive media. Students explore ethical issues related to computers and internet design, and interactive media. Students explore ethical issues related to computers and Internet technology and develop teamwork and communication skills that will enhance their employability.

**TL015  COMPUTER NETWORKING, PROGRAMMING AND HARDWARE OPERATIONS**  One Credit
In this course, you will learn the fundamentals of computer technology, networking, security, and computer programming. You will acquire the skills and information needed to install, upgrade, repair, configure, troubleshoot, optimize, and perform preventative maintenance of basic personal computer hardware and operating systems with in class hands on labs. You will learn basic computer networking and computer security. You will learn the elements of customer service and communication skills necessary to work with clients. The class will prepare you for the CompTIA® A+® Certification exams. The class will also introduce you to computer programming where you will learn Java programming language. You will be introduced in to mobile app creation using Java programming. This course will prepare you for the Principles of Computer Science or AP Computer Science A class.

**TL130  DIGITAL VISUALIZATION HONORS**  One Credit
Students gain experiences related to computer animation by using graphics and design concepts. Students solve problems involving 3-D object manipulation, storyboarding, texturing/mapping, lighting concepts, and environmental geometry. Students create a variety of animations that reflect real-world applications and are introduced to interactive and 3-D animation software. Production of a portfolio showcasing examples of original student work is included.

**TL029  3D GAMING**  One Credit
Students gain experiences related to computer animation by using graphics and design concepts. Students solve problems involving 3-D object manipulation, storyboarding, texturing/mapping, lighting concepts, and environmental geometry. Students create a variety of animations that reflect real-world applications and are introduced to interactive and 3-D animation software. Production of a portfolio showcasing examples of original student work is included.

**TL109  ENGLISH 9 HONORS**  One Credit
English 9 is a study of nonfiction, mythology, and an introduction to classical literature. Students study Homer, Shakespeare, Dickens, Buck, Twain, and a variety of other authors in various genre such as the short story, novel, drama and poetry. Students analyze literary texts, determine relationships between form and content, and go beyond an emotional reaction to an intellectual response. Students ready critically, asking pertinent questions about what they have read, recognizing assumptions and implications, and evaluating ideas. This course also concentrates on expository writing, literary analysis, and oral communication skills. Students draw conclusions, appraise, and speculate independently about the elements of literature. Students will utilize technology throughout the entire English 9 course. All class work and homework will be completed using technology. Students will create group and individual projects utilizing technology through PowerPoint, Inspiration, and other applicable programs. Research will be conducted using computer skills and Internet applications.

**TL110  ENGLISH 10 HONORS**  One Credit
Literary selections of English 10 Honors include Thoreau, Hawthorne, Melville, Cather, Twain, Faulkner, Fitzgerald and others. Students will explore various writing techniques and styles. These techniques will be used in their own expository, persuasive, and creative writings. Critiquing literary works in a major focus at this level. The fundamental elements of research will be applied directly to written and oral communications. Knowledge will be evident through oral presentations, written reports, analyses, and small/large group discussions. Students will utilize technology throughout the entire English 10 course. All class work and homework will be completed using technology. Students will create group and individual projects utilizing technology through PowerPoint, Inspiration, and other applicable programs. Research will be conducted using computer skills and Internet applications.

**TL111  ENGLISH 11 HONORS**  One Credit
The literature selections of English 11 Honors include works of Chaucer, Shakespeare, Milton, Dickens, Bronte, and the Romantic poets, Hardy and Conrad. A variety of supplemental works will be used to enhance the program of
literary appreciation/study. Literature will be used as a foundation for literary analysis, expository, and creative writing. Required research papers allow students to explore major types of criticism-formalistic, archetypal, psychological. Other types of writing include reader responses and book reviews about particular works of literature. The goal of the Honors curriculum is to produce self-directed learners who are risk takers, highly motivated, and willing to share their views with others. Students will utilize technology through the entire English 11 course. All class work and homework will be completed using technology. Students will create group and individual projects utilizing technology through PowerPoint, Inspiration, and other applicable programs. Research will be conducted using computer skills and Internet applications.

**TL137 ELECTRONIC COMMUNICATION 2**  
**One Credit**  
This course is to not only provide students with an opportunity to lead, direct, write and evaluate, but to give students a year to improve upon and refine skills that will prepare them for a career either in college or the workplace in film. Students will be evaluated based on their leadership skills, meeting of deadlines, writing skills and self-analysis and evaluation.

**TL209 WORLD HISTORY/GEOGRAPHY TO 1500 AD Honors**  
**One Credit**  
This program will build on the basic historical, geographical, political, and economic concepts presented to them in the K-8 program. The diversity of culture and the evolution of human history will be explored chronologically and geographically from the beginning of time until the rise of nation states in Europe. Geographical concepts will be incorporated within the context of world historical events. Students will examine the development of the world’s major political, economic, and legal systems; artistic and literary movements; technological changes, trade patterns; religions; and the influential people of history. Special emphasis will be given to the five themes of geography as they relate to regional conflicts, humanity’s relationships with the environment, and the foundation of democratic principles, such as citizenship. Hands-on activities and the use of available technology will be an integral part of this course. Students will critique analytical essays and continue to learn the research writing process. This course stresses complex critical thinking and problem solving. Students will utilize technology throughout the entire TL 210 course. All class work and homework will be completed using technology. Students will create group and individual projects utilizing technology through PowerPoint, Inspiration, and other applicable programs. Research will be conducted using computer skills and Internet applications.

**TL210 WORLD HISTORY/GEOGRAPHY 1500 AD TO THE PRESENT HONORS**  
**One Credit**  
Students in this course will build on the basic historical, geographic, political, and economic concepts presented to them in the first year of the program. The diversity of culture and the evolution of human history will be explored chronologically and geographically from the late Middle Ages to the present. Geographical concepts will be incorporated within the context of world historical events. Students will examine the development of the world’s major political, economic, and legal systems; artistic and literary movements; technological change; trade patterns; religions; and the influential people of history. Special emphasis will be given to the five themes of geography as they relate to regional conflicts, humanity’s relationships with the environment, and the foundation of democratic principles, such as citizenship. Hands-on activities and the use of available technology will be an integral part of this course. Students will critique analytical essays and continue to learn the research writing process. This course stresses complex critical thinking and problem solving. Students will utilize technology throughout the entire TL 210 course. All class work and homework will be completed using technology. Students will create group and individual projects utilizing technology through PowerPoint, Inspiration, and other applicable programs. Research will be conducted using computer skills and Internet applications.

**TL211 VA AND UNITED STATES HISTORY HONORS**  
**One Credit**  
This course will chronicle the history of the United States from the first European exploration of the Americas to the present. Individuals and groups which contributed to the unique evolution of the United States will be studied. Both domestic and foreign policies will be examined at various points in time as the United States developed into a democratic world power. While focusing on political and economic history, this course will include a study of the American culture. Document based questions will encourage students to refine their critical thinking skills and write better analytical, reflective, and evaluative essays. Students will also synthesize information about national and international political and economic movements as well as historical personages. As part of this program, debates will center on important issues faced by the United States and will require students to apply, synthesize, and evaluate the impact of the United States on world affairs. In addition to tests and quizzes, students will write analytical essays. Students will continue to learn the research writing process by using additional elements of research in a paper. Other student projects should include several of the following: book reviews, oral presentations/projects, debates, simulations, biographical sketches, and political cartoons. The purpose of these products is to enable students to develop the ability to demonstrate more complex critical thinking and problem solving.
solving. Students will utilize technology throughout the entire TL211H course. All class work and homework will be completed using technology. Students will create group and individual projects utilizing technology through PowerPoint, Inspiration, and other applicable programs. Research will be conducted using computer skills and Internet applications.

**TL221 TECHNOLOGY SERVICE LEARNING** One Credit
Students in the Center for Information Technology are provided with the skills and knowledge to function at proficient levels with regard to various aspects of technology. Students are not only taught the ethical and practical uses of technology, but they are also given the opportunity to share their knowledge and passion for technology with other students and business people in our community. Students will explore technical issues as it applies to education and businesses alike. Students will also be involved with technology training needs at Matoaca High School on an as needed basis. This course will allow our students to share their passion of technology and as well, give students the opportunity to perform community service.

**TL 330 GEOMETRY HONORS** One Credit
This course is designed for students who have successfully completed the standards for Algebra I. All students are expected to achieve the Geometry standards. The course includes, among other things, properties of geometric figures, trigonometric relationships, and reasoning to justify conclusions. Methods of justification will include paragraph proofs, two-column proofs, indirect proofs, coordinate proofs, algebraic methods, and verbal arguments. A gradual development of formal proof will be encouraged. Inductive and intuitive approaches to proof as well as deductive axiomatic methods should be used. This set of standards includes emphasis on two- and three-dimensional reasoning skills, coordinate and transformational geometry, and the use of geometric models to solve problems. A variety of applications and some general problem-solving techniques, including algebraic skills, will be used to implement these standards. Calculators, computers, graphing utilities (graphing calculators or computer graphing simulators), dynamic geometry software, and other appropriate technology tools will be used to assist in teaching and learning.

**TL340 ALGEBRA 2 HONORS** One Credit
Algebra 2/Technology Learning extends the concepts that students have encountered in previous coursework and provides a thorough treatment of advanced algebraic concepts. Emphasis will be placed on practical applications, logic of procedures and interpretation of results. Students routinely use calculators, laptops, and other technologies both as tools when dealing with solutions to problem situations and as a means to enhance learning and assessment. Students will be expected to communicate and practice mathematical ideas appropriately. **Pre-requisites: Algebra 1 or Geometry**

**TL 420 EARTH/SPACE SCIENCE** One Credit
Earth/Space Science is a laboratory course recommended for each ninth grade student in order to complete his/her general background in the fundamentals of science. Major areas of Earth/Space Science are geology, meteorology, oceanography, astronomy, physical geography, energy, and the environment.

**TL 430 BIOLOGY 1 HONORS** One Credit
Honors biology is a laboratory-based course which encompasses research design concepts introduced in the middle school. Core content will include interrelationships in ecosystems, taxonomy, cellular chemistry, genetics, microbiology, and physiology. These areas are developed within a framework of the principal biological theories with an emphasis on technology and critical thinking. Technology concepts will focus on examination and mastery of current Web 2.0 tools such as Prezi, YouTube, Animoto, Screencast, and Xtranormal.

Matoaca High School
17700 Longhouse Lane
Chesterfield, VA 23838
(804) 590-3108
Belinda Merriman, Principal
Stacy Bradshaw, Specialty Center Coordinator
State of the art technology and excellent communication skills are the foundations of the news programming, interviewing and advertisements on networks like CNN, NBC, MTV, and FOX. The Center for Mass Communications at Manchester High School will offer the skills and experiences it takes to be a part of this exciting field. Students will develop expertise in visual, written and oral communication skills in the areas of television, radio, multimedia, print journalism, advertising, and graphic design. Utilizing the in-house television studio, editing suites and computer labs, students will produce television shows, magazines and newspapers, and multimedia presentations. Comprehensive study and production in the areas of television, multimedia, graphic design, journalism, advertising and photography.

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<th>Mass Communications—Proposed Course Sequence</th>
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<tr>
<td><strong>Ninth</strong></td>
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<tr>
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<tr>
<td>Math/Elective**</td>
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<tr>
<td>Health and Physical Education 9</td>
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<td>World Language*/Elective**</td>
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<tr>
<th>Mass Communications Courses</th>
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<td><strong>English 9</strong></td>
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<tr>
<td>Mass Communications and Technology Connections</td>
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<tr>
<td>World History/World Geography Beginnings-1400 CE</td>
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</tbody>
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*Denotes all comprehensive high school courses taught with appropriate technology integration.

**Denotes opportunities for online technology courses dependent upon individual requests, strengths, interests and course availability.
MC009 MASS COMMUNICATIONS AND TECHNOLOGY CONNECTIONS One Credit
Mass Communications and Technology Connections will develop a foundation in the basic principles of communications settings and functions and the forms of mass communications. Students will develop skills in copy writing, reporting, script writing, and editing while exploring technical skills in the areas of desktop publishing, multimedia, photography, graphic design, and basic audio/video production. Oral presentation skills will also be developed with a focus on poise, standard usage, articulation, and style. Students will write and deliver formal and informal speeches and presentations.

MC010 MASS COMMUNICATIONS WRITING/PRODUCTION 1 One Credit
Students will study the historical, ethical, legal, and economic aspects of television, radio, newspaper, magazine, advertising, and public relations industries. Students in Mass Communications Writing and Productions will continue to develop skills in copy writing, reporting, script writing, editing, and photography as well as develop more intermediate and advanced desktop publishing skills. Writing, layout, and design of print publications will be a major focus in this program. Students will produce newsletters, pamphlets, newspapers, and advertisements utilizing standard software packages. Students will continue to develop and refine skills in writing effective speeches and making presentations.

MC011 MASS COMMUNICATIONS WRITING/PRODUCTION 2 One Credit
"Mass Communications Writing and Production 2 will focus on the broadcast media. Students will learn how to produce messages specifically designed for television and radio. This course is essential because it allows students to learn about and to become a part of the most powerful mass medium in our society. Graduates of the program will be able to apply their knowledge in authentic communications settings. The objectives of this course include the following: to develop proficiency in written, oral, and visual communication skills; to study the structural, economic, ethical and legal aspects of broadcast journalism; to develop technical proficiency in the areas of audio/video production; to continue to develop technical proficiency in the areas of photography, graphic design and multimedia. Pre-requisite: MC010 Mass Communications Writing/Production 1 Honors

MC012 MC WRITING/PRODUCTION RESEARCH One Credit
This class is an advanced production class where senior utilize the skills they've learned in mass communications in a variety of different ways. Students in this course will produce a biweekly news show aired on the school system's cable access channel. In addition, students will utilize their skills in journalistic writing, advertising graphic design and video production to create marketing materials for non-profit organizations within Chesterfield County.

MC109 ENGLISH 9 One Credit
English 9 Honors is a study of nonfiction, mythology, and an introduction to classical literature. Students study Homer, Shakespeare, Dickens, Buck, Twain, and a variety of other authors in various genre such as the short story, the novel, drama, and poetry. Students analyze literary texts, determine relationships between form and content, and go beyond an emotional reaction to an intellectual response. Students read critically, asking pertinent questions about what they have read, recognizing assumptions and implications, and evaluating ideas. This course also concentrates on expository writing, literary analysis, and oral communication skills. Students draw conclusions, appraise, and speculate independently about the elements of literature. Students will utilize the skills learned in Mass Communication and Technology Connections to complete English related assignments and projects.

MC110 ENGLISH 10 One Credit
Literary selections of English 10 Honors include Thoreau, Hawthorne, Melville, Cather, Twain, Faulkner, Fitzgerald, and others. Students will explore various writing techniques and styles. These techniques will be used in their own expository, persuasive, and creative writings. Critiquing literary works is a major focus at this level. The fundamental elements of research will be applied directly to written and oral communications. Knowledge will be evident through oral presentations, written reports, analyses, and small/large group discussions. Students will utilize the skills learned in Mass Communications Writing and Production 1 to complete English related assignments and projects.

MC111 ENGLISH 11 One Credit
This course is based upon a survey of British literature. Composition skills are further developed, emphasizing correctness, practicality, style, and fluency. A research paper is required.

MC112 ENGLISH 12 One Credit
This course is based upon a survey of world literature and includes comparative studies of universal themes in literature and the history of language. Language study includes effective communication in all forms of expression and practical skills for the working or the academic world. A research paper is required.
MC209  WORLD HISTORY/GEOGRAPHY TO 1500 AD
This program will build on the basic historical, geographical, political, and economic concepts presented in the K-8 program. The diversity of culture and the evolution of human history will be explored chronologically from the beginning of time until the rise of nation states in Europe. Geographical concepts will be incorporated within the context of world historical events. Students will examine the development of the world's major political, economic, and legal systems; artistic and literary movements; technological changes; trade patterns; religions; and the influential people of history. Special emphasis will be given to the five themes of geography as they relate to regional conflicts, humanity's relationships with the environment, and the foundation of democratic principles, such as citizenship. Hands-on activities and the use of available technology will be an integral part of this course. Students will utilize the skills learned in Mass Communications and Technology Connections to complete World History/World Geography related assignments and projects.

MC210  WORLD HISTORY/GEOGRAPHY 1500 AD TO THE PRESENT
Students in World History/World Geography 1400's to the Present will build on the basic historical, geographical, political, and economic concepts presented to them in the first year of the program. The diversity of culture and the evolution of human history will be explored chronologically and geographically from the late Middle Ages to the present. Geographical concepts will be incorporated within the context of world historical events. Students will examine the development of the world's major political, economic, and legal systems; artistic and literary movements; technological changes; trade patterns; religions; and the influential people of history. Special emphasis will be given to the five themes of geography as they relate to regional conflicts, humanity's relationships with the environment, and the foundation of democratic principles, such as citizenship. Hands-on activities and the use of available technology will be an integral part of this course. Students will utilize the skills learned in Mass Communications and Technology Connections to complete World History/World Geography related assignments and projects.

MC212  VA/US HISTORY
The curriculum examines the structure and functions of our federal form of government. The decision-making processes at the local, state, national, and international levels are emphasized. The foundations of American government, the politics of American democracy, and constitutional rights and responsibilities are explored in depth. United States political and economic systems are compared to those of other nations, with emphasis on the relationships between economic and political freedoms. Economic content includes the United States market system, supply and demand, and the role of the government in the economy. Democratic values and citizen participation are stressed throughout the course.

MC213  VA/US HISTORY
The curriculum examines the structure and functions of our federal form of government. The decision-making processes at the local, state, national, and international levels are emphasized. The foundations of American government, the politics of American democracy, and constitutional rights and responsibilities are explored in depth. United States political and economic systems are compared to those of other nations, with emphasis on the relationships between economic and political freedoms. Economic content includes the United States market system, supply and demand, and the role of the government in the economy. Democratic values and citizen participation are stressed throughout the course.

Manchester High School
12601 Bailey Bridge Road
Midlothian, VA 23112
(804) 739-6275

Peter Koste, Principal
Kathy Hoof, Specialty Center Coordinator
THE VIRGINIA’S GOVERNOR’S ACADEMY FOR ENGINEERING STUDIES
at Lloyd C. Bird High School

The Virginia Governor’s Academy for Engineering Studies at Lloyd C. Bird High School opened in September 2000, with an enrollment of thirty-five freshmen. Approximately fifty freshmen were selected and enrolled in each of the subsequent years. The Center is open to any qualifying student who is a resident of Chesterfield County. The goal of the Center is to enhance each student’s awareness of the field of engineering and to help that student narrow his or her focus of study while preparing to enter college and university programs. This is accomplished through a rigorous academic track that emphasizes advanced study in mathematics and science. As a result, the Pre-Engineering Studies students consistently average 100 points higher on SAT verbal and 100 points higher on SAT math scores than the students in our comprehensive high school program.

Applicants are selected based on a variety of criteria including aptitude and achievement test scores, teacher recommendations, statements of interest, and grades in core curriculum courses. Students with the strongest credentials and indicators for success are selected for this rigorous program.

The Governor’s Academy for Engineering Studies provides and promotes:

- A unified study of the fundamental concepts basic to all engineering fields
- Extensive use of technology within the classroom including computer-assisted drawing and other software used in the university setting
- Field experiences, dual enrollment courses, and Advanced Placement courses
- Access to the electives and student activities available to all students in a comprehensive high school

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<th>Ninth</th>
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<tr>
<td>English 9</td>
<td>English 10</td>
<td>English 11</td>
<td>English 12</td>
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<tr>
<td>World History/Geography to 1500</td>
<td>History/Geography 1500 AD to the Present</td>
<td>VA &amp; United States History</td>
<td>UV &amp; US Government</td>
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<tr>
<td>Engineering Geometry</td>
<td>Engineering Algebra 2 &amp; Trig</td>
<td>Math/Trig Analysis</td>
<td>AP Calculus or Calculus</td>
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<td>Engineering Physics</td>
<td>Engineering Biology</td>
<td>Engineering Chemistry</td>
<td>AP Physics/Biology/Chemistry</td>
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<td>Health and Physical Education 9</td>
<td>Health and Physical Education 10</td>
<td>Elective</td>
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<td>World Language</td>
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<tr>
<td>Foundations of Engineering</td>
<td>Engineering Design</td>
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<td>Elective</td>
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<td>Mentorship (Optional)</td>
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**Successful completion of Algebra 1 prior to enrolling in the Academy is required.**
PE010  ENGINEERING DESIGN – HOW THINGS WORK  
One Credit
Engineering Design – How Things Work is a hands-on, project-based class that teaches the principles of engineering and engineering technology through examining how everyday objects work. Mechanical, Electrical, Electronic, Fluids systems will be examined with an emphasis on how these systems have shaped our world.

PE011  FOUNDATIONS OF ENGINEERING  
One Credit
Foundations of Engineering is a course designed to introduce all first year students to the fundamentals of engineering and the various specialized fields. Students will examine technology and engineering fundamentals related to solving real-world problems. Students will be exposed to a variety of engineering specialty fields and related careers to determine whether they are good candidates for postsecondary educational opportunities in engineering. Students will gain a basic understanding of engineering history and design, using mathematical and scientific concepts. Students will participate in hands-on projects in a laboratory setting as they communicate information through team-based presentations, proposals, and technical reports.

PE021  ENGINEERING DESIGN  
One Credit
This course is required for all second year students in the Pre-Engineering Specialty Center. This course is designed to allow students to examine systems, the interaction of technology and society, ethics in a technological world, and the fundamentals of modeling while applying the engineering design process to areas of the designed world. Students will participate in hands-on projects in a laboratory setting as they communicate information through team-based presentations, proposals and technical reports. Field trips, guest speakers, and technology will be included to enhance the value of the principles and skills taught.

PE014  INTRODUCTION TO ENGINEERING AND DESIGN  
One-half Credit
This course is a pre-requisite for Graphic Design and Marketing students taking the Entrepreneurial Education and Capstone Project (9094). This course will introduce the student to engineering design process, creation of preliminary designs, selection of a preferred solution, generating specifications and implementing the design through advanced manufacturing techniques.

PE040  AEROSPACE ENGINEERING  
One Credit
Aerospace Engineering will approach the field of Aerospace Engineering with a project-based approach looking at both airplanes and spacecraft. Students will use a hands-on approach to study concepts including the history of aviation, aerodynamics, aircraft components, flight conditions, airport and flight operations, space, rocketry, and the aviation and space industries.

PE042  BIOMEDICAL ENGINEERING  
One Credit
Biomedical Engineering will approach the field of Biomedical Engineering with a project-based problem. Students will center their studies solving a problem such as the design of an artificial limb or heart, looking at the mechanics involved in the machine as well as the elements needed on the biology, physiology, and medical side of the design. (Projects may change from year to year) Students will apply their knowledge of physics, biology, their knowledge of physics, biology, and engineering design along with input and research in the field of biomedical engineering to complete the project.

PE044  ARCHITECTURAL ENGINEERING  
One Credit
3-D Engineering: Drawing and Design will approach the field of 3-D Engineering with a project-based problem, using and expanding concepts learned in Introduction to AutoCAD. Students will center their studies around the design of a building and study the physics, mechanics, and mathematics involved, as well as the aesthetics. (Projects may change from year to year) Students will apply their knowledge of physics, geometry, trigonometry, and engineering design, along with input and research in the field of architectural engineering to complete the project. Students will also define the difference between an architect and an architectural engineer, thus being able to make an informed career choice.

PE046  MANUFACTURING ENGINEERING HONORS  
One Credit
Manufacturing Engineering encompasses mechanics, hydraulics, pneumatics, electrical, and systems engineering as well as use of CAD and CNC to solve real-world applications of engineering problems. This is a project-based course with the majority of the work set up as hands-on activities. The student completes specific modules designed to teach the various areas of manufacturing engineering. The second semester challenges students to work as a team and use their newfound knowledge to design and build various projects that will accomplish a task or solve a typical engineering problem.

PE071  JUNIOR SEMINAR  
One Credit
Students in the third year of the Pre-engineering program will be required to attend a series of workshops with guest speakers, participate in college visits and field trips. They will log hours for discussion on engineering topics to be decided, and be prepared to complete an independent project and present to classmates, parents, and teachers, etc.
PE072 SENIOR SEMINAR One Credit
Semitrin 2 is a required class for Pre-Engineering students, to be taken in the senior year. This class includes several units of study relevant to college engineering courses. Topics will include Statics, Dynamics, Probability and Statistics, Thermodynamics, Electric Circuit Theory, and Engineering Ethics. Students will see what college-level engineering work is like, and get a little taste of actual lower level courses, while learning to apply what they have learned in their math and science classes.

PE073 JUNIOR MENTORSHIP One-half Credit
This course is designed for students who wish to participate in the mentorship experience either the summer before their senior year or after school during their senior year. A minimum of 80 hours (two standard work weeks) is required in order to receive half-credit. Students will develop skills in various areas, such as designing projects, solving technical problems, identifying steps in the design process, and evaluating products best suited for the design project.

PE074 SENIOR MENTORSHIP One Credit
This course is designed for students who wish to participate in the mentorship experience either the summer before their senior year or after school during their senior year. A minimum of 160 hours (four standard work weeks) is required in order to receive full credit. Students will develop skills in various areas, such as designing projects, solving technical problems, identifying steps in the design process, and evaluating products best suited for the design project.

PE110 ENGLISH 10 One Credit
This course is a combination of the traditional English 10 coursework and the principles of technical writing. Technical writing units are integrated into the study of effective communication skills and the fundamental elements of research. American literature is used to emphasize character motivation and human relations.

PE210 WORLD HISTORY THROUGH THE EYES OF ENGINEERING One Credit
World History through the eyes of Engineering incorporates an emphasis on major engineering innovations into the standard World History II course. Students will examine history from 1500 to present day in the context of engineering developments and focus on how those developments shaped world cultures. Many student assignments are related to work done in other engineering courses.

PE212 GOVERNMENT AND ETHICS One Credit
The curriculum examines the structure and functions of our federal form of government. The decision-making processes at the local, state, national, and international levels are emphasized. The foundations of American government, the politics of American democracy, and constitutional rights and responsibilities are explored in depth. United States political and economic systems are compared to those of other nations, with emphasis on the relationships between economic and political freedoms. Economic content includes the United States market system, supply and demand, and the role of the government in the economy. Democratic values and citizen participation are stressed throughout the course.

PE330 ENGINEERING GEOMETRY One Credit
Engineering Geometry illustrates the role of the engineer and how geometry is utilized in the problem solving process. This course is a unified study of planes, line congruencies, geometric inequalities, perpendicularity of lines and planes, polygons, polyhedral, area, volume, similarity, coordinate and transformational geometry, circles, and spheres. These units of study are enhanced with a problem solving format that allows for the use of engineering issues to explain these geometric concepts.

PE340 ALGEBRA 2 One Credit
Algebra 2 extends the concepts that students have encountered in previous coursework and provides a thorough treatment of advanced algebraic concepts. Emphasis will be placed on practical applications, logic of procedures, and interpretation of results. Graphing calculators and computers will enhance the students' understanding. Students will be expected to communicate and practice mathematical ideas appropriately. Pre-requisites: PE330 Geometry

PE342 ALGEBRA 2/TRIGONOMETRY One Credit
The design of this course provides students with a more rigorous treatment of Algebra 2 concepts, including a more detailed study of polynomial functions, rational expressions, domain, and range. Rapid pacing allows for the inclusion of major topics in the study of triangle and circular trigonometry as well as conic sections. Frequent opportunities are provided for students to make connections between topics studied and other disciplines. Students routinely use calculators to aid in the problem-solving process.

PE430 ENGINEERING BIOLOGY One Credit
Engineering Biology is a laboratory-based course which encompasses research design concepts, with applications to the fields of engineering, most specifically bio-tech engineering. Core content will include interrelationships in ecosystems, taxonomy, cellular chemistry, genetics, microbiology, and physiology. These areas are developed within a framework of the principal biological theories with an emphasis on critical thinking and science process skills. Team research projects will be developed using descriptive statistical techniques. Additionally, bio-tech processes will be developed and a research project on this topic will be completed.
PE440  CHEMISTRY & ENGINEERING APPLICATIONS  One Credit
This inquiry-based laboratory course is a comprehensive survey of inorganic and physical chemistry. The course will emphasize problem-solving, specifically related to engineering where possible, and provide a thorough foundation for the college bound student, emphasizing a quantitative approach. In addition to learning the concepts of chemistry, students will spend the majority of their time applying their knowledge to new situations and analyzing and evaluating chemical data. Students in this course will continue to learn and practice the skills of experimental design. Research projects will be completed by small teams of students, involving the use of inferential statistics as part of data analysis, and will be focused on engineering problems where appropriate.

PE450  ENGINEERING PHYSICS  One Credit
This is a college preparatory course with emphasis on physical science concepts. Concepts involved include mechanics, thermodynamics, waves, electromagnetism, modern physics, and scientific investigation. Student experiences center around active inquiry and experimentation.

PE470  SURVEY OF PRODUCT INNOVATION AND DESIGN  One Credit
Survey of Product Innovative and Design students will study career clusters that focus on engineering, marketing and art through a variety of investigative activities that will result in designing innovative products based on engineering principles and methods. Engineering, Marketing and Art students will observe, analyze, and report on the demand for innovative workers, organizational structures, quality control measures, selected policies and regulations, ethical issues, and rewards of developing and designing products. Additionally, students will research and analyze career and educational options, and develop or revise a plan related to their academic and career-related goals.

PE500  PRODUCT INNOVATION CAPSTONE PROJECT  One Credit
This course will be the capstone project for the students in the Marketing, Graphic Design and Engineering pathways at the Governor’s Academy for Engineering Studies. This course will provide the students the opportunity to work together on a product innovation project under faculty supervision. While working on the capstone project, students will investigate: project management, team building, content generation and testing, marketing analysis, visualization and prototyping.

PE501  SURVEY OF PRODUCT MARKETING  One Credit
This junior year course is the pre-requisite to the senior year capstone course. The first semester will be spent learning the basics of engineering and graphic design. During the second semester the students will participate in a project based learning tied related to their marketing specialty. The students will participate in nationwide engineering competitions/challenges. The student may also choose to complete a meaningful project that fulfills a need in the community.

PE502  SURVEY OF PRODUCT DESIGN  One Credit
This course provides experiences related to a wide range of tools and materials used to reproduce information and images. Several mediums are used, including paper, metal, plastic, and fabric. Students develop competencies in design and layout, composition and assembly, film conversion, image applications, message transfer, and print production.

PE510  CAPSTONE PROJECT GOVERNORS ACADEMY FOR ENGINEERING STUDIES  One Credit
This is the capstone project for students attending the Governor’s Academy for Engineering Studies. In this course students from the three pathways (engineering, marketing and graphic design) will work together on a product innovation project under faculty supervision. While working on the capstone project, students will investigate: project management, team building, concept generation and testing, market analysis, visualization and prototyping.

PE510H  CAPSTONE PROJECT GOVERNORS ACADEMY FOR ENGINEERING STUDIES HONORS  One Credit
This is the capstone project for students attending the Governor’s Academy for Engineering Studies. In this course students from the three pathways (engineering, marketing and graphic design) will work together on a product innovation project under faculty supervision. While working on the capstone project, students will investigate: project management, team building, concept generation and testing, market analysis, visualization and prototyping.

PE520  INNOVATION MARKETING CAPSTONE  One Credit
This is the capstone project for students attending the Governor’s Academy for Engineering Studies Marketing Pathway. In this course students from the three pathways (engineering, marketing and graphic design) will work together on a product innovation project under faculty supervision. While working on the capstone project, students will investigate: Project management, team building, concept generation and testing, market analysis, visualization and prototyping.

PE521  INNOVATION DESIGN CAPSTONE  One Credit
This is the capstone project for students attending the Governor’s Academy for Engineering Studies Marketing Pathway. In this course students from the three pathways (engineering, marketing and graphic design) will work together on a product innovation project under faculty supervision. While working on the capstone project, students will investigate: Project management, team building, concept
generation and testing, market analysis, visualization and prototyping.

**PE936 DIGITAL AND GRAPHIC DESIGN 1**  One Credit
Students gain experiences related to computer animation by using graphics and design concepts. Students solve problems involving 3-D object manipulation, storyboarding, texturing/mapping, lighting concepts, and environmental geometry. Students create a variety of animations that reflect real-world applications and are introduced to interactive and 3-D animation software. Production of a portfolio showcasing examples of original student work is included.

**PE937 DIGITAL AND GRAPHIC DESIGN 2**  One Credit
Students will explore the use of modeling, simulation, and game development software to solve real-world problems in science, technology, engineering, and mathematics (STEM). The activities will include evaluating and testing engineering designs, modeling geospatial data, observing and analyzing physics simulations, programming games for educational purposes, and creating visualization systems with 3D models. Students will develop an understanding of the systems, processes, tools, and implications of the field of modeling and simulation technology.

L. C. Bird High School
10301 Courthouse Road
Chesterfield, VA  23832
(804) 768-6110

Dr. Laura Hebert, Principal
Robert Benway, Specialty Center Coordinator
MATHEMATICS AND SCIENCE HIGH SCHOOL
at Clover Hill High School

The Mathematics and Science High School at Clover Hill focuses on interdisciplinary experiences in English, social studies, mathematics, and science that are planned and implemented by teams of teachers. The Center features an integrated curriculum in mathematics in which the major topics in traditional high school math courses are taught in three years via a thematic approach.

- An accelerated approach which allows students to take all Advanced Placement courses in history, science, English & math
- Dual enrollment classes in engineering, differential equations, US history, composition, field biology, and advanced math modeling as well as other specialized courses such as organic chemistry and historical research
- A unique, integrated approach to mathematics leading to an in depth understanding of Advanced Placement calculus courses and post AP courses, such as math modeling
- A program-wide emphasis on problem-solving, thinking, communication, and research
- Access to the electives and student activity programs available to all students of a comprehensive high school

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<tr>
<td>Integrated Pre-calculus 1 or Advanced Pre-calculus 1</td>
</tr>
<tr>
<td>Biology</td>
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<tr>
<td>World History/World Geography Beginnings - 1400 CE</td>
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<tr>
<td>Health and Physical Education 9</td>
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<tr>
<td>2 Electives</td>
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*All courses taken at Math and Science High School with the MS prefix carry honors credit.
MS109 ENGLISH 9  One Credit
Math/Science English 9 provides an opportunity to evaluate, express, and use ideas. Students then learn how to support ideas they have developed. They learn the basics: grammar, sentence structure, punctuation, usage, and writing tools. They examine examples of excellent expression so they can recognize and use its techniques in their own writing. Students experience the power and pleasure of functioning as effective group members as they relate what they learn to what they already know. An extensive array of activities in conjunction with Math/Science Global Studies 1 underscores the interdisciplinary focus of this course.

MS110 ENGLISH 10  One Credit
Using a chronological study of World and British literature this course focuses on reading skills to cultivate critical thinking skills; helping students become more mature communicators, both in writing and speaking; and to improve research skills. Differing from other English classes, this course uses an interdisciplinary approach, including nonfiction as a major part of its literary study.

MS111 M/S AP ENGLISH LITERATURE  One Credit
The Math/Science English 11 (AP Literature) class emphasizes effective writing and analytical reading skills through a survey of American prose, poetry, and drama. While the primary focus will be the detailed study of the texts themselves, historical issues will also be addressed and aligned with the US History course. Research and oral presentations will be integral parts of the class.

MS112 ENGLISH 12  One Credit
This course is designed as a post AP English course. It is based upon a survey of world literature and includes comparative studies of universal themes in literature and the history of language. Language study includes effective communication in all forms of expression and practical skills for the working or the academic world. A research paper is required.

MS113 AP ENGLISH LITERATURE  One Credit
As a key accelerated course in the Math & Science High School English sequence, Math/Sci AP English Literature links Math/Sci English 9 and 10 with our Post-AP English 12 course. Similar to Math/Sci English 9 and 10, Math/Sci AP English Literature will require at least as many hours of outside-the-classroom work as in-classroom instruction and work. Time management and English analysis skills developed in the first two courses will prepare students for the depth of analysis of fiction and non-fiction works, as well as the rigor and relevance of coursework that the instructor of a Math/Sci AP English Literature class will provide for the student. Students will read and write extensively and analyze at the college level. Fundamentals of timed writings, drawing together elements of several analyzed texts will provide a bridge to success in Post-AP course work. Math/Sci AP English Literature will correlate with AP US History to create cross-curricular assignments that introduce students to larger systems of knowledge.

MS209 WORLD HISTORY/GEOGRAPHY TO 1500  One Credit
Students in this Math/Science Center high school social studies course will build on the basic historical, geographical, political, and economic concepts presented to them in the K-8 program. The diversity of culture and the evolution of human history will be explored chronologically and geographically from the beginning of time until the rise of nation states in Europe. Geographical concepts will be incorporated within the context of world historical events. Students will examine the development of the world’s major political, economic, and legal systems; artistic and literary movements; technological changes; trade patterns; religions; and the influential people of history. Special emphasis will be given to the five themes of geography as they relate to regional conflicts, humanity’s relationships with the environment, and the foundation of democratic principles, such as citizenship. Hands-on activities and the use of available technology will be an integral part of this course. Students will critique analytical essays and begin to learn the research writing process. This course is a foundation for complex critical thinking and problem solving in subsequent social studies courses.

MS210 WORLD HISTORY/GEOGRAPHY 1500 AD TO THE PRESENT  One Credit
Students in World History/Geography 1500 AD to the present will build on the basic historical, geographical, political, and economic concepts presented to them in the first year of the program. The diversity of culture and the evolution of human history will be explored chronologically and geographically from the late Middle Ages to the present. Geographical concepts will be incorporated within the context of world historical events. Students will examine the development of the world’s major political, economic, and legal systems; artistic and literary movements; technological changes; trade patterns; religions; and the influential people of history. Special emphasis will be given to the five themes of geography as they relate to regional conflicts, humanity’s relationships with the environment, and the foundation of democratic principles, such as citizenship. Hands-on activities and the use of available technology will be an integral part of this course. Students will critique analytical essays and continue to learn the research writing process. This course stresses complex critical thinking and problem solving.
MS211 UNITED STATES HISTORY
One Credit
This course will chronicle the history of the United States from the first European exploration of the Americas to the present. Individuals and groups which contributed to the unique evolution of the United States will be studied. Both domestic and foreign policies will be examined at various points in time as the United States developed into a democratic world power. While focusing on political and economic history, this course will include a study of American culture. Document based questions will encourage students to refine their critical thinking skills and write better analytical, reflective, and evaluative essays. Students will also synthesize information about national and international political and economic movements as well as historical personages. As part of this program, debates will center on important issues faced by the U.S. and will require students to apply, synthesize, and evaluate the impact of the U.S. on world affairs. In addition to tests and quizzes, students will write analytical essays. Students will continue to learn the research writing process by using additional elements of research in a paper. Other student projects should include several of the following: book reviews, oral presentations/projects, debates, simulations, biographical sketches, and political cartoons. The purpose of these products is to enable students to develop the ability to demonstrate more complex critical thinking and problem solving skills.

MS212 VA/US HISTORY
One Credit
The curriculum examines the structure and functions of our federal form of government. The decision-making processes at the local, state, national, and international levels are emphasized. The foundations of American government, the politics of American democracy, and constitutional rights and responsibilities are explored in depth. United States political and economic systems are compared to those of other nations, with emphasis on the relationships between economic and political freedoms. Economic content includes the United States market system, supply and demand, and the role of the government in the economy. Democratic values and citizen participation are stressed throughout the course.

MS231 AP ECONOMICS: MICROECONOMICS AND MACROECONOMICS
One Credit
The microeconomic component of the course will provide students with 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. The macroeconomic component of the course will provide students with the principles of economics that apply to an economic system as a whole. Such a course places particular emphasis on the study of national income and price determination, and also develops students' familiarity with economic performance measures, economic growth, and international economics.

MS025 HISTORICAL RESEARCH (RESEARCH/TECHNOLOGY)
One Credit
This course is designed to help students to extend and refine their previous research efforts to a higher level. Emphasis will be on producing high-quality research products in the field of historical analysis and preservation.

MS027 ADVANCED HISTORICAL RESEARCH (RESEARCH AND TECHNOLOGY)
One Credit
Students are exposed to a variety of research options and methods for acquiring data. They also experience a variety of technological means for presenting the outcome of their research. Some projects require extensive research that goes beyond the school year. EX: A student creating a website on the Virginia State Legislature would require the time to master web design, conduct research on the General Assembly, create and mail questionnaires, conduct interviews, process the information, create the finish product and finally conduct a presentation.

MS481 BIOETICS AND APPLIED ETHICAL ANALYSIS
One-half Credit
This course will emphasize analyzing the thinking and decision-making of all parties and stress show ethical reasoning forms the basis for all human decision-making. The course would be especially valuable for students wishing to pursue careers in medicine, public policy, scientific research and law. Bioethics will provide students with opportunities to apply ethical and moral thinking in real-world situations by examining, specifically, the ethics of medical research and medical practice, scientific studies on humans and animals, and the role of society and government to protect and govern the actions of its citizens.

MS482 PHILOSOPHY & ETHICAL REASONING
One-half credit
Students will explore various ways of thinking by examining and studying major themes in philosophy. Students will be introduced to diverse ways of examining human problems by reading and discussing major philosophic works from human history. Students will share, analyze and evaluate ideas and ethical reasoning perspectives and viewpoints, and be able to analyze problems and develop rational and ethical solutions considering multiple viewpoints. The course is especially valuable to students wishing to pursue careers in medicine, public policy, scientific research, and law.

MS316 INTEGRATED PRECALCULUS 1
One Credit
These three courses comprise a five-semester sequence and are followed by enrollment in MSM 328 Mathematical
Modeling. Using an integrated approach, these courses explore the following major topics in geometry, Algebra II, trigonometry, and mathematical analysis: functions (polynomial), rational, exponential, logarithmic, trigonometric), parametric, and polar graphing; matrices, sequences, and series; geometry in space; probability and statistics; and an introduction to calculus (limits and derivatives). To aid them in their scientific research, students also learn statistical analysis. Graphing calculators serve as tools for solving problems and allowing more in-depth study of math concepts. Students have many opportunities to apply new skills both within the curriculum and in conjunction with other classes, particularly science.

**MS317 INTEGRATED PRECALCULUS 2** One Credit
These three courses comprise a five-semester sequence and are followed by enrollment in MSM 328 Mathematical Modeling. Using an integrated approach, these courses explore the following major topics in geometry, Algebra II, trigonometry, and mathematical analysis: functions (polynomial), rational, exponential, logarithmic, trigonometric), parametric, and polar graphing; matrices, sequences, and series; geometry in space; probability and statistics; and an introduction to calculus (limits and derivatives). To aid them in their scientific research, students also learn statistical analysis. Graphing calculators serve as tools for solving problems and allowing more in-depth study of math concepts. Students have many opportunities to apply new skills both within the curriculum and in conjunction with other classes, particularly science.

**MS318 INTEGRATED PRECALCULUS 3** One-half Credit
These three courses comprise a five-semester sequence and are followed by enrollment in MSM 328 Mathematical Modeling. Using an integrated approach, these courses explore the following major topics in geometry, Algebra II, trigonometry, and mathematical analysis: functions (polynomial), rational, exponential, logarithmic, trigonometric), parametric, and polar graphing; matrices, sequences, and series; geometry in space; probability and statistics; and an introduction to calculus (limits and derivatives). To aid them in their scientific research, students also learn statistical analysis. Graphing calculators serve as tools for solving problems and allowing more in-depth study of math concepts. Students have many opportunities to apply new skills both within the curriculum and in conjunction with other classes, particularly science.

**MS322 ADVANCED PRECALCULUS 1** One Credit
These courses comprise a three-semester sequence of courses and are followed by MSM 328 Mathematical Modeling. These courses include advanced function analysis; parametric and polar graphing; matrices, sequences and series; probability and statistics; limits; and derivatives. Students explore, discover, and analyze in order to solve real-world problems. They are also expected to do independent research on an individual topic related to mathematics and to present their findings both in writing and orally.

**MS323 ADVANCED PRECALCULUS 2** One-half Credit
These courses comprise a three-semester sequence of courses and are followed by MSM 328 Mathematical Modeling. These courses include advanced function analysis; parametric and polar graphing; matrices, sequences and series; probability and statistics; limits; and derivatives. Students explore, discover, and analyze in order to solve real-world problems. They are also expected to do independent research on an individual topic related to mathematics and to present their findings both in writing and orally.

**MS328 MATHEMATICAL MODELING** One-half Credit
This semester course has two goals: to use mathematics to model a wide variety of real-world phenomena and to establish a firm foundation for calculus and future work in other fields of study. Some of the topics used for modeling are: function analysis, data analysis, matrices, and linear programming. Students are required to display, describe, interpret, transform, and model numerical data obtained from classroom calculator- Based Laboratory (CBL) experiments or from other research. By using a graphing calculator, students focus on mathematical concepts and structure rather than computation.

**DE329 ADVANCE MATH MODELING** One-half Credit
This course is dual-enrollment with John Tyler Community college and offered to Math/Science and Clover Hill students who have already completed AP Calculus BC in their previous year. Topics include learning process for modeling, methodology, modeling skills, differential equations in modeling, mathematics applied to other disciplines, especially biology, chemistry, physics and engineering, report writing and presentation skills.

**MS354 MULTIVARIATE CALCULUS** One-half Credit
This course presents vector-valued functions, partial derivatives, multiple integrals, matrices, vector spaces, determinants, solutions of systems of linear equations, basis and dimension, Eigen values, and Eigen vectors. This course is designed for mathematical, physical and engineering science programs. **Pre-requisites:** AP Calculus BC and Ordinary Differential Equations.

**MA361 AP CALCULUS AB** One Credit
Advanced Placement Calculus AB explores the topics of limits/continuity, derivatives, and integrals. These ideas are examined using a multi-layered approach including the verbal, numerical, analytical, and graphical analysis of polynomial, rational, trigonometric, exponential, and logarithmic functions and their inverses. The student will be
expected to relate the connections among these approaches. Students will also be required to synthesize knowledge of the topics of the course to solve applications that model physical, social and/or economic situations. These applications should emphasize derivatives as rates of change, local linear approximations, optimizations and curve analysis, and integrals as Riemann sums, area of regions, volume of solids with known cross sections, average value of functions, and rectilinear motions. Teachers should consult (yearly) the AP Board for changes in curriculum and emphasis of particular topics. As mandated by the College Board, graphing calculators will be required. College credit and/or advanced placement in college is available to those students receiving a qualifying score on the Advanced Placement Examination.

**MA362 AP CALCULUS BC** One Credit
BC Calculus is intended for students who have a thorough knowledge of analytic geometry and elementary functions in addition to college preparatory algebra, geometry, and trigonometry. Although all of the elements of the Advanced Placement Calculus AB course are included, it provides a more rigorous treatment of these introductory calculus topics. The course also includes the development of the additional topics required by the College Entrance Examination Board in its syllabus for Advanced Placement Calculus BC. Among these are parametric, polar, and vector functions; the rigorous definition of limit; advanced integration techniques; Simpson’s Rule; length of curves; improper integrals; Hooke’s Law; and the study of sequences and series. The use of the graphing calculator will be fully integrated into instruction and students will be called upon to confirm and interpret results of problem situations that are solved using available technology. College credit and/or advanced placement in college is available to those students receiving a qualifying score on the Advanced Placement Examination.

**MA368 LINEAR ALGEBRA** One Credit
This course begins with practice in writing proofs, set theory, and number theory. Specific topics include set operation, equivalence relations, math induction, and the Fundamental Theorem of Arithmetic. This course also includes the study of abstract vector spaces, linear transformations, algorithms for solving systems of linear equations, matrix analysis, the theory of Eigen values and Eigen vectors, and the Jordan canonical form of matrices. Using calculators and computers extensively, applications of linear algebra to a variety of disciplines are emphasized.

**DE363 DIFFERENTIAL EQUATIONS** One-half Credit (JTCC 4 Credits)
Introduces ordinary differential equations. Includes first order differential equations, second and higher order ordinary differential equations with application. Designed for mathematical, physical, and engineering science programs. Prerequisite: AP Calculus BC

**MS377 COMPUTER PROGRAMMING JAVA** One Credit
Java introduces programming for an objected oriented, portable, robust, secure, high-performance, platform independent distributed development environment. Students receive in-depth exposure to this computer language and terminology and opportunities to apply the concepts presented to realistic problem-solving situations presented in the advanced placement curriculum. This accelerated course provides the necessary background for students to successfully pursue Advanced Placement Computer Science JAVA AB. Additional emphasis is placed upon computer ethics and responsible use of hardware and software components. Pre-requisite: Co-requisite: MA40 Algebra 2 and teacher recommendation.

**MS430 BIOLOGY** One Credit
Honors biology is a laboratory-based course which encompasses research design concepts introduced in the middle school. Core content will include interrelationships in ecosystems, taxonomy, cellular chemistry, genetics, microbiology, and physiology. These areas are developed within a framework of the principal biological theories with an emphasis on critical thinking and science process skills. Class team research projects will be developed using descriptive statistics techniques.

**MS440 CHEMISTRY** One Credit
This inquiry-based laboratory course is comprehensive survey of inorganic and physical chemistry. The course will emphasize problem solving and provide a thorough foundation for the college-bound student, emphasizing a quantitative approach. In addition to learning the concepts of chemistry, students will spend the majority of their time on applying their knowledge to new situations and analyzing and evaluating chemistry data. Students in this course will continue to learn and practice the skills of experimental design. Research projects will be completed by small teams of students involving the use of inferential statistics as part of data analysis.

**MS555 M/S AP PHYSICS 1** One Credit
This is a college preparatory course with emphasis on the analytic treatment of content, which will include kinematics, dynamics, Newtonian mechanics, conservation laws, kinetic molecular theory, waves, and the electromagnetic spectrum. Students are required to complete an individual research paper using appropriate techniques of statistical analysis introduced in the student’s prior science experiences. Keyboarding skills and/or computer skills are highly recommended. This course is primarily recommended for students planning to major in math or science at the college level.
MS469 AP PHYSICS C  One Credit
This course is designed to be equivalent to a freshman college physics course for students planning to major in engineering or physics. It is an intensive and rigorous survey of physical properties. This course surveys the topics in mechanics, and electricity and magnetism with approximately equal emphasis on these two areas. Strong emphasis is placed on solving a variety of challenging problems, requiring calculus. Weekly time equivalent to three hours lecture and four hours laboratory is required. Students will be prepared to sit for the AP Physics C test.

MS476 ORGANIC CHEMISTRY 1  One-half Credit
This course provides students with an opportunity to learn about a selected area of chemistry in greater depth. Students learn about all the major families of organic compounds and their reactions. Students also spend time studying polymer chemistry. The course is based primarily on student labs and projects.

MS477 ORGANIC CHEMISTRY 2  One-half Credit
This course allows students to make a detailed study of some applications of organic chemistry. Students learn how to use their creativity and background knowledge in the design of organic syntheses and in organic structure determination. The course also includes numerous applications of organic chemistry in biochemistry. Like Organic Chemistry 1, this course is based primarily on student labs and projects.

DE463 INTRO TO MICROBIOLOGY  One-half Credit
Studies the general characteristics of microorganisms. Emphasizes their relationships to individual and community health. Students interested in biology can further their understanding and academic discovery in microorganisms. Prerequisite: Honors chemistry and biology.

DE445 FIELD BIOLOGY  One Credit
Studies the general characteristics of microorganisms. Emphasizes their relationships to individual and community health. Students interested in biology can further their understanding and academic discovery in microorganisms. Prerequisite: Honors chemistry and biology.

DE811 ENGINEERING 1  One-half Credit
This course introduces the student to the engineering profession, including professional concepts, ethics, and responsibility. Students are introduced to engineering problem solving, and graphic techniques. Students are taught concepts of stress, strain, deformation, internal equilibrium, and basic properties of engineering materials. Analyzes axial loads, torsion, bending shear and combined loading. Studies stress transformation and principle stresses, column analysis and energy principles.

DE812 ENGINEERING 2  One-half Credit
This course introduces the mechanics of vector forces and space, scalar mass and time, including S. I. and U. S. customary units. Students are taught equilibrium, free body diagrams, movements of inertia and analysts of two-force and multi-force members.

MS026 SCIENTIFIC RESEARCH  One Credit
Students will conduct an independent research project and present it at a research competition. Students will also plan and execute a research symposium at the high school and document their experiences on a web page for the school. Students will also partner with VCU in an exploration of viral diversity.

MS463 INTRO TO MICROBIOLOGY  One-half Credit
Studies the general characteristics of microorganisms. Emphasizes their relationships to individual and community health. Students interested in biology can further their understanding and academic discovery in microorganisms. Prerequisite: Honors chemistry and biology.

MS920 ART EXPLORATION: AESTHETICS AND HISTORY  Prehistory to Middle Ages  One Credit
Students will study and experience a select number of major periods of art and the history and aesthetics associated with them. This course is intended for both art students and non-art students. Students will be engaged in Socratic discussion, studio work and the analysis of cultural expression. Students will gain an appreciation of art and the histories and cultures that create it. Students will learn how to discuss major issues in art and aesthetics. Students will gain insight of innovations and techniques through the studio experience.

MS921 ART EXPLORATION: AESTHETICS AND HISTORY  Renaissance to Modern  One Credit
Students will study and experience a select number of major periods of art and the history and aesthetics associated with them. This course is intended for both art students and non-art students. Students will be engaged in Socratic discussion, studio work and the analysis of cultural expression. Students will gain an appreciation of art and the histories and cultures that create it. Students will learn how to discuss major issues in art and aesthetics. Students will gain insight of innovations and techniques through the studio experience.
MS942  COMPUTER ART AND GRAPHICS 2  One Credit
This course will continue the knowledge gained from Computer Art and Graphics 1. Students will further their studies by using the computer as an art form and exploring multimedia and 3-D design. Computer Art and Graphics 2 is intended to prepare students for a future in the technology arts by exposing them to diverse creative opportunities with sophisticated hardware and software. Students will learn how to use technology as a means to achieve a creative end and appreciate the computer as a viable art form.

MS945  MATHEMATICS OF THE ARTS  One Credit
This course will give students the opportunity to extend and strengthen skills learned in Algebra and Geometry courses through applications in the arts. Students will have opportunities to observe how mathematics are integrally related to music and the performing arts, visual arts including architecture, ceramics, drawing, photography, printmaking, and sculpture. The intent of this course is to provide a mathematics-enriched elective to enhance the mathematics skills of students who have fulfilled graduation requirements and to encourage students to continue the pursuit of mathematics. Clover Hill High School only

Clover Hill High School
13301 Kelly Green Lane
Midlothian, Virginia 23112
(804) 739-6230

Dr. Deborah Marks, Principal
Sloan Burns, Specialty Center Coordinator
The Center for Spanish Immersion (El Centro de Immersion Espanola) at Manchester High School provides highly motivated students the opportunity to participate in an intensive program where selected core classes are taught in Spanish. They will emerge highly proficient in Spanish. Successful students will develop in-depth insights and abilities in Spanish. They may additionally qualify for Advanced Placement credit at the university level and receive special acknowledgment on their transcripts and diplomas.

- Provision for a nurturing environment and a faculty with a high level of proficiency
- Twelve interdisciplinary immersion classes taught over the course of four years by a well-trained faculty in a supportive environment
- State-of-the-art multi-media center with language learning activities, Internet access, and other technology necessary to succeed in the 21st century
- Dual enrollment options with local colleges and universities and mentoring activities within the corporate community
- Innovative opportunities for greater cultural awareness through travel, field trips and special programs
- Access to electives and student activities in a comprehensive high school

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*Number and choice of Immersion math classes determined by student placement (advanced math students may waive math and replace the courses with another Immersion course.)

** Field experiences - One or more summer experiences determined by instructor
SI011 SPANISH THROUGH THE MEDIA One-half Credit
Students will amplify their ability to interpret current topics of interest to people in the Spanish-speaking community, both here and abroad. Students will be able to analyze and interpret current issues in the Hispanic world. A wide variety of materials will be used, both print and streaming. Pre-requisites: Immersion III

SI012 SPANISH VIA THE INTERNET One-half Credit
Students will learn practical skills and explore topics of current interest in various Spanish-speaking countries. Examples of skills taught include: web page construction, analysis of media aimed at both English-speaking and Spanish-speaking audiences in the United States and beyond, creation of ads for a Spanish-speaking audience, and creation of CVs and resumes. Pre-requisites: Immersion III

SI045 SPANISH IMMERSION FIELD EXPERIENCE 1 One Credit
This course is designed for Immersion students who are participating in additional study of community-based experiences. Experiences may include pre-approved international immersion study, pre-approved domestic immersion study, internships and concurrent enrollment in one of the County's work-study programs.

SI169 SPANISH CULTURE AND LANGUAGE THROUGH FILM One Credit
“Spanish Culture and Language through Film” is an Immersion elective which will expand the students’ knowledge and appreciation of the language and culture while studying the films of various Spanish-speaking countries. The films chosen represent various Hispanic countries, which enables the students to observe daily life in these countries and compare it with their own life. Multiple genres are presented, and the themes of the movies vary greatly to cover information such as current issues in the Hispanic world, significant historical events, and the lives of famous Hispanics. This class will be conducted entirely in Spanish.

SI210 WORLD HISTORY/GEOGRAPHY 1500 A.D. TO THE PRESENT One Credit
Students in World History/World Geography 1400's to the present will build on the basic historical, geographic, political, and economic concepts presented to them in the first year of the program. The diversity of culture and the evolution of human history will be explored chronologically and geographically from the late Middle Ages to the present. Geographical concepts will be incorporated within the context of world historical events. Students will examine the development of the world's major political, economic, and legal systems; artistic and literary movements; technological changes; trade patterns; religions; and the influential people of history. Special emphasis will be given to the five themes of geography as they relate to regional conflicts, humanity's relationships with the environment, and the foundation of democratic principles, such as citizenship. Hands-on activities and the use of available technology will be an integral part of this course. Students will critique analytical essays and continue to learn the research writing process. This course stresses complex critical thinking and problem solving. This class will be taught entirely in Spanish.

SI221 SERVICE LEARNING One Credit
This course affords students the opportunity to apply their Spanish language skills in practical, community-based situations. Career exploration in fields that utilize their language skills will take place via online research and projects, and community-based service learning at local elementary and middle schools.

SI250 SPANISH IMMERSION HUMANITIES 1 One Credit
This course is an introduction to humanistic studies of the Spanish-speaking world. The course integrates areas of human endeavors and achievement in history, literature, philosophy, science, math and the fine arts from medieval times through the 18th century. Connections will be made to concerns and influences between the Spanish-speaking world and other cultures during the same period of time. The class will focus on the skills needed for critical thinking, reading, evaluating discussion techniques, and research techniques. This class will be taught entirely in Spanish. The class will focus on the skills needed for critical thinking, reading, evaluating discussion techniques, and research techniques.

SI251 SPANISH IMMERSION HUMANITIES 2 One Credit
This course focuses on Latin America and Spain during the nineteenth, twentieth and twenty-first centuries. Focus will be on various themes including: the role of Family, the role of Urbanization and the role of Ethnicity, literature, art, music, philosophy and history of the Western Hemisphere. This course is taught entirely in Spanish.

SI330 GEOMETRY One Credit
The Honors Geometry course is a unified study of plane, solid, and coordinate geometry. The curriculum includes the study of lines, planes, congruencies, geometric inequalities, perpendicularity of lines and planes, polygons, polyhedral, area, volume, similarity, coordinate and transformational geometry, circles, and spheres. Every effort is made to incorporate advanced technology into the curriculum through the use of calculators and computers. The intent of this course is to frame a curriculum that ensures the development of broad mathematical power and which cultivates students’ abilities to explore, conjecture, reason logically, formulate and solve
problems, and communicate mathematically. This course will be taught entirely in Spanish.

SI340 ALGEBRA 2

One Credit
Algebra 2 extends the concepts that students have encountered in previous coursework and provides a thorough treatment of advanced algebraic concepts. Emphasis will be placed on practical applications, logic of procedures, and interpretation of results. Graphing calculators and computers will enhance the students' understanding. Students will be expected to communicate and practice mathematical ideas appropriately. **Pre-requisites: SI330 Geometry**

SI342 ALGEBRA2/TRIGONOMETRY

One Credit
"Algebra 2/Trigonometry extends the concepts that students have encountered in Algebra I and Geometry. A problem solving focus allows students to connect their prior mathematical knowledge to more advanced topics. Emphasis is placed on the foundation of real numbers and underlying procedures used to solve a variety of open sentences. Graphical representations which relate algebra to geometry are integral to the program. Function concepts are extended to include polynomial, exponential, and logarithmic functions. Development of the complex number system allows students to gain greater insight into graphical analysis. Introductions to sequences and series, probability, and elementary counting principles assist students as they prepare for the Scholastic Assessment Tests. Instructional activities which require students to use calculators for problem solving further enhance the Algebra II experience. This course will be taught entirely in Spanish."

SI542 SPANISH IMMERSION 1

One Credit
Students will continue to develop the linguistic skills of listening, speaking, reading, and writing at an accelerated pace. They will integrate new and previously learned material to communicate original thoughts and expression. Through a variety of communicative exercises, students will continue to develop proficiency and the ability to express themselves. Language skills will be augmented through linguistic and cultural connections with other classes. Students will attain these skills essential to content courses taught in the Immersion program. The course also includes beyond-the-classroom activities and opportunities to put into practice what already has been learned. They will combine linguistic skills with an expanded opportunity for self-expression and to demonstrate other talents. This course will be taught entirely in Spanish.

SI543 SPANISH IMMERSION 2

One Credit
Students will continue to improve their linguistic skills at an accelerated pace. They will enhance their ability to manipulate the language at a more advanced level by expressing opinions and preferences, giving advice, negotiating, and persuading. Individual interests and talents are encouraged through increased opportunities for peer- and self-assessment and by simulating real-life situations in Spanish. Language skills will be augmented through linguistic and cultural connections with other classes. Students will attain skills in listening, speaking, reading, and writing essential to content courses taught in Spanish. The course also includes beyond the- classroom activities and opportunities to put into practice what already has been learned. Students will combine linguistic skills with an expanded opportunity for self-expression and to demonstrate other talents. This course will be taught entirely in Spanish.

SI544 SPANISH IMMERSION 3-AP LANGUAGE

One Credit
This course is part of a four-year program that provides students an opportunity to significantly increase the breadth and depth of their second language acquisition. In addition to an accelerated pace and a greater appreciation for diverse cultures, this program offers enhanced technology opportunities. This course will prepare students to take the AP Language exam. This course is taught entirely in Spanish.

SI545 SPANISH IMMERSION 4-AP LITERATURE

One Credit
Students will read and analyze a variety of genres in preparation for the AP Literature course. This class is the equivalent of a third year college Intro to Literature course, and covers works from the literature of both Spain and Latin America. At the end of this course, students will be able to function at the level of a student who is finishing their fifth or sixth semester of language study at the college level. This final language course is the culmination of the four-year program. This course will be taught entirely in Spanish.

SI709 HEALTH AND PHYSICAL EDUCATION 9

One Credit
This course is designed for students to apply current health information towards making healthy decisions. The content focuses on nutrition, health fitness, prevention of drug abuse, caring for self and others, and family life education. In physical education emphasis is placed on students becoming confident and competent in performing lifetime physical activities and in participating regularly in physical activity. Fitness experiences and individual fitness assessments are integrated throughout the year. This course will be taught entirely in Spanish.
Manchester High School
12601 Bailey Bridge Road
Midlothian, Virginia  23112
(804) 739-6275

Peter Koste, Principal
Kristal McIntire, Specialty Center Coordinator
Opening in September 2007, the Health Science Specialty Center seeks students from a broad range of ability levels wanting to prepare for careers in the healthcare industry. An AFT Healthcare Survey reports, “The [healthcare] system faces a widespread crisis in terms of hiring an adequate number of professionals to meet needs of patients.”

Beginning in their first year, students will explore career choices within the healthcare system. Students will also experience some of the practical applications of healthcare, such as becoming CPR certified and learning about the legal aspects of the industry. As students progress through the program, they will be offered opportunities for internships and mentorships with local healthcare providers, such as hospitals, retirement communities, and even local doctor’s offices. Students will be guided as they select a career pathway to pursue while at the Health Sciences Center. Upper-level classes will be geared toward one of the following career pathways.

### Health Science--Proposed Course Sequence

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| Health Science Biology  
Algebra 1 or 2  
Health Science English 9  
World History 1  
World Language  
Health & Physical Ed 9  
Elective  
Or  
Health Science Exploration 1  
20 hours of Community Service PER year | Health Science Chemistry  
Geometry  
Health Science English 10  
World History 2  
World Language  
Health & Physical Ed 10  
Elective  
Or  
Health Science Exploration 1  
Or  
Health Science Exploration 2  
Or  
Health Science Elective  
20 hours of Community Service PER year | Physics  
Trig Analysis or Adv. Alg/Trig  
US History  
World Language  
Elective  
Health Science Exploration 2  
Or  
Health Science Elective  
20 hours of Community Service PER year | AP Biology or AP Chemistry  
Calculus or College Algebra  
US Government  
Elective  
Health Science Elective  
20 hours of Community Service PER year |

**Career Pathway 1** is designed for students seeking employment or a training program after high school. Examples of career in this pathway include certified coding specialist, home health aide, emergency medical technician, and pharmacy technician.

**Career Pathway 2** is designed for students who will need to further their education, perhaps with an associate’s degree from a community college or technical school and some classes for industry certification. Examples of occupations in this pathway include clinical lab technician, dental hygienist, respiratory therapist, and optician.

**Career Pathway 3** is designed for students who wish to pursue a four-year college degree and possibly a professional degree. Examples of professions in this pathway include dentist, pharmacist, nurse anesthetist, and physician.

**Program Highlights**
- Partnerships with local hospitals, community colleges, and universities, as well as other healthcare-based organizations
- Lab-based, practical and clinical applications
- Opportunities for shadowing, internships and/or mentorships
- Career guidance for health occupations
- Tours of medical/clinical sites
- Health career fairs and institutes
- Guest lectures
- Advanced Placement and dual enrollment courses
CENTER OBJECTIVES
Students who would participate in the center will be able to:
- Make health career decisions suited to their needs, aptitudes, abilities and career objectives.
- Develop a foundation of knowledge and skills that supports advanced education or entry-level employment in a health career, including
  - Science and mathematics
  - Communication
  - Teamwork
  - Professional behavior and ethics
  - Analysis and problem-solving
HS010 HEALTH SCIENCE EXPLORATION 2 HONORS One Credit
Health Science Exploration II is the second overview course for all health science specialty center students. This course will provide an overview of health care careers and serve as an exposure course for health care domains such as medical privacy practices (HIPPA), medical jargon, health care safety procedures, medical math (dosage conversions), ethics, technology in medicine, forensic medicine, cell biology and cancer, and organ transplants.

HS020 INTRODUCTION TO PATIENT CARE One Credit
The purpose of Introduction to Patient Assessment is to teach all prospective health care workers how to assess a patient, both physically and through proper interview skills. Additionally, students will learn how to document said histories and properly record data in charts as well as the use of forms, directives, etc.  Pre-requisite: Current Science Teacher Recommendation, HS430 or SC430 and HS440 or SC440

HS090 HEALTH SCIENCE EXPLORATION 1 HONORS One Credit
Health Science Exploration I is an overview course for all health science specialty center students. This course will provide an overview of health care careers and serve as an exposure course for health care domains such medical privacy practices (HIPPA), medical jargon, health care safety procedures, medical math (dosage conversions), ethics, etc.

HS109 ENGLISH 9 One Credit
HS English 9 advances the study of written and spoken communication skills. Literature study emphasizes genre and the understanding of literary terms and vocabulary. Students will study health science related novels as part of their literature analysis.

HS109 ENGLISH HONORS One Credit
HS English 9 Honors is a study of nonfiction, mythology, and an introduction to classical literature with a focus on the health sciences as part of their coursework. Students study Homer, Shakespeare, Dickens, Buck, Twain, and a variety of other authors in various genre such as the short story, the novel, drama, and poetry. Students analyze literary texts, determine relationships between form and content, and go beyond an emotional reaction to an intellectual response. Students read critically, asking pertinent questions about what they have read, recognizing assumptions and implications, and evaluating ideas. This course also concentrates on expository writing, literary analysis, and oral communication skills. Students draw conclusions, appraise, and speculate independently about the elements of literature.

HS110 ENGLISH 10 One Credit
English 10 stresses refinement of skills with emphasis on effective written and oral communications. Literature emphasizes character motivation and human relations through the study of American literature. Additionally, students will study technical writing and will learn to research topics using A.P.A. documentation.

HS110 ENGLISH 10 HONORS One Credit
Literal selections of English 10 Honors include Thoreau, Hawthorne, Melville, Cather, Twain, Faulkner, Fitzgerald, and others. Students will explore various writing techniques and styles with a specific focus on technical writing in the health care field. These techniques will be used in their own expository, persuasive, and creative writings. Critiquing literary works is a major focus at this level. The fundamental elements of research will be applied directly to written and oral communications. Knowledge will be evident through oral presentations, written reports, analyses, and small/large group discussions. Additionally, students will be asked to use A.P.A. documentation as they research various topics for their discussions, presentations, and projects.

HS430 BIOLOGY One Credit
Health Science Biology, the study of living things, is a laboratory course designed with a focus on health science, which includes the following major areas of study: experimental design, chemistry, cells, genetics, viruses, monerans, protists, fungi, plants, animals, the human body, classification, evolution, and ecology. These areas are developed within the framework of the principal biological theories with an emphasis on critical thinking and science process skills and a focus on the relationships with human health care. If dissections are conducted in class, alternatives will be provided for students that request them.

HS430 BIOLOGY HONORS One Credit
Health Science Honors Biology is a laboratory-based course which encompasses research design concepts introduced in the middle school. Core content will include interrelationships in ecosystems, taxonomy, cellular chemistry, genetics, microbiology, and physiology, with a specific focus on human biology. These areas are developed within a framework of the principal biological theories with an emphasis on critical thinking and science process skills and a focus on the relationships with human health care. Class team research projects will be developed using descriptive statistics techniques. If dissections are conducted in class, alternatives will be provided for students that request them.
Nutrition bombards us wherever we look. Turn on the television news, glance at the magazine headlines, and you will see nutrition is one of the hottest topics. There is so much information on various diet plans, foods that prevent disease and health ailments. This course is designed to build a solid foundation in the basic principles and concepts of good nutrition. The course will clarify nutrition misconceptions and help build a healthy lifestyle through nutritional awareness. **Current Science Teacher Recommendation, HS430 or SC430 and HS440 or SC440**

**HS464 CELL BIOLOGY AND PATHOLOGY Honors/Semester** One-half Credit

Cell biology, the study of cells and their functions, is a laboratory and research based course leading to the student’s ability to understand the structures and functions of the cell. At the conclusion of the unit, the student will be able to differentiate between cell types and become aware of the concept “form follows function.” Pathology, the study of the nature of disease, is a laboratory and research based unit, including the causes, processes and consequences of disease. These areas are developed by the use of cell biology and pathology concepts with an emphasis on critical thinking and scientific processing skills. **Current Science Teacher Recommendation, HS430 or SC430 and HS440 or SC440**

**HS465 PSYCHOBIOLOGY** One Credit

Psychobiology is the subarea of psychology that takes a biological approach to understanding behavior. Psychobiologists study the biological events –genetics, neural, endocrine-that underlie each and every one of our thoughts, feelings, and actions. Research in this area focuses on the relationship between brain and behavior but often extends to physiological processes elsewhere in the body (e.g. stomach, glands). This course will introduce you to the methods Psychobiologists employ to investigate the biological underpinnings of behavior. It will explore what is currently known about the biological basis of emotional responses, mental illness, gender-specific behavior, memory, states of consciousness, sensory perception, thought and language, and several neurological disorders. Students will also receive the groundwork necessary to continue pursuing a career as a Polysomnography Technician. **Pre-requisite: Biology (SC430), Chemistry (SC440), and current science teacher’s recommendation.**

**HS471 PHARMACY TECHNICIAN I** One Credit

The US department of Labor projects more than 28,000 Pharmacy Technician jobs over the next 10 years. The Pharmacy Technician works under the supervision of the Pharmacist performing traditional pharmacist functions, specifically in drug distribution, inventory management, pharmacy administration and serving patients. This course will cover the following topics: basic medical terminology, human diseases, some alternative medicine, drug classifications, HIPAA, history of pharmacy, body systems and their drug interactions, prescription processing and dosage calculation, as well as essentials of pharmacy practice. **Pre-
requisite: Biology (SC430), Chemistry (SC440), and current science teacher’s recommendation.

**HS480  MEDICAL LAW AND ETHICS Semester**

One-half Credit

Medical Law and Ethics is an elective course in Social Studies for all health science specialty center students. This course will provide an overview of health care ethics and laws that apply throughout the medical profession. It will provide the students with a solid base for understanding current laws and ethics in the field of medicine as they relate to the medical practitioners and patients. **Pre-requisites:** Current social Studies Teacher Recommendation and SS209, SS210 or SS216

**HS540  SPANISH FOR HEALTH CARE WORKERS Semester**

One-half Credit

This course is designed for students who want to learn basic phrases in Spanish as related to daily activities in medical fields. The course activities include dialogues related to specific tasks (e.g. assessing medical history, assessing health risks, making appointments, etc.). Students will also learn basic grammar and vocabulary. Another aspect of this course will be to make the students aware of the cultural differences of Hispanic patients and their backgrounds. Students will be able to experience extracurricular activities as well as interact and contribute to the community. **Pre-requisites:** HS430 or SC430 and HS440 or SC440

**HS921  ANATOMY AND DRAWING**

One Credit

Anatomy and Drawing is a year-long class in drawing designed to develop skills that are valuable in the medical illustration field. A variety of drawing media will be employed such as graphite, charcoal, pen and ink and conte’. Drawings will be informed by studies in science and anatomy skill and precision are the focus of the class. Lab fee is required. **Pre-requisite:** HS430 or SC430

**HS946  EMT-BASIC I**

One Credit

This course will provide instruction in basic life support and physical assessment. This course will introduce role and responsibilities of the emergency medical technician/ambulance. Topics will also include emergency operations, anatomy and physiology, bleeding, shock, fractures and dislocations, abdominal and chest injuries. This course would be required for certification as a Virginia EMT-B. Students will be REQUIRED to sit for the EMT-B Certification Exam in May as well as participate in clinical in conjunction with the local volunteer rescue squads. **Pre-requisites:** Biology (SC430 or HS430), Chemistry (SC440 or HS440), successful completion of C.P.R. for Health Care, 16 years of age when the course starts, and application (screened by specialty center coordinator)

**HS947  EMT HONORS**

One Credit

Cosby High School
14300 Fox Club Parkway
Midlothian, VA  23112

Dr. Brenda Mayo, Principal
Cassandra Rogers, Specialty Center Coordinator
The Meadowbrook Academy for Digital Entrepreneurship is designed to prepare students not only to start their own businesses, but also to prepare them for careers in a competitive 21st century economy. This program will expose students to the ideas, lessons, and experiences that guide modern entrepreneurship. Students will mimic the same process many founders use when developing startup concepts, from idea generation and acceleration to finally execution. Students will have the opportunity to work alongside experts and mentors from the local, regional, and statewide entrepreneurial and higher educational communities. Students who enter the program will participate in a mentorship program with local business leaders and will develop their own businesses as a capstone project to pitch to a board of investors. Students who graduate from the program will apply the skills and knowledge necessary to be successful in the entrepreneurial ecosystem, as well as have the opportunity to obtain in demand industry certifications, including certification in project management.

- A rigorous four year program which will expose students to skills necessary to start and run their own businesses.
- A curriculum which will expose students to various fields related to business and technology including marketing, management, web design, and 21st century business trends.
- An emphasis on emerging technologies in the fields of innovation and business, which will allow students to use technology to enhance their understanding of modern entrepreneurship.
- An opportunity to work along local leaders in business, technology, and higher education including a mentorship program during the junior and senior years.
- A capstone project, which will allow students to plan, implement, and pitch their own business concepts to local business owners and investors.
- A newly renovated section of the school including some of the most unique classrooms and technologies found in Chesterfield County.

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<tr>
<td>MADE English 9 (H)</td>
<td>MADE English 10(H)</td>
<td>English 11 (H) or AP Eng. Language</td>
<td>English 12(H) or AP English Literature</td>
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<tr>
<td>Earth Science</td>
<td>Biology</td>
<td>Chemistry</td>
<td>Physics or AP Science</td>
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<tr>
<td>World History I* or AP Human Geography</td>
<td>World History II* or AP World History</td>
<td>US History* or AP US History</td>
<td>US Government* or AP US Government</td>
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<td>Geometry</td>
<td>Algebra 2</td>
<td>Trig Analysis or Adv. Alg/Trig</td>
<td>Probability and Statistics or AP Stat or AP Calculus</td>
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<td>World Language 1</td>
<td>World Language 2</td>
<td>World Language 3</td>
<td>MADE Elective</td>
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<tr>
<td>Health and PE 9*</td>
<td>Health and PE 10*</td>
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Notes:
Elective choices may vary based on student interest, availability, and changes in trends in the entrepreneurial world.
*Courses may be taken online or in summer school for additional program flexibility.
**Required specialty center course where students will also begin 60 hour mentorship in the field to be completed by end of Senior year.
^Seniors will complete a capstone project where they will execute a startup concept.
MADE ENGLISH 9 HONORS One Credit
MADE English 9 Honors is a study of nonfiction, mythology, and an introduction to classical literature. Students study Homer, Shakespeare, Dickens, Buck, Twain, and a variety of other authors in various genre such as the short story, the novel, drama, and poetry. Students analyze literary texts, determine relationships between form and content, and go beyond an emotional reaction to an intellectual response. Students read critically, asking pertinent questions about what they have read, recognizing assumptions and implications, and evaluating ideas. This course also concentrates on expository writing, literary analysis, and oral communication skills. Students draw conclusions, appraise, and speculate independently about the elements of literature. Many of the nonfiction selections in the course will also have elements of themes learned in eCommerce Exploration, and select writing assignments will correlate with course material in eCommerce Exploration as well.

ME110 HONORS ENGLISH 10 One Credit
The Honors English 10 course focuses on developing the students’ critical and analytical language skills. There are seven units in the course. The first unit of study concentrates on the elements of writing, grammar skills, and the establishment of a writing portfolio. The second unit of study provides students with a framework for reading literature from an ancient or foreign culture, and prepares them to recognize and appreciate thematic and archetypal connections.

ME501 HONORS IDEA GENERATION 101 One Credit
This course, Idea generation, is dedicated to helping the student identify opportunities for a new business venture by either deciding on one idea they have or helping to create ideas. The course starts with recognizing various ways to come up with a new idea and by the end of their senior year the goal is to outline a plan to take the idea to reality.

ME502 HONORS IDEA ACCELERATION One Credit
Idea Acceleration exposes students to the various models and strategies that will allow students to take ideas and "accelerate" them to potentially stable and sustainable business models. Through studying various case studies in startup creation, insight from industry professionals and experimentation students will develop a sound base of a business concept and a "Minimal Viable Product" by the end of the course to be shown off at an entrepreneurial expo and to be further developed in Idea Execution. Students will also begin their required 60 hour mentor-ship in this course to be completed in Idea Execution.

HONORS IDEA EXECUTION One Credit
From the principles established in Idea Generation 101 and Idea Acceleration, teams with hopeful investment, will learn how to manage a small startup based on their own concept developed in Idea Acceleration. Students will have the opportunity to run the day to day operations and become fully integrated as an entrepreneur. Students will also be expected to complete a 60 hour mentorship as part of this course with mentors who will help to guide them in the right direction towards being a successful startup. Students will also continue to advance on skills in marketing, advertising, finance, and continual innovation as it relates to their startup. In addition this course will also focus on exposing students to various opportunities to pursue entrepreneurship after high school in both the business and higher educational world.

ME612 HONORS ECONOMICS AND PERSONAL FINANCE One Credit
Students learn how economies and markets operate and how the United States economy is interconnected with the global economy. Additionally they learn how to navigate the financial decisions they must face and to make informed decisions relating to career exploration, budgeting, banking, credit, insurance, spending, financing post-secondary education, taxes, saving and investing, buying/leasing a vehicle, and living independently. They also learn the importance of investing in themselves in order to gain the knowledge and skills valued in the marketplace. Development of financial literacy skills and an understanding of economic principles will provide the basis for responsible citizenship, more effective participation in the workforce, and career success.

DESIGN FOR MOBILE AND WEB TECHNOLOGIES One Credit
Designed for students who are interested and mobile and web design, students will learn the necessary skills that are required to create and maintain websites, applications, and mobile technologies. Students will learn how to use various design digital materials that could be used to enhance or optimize potential businesses. Students will learn technologies that can help in maintaining information on their businesses create advertising materials, target potential markets, among others. Students who complete this course will have the ability to create a website using various sources, as well as have a basic understanding of how mobile and web technologies are helping to enhance and push the modern economy.

DIGITAL MARKETING One Credit
Emphasis in this marketing course will be on using emerging technologies to enhance the marketing skills of students. With an emphasis on data analysis and web analytic tools
such as Google Analytics, students will learn how they can use various tools to find potential markets for their products and services. Students receive an introduction to marketing functions and the business plan and study Internet marketing’s role in the global economy. They explore ethical, legal, and security aspects and prepare for a career in Digital marketing. Academic skills (mathematics, science, English, and history/social science) related to the content are a part of this course. Computer/technology applications supporting this course are studied.

FINANCIAL PLANNING FOR BUSINESS One Credit
Financial planning for business emphasizes the accounting and management skills necessary to responsibly run and maintain a business. Students will learn how to plan, manage, and analyze the financial and monetary aspects and performance of business enterprises. Students will also learn skills necessary to seek out investors in upstart businesses, as well as current crowdfunding sources that many small businesses are using to get off the ground floor. Students will learn from various outside sources in the banking and business to enhance their understanding of how to plan financially for venture businesses.

HONORS BUSINESS MANAGEMENT Semester Course
Students in this course will study and understand the basic management concepts and leadership styles necessary to be a successful entrepreneur. Students will explore topics such as business ownership and planning in the 21st century economy, economics, global business and human relations issues such as employee motivation and conflict resolution. In addition, students will explore the benefits and challenges modern technology has provided in management and human relations. Students will also enhance their leadership skills throughout this course.

BUSINESS LAW AND ETHICS Semester Course
Students will review concepts related to the legal aspects of running and maintaining a business. Students will better understand the relationship between the government in business. In addition, students will help to better understand personal and business law, consumer law, consumer rights, legal terminology, civil rights, etc. Students will also be introduced to ethical situations which business owners and employees face on a daily basis. Through the use of case studies and guest speakers, students will be forced to think critically to come up with solutions to ethical situations related to business.

Meadowbrook High School
4901 Cogbill Rd.
Richmond, VA 23234
804-743-3675

Andrew Mey, Principal
Joseph Farrell, Specialty Center Coordinator
Chesterfield Technical Center Offerings
Courthouse and Hull Street Campuses

Chesterfield County Public Schools’ Technical Center campuses offer one- and two-year courses in skill-based programs to all Chesterfield County juniors and seniors. All technical center programs lead to a license or credential upon successful completion. The courses listed are grouped into the Career and Technical Education Career Clusters.

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<th>BUSINESS MGT. &amp; ADMINISTRATION</th>
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<td>• Environmental Biotechnologies</td>
<td>• Advanced CAD &amp; Modeling</td>
<td>• 3D Animation &amp; Digital Production</td>
<td>• Legal Systems Administration</td>
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<td>• Landscaping &amp; Turf Mgt.</td>
<td>• Carpentry 1 &amp; 2</td>
<td>• Commercial Photography</td>
<td>• Medical Systems Administration</td>
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<td>• Urban Farming &amp; Crop Production</td>
<td>• Electricity 1 &amp; 2</td>
<td>• Digital Imaging &amp; Design</td>
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<td>• Sustainability &amp; Renewable Tech</td>
<td>• Heating, Ventilation, &amp; Air Conditioning (HVAC) 1 &amp; 2</td>
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<td>• Plumbing &amp; Pipefitting 1 &amp; 2</td>
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<td>• Precision Machining 1 &amp; 2</td>
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<th>EDUCATION &amp; TRAINING</th>
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<td>• Child Development</td>
<td>• Biotechnologies: Medicine, Forensics &amp; More</td>
<td>• Baking &amp; Pastry Arts</td>
<td>• Barbering 1 &amp; 2</td>
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<td>• Dental Occupations 1 &amp; 2</td>
<td>• Culinary Arts</td>
<td>• Cosmetology 1 &amp; 2</td>
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<td>• Health Assisting Careers</td>
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<td>• Medical Assistant 1 &amp; 2</td>
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<td>• Pre-Nursing 1 &amp; 2</td>
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<td>• Physical &amp; Occupational Therapy</td>
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<td>• Veterinary Science Honors</td>
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<th>MANUFACTURING</th>
<th>SCIENCE, TECH, ENGINEERING &amp; MATH</th>
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<td>• A+/CISCO 1-2</td>
<td>• Criminal Justice</td>
<td>• Precision Machining 1 &amp; 2</td>
<td>• Mechatronics 1 &amp; 2</td>
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<td>• CISCO Networking 3-4</td>
<td>• Firefighting 1 &amp; 2</td>
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<td>• Oracle 1 &amp; 2</td>
<td>• Homeland Security</td>
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<td>• Automotive Collision Repair &amp; Refinish 1 &amp; 2 and Automotive Collision Repair &amp; Refinish Apprenticeship</td>
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<td>• Automotive Technology 1 &amp; 2 and Automotive Technology Apprenticeship</td>
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<tr>
<td>• Global Logistics &amp; Enterprise Systems 1 &amp; 2</td>
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AGRICULTURE, FOOD AND NATURAL RESOURCES

DE630 LANDSCAPING AND TURF MANAGEMENT
TC630 LANDSCAPING AND TURF MANAGEMENT
Courthouse Campus  Three Credits
This course integrates turf management into the landscape curriculum. Along with teaching students skills needed for employment and advancement in landscape design, landscape construction, and landscape maintenance, students will begin to master the duties and tasks of professionals who establish and maintain turf in public areas such as golf courses; parks; athletic fields; school, industrial, and institutional campuses; and residential lawns.

DE632 URBAN FARMING AND CROP PRODUCTION
TC632 URBAN FARMING AND CROP PRODUCTION
Courthouse Campus  Three credits
Urban farming is the practice of cultivating, processing, and distributing food in or around a village, town, or city. Students in this course will be instructed in the value and benefit of trees and forests in urban areas. Students will also learn the Course content will include identifying, selecting, and caring for trees as well as grow and harvest foods in urban areas. Students in Urban farming will learn food security, food safety, nutrition, and income generation as key motivations for the practice. By learning to grow what we need near where we live, we decrease the "food miles" associated with long-distance transportation. We also get the freshest produce money can buy, and we are encouraged to eat in season. Students taking Urban farming will learn how to add greenery to cities, reducing harmful runoff, increasing shading, and counter the unpleasant heat island effect.

TH261 SUSTAINABILITY & RENEWABLE TECHNOLOGIES
Hull Campus  Three Credits
Sustainability and Renewable Technologies explores issues that affect global citizens in the areas of economics, culture, and the environment. The course introduces students to the historic, economic, political, environmental, and cultural issues that impact the global community and its’ future. Students will address issues affecting the health of our environment and explore solutions offered by sustainable agriculture, energy efficient building design, and renewable energy sources. Examining Green Building in Architecture and Construction, Exploring Design/Pre-Construction Principles, Applying Green Building Requirements to Construction, Conducting Whole-Building Blower Door Tests, Reducing Energy Use through Weatherization, Implementing Green Maintenance Operations.

ARCHITECTURE AND CONSTRUCTION

DE271 ADVANCED CAD AND MODELING
TC271 ADVANCED CAD AND MODELING
Hull Campus  Three Credits
In this one-year course, students (grades 11-12) study the areas of engineering, architecture, and geographic information systems, using 3D computer and solid models. Students prepare multi-view drawings and apply the design process to architectural projects, creating animations of digital mapping and 3D architectural models. Using computer-aided design (CAD) such as parametric modeling software and building information modeling (BIM) software students create and re-engineer original and existing consumer products, producing life-size plastic models with technologies such as 3D printers. Students who meet the Virginia Community College System’s dual-enrollment eligibility criteria (see back) and earn a final grade of C or better can earn seven tuition-free college credits. These credits can be applied to many four-year universities. A lab fee is required.

TC301 CARPENTRY 1
Courthouse Campus  Three Credits
This course is designed to teach students the fundamentals of blueprint reading, use of hand and power tools, and on-the-job practices. Emphasis is placed on methods of residential construction and installation techniques. Students will also learn all safety-related practices and techniques, including requirements for the OSHA 10 card.

DE300 CARPENTRY 2
TC302 CARPENTRY 2
Courthouse Campus  Three Credits
A continuation of Carpentry 1, this dual enrollment course permits students to gain first-hand experience by constructing various types of structures through both private and public partnerships with CTC. When construction is complete, eligible students may participate in the Workplace Transition Program (WTP) at selected local construction companies. Students in the WTP are responsible for their own transportation to work sites. Students successfully completing this course may also receive 3.0 college certificate credits at John Tyler Community College for course BLD 135, Building Construction Carpentry. Pre-requisites: Minimum Grade of C in TC301 Carpenter 1

DE361 DUAL ENROLLMENT CARPENTRY II  One Credit
Carpentry II leads to successful transition into postsecondary education for careers in carpentry and related fields, such as construction management, architecture, and others. Students are taught the safe use of hand and power tools common to
the industry to complement their OSHA 10 safety credential earned in Carpentry I. Students will become proficient in assembling and installing various types of residential construction components that are current with industry standards, including rigging and job-estimating procedures, forming foundations, framing floors, walls, ceiling, roofs, trusses, roofing materials, stairs, exterior doors and windows, decks, and porches. Successfully passing this course leads to CTE program completion.

DE311 ELECTRICITY 1
TC311 ELECTRICITY 1
Courthouse Campus  Three Credits
This course is designed to prepare students to work in a, commercial, or industrial area of electricity. Students will learn electrical blueprint reading; problem solving; troubleshooting; residential, commercial, and industrial wiring skills; and become familiar with the National Electric Code. Students will also learn all safety-related practices and techniques, including requirements for the OSHA 10 card.
Pre-requisites: MA 320 Algebra 1 or equivalent

DE312 ELECTRICITY 2
TC312 ELECTRICITY 2
Courthouse Campus  Three Credits
A continuation of Electricity 1, this course is designed for the transition of students into the workforce. Students are required to participate in the Workplace Transition Program at approved local electrical contractor work sites. Students are responsible for their own transportation to work sites. NOTE: Associated Builders and Contractors, Inc. (ABC) has selected Chesterfield Technical Center as one of the few schools in Virginia to offer a unique career opportunity. Students who successfully complete both years of Electricity, HVAC or Plumbing may receive one year of state credit toward an apprenticeship. Students will have the opportunity to be placed with an ABC-member company for the second year of the course. Hours worked by these second-year students will also count as one year apprenticeship work experience toward a journeyman's license. Pre-requisites: Minimum Grade of C in TC311 Electricity 1

TC331 HEATING, VENTILATION, & AIR CONDITIONING HVAC 1
Courthouse Campus  Three Credits
This course is designed to instruct students in the refrigeration cycle, electrical wiring diagrams, and troubleshooting. Students train on oil, gas, and electric furnaces and air cooling equipment. They also learn to analyze equipment and diagnose problems using simulation software. Students will also learn all safety-related practices and techniques, including requirements for the OSHA 10 card.

DE332 HEATING, VENTILATION, & AIR CONDITIONING HVAC 2
TC332 HEATING, VENTILATION, & AIR CONDITIONING HVAC 2
Courthouse Campus  Three Credits
A continuation of HVAC 1, this dual enrollment course is designed for the transition of students into the workforce. Students are required to participate in the Workplace Transition Program at approved local HVAC contractor work sites. Students are responsible for their own transportation to work sites. Students successfully completing this course may receive 3.0 tuition free college certificate credits at John Tyler Community College for course AIR121, Air Conditioning and Refrigeration 1. NOTE: Associated Builders and Contractors, Inc. (ABC) has selected Chesterfield Technical Center as one of the few schools in Virginia to offer a unique career opportunity. Students who

DE352 PLUMBING AND PIPEFITTING 2
TC352 PLUMBING AND PIPEFITTING 2
Courthouse Campus  Three Credits
A continuation of Plumbing and Pipefitting 1, this dual enrollment course is designed for the transition of students into the workforce. Students are required to participate in the Workplace Transition Program at approved local plumbing and pipefitting contractor work sites. Students are responsible for their own transportation to work sites. Students successfully completing this course may receive 3.0 tuition free college certificate credits at John Tyler Community College for course MAC 195, Pipefitting. NOTE: Associated Builders and Contractors, Inc. (ABC) has selected Chesterfield Technical Center as one of the few schools in Virginia to offer a unique career opportunity. Students who
In this course, creative applications on the computer are explored using PhotoShop, Flash, QuarkX, InDesign and Illustrator. Designs for digital graphics, professional media productions, layouts for publishing, and animated movies are created. 3D design using and computer animation are explored in depth. Student artists use digital cameras, drawing materials, scanners, and digital drawing tablets to create, input and design images. Professional portfolios are created for print and on CD ROM. Participation in art exhibitions, competitions, and workshops is an integral part of this course. Students with a final grade of C or better in this course may enroll in the 3D Animation and Digital Production course. Students who earn a final grade of C or better in the course can earn tuition free college credits from John Tyler Community College.

**BUSINESS MANAGEMENT & ADMINISTRATION**

**TC231 LEGAL SYSTEMS ADMINISTRATION**  

Courthouse Campus  

This course is designed to provide students with an understanding of what the law is and how it works in a legal firm. Students review all aspects of the law and put the legal theory into practice in a simulated law firm. The course covers corporate law, real estate, basic contracts, law office management, litigation, criminal law, domestic law, estates, trusts and wills, and employment law. Basic law office accounting and timekeeping skills will also be studied. Class projects involve putting the legal theory into practice and learning how to create the necessary legal documents for each project. Students use Office 2000 to create documents and the Internet for legal research. Advanced students, with their own transportation, may be able to participate in work experience at approved legal offices during the second semester. Students who earn a final grade of C or better in the course can earn tuition free college credits from John Tyler Community College.  

**Pre-requisites: IT101 Computer Applications (or MS Office and Internet competency).**

**DE240 MEDICAL SYSTEMS ADMINISTRATION**  

Courthouse Campus  

This course is designed to assist students in developing the skills needed for the medical office. Instruction includes general office tasks such as word processing, spreadsheet applications, filing, scheduling appointments, and receptionist duties, as well as specialized training in medical terminology, medical record keeping, insurance forms and reporting, billing, medical correspondence and medical office ethics. Customer service skills related to the responsibilities of working in a medical office are also taught. During the second semester, advanced students with their own transportation may be able to participate in work experience at approved medical sites. Successful completion of this course and passing the IC3 Certification or MOS exams (two exams/core level) allows students to earn two verified credits toward a journeyman’s license. **Pre-requisites: Minimum Grade of C in TC231.**

**DE206 3D ANIMATION AND DIGITAL PRODUCTION**  

Courthouse Campus  

Three Credits

This unique and challenging course is an ideal introduction for students interested in advancing their studies in the 3D arts, and provides skills for careers in gaming design, movie animation and visualization. The software used in this class is 3D Studio Max. By utilizing a hands-on approach, students begin their introduction to this software package with basic model editing, creating and editing material, and rendering. Adding motion to scenes and working with lights and cameras follows as the students begin to understand the limitless potential of 3D Studio Max. The second semester of the course includes an emphasis on work group projects, where students create and manage projects, and expand their knowledge of the more advanced functions of the software. Topics to be explored in the second semester are: raytraced reflections and refractions, particle systems, and inverse kinematics. **Prerequisites: Minimum grade of C in TC203 Digital Imaging and Design.**

**DE200 COMMERCIAL PHOTOGRAPHY**  

Courthouse Campus  

Three Credits

Digital and color photography, as well as black and white, darkroom techniques are explored in depth for students who are interested in this career field. The 4x5 view camera, the 2 1/4 medium format camera, 35mm digital SLR cameras and Polaroid backs are used to create commercial images. Portraiture, studio lighting, tabletop illustration, advertising, macro photography, photo restoration, flash photography, and digital imaging are integral to the course. Students will create a professional portfolio, participate in exhibitions, competitions, and workshops. A 35mm camera with adjustable f/stops and shutter speeds is required. In addition, a digital camera (6 mega pixels or higher resolution) is recommended. Students who earn a final grade of C or better in the course can earn tuition free college credits from John Tyler Community College.

**TC200 COMMERCIAL PHOTOGRAPHY**  

Courthouse Campus  

Three Credits

In this course, creative applications on the computer are successfully complete both years of Electricity, HVAC or Plumbing may receive one year of state credit toward an apprenticeship. Students will have the opportunity to be placed with an ABC-member company for the second year of the course. Hours worked by these second-year students will also count as one year apprenticeship work experience toward a journeyman’s license. **Pre-requisites: Minimum Grade of C in TC351 Plumbing and Pipefitting.**

**ARTS, A/V TECHNOLOGY & COMMUNICATION**

**TC203 DIGITAL IMAGING AND DESIGN**  

Courthouse Campus  

Three Credits

In this course, creative applications on the computer are explored using PhotoShop, Flash, QuarkX, InDesign and Illustrator. Designs for digital graphics, professional media productions, layouts for publishing, and animated movies are created. 3D design using and computer animation are explored in depth. Student artists use digital cameras, drawing materials, scanners, and digital drawing tablets to create, input and design images. Professional portfolios are created for print and on CD ROM. Participation in art exhibitions, competitions, and workshops is an integral part of this course. Students with a final grade of C or better in this course may enroll in the 3D Animation and Digital Production course. Students who earn a final grade of C or better in the course can earn tuition free college credits from John Tyler Community College.

**DE203 DIGITAL IMAGING AND DESIGN**  

Courthouse Campus  

Three Credits

In this course, creative applications on the computer are explored using PhotoShop, Flash, QuarkX, InDesign and Illustrator. Designs for digital graphics, professional media productions, layouts for publishing, and animated movies are created. 3D design using and computer animation are explored in depth. Student artists use digital cameras, drawing materials, scanners, and digital drawing tablets to create, input and design images. Professional portfolios are created for print and on CD ROM. Participation in art exhibitions, competitions, and workshops is an integral part of this course. Students with a final grade of C or better in this course may enroll in the 3D Animation and Digital Production course. Students who earn a final grade of C or better in the course can earn tuition free college credits from John Tyler Community College.

**DE200 COMMERCIAL PHOTOGRAPHY**  

Courthouse Campus  

Three Credits

Digital and color photography, as well as black and white, darkroom techniques are explored in depth for students who are interested in this career field. The 4x5 view camera, the 2 1/4 medium format camera, 35mm digital SLR cameras and Polaroid backs are used to create commercial images. Portraiture, studio lighting, tabletop illustration, advertising, macro photography, photo restoration, flash photography, and digital imaging are integral to the course. Students will create a professional portfolio, participate in exhibitions, competitions, and workshops. A 35mm camera with adjustable f/stops and shutter speeds is required. In addition, a digital camera (6 mega pixels or higher resolution) is recommended. Students who earn a final grade of C or better in the course can earn tuition free college credits from John Tyler Community College. **Pre-requisites: IT101 Computer Applications (or MS Office and Internet competency).**
EDUCATION & TRAINING

TC501 CHILD DEVELOPMENT  
Courthouse Campus Three Credits  
This course is designed to introduce students to early childhood development through classroom instruction, hands-on activities and experiences with children and staff at county elementary school sites. The course is for students who are pursuing careers as child care professionals in the areas of elementary education, psychology, social work, counseling, child care, and other fields that focus on child development.

HEALTH SCIENCE

TC461H MEDICAL BIOTECHNOLOGIES  
Sub Courses  
DE462H-BIO 2-GENETICS  
DE460H-BIO 2-MIZRO  
DE465H-BIOTECH FOUNDATIONS HEALTH/MEDICAL SCIENCE  
Courthouse Campus One Credit  
A cutting-edge opportunity for students preparing for careers in medicine or research, as well as for those fascinated by forensics and the rapid growth of the international biotechnology industry. One of only a handful of such courses offered nationwide, this course explores the complexities of scientific research in a new, state-of-the-art laboratory and classroom facility. Students combine advanced in-depth study of biotechnologies used in forensics, medicine, environmental science and genetics, with discussion relating to bioethics and bioinformatics. Students acquire hands-on laboratory skills such as micropipetting, DNA extraction, PCR (Polymerase Chain Reaction), electrophoresis, culturing of bacteria, and more. Emphasis is placed on continuing education requirements pertaining to professional career paths in biotechnology. This course will be displayed on a student’s schedule as two 1.0 credit honors science courses: TH446H and TC467H and one CTE elective credit. Pre-requisites: MA320 Algebra 1 or equivalent, SC430 Biology 1 and SC440 Chemistry (Chemistry may be taken concurrently).

TC401 DENTAL OCCUPATIONS 1  
Courthouse Campus Three Credits  
This course is designed to prepare students for entry level positions in the dental field. Students will learn basic dental anatomy, charting, instrumentation, radiographic techniques, use of dental equipment, and other dental skills.

TC402 DENTAL OCCUPATIONS 2  
Courthouse Campus Three Credits  
This course involves clinical rotations at selected dental care facilities. Students are required to participate in the Workplace Transition Program at approved local dentist offices or dental labs. Transportation is required. Pre-requisites: Minimum of Grade C in TC401 Dental Occupations 1 and be X-ray certified.

TH410 HEALTH ASSISTING CAREERS  
Hull Campus Three Credits  
Students explore opportunities in the health care field by developing basic skills common to several assisting careers. They study body structure and function, principles of health, microbes, and disease, and an overview of the health and patient care system. Supervised work-based learning may begin as part of the course in health care settings and is managed by the health and medical sciences education teacher. Lab fee required.

TC413 MEDICAL ASSISTANT 1  
Courthouse Campus Three Credits  
This course is designed to prepare students to take the Medical Assistant Certification (CMA) Examination through the National Association of Health Professionals. Students develop basic skills and techniques to assist a physician with patient examinations, minor surgery, and collecting and analyzing specimens. Additionally, students learn to perform basic diagnostic tests such as electrocardiograms, apply principles of medical asepsis, check vital signs and record findings, change dressings and bandages, and administer
prescribed medications via specified routes such as injections. Training also includes principles of basic anatomy, medical math, and drug dosage/calculations.

**TC414 MEDICAL ASSISTANT 2**
**Courthouse Campus** Three Credits
Medical Assistant 2 is a continuation of Medical Assistant 1. Student further develop medical-assisting skills and techniques through advanced on-the-job clinical experience in physicians' offices or clinics. Transportation to clinical sites is the responsibility of the student. **Pre-requisites:** Minimum of Grade C in TC413, Medical Assistant 1

**TC428 PRE-NURSING 1 HONORS**
**Courthouse Campus** One & one-half Credits
The first component of the program is devoted primarily to classroom and nursing laboratory activities. Students learn nursing theory in anatomy and physiology and issues relating to health care systems, legal and ethical implications of practice, and professionalism in nursing. A minimum grade of 81% is required in each of these study areas. Theory and lab practice in basic nursing skills are also taught. NOTE: This 18-month program is regulated by the Virginia Board of Nursing and is designed to prepare students to practice nursing under the guidance of registered nurses or physicians. Applicants must demonstrate essential functional abilities consistent with the standards of nursing as defined by the National Council of State Board of Nursing. The program is divided into three components and consists of a combination of classroom training and clinical experiences. Students taking the third component (Practical Nursing 3) of the program must do so following high school graduation. Practical Nursing 3 includes nine months of classroom, lab and clinical study in advanced medical surgical nursing, obstetrics, pediatrics, psychiatric nursing, and pharmacology. Students participate in clinical learning experiences in five area hospitals and in various community health care settings. Students successfully completing the entire program (TC428, TC429 and the post-graduate Practical Nursing 3 component) are eligible to take the National Council Licensure Examination for Practical Nurses (NCLEX-PN). **Pre-requisites:** TC428 Practical Nursing 1

**TH425 PHYSICAL & OCCUPATIONAL THERAPY**
**Hull Campus** Three Credits
The program will introduce students to the professions of physical and occupational therapy. Students will explore the principles and practices of therapists in the health care industry and participate in clinical observation under the direct supervision of a licensed physical and/or occupational therapist. Clinical skills in the areas of physical therapy and occupational therapy enable students to gain understanding of rehabilitative care, which is practiced throughout the continuum of care and across the life span of individuals. After successful completion of this course, students may choose to pursue employment as physical or occupational therapy technicians or may seek higher education for specific degrees/licensure in a variety of fields such as physical therapy, occupational therapy, speech therapy, sports medicine, athletic training, chiropractic medicine, biology, or exercise science. **A lab fee and lab coat are required.** Recommended prerequisite(s): Algebra and Biology

**TC451 VETERINARY SCIENCE HONORS**
(DE752; DE753; DE754)
**Courthouse Campus** Three Credits
This course combines classroom discussion and hands-on training with companion animals. The course is designed for students considering careers in animal science, veterinary medicine, pet industries, governmental regulatory agencies, pharmaceutical sales, agricultural production, and laboratory research. Course content includes an introduction to companion and production animals, understanding the concepts of genetics, species and breeding, identifying body systems and their treatment, disease and its prevention, animal nutrition, animal behavior and training, ethical/legal animal welfare issues, ownership responsibilities, and biosecurity issues. Students learn various technical skills, such as...
safe animal restraint, administering medication, applying septic techniques, recognizing abnormal behavior, maintaining appropriate housing, grooming, and performing administrative duties in a simulated veterinary hospital environment. Emphasis is placed on continuing education as well as entry-level career opportunities. This course is displayed on a student's schedule as three 1.0 credit courses: TC452O/Small Animal Care (elective credit), TC453O/Anatomy & Physiology science credit and TC454O/Veterinary Science (elective credit). A lab fee, private health insurance, and uniforms are required.

**Pre-requisites:** MA320 Algebra 1 or equivalent and SC430 Biology 1

**TH451 VETERINARY SCIENCE**

**Hull Campus**  
Three Credits

In this one-year course, students will learn about veterinary science in a classroom setting, on site visits, as well as in a simulated small animal veterinary hospital, with hands-on training in small animal care. The course will introduce students to the technical knowledge and skills needed to succeed in careers involving companion animals, including but not limited to, pet care industries, government agencies, laboratory research institutions, pharmaceutical occupations and veterinary medical assisting and technology, as well as postsecondary education. Course content includes an introduction to companion animals, their management and care, understanding the concepts of genetics, species and reproduction, small animal medicine, disease and its treatment and prevention, small animal nutrition, behavior and training, ethical/legal animal welfare issues, ownership responsibilities, veterinary surgical and medical assisting and the procedures involved in the management of a small animal hospital. The students learn hands-on technical skills including small animal handling and restraint, medication and vaccine administration, veterinary surgical assisting, proper laboratory sampling and testing and proper housing and grooming skills. Additional educational opportunities include special guest speakers, animal demonstrations and field trips to small animal care related facilities. Students will also learn workplace readiness and leadership skills to further them on their pathway to success. **Lab fee, private health insurance, and uniforms are required.**

**Pre-requisites:** MA320 Algebra 1 or equivalent and SC430 Biology 1

**HOSPITALITY & TOURISM**

**DE521 BAKING AND PASTRY ARTS**

**TC521/TH521 BAKING AND PASTRY ARTS**

**Courthouse and Hull Campus**  
Three Credits

This course is designed as an introduction to the principles and techniques used in the preparation of high quality baked goods and pastries. Students learn to take yeast breads, quick breads, pies, cakes and specialty desserts. The course gives students the opportunity to practice the skills necessary in food establishments such as restaurants, hotels, bakeries and catering facilities. This class also provides the foundation for students who aspire to continue their education at a postsecondary culinary baking school. Students who earn a final grade of C or better in the course can earn tuition-free college credits from John Tyler Community College.

**DE520 CULINARY ARTS**

**TC520/TH520 CULINARY ARTS**

**Courthouse and Hull Campus**  
Three Credits

This course is designed to prepare students for work in food service establishments such as restaurants, hotels, bakeries, and catering facilities. The course emphasizes food preparation and food presentation and includes culinary terminology, knife skills, use of kitchen equipment, sanitation, and menus. Students learn to prepare stocks, soups, sauces and main course dishes, as well as develop skills to serve food in an appetizing way. Students will have hands-on opportunities to prepare and serve food for dinners, banquets, receptions, and other special events. Students who successfully complete this course are well suited to transition to the workplace or to pursue post-secondary culinary arts schooling. Students who earn a final grade of C or better in the course can earn tuition-free college credits from John Tyler Community College.

**HUMAN SERVICES**

**TH516 BARBERING**

**Hull Campus**  
Three Credits

This two-year course will introduce students to the study of hair, scalp, and skin. In year one, students study in a clinical lab setting, using mannequins and live models for manipulative practice. The program emphasizes safety and sanitation, communication, and management skills. In year two, students apply their knowledge of barbering skills in a clinical lab setting, using mannequins and live models for manipulative practice. The program emphasizes safety and sanitation, communication skills, and management of a barber shop or beauty salon. Related areas of study include psychology, ethics, and professional image. Competency completions prepare the students for the Virginia state licensing exam. **Lab fee required.**

**TH517 BARBERING II**

**Hull Campus**  
Three credits

Students apply their knowledge of barbering skills in a clinical lab setting, using mannequins and live models for manipulative practice. The program emphasizes safety and sanitation, communication skills, and management of a barber shop or beauty salon. Related areas of study include psychology, ethics, and professional image. Competency completions prepare the students for the Virginia state licensing exam.
TC511 COSMETOLOGY 1
Courthouse Campus Three Credits
This course is designed to prepare students for a career in the field of cosmetology. Students will learn to shampoo, style, cut, permanent wave, chemically relax, and tint hair. In addition skin care, makeup, and nail care are studied. Emphasis is placed on hygiene, sanitation, customer relations, and salon management. A minimum of 75% for each course component is required for continuation to Cosmetology 2.

TC512 COSMETOLOGY 2
Courthouse Campus Three Credits
This course is a continuation of Cosmetology 1, but with increased emphasis on demonstration. Students will operate a school sponsored salon and/or have an opportunity to work in approved professional salons in the area. To be eligible to take the Virginia Board for Cosmetology Licensing Examination, students must pass both years of Cosmetology with a grade of 75% or higher for each course component, work 480 hours or more in an approved salon, and have all competencies completed. Pre-requisites: Minimum 75% grade in TC 511 Cosmetology 1

TC513 NAIL TECHNICIAN
Courthouse Campus Three Credits
This course is designed to prepare students for licensure as a Nail Technician by the Virginia Board for Barbers and Cosmetology. Students learn to provide nail salon services including manicures, pedicures, acrylic nails, gel nails, nail tips, nail art, and polishing. Included is a study of safety and sanitation, workplace ethics, the health and science of nail technology, salon operation/management and state regulations for nail technicians. Students operate, and provide nail services in the CTC-sponsored nail salon. Advanced students with their own transportation may be able to participate in work experiences during the second semester at approved salons. To be eligible to take the Virginia Board for Barbers and Cosmetology Licensing Examination for Nail Technicians, applicants must be at least 16 years old and must earn a grade of 75% or higher for each course component.

INFORMATION TECHNOLOGY

DE245 A+/CISCO 1-2 HONORS
TC245 A+/CISCO 1-2 HONORS
Courthouse Campus Three Credits
This is a two-part course comprised of IT Essentials I (A+) and Networking for Home and Small Businesses, Small-to-Medium Business and ISPs. Students develop skills related to the design, configuration, and maintenance of PC hardware and software and Local Area Networks. Specifically, students study cabling, routing, IP addressing, routing protocols, network and hardware troubleshooting, basic electronics, installing hardware and network components, installing and configuring operating systems, adding and troubleshooting peripherals and multimedia capabilities. The course covers the OSI model and industry standards, network topologies, subnetting, and basic network design. An introduction to advanced technologies such as voice, video, wireless and security is also provided. This course prepares students for the following industry recognized certifications: CompTIA A+, Cisco Certified Entry Network Technician (CCENT), and the Internet and Computing Core Certification (IC3). Students who earn a final grade of C or better in the course can earn tuition free college credits from John Tyler Community College

DE247 CISCO NETWORKING 3-4 HONORS
TC247 CISCO NETWORKING 3-4 HONORS
Courthouse Campus Three Credits
This course extends student knowledge with the design, configuration, and maintenance of switches and routers, LANs and VLANs. Specifically students configure and troubleshoot LANs, WANs--including PPP and Frame Relay design, VLSM and the configuration and implementation of access control lists. A study of advanced wireless business network technology is included. This course prepares students for the following industry recognized certifications: Network+ and Cisco Certified Networking Associate (CCNA). Students who earn a final grade of C or better in the course can earn tuition free college credits from John Tyler Community College. Prerequisites: TC245 A+/Cisco 1-2 with a minimum grade of C in the Cisco portion of the course.

DE390 ORACLE 1 HONORS
TC391 ORACLE 1 HONORS
Courthouse Campus Three Credits
This course was developed in cooperation with Oracle Corporation under the Oracle Academic Initiative and leads to certification in one of the most widely used software applications in the business world. First year instruction focuses on database development, design, normalization and Structured Query Language (SQL) programming. The Oracle Certification Exam, Introduction to Oracle: SQL (Exam #1Z0-007), is administered at the end of the course. Students who earn a final grade of C or better in the course can earn tuition-free college credits from John Tyler Community College.

DE392 ORACLE 2 HONORS
TC392 ORACLE 2 HONORS
Courthouse Campus Three Credits
In this continuation of Oracle 1, students study database programming, which introduces them to Procedural Language/Structured Query Language (PL/SQL). PL/SQL is Oracle Corporation’s standard data access language for relational databases. An in-depth study of database programming with PL/SQL prepares students for the Oracle
Mayday Awareness, are stipulated for those students seeking FIREFIGHTING 1 certification. Requirements, including CPR, HAZMAT operations, and enrollment also require parental consent. Additional requirements, including CPR, HAZMAT operations, and Mayday Awareness, are stipulated for those students seeking NFPA 1001-2013 Firefighter I certification.

1.79.1 Code of Virginia) by the first day of the course offering. A lab fee is required. Note: Students must be at least 16 years old (40-1.79.1 Code of Virginia) by the first day of the course offering. Enrollment also requires parental consent. Additional requirements, including CPR, HAZMAT operations, and Mayday Awareness, are stipulated for those students seeking NFPA 1001-2013 Firefighter I certification.

Pre-requisites: Minimum grade of C in TC391, Oracle 1.

LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY

DE721 CRIMINAL JUSTICE
TC421 CRIMINAL JUSTICE

Courthouse Campus

Three Credits

Taught in cooperation with the Chesterfield County Police Department, this course provides students with an understanding of the basic skills and technical knowledge needed to enter this dynamic field of study. Students participate in components of study that are similar to those of a Police Academy Cadet Program, including marching, drill and ceremonies, and light physical training. Students explore the occupations, activities, duties, and procedures of various law enforcement agencies within the criminal justice field, including sworn law enforcement officer, corrections, probation and parole, and private industry loss prevention. Types of crimes and procedures for dealing with them are also covered in the course. Numerous field trips and guest speakers provide students with a real-world view. Students may earn the right to participate in a ride-along program with the Chesterfield Police Department. American Red Cross certificates in CPR (adult and child) and standard first aid may be earned in the course. Pre-requisites: MA320 Algebra 1, pass a physical examination, have private health insurance.

DE441 FIREFIGHTING 1
TH441 FIREFIGHTING 1

Hull Campus

This is the first of a two-year course offering. Firefighting provides students with firefighting, CPR/AED, and Advanced First Aid training. Firefighting is one of the most dangerous jobs in the world and, therefore, requires complete discipline and attention to achieving the academic and professional standards necessary to successfully fight live fires, address hazardous-materials incidents, and conduct search-and-rescue operations. This year meets the standards of National Fire Protection Association (NFPA) 1001-2013 leading to Firefighting I certification.

Transportation to training sites is the responsibility of the student. Some Saturday training may be required. A lab fee is required. Note: Students must be at least 16 years old (40-1.79.1 Code of Virginia) by the first day of the course offering. Enrollment also requires parental consent. Additional requirements, including CPR, HAZMAT operations, and Mayday Awareness, are stipulated for those students seeking NFPA 1001-2013 Firefighter I certification.

TH442 FIREFIGHTING II

Three Credits

DE442 FIREFIGHTING II

Hull Campus

This course builds upon the professional knowledge gained and skills taught in Firefighting I. Students respond to simulated hazardous-materials incidents and conduct rescue operations, including vehicle extrication. Students react to multi-faceted situations (e.g., caused by simulated terrorism, accidents, and natural disasters) by managing resources such as medivac helicopters, emergency medical personnel, technical rescue teams, and community-based organizations. Students will become familiar with the procedures, equipment, and technologies used by current fire departments. This course challenges students academically, mentally, and physically and meets the standards of National Fire Protection Association (NFPA) leading to Firefighting II certification.

DE610 HOMELAND SECURITY
TH610 HOMELAND SECURITY

Hull Campus

Three Credits

This course will introduce students to the policies and procedures of the Department of Homeland Security as well as provide students with the knowledge and skills needed to assess, investigate and respond to terrorism incidents. Topics will include: legal issues surrounding homeland security; security and surveillance principles; the role of intelligence gathering in protecting the nation's critical infrastructures; emergency planning; law enforcement, security, surveillance and investigations; terrorism and counter-terrorism; and homeland security operations. Particular emphasis will be placed on Cyber Security. Topics will include: information security principles, emerging threats; malware; defensive technologies; information assurance standards; network security; web presence and applications; risk assessment and management; disaster recovery; and trends and protection priorities. Lab fee and uniform required.

SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS

DE256H MECHATRONICS 1
TH256H MECHATRONICS 1

Hull Campus

Three Credits

This is the first class in a two-year program (3.0 honors credits per year). Mechatronics is an interdisciplinary area of engineering that combines mechanical and electrical engineering and computer science. A typical mechatronic system picks up signals from the environment, processes them to generate output signals, transforming them for example into forces, motions and actions. This course provides a depth and breadth of the basic skills required in today's automated manufacturing environment. Students will explore careers, build circuits, and use principles of physics to
analyze basic electronic and robotic components.

**TH257H MECHATRONICS II**  Three Credits

**DE257H MECHATRONICS II**

**Hull Campus**

This course provides instruction in programming robots used in assembly and manufacturing settings. Students will work with various power systems while acquiring machining, welding, and system engineering skills. This course leads to industry certification options, including the general industry OSHA 10 card, to further validate their mastery of related skills.

**TRANSPORTATION, DISTRIBUTION & LOGISTICS**

**DE102 AUTOMOTIVE COLLISION REPAIR AND REFINISH 2**

**TC102 AUTOMOTIVE COLLISION REPAIR AND REFINISH 2**

**Courthouse Campus**  Three Credits

A continuation of Automotive Collision Repair and Refinish 1, this course is designed to prepare students for employment opportunities in the automotive collision repair industry. Instruction of I-Car (Inter-Industry Conference on Auto Collision Repair) related materials includes the study of structural damage and repair, diagnosing and estimating repair costs, customer relations, plastic repair, and the prepping and application of today's newest automotive paint materials. On-the-job training is emphasized to extend technical knowledge and skills in preparation for taking the National Institute for Automotive Service Excellence (ASE) professional certification tests. **Pre-requisites:** Minimum Grade of B in TC101 Automotive Collision Repair and Refinish 1.

**DE103 ACRR APPRENTICESHIP**

**TC103 AUTOMOTIVE COLLISION REPAIR AND REFINISH APPRENTICESHIP**

**Courthouse Campus**  Three Credits

This course is designed for students planning to become certified automotive collision repair and refinish technicians. Through Automotive Youth Educational Systems (AYES), the course begins with a paid summer internship. During the internship, students receive training under the guidance of an experienced automotive collision repair technician at a local collision repair facility (students are responsible for their own transportation to work sites). In September, students join other students in the program at CTC for advanced classroom/lab training with an I-Car and ASE-certified instructor, while continuing their work experience at a local collision repair facility. **Pre-requisites:** Minimum Grade of B in TC101, Automotive Collision Repair and Refinish 1 and application requirements.

**DE710 AUTOMOTIVE TECHNOLOGY 1**

**TC111 AUTOMOTIVE TECHNOLOGY 1**

**Courthouse Campus**  Three Credits

This course is designed to prepare students for job opportunities in the automotive repair industry and is the first step toward professional certification by the National Institute for Automotive Service Excellence (ASE). Emphasis is placed on building knowledge and skills needed to inspect, diagnose, maintain, and repair automotive systems. After instruction in standard automotive practices (safety, hand and power tools, gaskets, fasteners, etc.), and fundamentals (engine and electrical system operations), the course covers the following automotive systems in detail: brakes and steering; suspension; engine performance (emission, ignition, induction, fuel, and computerized engine controls). Students also have the opportunity to take the Virginia Motor Vehicle Safety Inspector’s Examination. Students who earn a final grade of C or better in the course can earn tuition-free college credits from John Tyler Community College. **Pre-requisites:** Minimum Grade of B in TC111 Automotive Technology 1.

**DE712 AUTOMOTIVE TECHNOLOGY 2**

**TC112 AUTOMOTIVE TECHNOLOGY 2**

**Courthouse Campus**  Three Credits

A continuation of Automotive Technology I, this course is designed to prepare students for employment opportunities in the automotive repair industry and is the first step toward professional certification by the National Institute for Automotive Service Excellence (ASE). Emphasis is placed on building knowledge and skills needed to inspect, diagnose, maintain, and repair the following automotive systems: electrical (starting, charging, and vehicle accessories), and engine performance (emission, ignition, induction, fuel, and computerized engine controls). Students also have the opportunity to take the Virginia Motor Vehicle Safety Inspector’s Examination. Students who earn a final grade of C or better in the course can earn tuition-free college credits from John Tyler Community College. **Pre-requisites:** Minimum Grade of B in TC111 Automotive Technology 1.

**DE713 AUTOMOTIVE TECHNOLOGY APPRENTICESHIP**

**TC113 AUTOMOTIVE TECHNOLOGY APPRENTICESHIP**

**Courthouse Campus**  Three Credits

This automotive program is designed for students planning to become certified automotive technicians. Through Automotive Youth Educational Systems (AYES), the program begins with a paid summer internship. During the internship, students receive training under the guidance of an experienced automotive technician at a local automotive dealership (students are responsible for their own transportation to work sites). In September, students begin advanced classroom/lab training in preparation for professional certification by the National Institute for Automotive Service Excellence (ASE) while training with an experienced ASE-certified instructor; students continue their work experience at a local automotive dealership. **Pre-requisites:** Minimum B grade in TC111 Automotive Technology 1 and application requirements.

**DE620H GLOBAL LOGISTICS and ENTERPRISE SYSTEMS 1**

**TH620H GLOBAL LOGISTICS and ENTERPRISE SYSTEMS 1**
Hull Campus  
Three Credits  
Logistics is moving the right goods to the right place at the right time for the right price at the right quality. This two-year honors course is designed to build a workforce to capitalize on the projections from the Commonwealth Center of Advanced Logistics Systems (CCALS) to meet the rapidly increasing demand for high-skilled, high-wage supply chain and logistics systems professionals. This course will introduce students to global logistics in a virtual enterprise systems environment. Topics include distribution, inventory, warehousing, transportation, supply chain, procurement, fulfillment, customer service, production, packaging, material handling, business processes and integration, logistics information systems, enterprise resource planning, business intelligence, and management information systems. Additionally, students will receive instruction on SAP software. Upon completion of a formal coursework sequence, students will have the opportunity to earn at least one state-approved, industry-specific certification. **Lab fee required.**

**TH621 GLOBAL LOGISTICS AND ENTERPRISE SYSTEMS II**

**Hull Campus**  
Three Credits  
Logistics is moving the right goods to the right place at the right time for the right price at the right quality. This course is designed to build a workforce to capitalize on the projections from the Commonwealth Center of Advanced Logistics Systems (CCALS) to meet the rapidly increasing demand for high-skilled, high-wage supply chain and logistics systems professionals. This course requires students to have completed the Global Logistics and Enterprise Systems I and worked with global logistics processes in a virtual enterprise systems environment. Advanced topics addressed by this course include managing material handling, transportation issues, accounting and finance, production processes, process integration, facility location decisions, and international logistics.

**TH621H GLOBAL LOGISTICS AND ENTERPRISE SYSTEMS II HONORS**

**Hull Campus**  
Three Credits  
Logistics is moving the right goods to the right place at the right time for the right price at the right quality. This course is designed to build a workforce to capitalize on the projections from the Commonwealth Center of Advanced Logistics Systems (CCALS) to meet the rapidly increasing demand for high-skilled, high-wage supply chain and logistics systems professionals. This course requires students to have completed the Global Logistics and Enterprise Systems I and worked with global logistics processes in a virtual enterprise systems environment. Advanced topics addressed by this course include managing material handling, transportation issues, accounting and finance, production processes, process integration, facility location decisions, and international logistics.
EN109  ENGLISH 9 HONORS  One Credit
English 9 Honors is a study of nonfiction, mythology, and an introduction to classical literature. Students study Homer, Shakespeare, Dickens, Buck, Twain, and a variety of other authors in various genres such as the short story, the novel, drama, and poetry. Students analyze literary texts, determine relationships between form and content, and go beyond an emotional reaction to an intellectual response. Students read critically, asking pertinent questions about what they have read, recognizing assumptions and implications, and evaluating ideas. This course also concentrates on expository writing, literary analysis, and oral communication skills. Students draw conclusions, appraise, and speculate independently about the elements of literature.

EN110  ENGLISH 10  One Credit
English 10 stresses refinement of skills with emphasis on effective written and oral communications. Literature emphasizes character motivation and human relations through the study of American literature.

EN110  ENGLISH 10 HONORS  One Credit
Literary selections of English 10 Honors include Thoreau, Hawthorne, Melville, Cather, Twain, Faulkner, Fitzgerald, and others. Students will explore various writing techniques and styles. These techniques will be used in their own expository, persuasive, and creative writings. Critiquing literary works is a major focus at this level. The fundamental elements of research will be applied directly to written and oral communications. Knowledge will be evident through oral presentations, written reports, analyses, and small/large group discussions.

EN111  ENGLISH 11 HONORS  One Credit
The literature selections of English 11 Honors include works of Chaucer, Shakespeare, Milton, Dickens, Bronte, and the Romantic poets, Hardy and Conrad. A variety of supplemental works will be used to enhance the program of literary appreciation/study. Literature will be used as a foundation for literary analysis, expository, and creative writing. Required research papers allow students to explore major types of criticism formalistic, archetypal, psychological. Other types of writing include reader responses and book reviews about particular works of literature. The goal of the Honors curriculum is to produce self-directed learners who are risk takers, highly motivated, and willing to share their views with others.

EN111  ENGLISH 11  One Credit
This course is based upon a survey of British literature. Composition skills are further developed, emphasizing correctness, practicality, style, and fluency. A research paper is required.

EN112  ENGLISH 12  One Credit
This course is based upon a survey of world literature and includes comparative studies of universal themes in literature and the history of language. Language study includes effective communication in all forms of expression and practical skills for the working or the academic world. A research paper is required.

EN112  ENGLISH 12 HONORS  One Credit
This course is designed for highly motivated seniors who enjoy being academically challenged and who have successfully completed English 11 Honors. This class prepares students for the rigorous educational experiences demanded by competitive colleges and universities. Writing for a variety of audiences and purposes is a focal point of the class. Students will read and analyze world literature and will focus on comparative studies of universal themes. A research paper is required.

EN113  AP ENGLISH LITERATURE  One Credit
This is a college-level course for selected seniors. Emphasis is placed on critical thinking and writing in relation to literary analysis. World literature is the basis for study.

EN114  AP ENGLISH LITERATURE AND COMPOSITION  One Credit
The AP Literature and Composition course develops students' interpretative skills as they read and write with increasing complexity and sophistication. This course is a year-long, college-level course for selected seniors. It will engage students in the careful reading and critical analysis of imaginative literature. Through close reading of selected texts, students shall expand their understanding of how writers use language to provide meaning. As they read, students shall consider a work's structure, style, and themes as well as smaller-scale elements such as the use of figurative language, imagery, symbolism, and tone. As they write and discuss, students shall express with focus and clarity their understanding of literature.

EN115  WOMEN'S LITERATURE  One Credit
This course provides the opportunity to extend the canon of literature from the traditional English class in order to focus on women's literature and issues. Students will have the opportunity to study the historical, cultural, and societal contributions women have made by focusing on various genres of women's literature. This course will focus on women writers throughout history and students will delve
deeper into the life of writings of one writer as a year long project. Students will communicate ideas and opinions through critical commentary, both written and oral. Through the study of women and their role in history through literature, students will come to recognize the female literary tradition so engrained in each person, whether male or female. Students will think and write critically and analytically while synthesizing and evaluating the information in order to apply it to their current life and time.

**EN119 NON-TRADITIONAL WRITING**  
One Credit  
This course will extend the opportunity to special education students in the exploration and use of traditional elements of writing such as metaphors, descriptive phrases, sensory words, alliteration, smiles, etc. via the research of the work in nontraditional writers and songwriters such as Tupac Sonya Sanchez, Shel Silverstein, Nikki Giovannni, Bob Marley, Sherman Alexis, Toni Morrison, Mya Angelou and Flannery O'Connor. Students will develop expository and informational writings; edit writing for correct grammar, capitalization, punctuation, spelling, sentence structure, paragraphing; use writing to interpret, analyze and evaluate ideas; collect, evaluate, organize, and present information; read, critique and analyze a variety of poetry and participate in and report on small group learning activities.

**EN120 LITERATURE, SOCIETY AND SCIENCE**  
One Credit  
This inter-curricular course is an introduction to humanistic studies as they relate to culture, literature, language, history, science, and mathematics from classical Greek through contemporary society. The class will focus on the skills needed for critical thinking and research, discussion techniques, and research techniques.

**EN124 TECHNICAL COMMUNICATIONS**  
One Credit  
Technical Communications is a course designed to prepare students for the challenges of the work place. The course’s content employs a number of existing reading, writing, and communication strategies, refining and adapting them to the demands of technical communications. The class is taught as a practical course where students will achieve mastery through application.

**EN127 AFRICAN AMERICAN LITERATURE**  
One-half credit  
African American Literature is an integral component of American Literature and the Black Experience in America. Students will learn how literature reflects the trials, tribulations, and triumphs of race relations in the United States. Curriculum will span slavery through modern times. The objective of this course is to give students an appreciation of the Black Experience through studying African American Literature. Through literature, students will experience the turbulent journey that shaped current racial relations in America and defined African Americans as individuals.

**EN129 AFRICAN AMERICAN LITERATURE 2**  
One Credit  
This is an elective course designed to provide students of diverse ethnic backgrounds with the opportunity to study the history, literature, contributions, and culture of African Americans during the Harlem Renaissance, the Civil Rights Movement, and contemporary times. The course will focus on larger works, such as contemporary novels and plays. Students will also delve deeper into the life and writings of one African American writer as a year long project.

**EN132 STRATEGIC READING**  
One Credit  
Strategic Reading offers ninth grade students the chance to learn and practice reading strategies through teacher modeling, cooperative learning, and independent practice. This strategy-based course helps improve fluency, reading comprehension, vocabulary and listening comprehension. Writing is also a component of this class. Target areas include vocabulary and sentence structure. This course provides an excellent foundation for CCPS English 9 curriculum.

**EN135 APPLIED READING**  
One Credit  
This is a course is for students who need to improve reading, writing, and study skills necessary for learning any subject in high school. Emphasis is placed on vocabulary development, comprehension, and writing skills. Students who read below grade level are pre- and post-tested and receive instruction based on their needs.

**EN136 SAT PREPARATION READING**  
One-half Credit  
This elective course is similar to a college level study skills course. Emphasis is placed on improving vocabulary in preparation for the SAT, developing critical thinking skills, increasing reading speed, refining research/study skills, and managing time.

**EN136H SAT PREP ENGLISH**  
One-half Credit  
This course is designed to strengthen the students’ test-taking skills so as to enhance his/her scores on the Scholastic Aptitude Test. Students will practice thinking strategies, become thoroughly familiar with the structure of standardized exams, and build verbal competence. Speed reading, reading for accuracy, literary texts, information literacy, and research skills will be emphasized.

**EN137 SAT PREPARATION READING**  
One Credit  
This elective course is similar to a college level study skills course. Emphasis is placed on improving vocabulary in preparation for the SAT, developing critical thinking skills, increasing reading speed, refining research/study skills, and managing time.

**EN138 STUDY SKILLS**  
One-half Credit
This course is designed for students who need to improve reading, listening, and learning skills. Course objectives focus on improving memory, test taking, note taking, and organizational skills. In addition, increasing reading rate, comprehension, and vocabulary are emphasized.

EN139 STUDY SKILLS One Credit
This course is designed for students who need to improve reading, listening, and learning skills. Course objectives focus on improving memory, test taking, note taking, and organizational skills. In addition, increasing reading rate, comprehension, and vocabulary are emphasized.

EN150 CREATIVE WRITING One-half Credit
This is an elective course designed to provide the student with an opportunity to explore special writing interests through a variety of writing experiences. Students will be encouraged to refine their writing for possible inclusion in school literary publications. It is recommended only for those students who are interested in writing.

EN151 CREATIVE WRITING 1 One Credit
This is an elective course designed to provide the student with an opportunity to explore special writing interests through a variety of writing experiences. Students will be encouraged to refine their writing for possible inclusion in school literary publications. It is recommended only for those students who are interested in writing.

EN152 CREATIVE WRITING 2 One Credit
This is an elective course designed for those students with special writing talent and industry. These students will pursue more challenging and lengthy writing and possibly submit their works to publications outside the school.

EN153 CREATIVE WRITING 3 One Credit
This is an advanced elective course for students who have demonstrated a high degree of skill in and dedication to writing. Students will submit work to audiences outside the school.

EN154 COLLEGE TRANSITION One Credit
College Transition is an elective course designed to provide students with the background and strategies that are the foundation for success, (drive, action, openness, and reason), comprehension monitoring (motivated to achieve, setting goals, recognizing learning styles, understanding learning, mastering course material), critical thinking (elements of thought, art of persuasion, good writing) and independent living (decision making, critically planning your future). In addition SAT verbal preparation, critical reading, and speed reading will be included.

EN161 JOURNALISM 1 One Credit
This is an elective course designed to teach students to communicate through newspaper writing and to make students aware of all elements that make up the journalistic field. The course includes an extensive study of the newspaper and an introductory study of magazines, television, movies, and yearbooks. It is recommended only for those students who are interested in writing.

EN162 JOURNALISM 2 One Credit
This is an elective course for those students who wish to pursue a more extensive study of journalism.

EN163 JOURNALISM 3 One Credit
This course provides extensive study in desktop publishing, layout, design, printing, and photography. Students produce the school newspaper.

EN167 JOURNALISM 4 One Credit
This course is designed for publication students and includes study of desktop publishing/design, digital imaging and scanning techniques, and integration of publications with the school's Web page. Techniques include publication design, advertising, and writing using research skills. Business management skills are studied.

EN168 AP JOURNALISM One Credit
This course combines a writing program which demonstrates the clear, concise writing style of a journalist and a reading program which demands higher-level thinking skills and analysis of both contemporary and classical literature. This course would prepare students for the Advanced Placement examination in English Language and Composition.

EN164 YEARBOOK 1 One Credit
This course provides study in desktop publishing, layout, design, printing, and photography. Students help produce the school yearbook.

EN165 YEARBOOK 2 One Credit
Students in this course provide leadership and management in the publication of the school yearbook.

EN166 PUBLICATIONS One Credit
This course is designed for publications students who are interested in holding senior editor positions. Students will continue production of the school yearbook including, writing, copy editing, photography, layout and design, and business management.

EN169 ETHICS AND CULTURE IN FILM One Credit
Students will begin the year studying the history and development of film. Students will be exposed to the various elements of film and draw comparisons and contrasts and analyze film in much the same way they critique and analyze literature. The focus of the films will deal with characters
facing moral and ethical dilemmas. Films exploring ethnic and racial issues within our culture also will be studied. There will be an application process for those who wish to enroll.

EN170 COMMUNICATIONS  One-half Credit
This elective course is designed to help students develop speaking as well as listening skills. It will help students become familiar with confidence building steps and exercises and will offer students opportunities to practice informative, persuasive, demonstration, and extemporaneous speeches.

EN171 COMMUNICATIONS 1  One Credit
This elective course is designed to help students develop speaking as well as listening skills. It will help students become familiar with confidence building steps and exercises and will offer students opportunities to practice informative, persuasive, demonstration, and extemporaneous speeches.

EN172 COMMUNICATIONS 2  One Credit
This is an elective course designed to offer students the mechanics of public speaking. Emphasis is placed on research, organization of ideas, and delivery techniques. The listening process develops recognition of word usage. Students are introduced to communication through radio, television, and the theatre.

EN173 COMMUNICATIONS 3  One Credit
This is an elective course designed for students who wish to gain proficiency within the specific areas of forensics and debate. Oratory, extemporaneous speaking, and the oral interpretation of prose and poetry are studied and practiced.

EN174 COMMUNICATIONS 4  One Credit
This is an advanced elective course in public speaking, oral interpretation, and debate. It is designed for those students who display outstanding talent and acute interest in public speaking and oral interpretation. Pre-requisites: EN172 Communications 2 or EN173 Communications 3

EN175 SHAKESPEARE  One-half Credit
This course provides the opportunity to study the Shakespeare's work in-depth, focusing on comedies, tragedies, and history plays as well as some sonnets. Since the plays were meant to be performed, students will examine each work performed on stage or film as an integral part of the program. Class performances, discussions, and/or written analyses and research are a part of the daily activities.

EN581 ENGLISH CADETS  One Credit
Students in the fourth year of high school English have the opportunity to be cadet teachers by working with students who have been absent or who might need extra help. Cadets may also lead discussion groups. Student applicants will be recommended to work with lower level English classes by previous English teachers. Qualified English 12 students may work with English 9-11 classes. Cadets will additionally learn about and practice management of classroom materials organization.

EN701 AMERICAN SPORTS IN LITERATURE 2  One Credit
This course is designed for a more rigorous and in-depth analysis of the impact of sports literature. Students will continue to read and examine sports novels and articles, and will also complete and independent reading project and unit on sports journalism.

DE112 COLLEGE COMPOSITION  One Credit
(JTCC 6 credits)
This course is designed to develop writing ability for study, work, and other areas of writing based on experience, observation, research, and reading of selected literature. Students are guided in learning writing as a process: understanding audience and purpose, exploring ideas and information, composing, revising, and editing. Writing is supported by integrating experiences in thinking, reading, listening, and speaking.

MATHEMATICS

MA301 FAST MATH 1  One Credit
FAST Math is a mathematics program designed for non-active speakers of English who are two or more years behind in math and have limited experiences in formal educational settings. FAST Math not only provides mathematics instruction for students, but also builds their competence in English with the kinds of language they specifically need to succeed in math classes.

MA302 FAST MATH 2  One Credit
FAST Math II and III are designed to address elementary and middle school content.

MA303 FAST MATH 3  One Credit
FAST Math III is designed to assist students in developing pre-algebra concepts and skills, preparing them for success in algebra and geometry.

MA304 ALGEBRA READINESS 1  One Credit
These courses are designed to support and promote student success in mathematics coursework necessary to fulfill graduation requirements. While strengthening prerequisite skills in the areas of operations with whole numbers, fractions, decimals, percentages, integers, and rational numbers, students will solidify algebraic concepts through modeling and the use of manipulatives, graphing calculators, and computer software where appropriate. A concentration on improving problem solving test communications in mathematics coupled with an emphasis on standardized test preparation with build mathematical confidence.
MA305 ALGEBRA READINESS 2   One Credit
These courses are designed to support and promote student success in mathematics coursework necessary to fulfill graduation requirements. While strengthening prerequisite skills in the areas of operations with whole numbers, fractions, decimals, percentages, integers, and rational numbers, students will solidify algebraic concepts through modeling and the use of manipulatives, graphing calculators, and computer software where appropriate. A concentration on improving problem solving test communications in mathematics coupled with an emphasis on standardized test preparation with build mathematical confidence.

MA311 FOUNDATIONS OF ALGEBRA   One Credit
The Foundations of Algebra course is designed to allow students to successfully master a variety of algebra topics. The curriculum requires students to use algebra as a tool for representing and solving a variety of practical problems. Tables and graphs will be used to interpret algebraic expressions, equations, and inequalities and to analyze functions. Matrices will be used to organize and manipulate data. Graphing calculators and computers will be used as tools to enhance problem solving. Pre-requisites: MA311 Foundations of Algebra

MA312 APPLIED ALGEBRA/FOUNDATIONS OF GEOMETRY   One Credit
In the course Applied Algebra and Foundations of Geometry students apply the fundamental skills developed in Foundations of Algebra and extend them to more advanced topics of algebra. The course also includes the development of basic geometric principles related to lines, angles, triangles, symmetry, and transformation. Graphing calculators and computers will be used as tools to enhance problem solving. Pre-requisites: MA312 Applied Algebra/Foundations of Geometry

MA313 APPLIED GEOMETRY   One Credit
Applied Geometry is a unified study of plane, solid, coordinate, and transformational geometry. The course extends the study of the basic principles of geometry to include polygons, constructions, proportional reasoning, circles, surface area, and volume. Graphing calculators and computers will be used as tools to enhance problem solving. Pre-requisites: MA312 Applied Algebra/Foundations of Geometry

MA314 ALGEBRA READINESS 1   One-half Credit
These courses are designed to support and promote student success in mathematics coursework necessary to fulfill graduation requirements. While strengthening prerequisite skills in the areas of operations with whole numbers, fractions, decimals, percentages, integers, and rational numbers, students will solidify algebraic concepts through modeling and the use of manipulatives, graphing calculators, and computer software where appropriate. A concentration on improving problem solving test communications in mathematics coupled with an emphasis on standardized test preparation with build mathematical confidence.

MA320 ALGEBRA 1   One Credit
The standard Algebra 1 course incorporates all of the foundation skills that are necessary for students to pursue college preparatory mathematics in high school. The properties of and operations on numbers are extended to include the development of the real number system. Sets, equations, inequalities, exponents, polynomials, functions, graphing, systems of equations, and quadratics are the major topics of study. Additionally, the ability to make comparisons of one-variable data sets using statistical techniques including measures of central tendency, range, and box-and-whisker graphs is an expectation for all students in Algebra 1. Graphing calculators will be utilized to enhance the understanding of functions and provide a powerful tool for solving and verifying solutions to equations and inequalities. Other existing and emerging technologies are used as tools to facilitate the problem solving process, data analysis techniques, and graphing.

MA324 ALGEBRA 1, PART 1   One Credit
This first course is a two-year study of Algebra 1 content provides a strong foundation for student success. Included in this course will be fundamental algebra content including working with functions, solving equations, solving inequalities, and graphing linear equations. Graphing calculators and computers will be used as tools to enhance problem solving. Pre-requisites: MA324 Algebra 1, Part 1

MA325 ALGEBRA 1, PART 2   One Credit
The second course in a two-year study of Algebra 1 content will include topics such as solving equations and inequalities, working with radicals, solving systems of equations and inequalities, and working with quadratic functions. Graphing calculators and computers will be used as tools to enhance problem-solving. Pre-requisites: MA324 Algebra 1, Part 1

MA330 GEOMETRY   One Credit
Geometry is a unified study of plane, solid, and coordinate geometric concepts which provides students with the prerequisite skills that will facilitate the study of advanced mathematics. Investigations of lines, planes, congruencies, similarities, geometric inequalities, parallelism, perpendicularity, polygons, areas, volumes, circles, and three dimensional figures are incorporated to provide a complete course of study. Formal and informal deductive reasoning skills are developed and applied to the construction of formal proof. Opportunities are provided for discovery learning through hands-on activities and experiences that allow for utilizing computer software to explore major concepts and develop problem solving skills. Pre-requisites: Algebra 1
MA330 GEOMETRY HONORS
The Honors Geometry course is a unified study of plane, solid, and coordinate geometry. The curriculum includes the study of lines, planes, congruencies, geometric inequalities, perpendicularity of lines and planes in space, parallel lines and planes, polygons, polyhedral, area, volume, similarity, coordinate and transformational geometry, circles, and spheres. Every effort is made to incorporate advanced technology into the curriculum through the use of calculators and computers. The intent of this course is to frame a curriculum that ensures the development of broad mathematical power and which cultivates students’ abilities to explore, conjecture, reason logically, formulate and solve problems, and communicate mathematically. **Pre-requisites:** Algebra 1

MA332 GEOMETRY, PART 1
The Geometry Part 1 course is designed to allow students to master a variety of geometric concepts including parallel lines, triangle congruencies, geometric inequalities and transformations. These concepts along with a review of Algebra 1 skills will be reinforced by using calculators and computers in the classroom. **Pre-requisites:** Algebra 1 or MA324 Algebra 1, Part 1

MA333 GEOMETRY, PART 2
The Geometry Part 2 course will follow Geometry Part 1 and will include concepts involving area and volume of various geometric figures, ratios and proportions, triangle similarities, circles and right triangle trigonometry. Algebra 1 skills will continue to be reinforced with applications relevant to the geometric concepts being taught. **Pre-requisites:** MA332 Geometry, Part 1

MA334 ALGEBRA, FUNCTIONS, AND DATA ANALYSIS
Through the investigation of mathematical models, students will strengthen conceptual understandings in mathematics and develop connections between statistics and algebra. This course introduces new material through problems that lead to rigorous investigation of advanced algebra and statistics. Topics include exponential and logarithmic functions, linear programming, conditional probability, probability density functions and z-scores. The curriculum is aligned to the Virginia Standards of Learning for Algebra, Functions, and Data Analysis.

MA340 ALGEBRA 2
Algebra 2 extends the concepts that students have encountered in previous coursework and provides a thorough treatment of advanced algebraic concepts. Emphasis will be placed on practical applications, logic of procedures, and interpretation of results. Graphing calculators and computers will enhance the students' understanding. Students will be expected to communicate and practice mathematical ideas appropriately. **Pre-requisites:** Algebra 1 or Geometry

MA340 ALGEBRA 2 HONORS
Algebra 2/Honors extends the concepts that students have encountered in previous coursework and provides a thorough treatment of advanced algebraic concepts. Emphasis will be placed on practical applications, logic of procedures and interpretation of results. Students routinely use calculators as a tool when dealing with solutions to problem situations. Students will be expected to communicate and practice mathematical ideas appropriately. **Pre-requisites:** Algebra 1 or Geometry

MA343 ADVANCED ALGEBRA
Advanced Algebra builds upon the foundation skills that students have developed in Algebra 2 to incorporate a detailed treatment of functions, theory of equations, matrices, sequences, series, and conic sections. A problem solving approach allows students to recognize connections between concepts that are introduced and other disciplines. A variety of instructional techniques provides an active learning mathematics environment which is enhanced by the use of technology. Students develop abilities to conjecture, explain, and defend their responses. **Pre-requisites:** MA340 Algebra 2

MA5600 GRADE 12 MATHEMATICS CAPSTONE COURSE
Virginia’s College and Career Ready Mathematics Performance Expectations grade 12 capstone course contains high-interest contextualized content designed to give students an additional boost for competent and successful entry into college and careers. The course will add to students’ preparation for college and the workplace by 1) enhancing skills in number and quantity, functions and algebra, geometry, and statistics and probability; and 2) simultaneously reinforcing readiness skills and dispositions in adaptability and flexibility, creativity and innovation, leadership, teamwork, collaboration, and work ethic. The course will augment skills in applied mathematical concepts through mathematical investigations in a variety of real-world contexts and applied settings. Prerequisite: have satisfactorily completed the required mathematics courses based on the Standards of Learning including Algebra, Functions, and Data Analysis or Algebra II

MA350 TRIGONOMETRY
Trigonometry is a one semester course in which students learn the fundamentals of triangle and circular trigonometry. Experiences with right triangle trigonometry are logically related to more advanced trigonometric concepts including radian measures of angles, graphs of circular functions, identities, special angle formulas, and the Laws of Sines and Cosines. Connections to applications of trigonometry in
sound, motion, surveying, and biorhythms make the course more stimulating for students. Students routinely use graphing calculators as tools when dealing with solutions to problem situations. **Pre-requisites:** MA340 Algebra 2

**MA351 TRIGONOMETRY/ADVANCED ALGEBRA** One Credit

The design of the Trigonometry/Advanced Algebra course allows for the extension of Algebra 2 concepts with an emphasis on functions, theory of equations, graph theory, matrices, sequences and series, and conic sections. Elementary trigonometric topics are introduced and fully developed to include triangular and circular definitions of the trigonometric functions, establishing identities, special angle formulas, Law of Sines, Law of Cosines, and solutions of trigonometric equations. Constructing, interpreting, and using graphs of the various function families is stressed throughout the course of study. Students are encouraged to explore fundamental applications of the topics studied with the use of graphing calculators. **Pre-requisites:** MA340 Algebra 2

**MA352 TRIGONOMETRY/ANALYSIS HONORS** One Credit

Trigonometry/Analysis allows students to extend their Algebra II skills to advanced topics including mathematical induction, matrix algebra, vectors, and the binomial expansion. A detailed treatment of function concepts deepens abilities to deal concretely and abstractly with mathematical topics. Additionally, the fundamentals of triangle and circular trigonometry are presented with an emphasis on graphing, establishing identities, developing special angle formulas, utilizing the Laws of Sines and Cosines, and polar coordinates. The course of study is enhanced by making connections of the concepts presented to other disciplines. Students routinely use graphing calculators as tools for exploratory activities and for solving rich application problems. **Pre-requisites:** MA340 Algebra 2

**MA352 TRIGONOMETRY/ANALYSIS** One Credit

Trigonometry/Analysis students use mathematical skills from previous courses and apply abstract reasoning to the study of advanced topics. This course provides a thorough treatment of trigonometry through the study of trigonometric definitions, graphs, applications, equations, and inequalities. Trigonometry is approached from the perspective of triangular and circular functions. Students routinely use calculators as a tool and will be expected to communicate and practice ideas appropriately. **Pre-requisites:** MA340 Algebra 2

**MA360 HIGH SCHOOL CALCULUS** One Credit

High School Calculus is offered as an alternative to Advanced Placement Calculus AB. Students abilities to work effectively with major topics from elementary functions are strengthened, and students are introduced to differential and integral calculus topics. High School Calculus is application-oriented and exposure to detailed theory is limited. Topics covered provide a skill review and serve as background for a first semester college calculus course. To add depth to student understanding, graphing calculators are used for instruction throughout the course of study. **Pre-requisites:** MA352 Trigonometry/Analysis

**MA361 AP CALCULUS AB** One Credit

Advanced Placement Calculus AB explores the topics of limits/continuity, derivatives, and integrals. These ideas are examined using a multi-layered approach including the verbal, numerical, analytical, and graphical analysis of polynomial, rational, trigonometric, exponential, and logarithmic functions and their inverses. The student will be expected to relate the connections among these approaches. Students will also be required to synthesize knowledge of the topics of the course to solve applications that model physical, social and/or economic situations. These applications should emphasize derivatives as rates of change, local linear approximations, optimizations and curve analysis, and integrals as Riemann sums, area of regions, volume of solids with known cross sections, average value of functions, and rectilinear motions. Teachers should consult (yearly) the AP Board for changes in curriculum and emphasis of particular topics. As mandated by the College Board, graphing calculators will be required. College credit and/or advanced placement in college is available to those students receiving a qualifying score on the Advanced Placement Examination. **Pre-requisites:** MA352 Trigonometry/Analysis

**MA362 AP CALCULUS BC** One Credit

BC Calculus is intended for students who have a thorough knowledge of analytic geometry and elementary functions in addition to college preparatory algebra, geometry, and trigonometry. Although all of the elements of the Advanced Placement Calculus AB course are included, it provides a more rigorous treatment of these introductory calculus topics. The course also includes the development of the additional topics required by the College Entrance Examination Board in its syllabus for Advanced Placement Calculus BC. Among these are parametric, polar, and vector functions; the rigorous definition of limit; advanced integration techniques; Simpson’s Rule; length of curves; improper integrals; Hooke’s Law; and the study of sequences and series. The use of the graphing calculator will be fully integrated into instruction and students will be called upon to confirm and interpret results of problem situations that are solved using available technology. College credit and/or advanced placement in college is available to those students receiving a qualifying score on the Advanced Placement Examination. **Pre-requisites:** MA352 Trigonometry/Analysis

**MA370 PROBABILITY AND STATISTICS HONORS** One-half Credit
Elementary probability and statistics are studied with an emphasis on collecting data and interpreting data through numerical methods. Specific topics include the binomial and normal distributions, probability, linear correlation and regression, and other statistical methods. Students are expected to understand the design of statistical experiments. They are encouraged to study a problem, design and conduct an experiment or survey, and interpret and communicate the outcomes. The use of computers and calculators should enhance the learning process and provide students with experiences working with emerging technologies. Pre-requisites: MA340 Algebra 2

MA370 PROBABILITY AND STATISTICS One-half Credit
The semester course in probability and statistics develops the basic principles of data collection and numerical analysis. Specific topics in the course of study include measures of central tendency, experimental and theoretical probability, combinations, and sampling theory. Throughout the course, students are encouraged to make use of available technologies to assist in organizing and interpreting data and to understand the usefulness of emerging technologies as tools for solving problems. Through meaningful activities and simulations, students are provided with experiences that will model the means by which data are collected, used, and analyzed. Pre-requisites: MA340 Algebra 2

MA371 PROBABILITY AND STATISTICS One Credit
The year course in probability and statistics exposes students to fundamental concepts with emphasis on collecting data and interpreting data through numerical methods. Specific topics include the binomial and normal distributions, probability, linear correlation and regression, and other statistical methods. The use of computers and calculators enhances the learning process and provides students with experiences in working with emerging technologies. This course will enable students to be wise users of statistical methods and more critical consumers of statistical materials. Pre-requisites: MA340 Algebra 2

MA371 PROBABILITY AND STATISTICS HONORS One Credit
Elementary probability and statistics are studied with an emphasis on collecting data and interpreting data through numerical methods. Specific topics include the binomial and normal distributions, probability, linear correlation and regression, analysis of variance, and other descriptive statistical methods. Students are expected to understand the design of statistical experiments. They are encouraged to study a problem, design and conduct an experiment, and interpret and communicate the outcomes. Moreover, students should be able to transform data to aid in data interpretation and prediction and test hypotheses using appropriate statistics. The use of computers and calculators enhances the learning process and provides students with experiences in working with emerging technologies. Pre-requisites: MA340 Algebra 2

MA372 DISCRETE MATH One-half Credit
Discrete Math is the study of math properties of sets and systems that have a countable (discrete) number of elements. With the advent of modern technology, discrete (discontinuous) models have become as important as continuous models. This course includes graph theory, linear programming, matrix modeling, and social decision making. Pre-requisites: MA340 Algebra 2

MA373 PROBABILITY AND STATISTICS/DISCRETE MATH HONORS One Credit
The content of this one year course is the same as the two semesters of courses MA370 Probability and Statistics Honors and MA372 Discrete Math Honors. Pre-requisites: MA340 Algebra 2

MA374 SAT MATH PREPARATION One-half Credit
SAT Math Preparation is designed to familiarize students with the Scholastic Assessment Test. In this course students review arithmetic, algebra, geometry, and Algebra 1 topics that are frequently found on the SAT test. Students examine test-taking strategies, become familiar with the format of the test, and experience the SAT process under simulated conditions while taking practice tests. These experiences are valuable to students as they encounter problems that are unique to the Scholastic Aptitude Test. Instructors continuously receive updates relative to the test and inform students of the latest adjustments in content, format, and scoring. Pre-requisites: Geometry

MA374H SAT PREPARATION MATH One-half Credit
This course is designed to strengthen the students' test-taking skills so as to enhance his/her scores on the SAT. Students will practice thinking strategies, become thoroughly familiar with the structure of the standardized exams, and build math and science competence.

MA375 CALCULUS BASED PROBABILITY AND STATISTICS One Credit
An advanced level Mathematics course offered for students that want to continue their probability and statistics knowledge. This course will work on preparing students with the skills and knowledge required for a career as an actuary and/or statistician. This course will develop the candidate's knowledge of the fundamental probability tools for quantitatively assessing risk. The application of these tools to problems encountered in actuarial science is emphasized. A thorough command of the supporting calculus is assumed.

MA376 AP STATISTICS One Credit
Students will be taught the concepts and skills needed to complete successfully the AP Statistics exam. These topics include: collecting and interpreting data through numerical methods, binomial and normal distribution, probability, linear correlation and regression, analysis of variance, and other descriptive statistical methods. Students should be able to transform data to aid in data interpretation and prediction and test hypotheses using appropriate statistics. College credit and/or advanced placement in college is available to those students receiving a qualifying score on the Advanced Placement Examination. Pre-requisites: MA340 Algebra 2

MA381 COMPUTER MATHEMATICS One Credit
Computer Mathematics provides students with experiences in workplace computer applications, personal finance, essential algebra skills necessary for college mathematics, and computer programming techniques and skills. Students will solve problems that can be set up as mathematical models. Programming concepts, problem-solving strategies, and mathematical applications will be integrated throughout the course. Students who successfully complete the standards for this course may earn credit toward meeting the mathematics graduation requirement. Pre-requisites: Algebra 1 and Geometry

MA384H AP COMPUTER SCIENCE PRINCIPALS HONORS One Credit
Computer Science Principals is designed to introduce students to the central ideas of computing and computer science, to instill ideas and practices of computational thinking, and to have students engage in activities that show how computing and computer science change the world. The proposed course is rigorous and rich in computational content, includes computational and critical thinking and skills, and engages students in the creative aspects of the field. Through both its content and pedagogy, this course aims to appeal to a broad audience.

MA390 PERSONAL LIVING AND FINANCE One Credit
Personal Living and Finance requires students to call upon their foundation skills and knowledge of arithmetic to solve problems that are related to consumer issues. The nature of our society makes it essential for students to be aware of the basis tenets of banking, credit, taxes, insurance, investments, and income budgeting. This program provides increased opportunities for students to extend their prior knowledge to more realistic and applicable problem solving. Occasions to use computer simulations of small business enterprises, the stock market, and similar real-world applications enrich the curriculum.

MA581 MATHEMATICS CADET TEACHER One Credit
Students in the fourth or fifth year of math have the opportunity to be cadet teachers by working with students who have been absent or require additional help. They also may lead small groups, instructional sessions. Students are recommended for this course by their previous math teachers.

DE335 HONORS COLLEGE PRE-CALCULUS (Dual Enrollment) One Credit
This is a dual enrollment course designed for students who plan to pursue college majors in the fields of engineering, science and technology. Specific topics to be covered include: general properties of functions; operations with functions; inverse functions; complex numbers; polynomial and rational functions; trigonometric functions and equations; law of sines and law of cosines; exponential and logarithmic functions and applications; exponential and logarithmic equations; conic sections, polar coordinates and parametric equations.

DE335 PRECALCULUS 1-2 Year, One Credit (JTCC, 6 Credits)
These courses present topics in college algebra; matrices; and algebraic, exponential, and logarithmic functions. Trigonometry, analytic geometry, and sequences in series are also presented.

DE336 CALCULUS Year, One Credit (JTCC, 8 Credits)
The first of two semesters will present topics in differential calculus of one variable, including the theory of limits, derivatives, differentials, definite and indefinite integrals and applications to algebraic and transcendental functions. The second semester of this course will present vectors in three dimensions, definite integrals, methods of integration, indeterminate forms, partial differentiation and multiple integrals.

CP382 COMPUTER PROGRAMMING One Credit
This course provides an introduction to computer programming. Students will receive exposure to programming language(s), terminology, and opportunities to apply the concepts presented in realistic problem solving situations. Emphasis is placed upon computer ethics and teaching students to be responsible users of hardware and software components. Pre-requisites: Algebra 1 and teacher recommendation.

CP383 COMPUTER PROGRAMMING JAVA-HONORS One Credit
Java introduces programming for an object-oriented, portable, robust, secure, high-performance, platform independent distributed development environment. Students receive in-depth exposure to this computer language and terminology and opportunities to apply the concepts presented to realistic problem-solving situations presented in the advanced placement curriculum. This accelerated course provides the necessary background for students to successfully pursue Advanced Placement Computer Science.
JAVA AB. Additional emphasis is placed upon computer ethics and responsible use of hardware and software components. **Pre-requisites:** Algebra 1 and Geometry, Co-requisite: Algebra II and teacher recommendation

**CP384 AP COMPUTER SCIENCE A JAVA** One Credit
Advanced Placement Computer Science AB is taught according to the suggestions in the syllabus for Computer Science AB available through the College Entrance Examination Board. Major topics in AP Computer Science AB include programming methodology, algorithms, and data structures. Topics for Advanced Placement Computer Science are extended to include constructs, data types, functions, testing, debugging, algorithms, and data structures. The JAVA programming language is used to implement computer based solutions to meaningful problems. Treatments of computer systems and the social implications of computing are integrated into the course. **Pre-requisites:** CP 383 Computer Programming JAVA or teacher recommendation

**CP385 INDEPENDENT STUDY: COMPUTER SCIENCE HONORS** One Credit
This independent study course will provide students with the opportunity to explore and investigate topics in programming in JAVA. Topics in data types, strings, classes, structures, applets, and arrays are discovered through real-world concepts and examples. Additionally, content information emphasizes important object-oriented programming concepts. Students will create and problem-solve programs which are applicable in the technology, business and science world. **Pre-requisites:** Teacher recommendation only

**SC240H PRE-AP CHEMISTRY HONORS** One-half Credit
Pre-Advanced Placement (AP) Chemistry is a course designed to promote critical thinking and evaluation based on the College Board AP Chemistry course for high school students. This class is designed to allow students to work at an advanced pace (beyond Chemistry Honors) to study the big ideas, which encompass the core scientific principles, theories and processes governing chemical systems. The class will also cover the VA SOL requirements and the students will be required to pass the Chemistry SOL as an end of course assessment. The students will also practice technical and timed writing skills in preparation for future Advanced Placement coursework such as the AP Chemistry course. This course engages students in careful evaluation of concepts and development of skills through inquiry-based investigations, research projects, group discussions, and long-range projects. Pre-AP Chemistry will correlate with Honors Algebra II to promote cross-curricular study to develop an understanding of the interrelationship of science with technology, engineering and mathematics. Scientific investigation as well as experimentation will be conducted in an interdisciplinary manner. Throughout this course, students will be reminded of the big ideas which frame the AP Chemistry course curriculum as well as the enduring understandings which incorporate the core concepts that students need to retain from the learning experience.

**SC410 DISCOVERY SCIENCE** One Credit
Discovery science is an interdisciplinary course that is designed to examine topics such as scientific research, states of matter, renewable and nonrenewable energies, food, and environmental topics through experimentation. It emphasizes that science is a process of discovering answers and/or solutions to questions and problems that have come up under various scientific, technological, environmental, and economical circumstances. Students will engage with science through project based learning (PBL) and open-ended inquiry in conjunction with blended learning. Students will develop critical thinking skills and gain valuable team working experience and thus preparing for a successful start in the workforce.

**SC420 EARTH/SPACE SCIENCE 1** One Credit
Earth/space science course connects the study of Earth’s composition, structure, processes, and history; its atmosphere, fresh water, and oceans; and its environment in space. The course emphasizes historical contributions in the development of scientific thought about Earth and space. Earth Science stresses the interpretation of maps, charts, tables, and profiles; the use of technology to collect, analyze, and report data; and science skills in systematic investigation. Problem solving and decision making are an integral part of the course, especially as they relate to the costs and benefits of utilizing Earth’s resources. Major topics of study include plate tectonics, the rock cycle, Earth history, the oceans, the atmosphere, weather and climate, and the solar system and universe. Students are expected to use the scientific method to discover scientific principles. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts.

**SC421 EARTH SCIENCE 2** One Credit
This laboratory course provides an advanced survey of earth science topics chosen from oceanography, geology, astronomy and meteorology. The content is organized around thematic units and human activities and influences are explored. Students are expected to use the scientific method to discover scientific principles. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. **Pre-requisites:** SC420 Earth/Space Science 1

**SC426 OCEANOGRAPHY** One Credit
SC426 HONORS OCEANOGRAPHY One Credit
In this honors course the theories of Earth’s structure and plate tectonics will be presented as a base on which to build the explanation of the physical features of the ocean floor. Both historical and physical geology of the ocean floor will be investigated. Students will study the physical properties of seawater, marine chemistry, marine organisms, salinity and density, circulation within the oceans, waves, currents, tides, and oceanographic instruments and research. Students are expected to use the scientific method to discover scientific principles. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts.

SC429 AP ENVIRONMENTAL SCIENCE One Credit
AP Environmental Science is an interdisciplinary course designed to be the equivalent of an introductory college course in environmental science. This course will provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world; to identify and analyze environmental problems both natural and human-made; to evaluate relative risks associated with these problems; and to examine alternative solutions for resolving and/or preventing them. Environmental Science counts as earth science credit. Pre-requisites: SC430 Biology 1 and SC440 Chemistry 1

SC430 BIOLOGY 1 HONORS One Credit
Honors biology is a laboratory-based course which encompasses research design concepts introduced in the middle school. Core content will include interrelationships in ecosystems, taxonomy, cellular chemistry, genetics, microbiology, and physiology. These areas are developed within a framework of the principal biological theories with an emphasis on critical thinking and science process skills. Research projects will be developed using descriptive statistics techniques. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. If dissections are conducted in class, alternatives will be provided for students that request them. Pre-requisites: SC420 Earth/Space Science 1 and SC430 Biology 1

SC431 BIOLOGY 2 HONORS One Credit
This laboratory course provides an advanced survey of life science topics chosen from molecular and cellular biology, the biology of organisms and ecology. Science, technology and societal issues are incorporated throughout. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. If dissections are conducted in class, alternatives will be provided for students that request them. Pre-requisites: SC420 Earth/Space Science 1 and SC430 Biology 1

SC430 BIOLOGY 1
Biology, the study of living things, is a laboratory course which includes the following major areas of study: experimental design, biochemistry, cellular structure, DNA and genetics—classification and kingdom, evolution, and ecology. These areas are developed within the framework of the principal biological theories with an emphasis on critical thinking and science process skills. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. If dissections are conducted in class, alternatives will be provided for students that request them.

SC431 BIOLOGY 2
This laboratory course provides an advanced survey of selected areas of biology for students planning to pursue careers in biological and medical fields. Emphasis is placed on research skills and techniques in content chosen from molecular and cellular biology, the biology of organisms and ecology. Honors credit is given for Biology 2 only when individual student projects or papers are submitted for consideration to local, state or national organizations and competitions for evaluation. Weekly time equivalent to three hours of lecture and four hours of laboratory is required. If dissections are conducted in class, alternatives will be provided for students that request them. Pre-requisites: SC420 Earth/Space Science 1 and SC430 Biology 1

SC434 ANATOMY AND PHYSIOLOGY One Credit
Anatomy/Physiology is designed to provide students with an in-depth study of the structure and function of the human body. The skeletal, muscular, circulatory, respiratory, digestive, excretory, nervous and endocrine systems are included. The relationships of body structure and function are emphasized. Laboratory work includes dissections and physiology experiments. Laboratory experiments are used to teach conceptual themes through process skills. Students are required to submit written laboratory reports and to design and conduct an investigation whether in small groups or as an individual. Students are expected to use the scientific method
to discover scientific principles. **Pre-requisites: SC430 Biology 1 and SC440 Chemistry 1 or SC420 Earth/Space Science 1**

**SC434 ANATOMY AND PHYSIOLOGY HONORS** One Credit
Anatomy/Physiology is designed to provide students with an in-depth study of the structure and function of the human body. The skeletal, muscular, circulatory, respiratory, digestive, excretory, nervous and endocrine systems are included. The relationships of body structure and function are emphasized. Laboratory work includes dissections and physiology experiments. Laboratory experiments are used to teach conceptual themes through process skills. Students are required to submit written laboratory reports and to design and conduct an investigation whether in small groups or as an individual. Students are expected to use the scientific method to discover scientific principles. **Pre-requisites: SC430 Biology 1 Honors and SC440 Chemistry 1 Honors**

**SC439 AP BIOLOGY** One Credit
This course is designed to be equivalent of a college freshman general biology course. Students will explore the fundamental characteristics of living matter from the molecular level to the ecosystem level. The diversity of living organisms, their structure, function and evolution is emphasized. A college-level text is used as the basal text. Weekly time equivalent to three hours of lecture and four hours of laboratory is required. If dissections are conducted in class, alternatives will be provided for students that request them. **Pre-requisites: SC430 Biology 1 and SC440 Chemistry 1**

**SC440 CHEMISTRY 1** One Credit
Chemistry students are introduced to basic chemical concepts including the composition of matter, atomic structure, periodic table, chemical bonding, formulas and equations, reacting quantities, and acid base theory. Laboratory experiments are used to teach conceptual themes through abstract reasoning and process skills. Students are expected to use the scientific method to discover scientific principles and to submit written laboratory reports. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. **Co-requisites: MA340 Algebra 2**

**SC440 CHEMISTRY 1 HONORS** One Credit
This inquiry-based laboratory course is a comprehensive survey of inorganic and physical chemistry. The course will emphasize problem solving and provide a thorough foundation for the college-bound student, emphasizing a quantitative approach. In addition to learning the concepts of chemistry, students will spend the majority of their time on applying their knowledge to new situations and analyzing and evaluating chemistry data. Students in this course will continue to learn and practice the skills of experimental design. Research projects will be completed by small teams of students involving the use of inferential statistics as part of data analysis. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. **Co-requisites: MA340 Algebra 2**

**SC444 ECOLOGY** One Credit
This laboratory course is designed to help students understand environmental principles, the consequences of human activities, and the impact of these activities on Earth. Major topics in this course are population biology, ecosystems, and the effects of science and technology on physical and complex adaptive systems. Laboratory experiments are used to teach conceptual themes through process skills. Students are required to submit written laboratory reports and to design and conduct an investigation whether in small groups or as an individual. Students are expected to use the scientific method to discover scientific principles. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. **Pre-requisites: SC430 Biology 1 and SC440 Chemistry 1 or SC420 Earth/Space Science 1**

**SC449 AP CHEMISTRY** One Credit
This course is designed to be the equivalent of a first year college chemistry course. It differs qualitatively and quantitatively from the usual high school chemistry course with respect to the kind of textbook used; the scope, sequence, and detail of topics covered; the mathematical formulation of principles; the emphasis on calculations; and the nature and variety of laboratory work done by student. A college textbook is used and the laboratory component is rather sophisticated. Weekly time equivalent to three hours lecture, four hours laboratory, and five hours independent study are expected. **Pre-requisites: SC430 Biology 1 and SC440 Chemistry 1**

**SC450 PHYSICS 1** One Credit
The Physics course emphasizes a more complex understanding of experimentation, the analysis of data, and the use of reasoning and logic to evaluate evidence. Students build on basic principles of physical science by exploring in depth the nature and characteristics of energy and its dynamic interaction with matter. Key areas covered include force and motion, kinetic molecular theory, energy transformations, wave phenomena and the electromagnetic spectrum, light, electricity and scientific investigation. The course stresses the practical application of physics in other areas of science and technology and how physics affects our world. Students are expected to use the scientific method to discover scientific principles. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. **Pre-requisites: MA340 Algebra 2 co-requisite**
SC450 PHYSICS 1 HONORS One Credit
The Physics course emphasizes a more complex understanding of experimentation, the analysis of data, and the use of reasoning and logic to evaluate evidence. Students build on basic principles of physical science by exploring in depth the nature and characteristics of energy and its dynamic interaction with matter. Key areas covered include force and motion, kinetic molecular theory, energy transformations, wave phenomena and the electromagnetic spectrum, light, electricity and scientific investigation. The course stresses the practical application of physics in other areas of science and technology and how physics affects our world. Students are required to use the scientific method to discover scientific principles. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. Pre-requisites: MA340 Algebra 2

SC452 ASTRONOMY One Credit
This course is designed to develop student proficiency in astronomy including planetary orbits, origin/evolution/death of the Universe (cosmology), subatomic particles, nuclear fusion, star maps, constellations/moon phases, telescope designs/ optics, useful parts of the electromagnetic spectrum, and spectroscopy. Historical developments of astronomy from earliest history through quantum mechanics are important topics. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts.

SC452H ASTRONOMY HONORS One Credit
This course is designed to develop student proficiency in astronomy including planetary orbits, origin/evolution/death of the Universe (cosmology), subatomic particles, nuclear fusion, star maps, constellations/moon phases, telescope designs/ optics, useful parts of the electromagnetic spectrum, and spectroscopy. Historical developments of astronomy from earliest history through quantum mechanics are important topics. Students are expected to use the scientific method to discover scientific principles. Students are required to submit written laboratory reports and to design and conduct research projects that are experimental in nature. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts.

SC453 PHYSICS One Credit
Students blend real world physics application with concepts reviewed through technology and related issues in this college preparatory course. Mechanics, thermodynamics, waves, electro- magnetism, modern physics, and scientific investigation are emphasized topics. The course stresses the practical application of physics in other areas of science and technology and how physics affects our world. Students are expected to use the scientific method to discover scientific principles. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. Pre-requisites: MA320 Algebra 1

SC457 AP PHYSICS 1 One Credit
AP Physics 1 is an algebra-based, introductory college-level physics course that explores topics such as Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. Through inquiry-based learning, students will develop scientific critical thinking and reasoning skills. AP Physics 1 prepares students for the AP Physics 1 exam. Laboratory experiences make up at least 25% of the instructional time and are the framework within which students can expect to study the key concepts. Pre-requisites: MA340 Algebra 2 Honors, Geometry

SC556H AP PHYSICS 2 HONORS One Credit
AP Physics 2 is an algebra-based, introductory college-level physics course that explores topics such as fluid statics and dynamics; thermodynamics with kinetic theory; PV diagrams and probability; electrostatics; electrical circuits with capacitors; magnetic fields; electromagnetism; physical and geometric optics; and quantum, atomic, and nuclear physics. Through inquiry-based learning, students will develop scientific critical thinking and reasoning skills. AP Physics 2 prepares students for the AP Physics 2 exam. Laboratory experiences make up at least 25% of the instructional time and are the framework within which students can expect to study the key concepts. Pre-requisites: MA340 Algebra 2 Honors & SC457 AP Physics 1

SC459 AP PHYSICS C One Credit
This course is a equivalent of a college physics course. AP Physics C prepares students two different AP exams, Physics C: Mechanics and Physics C: Electricity and Magnetism. Mechanics and electricity and magnetism are covered with equal emphasis on both. AP Physics emphasizes both physics knowledge and problem solving. The emphasis is on basic principles of physics and their applications through careful and selective treatment of well-chosen areas. Methods of calculus are used in formulating physical principles and in applying them to physical problems. This course is designed for students planning to major in physical sciences or engineering. Laboratory experiences make up at least 25% of the instructional time and are the framework within which students can expect to study the key concepts. Pre-requisites: SC450 Physics 1, MA361 AP Calculus AB or MA362 AP Calculus BC co-requisite
SC460  FORENSIC CHEMISTRY  One Credit
This is a multidisciplinary laboratory course, with emphasis on advanced chemistry topics, giving students an appreciation of how scientific concepts are applied to real world situations, specifically forensic investigations. Topics of study will include the history of forensic science and major forensic disciplines such as fingerprinting, questioned documents, entomology, anthropology, DNA analysis, serology, trace evidence, pathology, etc., as well as law and ethics and current legal issues affecting the field of forensic science. After learning basic concepts, student will apply their knowledge to the investigation of simulated crime scenes and participate in mock trials. This course focuses on problem solving, with an emphasis on writing, using experimentation, theorization, research, synthesizing information and making evidence-based conclusions. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. Pre-requisites: SC430 Biology 1, SC440 Chemistry 1, MA340 Algebra 2

SC470  CHEMISTRY 2  One Credit
This laboratory course provides an advanced survey of chemistry topics. Topics from Chemistry 1 will be elaborated in greater depth. The content is organized around thematic units and human activities. Laboratory experiments are used to teach conceptual themes through abstract reasoning and process skills. Students are expected to use the scientific method to discover scientific principles and to submit written laboratory reports. Laboratory experiences make up at least 50% of the instructional time and are the framework within which students can expect to study the key concepts. Pre-requisites: SC440 Chemistry 1

SC490  LABORATORY ASSISTANT  One Credit
With permission of the science department chairman and the principal, a student may serve as a laboratory assistant. Only students with an interest and background in science, a strong sense of responsibility, dependability, and willingness to work will be selected. Students may use only one credit in this course to fulfill graduation requirements. This course will not satisfy a science graduation credit, only an elective credit.

DE425  PLANT AND ANIMAL LIFE OF VIRGINIA (Dual Enrollment)  One Credit
Focuses on identification and ecological relationships of the native plants and animals of Virginia. Emphasizes trees, shrubs, vines, wildflowers, ferns, birds, reptiles, amphibians, mammals and invertebrates (including insects of field and stream). Focus will be met through discussions, lectures, lab and field exercises, and the reading, analyzing and conducting of current ecological research that links native Virginia plants to native Virginia animals. Pre-requisites: SC430 Biology 1 and SC440 Chemistry 1 or SC420 Earth/Space Science 1

DE432  INTRODUCTORY MICROBIOLOGY  Semester
This course studies the general characteristics of microorganisms. The course emphasizes their relationships to individual and community health. Weekly time equivalent to three hours lecture and three hours laboratory are expected. Pre-requisites: SC430 Biology 1 and SC440 Chemistry 1 or SC420 Earth/Space Science 1

DE433  HUMAN HEREDITY  Semester, One-half Credit
(JTCC, 3 Credits)
This course surveys basic principles of classical and molecular genetics as applied to humans. Weekly time equivalent to three hours lecture is expected. Pre-requisites: SC430 Biology 1 and SC440 Chemistry 1 or SC420 Earth/Space Science 1

DE434  HUMAN ANATOMY AND PHYSIOLOGY 1-2  Year Course, 1 Credit
(JTCC, 8 Credits)
This course integrates anatomy and physiology of cells, tissues, organs, and systems of the human body. Concepts of chemistry, physics, and pathology are included. Weekly time equivalent to three hours lecture and four hours laboratory/research is required. Pre-requisites: SC430 Biology 1 and SC440 Chemistry 1

DE436  GENERAL BIOLOGY 1-2  Year Course, 1 Credit
(JTCC, 8 Credits)
This course is designed to be the equivalent of a college freshman general biology course. Students will explore the fundamental characteristics of living matter from the molecular level to the ecosystem level. The diversity of living organisms, their structure, function and evolution is emphasized. A college-level text is used as the basal text. Weekly time equivalent to three hours lecture and four hours laboratory/research is required. Pre-requisites: SC430 Biology 1 and SC440 Chemistry 1 or SC420 Earth/Space Science 1

DE444  ENVIRONMENTAL SCIENCE  Semester, One-half Credit
(JTCC, 4 Credits)
This one-semester dual enrollment laboratory course provides a study of terrestrial and fresh water ecosystems as well as the impact of human activities on the biotic and abiotic ecosystems. Pre-requisites: SC430 Biology 1 and SC440 Chemistry 1 or SC420 Earth/Space Science 1

DE447  MARINE ECOLOGY  Semester, One-half Credit
(JTCC, 4 Credits)
This one-semester dual enrollment laboratory course provides a study of the interrelationships and interactions of the biotic and abiotic parameters in a marine environment.
Marine life, marine communities, and marine ecosystems are studied in considerable detail as well as the impact of human activities on the marine environment. **Pre-requisites:** SC430 Biology 1 and SC440 Chemistry 1 or SC420 Earth/Space Science 1

**DE449 CHEMISTRY** Year, One Credit

(JTCC, 8 Credits)

This course is designed to be the equivalent of a first year college chemistry course. It differs qualitatively and quantitatively from the usual high school chemistry course with respect to the kind of textbook used; the scope, sequence, and detail of topics covered; the mathematical formulation of principles; the emphasis on calculations; and the nature and variety of laboratory work done by student. A college textbook is used and the laboratory component is rather sophisticated. Weekly time equivalent to three hours lecture, four hours laboratory, and five hours independent study are expected. **Pre-requisites:** SC430 Biology 1, SC440 Chemistry 1

**DE450 PRINCIPLES OF PHYSICS 1-2 HONORS** One credit

(JTCC, 8 credits)

This dual enrollment laboratory course corresponds to John Tyler General College Physics PHY 121-122. Fundamental principles of physics, including mechanics, thermodynamics, wave phenomena, electricity and magnetism, as well as modern physics topics are explored. Students will master physics concepts while using quantitative and qualitative analysis to support scientific reasoning. These concepts will be applied to everyday phenomena. Weekly time equivalent to three hours lecture and four hours laboratory/research is required. **Pre-requisites:** MA340 Algebra 2 or MA352 Trigonometry/Analysis

**DE459 PHYSICS** Year, One Credit

(JTCC, 8 Credits)

This dual enrollment laboratory course corresponds to John Tyler General College Physics PHY 201-202. This course differs qualitatively and quantitatively from the usual secondary school course. Laboratory experience is a vital part of the program. A college physics text is used as the basal text. Weekly time equivalent to three hours lecture and four hours laboratory/research is required. **Pre-requisites:** SC430 Biology, SC440 Chemistry 1, SC450 Physics 1

**HISTORY AND SOCIAL SCIENCES**

**SS205 VA/US HISTORY SOL REVIEW** One-half Credit

This elective course is for those students who have not passed a Virginia Standards of Learning Test in social sciences. Students will examine the political, social and cultural growth of Virginia and The United States with a special emphasis on the Virginia Standards of Learning. Each student will be assessed to identify areas of weakness so that their end of the course SOL test results will improve. Students will receive reading assessment and instruction in test taking strategies and skills. Each specific SOL will be explored and presented using varied and individualized instructional methods designed to meet the needs and learning styles of each student.

**SS209 WORLD HISTORY/GEOGRAPHY TO 1500 A.D.** One Credit

This program will build on the basic historical, geographic, political, and economic concepts presented in the K-8 program. The diversity of culture and the evolution of human history will be explored chronologically from the beginning of time until the Renaissance in Europe. Geographical concepts will be included within the context of world historical events.

**SS209 WORLD HISTORY/GEOGRAPHY TO 1500 A.D. HONORS** One Credit

This program will build on the basic historical, geographic, political, and economic concepts presented to them in the K-8 program. The diversity of culture and the evolution of human history will be explored chronologically and geographically from the beginning of time until the Renaissance in Europe. Geographical concepts will be incorporated within the context of world historical events. Students will examine the development of the world’s major political, economic, and legal systems; artistic and literary movements; technological changes; trade patterns; religions; and the influential people of history. Special emphasis will be given to the five themes of geography as they relate to regional conflicts, humanity’s relationships with the environment, and the foundation of democratic principles, such as citizenship. Hands-on activities and the use of available technology will be an integral part of this course. Students will critique analytical essays and begin to learn the research writing process. This course is a foundation for complex critical thinking and problem solving in subsequent social studies courses.

**SS210 WORLD HISTORY/GEOGRAPHY 1500 A.D. TO THE PRESENT** One Credit

Students in World History/Geography 1500 A.D. to the Present will build on the basic historic, geographical, political, and economic concepts presented to them in the first year of the program. The diversity of culture and the evolution of human history will be explored chronologically and geographically from the Renaissance to the present.

**SS210 WORLD HISTORY/GEOGRAPHY 1500 A.D. TO THE PRESENT HONORS** One Credit

Students in this course will build on the basic historical, geographic, political, and economic concepts presented to them in the first year of the program. The diversity of culture and the evolution of human history will be explored...
SS211 VIRGINIA AND UNITED STATES HISTORY

This course will chronicle the history of the United States from the first European exploration of the Americas to the present. Individuals and groups that contributed to the unique evolution of the United States will be studied. Both domestic and foreign policies will be examined at various points in time as the United States developed into a democratic world power. While focusing on political and economic history, this course will include a study of the American culture.

SS211 VIRGINIA AND UNITED STATES HISTORY HONORS

This course will chronicle the history of the United States from the first European exploration of the Americas to the present. Individuals and groups that contributed to the unique evolution of the United States will be studied. Both domestic and foreign policies will be examined at various points in time as the United States developed into a democratic world power. While focusing on political and economic history, this course will include a study of the American culture. Document based questions will encourage students to refine their critical thinking skills and write better analytical, reflective, and evaluative essays. Students will also synthesize information about national and international political and economic movements as well as historical personages. As part of this program, debates will center on important issues faced by the U.S. and will require students to apply, synthesize, and evaluate the impact of the U.S. on world affairs. In addition to tests and quizzes, students will write analytical essays. Students will continue to learn the research writing process by using additional elements of research in a paper. Other student projects should include several of the following: book reviews, mock trials, U.N. simulations, political cartoons, debates, court briefs, and written/oral summaries of legislative issues. The purpose of these projects is to enable students to develop the skills necessary to demonstrate more complex critical thinking and problem solving skills.

SS212 VIRGINIA AND UNITED STATES GOVERNMENT

The curriculum examines the structure and functions of our federal form of government. The decision-making processes at the local, state, national, and international levels are emphasized. The foundations of American government, the politics of American democracy, and constitutional rights and responsibilities are explored in depth. United States political and economic systems are compared to those of other nations, with emphasis on the relationships between economic and political freedoms. Economic content includes the United States market system, supply and demand, and the role of the government in the economy. Democratic values and citizen participation are stressed throughout the course.

SS212 VIRGINIA AND UNITED STATES GOVERNMENT HONORS

The curriculum examines the structure and functions of our federal form of government. The decision-making processes at the local, state, national, and international levels are emphasized. The foundations of American government, the politics of American democracy, and constitutional rights and responsibilities are explored in depth. United States political and economic systems are compared to those of other nations, with emphasis on the relationships between economic and political freedoms. Economic content includes the United States market system, supply and demand, and the role of the government in the economy. Democratic values and citizen participation are stressed throughout the course. In addition to regular evaluation, all students will write one or more position papers and/or a research paper. Other student projects should include several of the following items: book reviews, mock trials, U.N. simulations, political cartoons, debates, court briefs, and written/oral summaries of legislative issues. The purpose of these projects is to enable students to develop the skills necessary to demonstrate more complex critical thinking and problem solving.

SS213 AP UNITED STATES AND VIRGINIA GOVERNMENT

This course will give students 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 and statistical data. It also requires familiarity with the various institutions, groups, beliefs, and ideas that constitute United States political system. Beyond the curriculum designed by the College Board, this course will incorporate the Virginia Standards of Learning including political philosophy, economics, and state and local systems of government. Students will be eligible to take the Advanced
Placement exam and may learn as much as three hours of college credit.

**SS214 AP UNITED STATES HISTORY**  
One Credit  
AP United States History is designed to prepare students for the Advanced Placement test in what is usually a required course at the university level. A chronological approach is used to cover United States history from the first European exploration of the Americas to the present. The influences and contributions of individuals and groups are examined in the development of the United States and its changing role in world affairs. Students are exposed to political, social, economic, diplomatic, intellectual and cultural history. A major component of this course is the reading and interpretation of various historical documents.

**SS215 UNITED STATES MILITARY AND DIPLOMACY**  
One Credit  
This elective course is designed to teach students about the history of the United States, the development of its military and the US role as a modern nation with global influence. The course will span the period from the French and Indian War to the present. It will include the viewpoint of the common citizen rather than just the most influential figures of the day. For example, the course will explore what life was like for the common foot soldier who served on the front lines, and how the role of women and minorities in the military has changed throughout our history. Students will gain an appreciation of their freedoms by seeing that during some of the darkest times in our history. Americans have continued to demonstrate their best qualities and put aside personal differences of opinion.

**SS216 AP WORLD HISTORY**  
One Credit  
This course provides students with a comprehensive and rigorous course of western and non-western history. While there are AP counterparts in Chesterfield to US/VA History and US/VA Government, there is none for world history. This provides sophomores an opportunity to gain university credit and an introduction to the AP curriculum. The course is a survey of history from 12,000 BC to the present. In keeping with the global trend at both the university and secondary levels, there is an emphasis on the history of all continents and peoples. Although Europe is still an important component of the course, more focus is placed on the non-Western world.

**SS217 LATIN AMERICAN STUDIES**  
One-half Credit  
Latin American Studies is an component of the Social Studies program for students of Hispanic background living in America. The course will attempt to help the students better understand the continent of their origin as well as gain an understanding of their cultural patterns. Topics will include (but not be limited to) the Iberian heritage, conquest, and institutions brought to Latin America; the impact of race, ethnicity and social class on the indigenous populations and other topics that the students might want to explore: street children; child labor; the status of women, reasons, for emigration, economics, political institutions, etc.

**SS219 ANCIENT AND MODERN CULTURES**  
One Credit  
This course is an introduction to archeology (the study of past cultures using material remains such as artifacts and structures as the primary evidence) as well as cultural anthropology (the comparative study of human cultural and biological variety worldwide and through time.) The goals of the course are to examine the diversity of human cultural forms in areas such as subsistence (making a living), social and personal identity, language use, emotions, social inequality, family and kinship, and gender. Students will locate and identify selected famous archeological sites from various historical periods.

**SS220 AP EUROPEAN HISTORY**  
One Credit  
AP European History is designed to prepare students for the Advanced Placement test in what is ordinarily the freshman level college history course. The course uses an essentially chronological approach to view the scope of European history from the Renaissance to the present. During this time period Europeans discovered the rest of the world, conquered it, and then were forced to relinquish it. Economic, political, and social history is examined as well as the lives of great monarchs, artists, and thinkers who shaped the history of Europe and America. Students learn about a range of people from Louis XIV to John Locke, Leonardo to Newton, and Machiavelli to Adolf Hitler. Students participate in the level of work which awaits them in college.

**SS221 SERVICE LEARNING**  
One Credit  
The purpose of the course is to provide the time and opportunity for students to perform community service. Students will also study contemporary social problems facing our society and understand the role volunteers can play in finding possible solutions. Students are dismissed from school three afternoons each week to provide their services in nearby elementary and middle schools, nursing homes, parks, and hospitals. Each student is required to complete 160 hours of community service during the school year and to participate in class projects. Students will maintain a journal and spend time in reflection with the class.

**SS222 PRACTICAL LAW**  
One-half Credit  
The objective of the Practical Law curriculum is to provide practical information and problem solving opportunities for students to develop the knowledge and skills essential for survival in today's litigious society. The curriculum includes basic factual concepts as well as activities such as case studies, mock trials, role-playing, and small and large group exercises. Students are encouraged to apply these concepts and skills in a study of hypothetical situations and law-related
current events. Through this application of knowledge, concepts, and skills, the student develops the ability to analyze facts and circumstances objectively and to determine appropriate outcomes.

SS223 PRACTICAL LAW One Credit
The objective of the Practical Law curriculum is to provide practical information and problem solving opportunities for students to develop the knowledge and skills essential for survival in today’s litigious society. The curriculum includes basic factual concepts as well as activities such as case studies, mock trials, role-playing, and small and large group exercises. Students are encouraged to apply these concepts and skills in a study of hypothetical situations and law-related current events. Through this application of knowledge, concepts, and skills, the student develops the ability to analyze facts and circumstances objectively and to determine appropriate outcomes.

SS224 INTRODUCTION TO SOCIOLOGY One-half Credit
The goal of the sociology curriculum is to provide the background and framework for students to better understand their roles in society and the effects of various groups’ actions and interactions on society. As students study American society, they incorporate many of the concepts learned in other disciplines of social studies such as responsibilities; rights; cause and effect; choices and their impact; the importance of communication, organizations, relationships, and the major American cultural institutions. This new application of traditional social studies skills and concepts provides a valuable awareness and insight into the general importance of and need for a broad understanding of the social studies.

SS225 SOCIOLOGY One Credit
The goal of the sociology curriculum is to provide the background and framework for students to better understand their roles in society and the effects of various groups’ actions and interactions on society. As students study American society, they incorporate many of the concepts learned in other disciplines of social studies such as responsibilities; rights; cause and effect; choices and their impact; the importance of communication, organizations, relationships, and the major American cultural institutions. This new application of traditional social studies skills and concepts provides a valuable awareness and insight into the general importance of and need for a broad understanding of the social studies.

SS226 INTRODUCTION TO SOCIOLOGY WITH PEER FACILITATORS One Credit
Students learn to help others through understanding communication skills and good decision-making. Emphasis is placed upon teen issues and helping within the school environment. Students are required to apply for this program.

SS228 ADVANCED PEER FACILITATORS One Credit
Student Facilitators continue to refine their helping skills. Leadership concepts are introduced and students expand their helping emphasis through community outreach.

SS229 AFRICAN AMERICAN HISTORY One-half credit
African American history is an integral component of American history and the Black Experience in America. Students learn to examine history from a minority perspective through the examination of trials, tribulations, and triumphs of race relations in the United States. Curriculum will span slavery through modern times and provide a concentration not afforded by a survey US History course. The objective of the course is to give students an appreciation of the Black Experience in American history through the in-depth study of primary documents and accounts of the events in American history affecting African Americans the most.

SS234 MYTHS, LEGENDS, AND MYSTERIES One-half Credit
In this course, students will explore the non-factual part of history and its association with different cultures and beliefs. Topics to be studied include the mythological legends of Africa, Asia, America, and classical civilizations; religious traditions of East and West; and mysteries of the world today.

SS234H MYTHS, LEGENDS AND MYSTERIES HONORS One-half Credit
In this course, students will explore the non-factual part of history and its association with different cultures and beliefs. Topics to be studied include the mythological legends of Africa, Asia, America, and classical civilizations; religious traditions of East and West; and mysteries of the world today. The course is structured in such a way that interested students of honors-level classes will be intellectually challenged. Students will read and analyze primary source documents, discuss current issues in religion, problem-solve and make conclusions regarding sectarian religious global conflicts, both historical and current.

SS235 MYTHS, LEGENDS, AND MYSTERIES One Credit
In this course, students will explore the non-factual part of history and its association with different cultures and beliefs. Topics to be studied include the mythological legends of Africa, Asia, America, and classical civilizations; religious traditions of East and West; and mysteries of the world today.

SS236 INTERNATIONAL AFFAIRS HONOR One Credit
"Honors International Affairs is open to juniors and seniors currently taking Honors or AP History. This class is a study of post WWII US foreign policy. Major points of emphasis
include the Cold War (Berlin Wall, Cuban Missile Crisis, Vietnam, etc.) the collapse of Communism, the evolution of the European Union, Globalization, and current world "hot spots." Students will develop college level reading, research and writing skills. While an awareness of current issues and regular "news watching" is expected, an emphasis is placed on research and analytical thinking skills. Class work includes, but is not limited to, debates, article critiques, (written and oral). Writing position papers, participation in Model UN, and 2 major research papers."

SS237 VIRGINIA AND THE CIVIL WAR: THE HAMMER AND THE ANVIL One-half Credit
This course provides an overview history of the Civil War era (1845-90) in the United States and especially in the state of Virginia. Emphasis will be on national and state events and personalities which would be covered through class research projects, lectures, independent reading, historical site visits, speakers, and museum work.

SS239 PRE-AP WORLD HISTORY HONORS One Credit
Pre-AP World History is designed to introduce the student to acquiring the historical thinking skills necessary to be successful in AP Social Science courses. These skills include, but are not limited to, analyzing primary sources (documents, maps, charts, graphs, art); points of view and content; continuity and change over time within and between different regions; the impact of technology, economics and demography on people and the environment; systems of social and gender structure; political organizations; and the cultural, intellectual, and religious developments and interactions among and within societies. The course begins with prehistory and concludes with the Renaissance. At the conclusion of the year, students will take the WH I SOL.

SS241 NATIVE AMERICAN STUDIES One-half Credit
The course provides an in-depth study of the evolution of Native American cultures and civilization. The overall purpose is to present a cultural understanding of Native American history and society from the pre-contact period through the present day. Particular emphasis will be placed on moving away from a Euro centric historical view of Native Americans in order to better understand the people and society from their own unique perspectives. This study will be undertaken through a combination of projects, independent reading, lecture, research, and historical site visits which will facilitate independent student explorations in their particular areas of interest.

SS242 VIRGINIA AND THE SECOND WORLD WAR One-half Credit
This course provides a chronological study of the Second World War (World War II) from the Treaty of Versailles (1919) through the end of the War in the Pacific (1945). By the end of the semester, the student should be well equipped with a through understanding of the greatest conflict in World History. The student will take an in-depth look at the role of the United States played in world affairs and in the process develop a greater appreciation of his/her American heritage. Through this study, one should be able to form a firm foundation for intelligent and positive citizenship.

SS244 NATIVE AMERICAN STUDIES One Credit
The course provides an in-depth study of the evolution of Native American cultures and civilization. The overall purpose is to present a cultural understanding of Native American history and society from the pre-contact period through the present day. Particular emphasis will be placed on moving away from a Euro centric historical view of Native Americans in order to better understand the people and society from their own unique perspectives. This study will be undertaken through a combination of projects, independent reading, lecture, research, and historical site visits which will facilitate independent student explorations in their particular areas of interest.

SS247 AP HUMAN GEOGRAPHY One Credit
The AP Human Geography course introduces students to the field of academic geography. Emphasis will be placed on geographic concepts of location, space, place, scale, pattern, regionalization and globalization. Students will develop an understanding of human interaction, demographic change, environmental affects, and economic impacts on the world.

SS249 SERVICE LEARNING 2 One Credit
Service Learning 2 is a course whose purpose is to expose students to the importance of volunteer work within their community. Students learn by doing. Service develops and refines responsibility and commitments. Students who perform volunteer services learn to value their skills and develop positive images about themselves. They learn to work with others and to solve problems, and in the process, develop leadership and teamwork skills.

SS251 AP PSYCHOLOGY One Credit
This course provides students with an introduction to the study of behavior and mental processes. They will learn the facts and concepts important to the different fields with psychology and explore the methods used within these fields.

SS253 AMERICAN HISTORY/LITERATURE One Credit
This course will provide an in-depth study of modern American history and an in-depth analysis of corresponding American literature. The course will examine relevant topics seen in modern American culture and daily impact on American citizens. This course will enhance student learning by delving deeper into modern subjects that are covered in a rudimentary way in existing US History and government courses.
SS253H AMERICAN HISTORY/LITERATURE One Credit
This course will provide an in-depth study of modern American history and an in-depth analysis of corresponding American literature. The course will examine relevant topics seen in modern American culture and daily impact on American citizens. This course will enhance student learning by delving deeper into modern subjects that are covered in a rudimentary way in existing US History and government courses. Students are exposed to a variety of research options and methods for acquiring data. They also experience a variety of technological means for presenting the outcome of their research.

SS254 COMPARATIVE RELIGIONS SEMESTER One-half Credit
This single semester course surveys the basic elements and historical developments of world religions. After establishing a common definition of the purpose of religion and ways to study religion, students study Buddhism, Taoism, Hinduism, Judaism, Christianity, and Islam. Other religions are studied as time and interest permit. The course is structured in such a way that interested students of any level can be successful. (Pilot schools: Monacan, Cosby and Clover Hill High Schools ONLY)

SS254H COMPARATIVE RELIGIONS HONORS One-half Credit
This single semester course surveys the basic elements and historical developments of world religions. After establishing a common definition of the purpose of religion and ways to study religion, students study Buddhism, Taoism, Hinduism, Judaism, Christianity and Islam. Other religions are studied as time and interest permit. The course is structured in such a way that interested students of honors-level classes will be intellectually challenged. Students will read and analyze primary source documents, discuss current issues in religion, problem-solve and make conclusions regarding sectarian religious global conflicts, both historical and current.

SS255 THE BIBLE: ITS IMPACT ON HISTORY One-half Credit
Knowledge of the Bible is an acknowledged field of academic study. The Bible contributes to the study of over two thousand years of Western culture, art, music, literature, history, and religion. The purpose of this course is to enable students to acquire an understanding and appreciation of the Bible’s major ideas, historical and geographical contexts along with the impact of the Bible on later history. The course will include the study of the Bible in its historical, sociological, and cultural contexts, and its impact on later cultures, societies, and religions.

SS263 WORLD GEOGRAPHY One Credit
The focus of this course is the study of the world’s peoples, places, and environments, with an emphasis on world regions. The knowledge, skills, and perspectives of the course are centered on the world’s peoples and their cultural characteristics, landforms and climates, economic development, and migration and settlement patterns. Spatial concepts of geography will be used as a framework for studying interactions between humans and their environments. Using geographic resources, students will employ inquiry, research, and technology skills to ask and answer geographic questions. Particular emphasis will be placed on students’ understanding and applying geographic concepts and skills to their daily lives.

SS267 CONTEMPORARY RACE AND CULTURE One Credit
This upper-level, elective course is for students who would like to learn about race and culture by developing self-awareness and learning about differences in a contemporary setting. Curriculum will include science, history, current events, and students’ reflections on their own lives, either in written form, online discussion, or in oral presentation.

SS313 AP COMPARATIVE GOVERNMENT AND POLITICS One-half Credit
The Advanced Placement course in Comparative Government and Politics introduces students to fundamental concepts used by political scientists to study the processes and outcomes of politics in a variety of country settings. The course aims to illustrate the rich diversity of political life, to show available institutional alternatives, to explain differences in processes and policy outcomes, and to communicate to students the importance of global political and economic changes. Comparison assists both in identifying problems and in analyzing policymaking. Six countries form the core of the AP Comparative Government and Politics course. China, Great Britain, Mexico, Nigeria, and Russia are all regularly covered in college-level introductory comparative politics courses. The inclusion of Iran adds a political system from a very important region of the world and one that is subject to distinctive political and cultural dynamics.

SS321 AP ECONOMICS AND ECONOMICS AND PERSONAL FINANCE One Credit
The microeconomic component of the course will provide students with 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. The macroeconomic component of the course will provide students with the principles of economics that apply to an economic system as a whole. Such a course places particular emphasis on the study of national income and price determination, and also develops students' familiarity with economic performance measures,
economic growth, and international economics. On a personal level, students learn that their own human capital (knowledge and skills) is their most valuable resource and that investing in education and training improves the likelihood of their future economic success. The standards also help students develop thinking skills that include analyzing real-world situations, economic reasoning, decision making, and problem solving. Students who pass AP Economics also earn the required credit for the FC612 Economics and Personal Finance course.

**DE211  UNITED STATES HISTORY 1-2**  Year, One Credit (JTCC, 6 Credits)

This course offers college credit for course work completed through John Tyler Community College. The course content surveys United States history from its beginning to the present.

**DE212  UNITED STATES GOVERNMENT 1-2**  Year, One Credit (JTCC, 6 Credits)

This course offers college credit for course work completed through John Tyler Community College. Topics explored in this course include federalism; the electoral process; mass media; political parties; the three branches of government; civil rights and civil liberties; and economic, domestic, and global policies.

**DE225  SOCIOLOGY**  One Credit

This course introduces basic concepts and methods of sociology. Presents significant research and theory in areas such as socialization, group dynamics, gender roles, minority group relations, stratification, deviance, culture, and community studies. Includes population, social change, and social institutions: family, education, religion, political system, and economic systems.

**WORLD LANGUAGES**

**WL511  FRENCH 1**  One Credit

This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, speaking and listening activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. As much as possible, the class is conducted in French. Students will increase their cultural awareness through the study of various thematic units; i.e. school, family, pastimes, and friends. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed.

**WL512  FRENCH 2**  One Credit

This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with a Novice-High Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. As much as possible, the class is conducted in French. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. Students at this level can generally be understood by a sympathetic audience. **Pre-requisite:** WL502 FRENCH 1B or WL511 FRENCH 1

**WL512  FRENCH 2 HONORS**  One Credit

The content of French 2 Honors expands and enriches the curriculum for French 2. Students are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with a Novice-High Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. As much as possible, the class is conducted in French. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. Students at this level can generally be understood by a sympathetic audience. **Pre-requisite:** WL502 FRENCH 1B or WL511 FRENCH 1

**WL513  FRENCH 3**  One Credit

This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group...
instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. The speaker can generally be understood by a sympathetic audience. French 3 classes are conducted almost entirely in French.

**Pre-requisite: WL512 FRENCH 2**

**WL513 FRENCH 3 HONORS**

The content of French 3 Honors expands and enriches the curriculum for French 3. Honors level students are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language—expressing opinions, negotiating, persuading, and advising. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. The speaker can generally be understood by a sympathetic audience. French 3 classes are conducted almost entirely in French.

**Pre-requisite: WL512 FRENCH 2**

**WL514 FRENCH 4**

Linguistic skills continue to be polished and strengthened, enabling the student to communicate with increasing precision and accuracy. The goal is for students to develop their understanding of French in contemporary, literary, historical, and cultural contexts, as well as to address current social problems and solutions. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. The speaker can generally be understood by a sympathetic audience. French 4 classes are conducted in French.

**Pre-requisite: WL513 French 3**

**WL514 FRENCH 4 HONORS**

One Credit

The content of French 4 Honors expands and enriches the curriculum for French 4. Honors level students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through various thematic units based on AP themes. The use of technology is encouraged to implement and enhance the students’ studies. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents.

**Pre-requisite: WL514 French 4**

**WL515 FRENCH 5**

One Credit

A comprehensive and in-depth study is presented at this advanced level. Students increase their understanding of French in contemporary, literature, historical, and cultural contexts as they address current social problems and solutions. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with the following proficiency levels on the ACTFL scale: Interpersonal Speaking (Int. High), Presentational Speaking (Int. Mid), Presentational Writing (Int. Mid/High), Interpretive (Int. Mid/High). The use of technology is encouraged to implement and enhance the students’ studies. Students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but may not be able to discuss in depth highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They may make sporadic errors when using highly complex structures, but the errors will not interfere in communicating with a native speaker. This class is conducted entirely in French.

**Pre-requisites: WL514 French 4**

**WL515 FRENCH 5 HONORS**

One Credit

The content of French 5 Honors expands and enriches the curriculum for French 5. Honors level students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the
language--expressing opinions, negotiating, persuading, and advising. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with the following proficiency levels on the ACTFL scale: Interpersonal Speaking (Int. High), Presentational Speaking (Int. Mid), Presentational Writing (Int. Mid/High), Interpretive (Int. Mid/High). The use of technology is encouraged to implement and enhance the students’ studies. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. No English is spoken in this class. **Pre-requisites:** WL514 French 4

**WL516 FRENCH 6 HONORS** One Credit

This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in French. Successful students will exit the course with the following proficiency levels on the ACTFL scale: Interpersonal Speaking (Int. High/Adv. Low), Presentational Speaking (Int. High), Presentational Writing (Int. High), Interpretive (Int. High/Advanced Low). These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but may not be able to discuss in depth highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They make few errors when using highly complex structures; the errors will not interfere in communicating with a native speaker. The use of technology is encouraged to implement and enhance the students’ studies. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. The class is conducted in French. **Pre-requisites:** WL515 French 5

**WL517 AP FRENCH LANGUAGE AND CULTURE** One Credit

The goal of this course is to achieve a high level of proficiency in the four linguistic skills, listening, speaking, reading and writing, as prescribed by the College Board. Students with a score of 3 or higher on the AP French Language Exam qualify for the Seal of Biliteracy. The classes are conducted in French. **Pre-requisites:** WL514 French 4 or higher

**WL519 FRENCH 7** One Credit

Level 7 continues to expand communicative skills, literary exposure, and cultural awareness. Students will select projects and activities that interest them to be completed as an independent study program. Students and teachers will communicate exclusively in French. **Pre-requisites:** WL516 French 6

**WL519 FRENCH 7 HONORS** One Credit

This course for advanced level students emphasizes self-directed learning. Students will conduct an interdisciplinary, in-depth investigation of one historical or cultural topic of interest per quarter using materials in the target language and present their findings in the target language. Students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but can discuss in depth some highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They make few errors when using highly complex structures; the errors will not interfere in communicating with a native speaker. Students and teachers will communicate exclusively in French. **Pre-requisites:** WL516 French 6

**WL521 GERMAN 1** One Credit

This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. As much as possible, the class is conducted in German. Students will increase their cultural awareness through various thematic units; i.e. school, family, pastimes, and friends. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed.

**WL522 GERMAN 2** One Credit

This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with a Novice-High Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class
discussions, individual projects, the Internet when appropriate, and teacher-created activities. As much as possible, the class is conducted in German. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. Students at this level can generally be understood by a sympathetic audience. Pre-requisite: WL504 GERMAN 1B or WL521 GERMAN 1

WL522 GERMAN 2 HONORS One Credit
The content of German 2 Honors expands and enriches the curriculum for German 2. Students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. Students are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with a Novice-High Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. As much as possible, the class is conducted in German. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and combine linguistic skills with other talents. Students at this level can generally be understood by a sympathetic audience. Pre-requisite: WL504 GERMAN 1B or WL521 GERMAN 1

WL523 GERMAN 3 One Credit
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. Their efforts at communication are comprehensible to a sympathetic audience. German 3 classes are conducted almost entirely in German. Pre-requisite: WL504 GERMAN 1B or WL521 GERMAN 1

WL523 GERMAN 3 HONORS One Credit
The content of German 3 Honors expands and enriches the curriculum for German 3. Students are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language—expressing opinions, negotiating, persuading, and advising. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. The speaker can generally be understood by a sympathetic audience. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. German 3 classes are conducted almost entirely in German. Pre-requisites: WL504 GERMAN 1B or WL521 GERMAN 1

WL524 GERMAN 4 One Credit
Linguistic skills continue to be polished and strengthened, enabling the student to communicate with increasing precision and accuracy. The goal is for students to develop their understanding of German in contemporary, literary, historical, and cultural contexts, as well as to address current social problems and solutions. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through various thematic units based on AP themes. The use of technology is encouraged to implement and enhance the students’ studies. The speaker can generally be understood by a sympathetic audience. These classes are conducted in German. Pre-requisites: WL504 GERMAN 1B or WL521 GERMAN 1

WL524 GERMAN 4 HONORS One Credit
The content of German 4 Honors expands and enriches the curriculum for German 4. Honors level students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. This academic elective focuses on
Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through various thematic units based on AP themes. The use of technology is encouraged to implement and enhance the students’ studies. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. These classes are conducted in German. Pre-requisites: WL523 GERMAN 3

WL525 GERMAN 5
One Credit
A comprehensive and in-depth study is presented at this advanced level. In addition, the students increase their understanding of German in contemporary, literary, historical, and cultural contexts as well as to address current social problems and solutions. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with the following proficiency levels on the ACTFL scale: Interpersonal Speaking (Int. Mid), Presentational Speaking (Int. Mid), Presentational Writing (Int. Mid/High), Interpretive (Int. Mid/High). The use of technology is encouraged to implement and enhance the students’ studies. Students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but may not be able to discuss in depth highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They may make sporadic errors when using highly complex structures, but the errors will not interfere in communicating with a native speaker. These classes are conducted entirely in German. Pre-requisites: WL524 GERMAN 4

WL525 GERMAN 5 HONORS
One Credit
The content of German 5 Honors expands and enriches the curriculum for German 5. Honors level students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with the following proficiency levels on the ACTFL scale: Interpersonal Speaking (Int. High), Presentational Speaking (Int. Mid), Presentational Writing (Int. Mid/High), Interpretive (Int. Mid/High). Students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but may not be able to discuss in depth highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They may make sporadic errors when using highly complex structures, but the errors will not interfere in communicating with a native speaker. These classes are conducted entirely in German. Pre-requisites: WL525 GERMAN 5

WL526 GERMAN 6 HONORS
One Credit
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in German. Successful students will exit the course with the following proficiency levels on the ACTFL scale: Interpersonal Speaking (Int. High/Adv. Low), Presentational Speaking (Int. High), Presentational Writing (Int. High), Interpretive (Int. High/Advanced Low). They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. Students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but may not be able to discuss in depth highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They may make sporadic errors when using highly complex structures, but the errors will not interfere in communicating with a native speaker. The use of technology is encouraged to implement and enhance the students’ studies. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. These classes are conducted entirely in German. Pre-requisites: WL524 GERMAN 4 or higher

WL527 AP GERMAN LANGUAGE AND CULTURE
One Credit
The goal of this course is to achieve a high level of proficiency in the four linguistic skills, listening, speaking, reading and writing, as prescribed by the College Board. Students with a score of 3 or higher on the AP German Language Exam qualify for the Seal of Biliteracy. The classes are conducted in German. Pre-requisites: WL524 GERMAN 4 or higher
WL529 GERMAN 7 HONORS One Credit
This course for advanced level students emphasizes self-directed learning. Students will conduct an interdisciplinary, in-depth investigation of one historical or cultural topic of interest per quarter using materials in the target language and present their findings in German. Students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize and can discuss in depth some highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They make few errors when using highly complex structures; the errors will not interfere in communicating with a native speaker. Students and teachers will communicate exclusively in German. Pre-requisites: WL526 GERMAN 6

WL531 LATIN 1 One Credit
This academic elective focuses on Presentational Writing and Interpretive Reading in Latin. Successful students will exit the course with a Novice-High Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale for Presentational Writing. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through seven thematic units. The use of technology is encouraged to implement and enhance the students’ studies.

WL532 LATIN 2 One Credit
The second level of Latin offers a continuing study and review of grammar previously introduced. Most of the formal grammar necessary for the reading of Latin literature will be presented. Readings continue to focus on daily life. Legendary history and mythology complement the integrated language approach to translation. The use of technology is encouraged to implement and enhance the students’ studies. Successful students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale for Presentational Writing. The students' composition can generally be understood by a sympathetic reader. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. Pre-requisite: WL526 LATIN 1B or WL531 LATIN 1

WL532 LATIN 2 HONORS One Credit
The content of Latin 2 Honors expands and enriches the curriculum for Latin 2. Honors level students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. Successful students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale for Presentational Writing and Novice-High for Presentational Speaking. The students' composition can generally be understood by a sympathetic reader. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. Pre-requisites: WL506 LATIN 1B or WL531 LATIN 1

WL533 LATIN 3 One Credit
The third level reviews and completes the study of grammar. Additional vocabulary is introduced through the readings. Latin prose reading selections, featuring the Republic and the Empire, include such authors as Cicero, Caesar, Eutropius, Augustus, and Petronius. With enhanced vocabulary, students are able to read passages from the works of selected authors. Successful students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale for Presentational Writing and Novice-High for Presentational Speaking. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. Pre-requisite LATIN 2

WL533 LATIN 3 HONORS One Credit
The content of Latin 3 Honors expands and enriches the curriculum for Latin 3. Honors level students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. Students are strongly encouraged to do a
practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. Successful students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale for Presentational Writing and Novice-High for Presentational Speaking. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisites: WL532 LATIN 2**

**WL534 LATIN 4**  
One Credit
Latin 4-7 courses feature the study of a variety of authentic Roman texts which could include Virgil’s Aeneid, Ovid’s Metamorphoses, Plautus plays, poetry by Catullus and Horace among other classical authors and works. Students will study the politics, history, mythology and culture relevant to the texts. Students will also explore the influence of what they read on later generations and draw connections to the world in which they live today. Students will refine their grammatical skills and gain familiarity with vocabulary central to the texts. The study of literary devices and meter will strengthen the students’ appreciation of literature. Successful students will exit the course with an Intermediate-High Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale for Presentational Writing and Novice-High for Presentational Speaking. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisites: WL533 LATIN 3 (or the previous Latin class)**

**WL534 LATIN 4 HONORS**  
One Credit
The content of Latin 4-7 Honors expands and enriches the curriculum. Honors level students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to participate in sophisticated class discussions about the content, style and syntax of the text. They demonstrate increased proficiency in manipulating and analyzing the language appropriately. The course also includes a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. Successful students will exit the course with an Intermediate-High Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale for Presentational Writing and Novice-High for Presentational Speaking. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisites: WL534 LATIN 4**

**WL535 LATIN 5**  
One Credit
Latin 4-7 courses feature the study of a variety of authentic Roman texts which could include Virgil’s Aeneid, Ovid’s Metamorphoses, Plautus plays, poetry by Catullus and Horace among other classical authors and works. Students will study the politics, history, mythology and culture relevant to the texts. Students will also explore the influence of what they read on later generations and draw connections to the world in which they live today. Students will refine their grammatical skills and gain familiarity with vocabulary central to the texts. The study of literary devices and meter will strengthen the students’ appreciation of literature. Successful students will exit the course with an Advanced-Mid Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with an Intermediate-Mid / High Proficiency level on the ACTFL scale for Presentational Writing and Novice-High for Presentational Speaking at minimum. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisites: WL533 LATIN 3 (or the previous Latin class)**

**WL535 LATIN 5 HONORS**  
One Credit
The content of Latin 5 Honors expands and enriches the curriculum for Latin 5. Students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. Successful students will exit the course with an Advanced-Mid Proficiency level on the ACTFL scale for Interpretive Reading. Students will exit the course with an Intermediate-Mid / High Proficiency level on the ACTFL scale for Presentational Writing and Novice-High for Presentational Speaking at minimum. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisites: WL534 LATIN 4**
WL536 LATIN 6 HONORS
One Credit
Latin 4-7 courses feature the study of a variety of authentic Roman texts which could include Virgil’s Aeneid, Ovid’s Metamorphoses, Plautus plays, poetry by Catullus and Horace among other classical authors and works. Students will study the politics, history, mythology and culture relevant to the texts. Students will also explore the influence of what they read on later generations and draw connections to the world in which they live today. Students will refine their grammatical skills and gain familiarity with vocabulary central to the texts. The study of literary devices and meter will strengthen the students' appreciation of literature. Successful students will exit the course with an Advanced-Mid Proficiency level on the ACTFL scale for Presentational Reading and Writing and Novice-High for Presentational Speaking at minimum. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. Successful students will also explore the influence of what they read on later generations and draw connections to the world in which they live today. Students will refine their grammatical skills and gain familiarity with vocabulary central to the texts. The study of literary devices and meter will strengthen the students' appreciation of literature. Successful students will exit the course with an Advanced-Mid Proficiency level on the ACTFL scale for Presentational Reading and Writing and Novice-High for Presentational Speaking at minimum. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. Successful students must also participate in the honors practicum, requiring beyond the classroom activities. Pre-requisites: WL536 Latin 5

WL538 AP LATIN
One Credit
Students may opt for an Advanced Placement prescription at Level 4 or 5. The designated author is Virgil. Through these readings and independent work, a study of Roman history and culture is continued. A review of grammar and writing is instituted when necessary. The use of technology is encouraged to implement and enhance the student’s study. Student with a score of 3 or higher on the AP Latin Language Exam qualify for the Seal of Biliteracy. Pre-requisites: WL534 Latin 4 (Advanced placement prescription may start as early as Latin 4; in such cases, WL533 Latin 3 will be the prerequisite.)

WL539 LATIN 7 HONORS
One Credit
Latin 4-7 courses feature the study of a variety of authentic Roman texts which could include Virgil’s Aeneid, Ovid’s Metamorphoses, Plautus plays, poetry by Catullus and Horace among other classical authors and works. Students will study the politics, history, mythology and culture relevant to the texts. Students will also explore the influence of what they read on later generations and draw connections to the world in which they live today. Students will refine their grammatical skills and gain familiarity with vocabulary central to the texts. The study of literary devices and meter will strengthen the students' appreciation of literature. Successful students will exit the course with an Advanced-Mid Proficiency level on the ACTFL scale for Presentational Reading and Writing and Novice-High for Presentational Speaking at minimum. These goals will be accomplished through individual and paired activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. Successful students must also participate in the honors practicum, requiring beyond the classroom activities. Pre-requisites: WL536 Latin 6

WL541 SPANISH 1
One Credit
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with a Novice-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. As much as possible, the class is conducted in Spanish. Students will increase their cultural awareness through various thematic units; i.e. school, family, pastimes, and friends. The use of technology is encouraged to implement and enhance the students’ studies. This course will require nightly homework, ongoing studying, memorization, and practice in order to build the foundation necessary to succeed. Pre-requisites: WL542 Latin 7 Honors or WL539 Latin 6

WL542 SPANISH 2
One Credit
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with a Novice-High Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. As much as possible, the class is conducted in Spanish. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. Students at this level can generally be understood by a sympathetic audience. Pre-requisites: WL508 SPANISH 1B or WL541 SPANISH 1

WL542 SPANISH 2 HONORS
One Credit
The content of Spanish 2 Honors expands and enriches the curriculum for Spanish 2. Honors level students are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate
manner. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with a Novice-High Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. As much as possible, the class is conducted in French. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. Students at this level can generally be understood by a sympathetic audience. Pre-requisite: WL508 SPANISH 1B or WL541

WL543 SPANISH 3 One Credit
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. Their efforts at communication are comprehensible to a sympathetic audience. Spanish 3 classes are conducted almost entirely in Spanish. Pre-requisite: WL542 SPANISH 2

WL543 SPANISH 3 HONORS One Credit
The content of Spanish 3 Honors expands and enriches the curriculum for Spanish 3. Honors level students are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language—expressing opinions, negotiating, persuading, and advising. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with an Intermediate-Low Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. The speaker can generally be understood by a sympathetic audience. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. Spanish 3 classes are conducted almost entirely in Spanish. Pre-requisite: WL542 SPANISH 2

WL544 SPANISH 4 One Credit
Linguistic skills continue to be polished and strengthened, enabling the student to communicate with increasing precision and accuracy. The goal is for students to develop their understanding of Spanish in contemporary, literary, historical, and cultural contexts, as well as to address current social problems and solutions. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will increase their cultural awareness through various thematic units. The use of technology is encouraged to implement and enhance the students’ studies. The speaker can generally be understood by a sympathetic audience. Spanish 4 classes are conducted in Spanish. Pre-requisite: WL543 SPANISH 3

WL544 SPANISH 4 HONORS One Credit
The content of Spanish 4 Honors expands and enriches the curriculum for Spanish 4. Students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with an Intermediate-Mid Proficiency level on the ACTFL scale in the areas of listening, speaking, reading, and writing. Students will increase their cultural awareness through various thematic units. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. The class is conducted in Spanish. Pre-requisite: WL543 SPANISH 3
WL545 SPANISH 5
One Credit
A comprehensive and in-depth study is presented at this advanced level. In addition, the students increase their understanding of Spanish in contemporary, literary, historical, and cultural contexts as well as to address current social problems and solutions. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with the following proficiency levels on the ACTFL scale: Interpersonal Speaking (Int. High), Presentational Speaking (Int. Mid), Presentational Writing (Int. Mid/High), Interpretive (Int. Mid/High). These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. Students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but may not be able to discuss in depth highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They may make sporadic errors when using highly complex structures, but the errors will not interfere in communicating with a native speaker. These classes are conducted entirely in Spanish. Pre-requisite: WL544 SPANISH 4

WL545 SPANISH 5 HONORS
One Credit
The content of Spanish 5 Honors expands and enriches the curriculum for Spanish 5. Students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with the following proficiency levels on the ACTFL scale: Interpersonal Speaking (Int. High), Presentational Speaking (Int. Mid), Presentational Writing (Int. Mid/High), Interpretive (Int. Mid/High). These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but may not be able to discuss in depth highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They may make sporadic errors when using highly complex structures, but the errors will not interfere in communicating with a native speaker. The use of technology is encouraged to implement and enhance the students’ studies. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. These classes are conducted entirely in Spanish. Pre-requisite: WL545 SPANISH 5

WL546 SPANISH 6 HONORS
One Credit
This academic elective focuses on Interpersonal Speaking and Writing, Interpretive Reading, Viewing, and Listening, and Presentational Speaking and Writing in Spanish. Successful students will exit the course with the following proficiency levels on the ACTFL scale: Interpersonal Speaking (Int. High/Adv. Low), Presentational Speaking (Int. High), Presentational Writing (Int. High), Interpretive (Int. High / Advanced Low). These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize but may not be able to discuss in depth highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They may make errors when using highly complex structures, but the errors will not interfere in communicating with a native speaker. The use of technology is encouraged to implement and enhance the students’ studies. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. These classes are conducted entirely in Spanish. Pre-requisite: WL545 SPANISH 5 or WL546 SPANISH 6

WL547 AP SPANISH LANGUAGE AND CULTURE
One Credit
The goal of this course is to achieve a high level of proficiency in the four linguistic skills, listening, speaking, reading, and writing, as prescribed by the College Board. Students with a score of 3 or higher on the AP Spanish Language Exam qualify for the Seal of Biliteracy. The use of technology is encouraged to implement and enhance the students’ studies. The classes are conducted in Spanish. Pre-requisite: WL545 SPANISH 5 or WL546 SPANISH 6

WL548 AP SPANISH LITERATURE AND CULTURE
One Credit
The goal of this course is to achieve a high level of proficiency in the four linguistic skills, listening, speaking, reading, and writing, as prescribed by the College Board. Students with a score of 3 or higher on the AP Spanish Literature Exam qualify.
for the Seal of Biliteracy. The classes are conducted in Spanish. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisite: WL547 AP SPANISH LANGUAGE AND CULTURE**

**WL550 SPANISH 7 HONORS** One Credit

This course for advanced level students emphasizes self-directed learning. Students will conduct an interdisciplinary, in-depth investigation of one historical or cultural topic of interest per quarter using materials in the target language and present their findings in the target language. Students and teachers will communicate exclusively in Spanish. Students are able to speak the language with enough accuracy to participate effectively in formal and informal conversations on a wide variety of topics. They can support opinions and hypothesize in Spanish. They can discuss in depth some highly abstract topics. They are partially familiar with regional or other differences and command a wide variety of interactive strategies. They make few errors when using highly complex structures; the errors will not interfere in communicating with a native speaker. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisite: WL545 SPANISH 5 or WL546 SPANISH 6 or WL AP SPANISH LITERATURE AND CULTURE**

**WL551 JAPANESE 1** One Credit

Students begin to acquire skills in understanding and speaking the Japanese language. Basic grammar and vocabulary used in daily living, practical conversations, and discussions of Japanese culture are studied. Hiragana, the Japanese syllabify writing system, and katakana, the Japanese syllabify for foreign words, are taught. A limited number of kanji characters, are also introduced. Through the language, students study history, geography, culture, and customs of the country. These goals will be accomplished through individual and paired activities, reading authentic basic Japanese, listening and speaking activities, small and large group instruction, individual projects, the Internet when appropriate, and teacher-created activities. This is an academic elective that requires regular study, homework, memorization and practice. The use of technology is encouraged to implement and enhance the students’ studies. Successful students will exit the course with a Novice-Mid Proficiency level in Interpersonal Speaking and Interpretive Listening on the ACTFL scale, Novice-Mid in Presentational Speaking and Writing, and a Novice-Mid Proficiency level in Interpretive Reading on the ACTFL Proficiency scale. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. **Pre-requisite: WL551 JAPANESE 1**

**WL552 JAPANESE 2** One Credit

The content of this course expands and enriches the Japanese 2 curriculum. The students develop in greater depth the linguistic skills of listening, speaking, reading, and writing. They are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They demonstrate increased proficiency in manipulating the language in a culturally appropriate manner. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. The use of technology is encouraged to implement and enhance the students’ studies. Successful students will exit the course with a Novice-Mid / High Proficiency level in Interpersonal Speaking and Interpretive Listening on the ACTFL scale, Novice-Mid in Presentational Speaking and Writing, and a Novice-Mid Proficiency level in Interpretive Reading on the ACTFL Proficiency scale. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. **Pre-requisite: WL551 JAPANESE 1**

**WL553 JAPANESE 3** One Credit

Linguistic skills and grammatical concepts are reviewed and strengthened, while cultural concepts are expanded to enable students to understand cultural differences. The goal is for students to communicate with increasing proficiency by discussing the world of work, travel in Japan, and Japanese cuisine. Japanese 3 classes are conducted almost entirely in Japanese. The use of technology is encouraged to implement and enhance the students’ studies. Successful students will exit the course with a Novice- High Proficiency level in Interpersonal Speaking and Interpretive Listening on the ACTFL scale, Novice-Mid / High in Presentational Speaking and Writing, and Interpretive Reading on the ACTFL Proficiency scale. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. **Pre-requisite: WL551 JAPANESE 1**

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activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. **Pre-requisite: WL552 JAPANESE 2**

**WL553 JAPANESE 3 HONORS**

One Credit

The content of this course expands and enriches the Japanese curriculum. The students develop the linguistic skills of listening, speaking, reading, and writing at an accelerated pace. Honors level students are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. They are expected to interact using more complex responses thus demonstrating greater ability to manipulate and create in the language -- expressing opinions, negotiating, persuading, and advising. The student’s individual interests and talents are encouraged through increased opportunities for peer- and self-assessment and by simulating real-life situations in Japanese and beginning to discuss larger societal issues. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. The use of technology is encouraged to implement and enhance the students’ studies. Successful students will exit the course with a Novice-High Proficiency level in Interpersonal Speaking and Interpretive Listening on the ACTFL scale, Novice-Mid / High in Presentational Speaking and Writing, and Interpretive Reading on the ACTFL Proficiency scale. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. **Pre-requisite: WL552 JAPANESE 2**

**WL554 JAPANESE 4**

One Credit

In Japanese 4, students continue to broaden the range of topics discussed and compared. The use of technology is encouraged to implement and enhance the students’ studies. Successful students will exit the course with an Intermediate-Low Proficiency level in Interpersonal Speaking and Interpretive Listening on the ACTFL scale, Novice-High in Presentational Speaking and Writing, and Interpretive Reading on the ACTFL Proficiency scale. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. This class is conducted in Japanese. **Pre-requisite: WL553 JAPANESE 3**

**WL554 JAPANESE 4 HONORS**

One Credit

The content of this course expands and enriches the Japanese 4 curriculum. Honors level students are expected to express themselves beyond simple mechanical responses, demonstrating the ability to manipulate and create in the language. Successful students will exit the course with an Intermediate-Low Proficiency level in Interpersonal Speaking and Interpretive Listening on the ACTFL scale, Novice-High in Presentational Speaking and Writing, and Interpretive Reading on the ACTFL Proficiency scale. These goals will be accomplished through individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students are strongly encouraged to do a practicum, an opportunity to put into practice what already has been learned and to combine linguistic skills with other talents. This class is conducted in Japanese. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisite: WL553 JAPANESE 3**

**WL561 HERITAGE SPANISH LANGUAGE 1**

One credit

This course is intended for students whose dominant spoken language is Spanish, but who lack expertise in reading and writing in their native tongue. The thematic units are built around short, leveled stories and one or more short, culturally authentic novels. Grammar topics focus on strengthening the writing skills of heritage speakers. Typical activities include individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students will learn about the diversity of Hispanic cultures and will explore themes of interest to Hispanic students. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisites: Intermediate-Mid Interpersonal Speaking Proficiency (ACTFL Scale) in Spanish, Novice-Low Interpersonal Writing Proficiency (ACTFL Scale) in Spanish, and Novice-Low Interpretive Reading Proficiency (ACTFL Scale) in Spanish.**

**WL562 HERITAGE SPANISH LANGUAGE 2**

One credit

This course is intended for students whose dominant spoken language is Spanish, but who lack expertise in reading and writing in their native tongue. Students will learn more about the diversity of Hispanic cultures and will explore themes of interest to Hispanic students. The thematic units are built around longer, leveled stories and culturally authentic novels. Grammar topics focus on strengthening the writing skills of heritage speakers. Typical activities include individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisite: WL561 Native Spanish Language 1 or Intermediate-High Interpersonal Speaking Proficiency (ACTFL Scale) in Spanish, Novice-High Interpersonal Writing Proficiency (ACTFL Scale) in Spanish, and Novice-High Interpretive Reading Proficiency (ACTFL Scale) in Spanish.**
WL563 HERITAGE SPANISH LANGUAGE 3 One Credit
This course is designed to further students’ progress in the development of the four language skills while deepening their insight into Hispanic culture through the exposure to works by modern writers of the Spanish-speaking world. Grammar topics focus on strengthening the writing skills of heritage speakers. Typical activities include individual and paired activities, listening and speaking activities, small and large group instruction, class discussions, individual projects, the Internet when appropriate, and teacher-created activities. Students taking this course are ready to transition to AP Spanish Language and Culture. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisite:** WL562 Native Spanish Language 2

WL580 WORLD LANGUAGE CADET TEACHER One-half Credit
Students in the fourth or fifth year of a foreign language have the opportunity to be cadet teachers by working with students who have been absent or need extra help. They also may lead discussion groups in the target language. Students are recommended for this course by their previous foreign language teachers. A qualified fourth-year student could work with a first-year class and fifth-year students could work with a first or second-year class. The use of technology is encouraged to implement and enhance the students’ studies.

WL581 WORLD LANGUAGE CADET TEACHER One Credit
Students in the fourth or fifth year of a foreign language have the opportunity to be cadet teachers by working with students who have been absent or need extra help. They also may lead discussion groups in the target language. Students are recommended for this course by their previous foreign language teachers. A qualified fourth-year student could work with a first-year class and fifth-year students could work with a first or second-year class. The use of technology is encouraged to implement and enhance the students’ studies.

WL584 SPANISH FOR THE HEALTHCARE PROFESSIONS One Credit
This course covers all four linguistic skills (speaking, listening, reading and writing) necessary to communicate with the 21st Century Hispanic patient population encountered in the various healthcare professions. Emphasis will be placed on perfecting speaking and listening skills on applied medical terminology. Students will be expected to participate in activities such as role-playing based on typical office and emergency procedures. The use of technology is encouraged to implement and enhance the students’ studies. **Pre-requisite:** SPANISH 1, 2 & 3 with a grade of "C" or better.

DE564 INTERMEDIATE COLLEGE SPANISH One Credit
This course emphasizes the development of language skills and cultural awareness through the active use of art, music, and literature from the Spanish-speaking world. Through carefully sequenced reading, vocabulary, and practice activities, students’ progress an Intermediate-High level of proficiency. The program is enhanced by cutting-edge multimedia learning tools, including a unique online resource that offers convenient access to electronic versions of student and instructor supplements. The use of technology is encouraged to implement and enhance the students’ studies.

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HEALTH AND PHYSICAL EDUCATION

HP702 HEALTH AND SPECIAL PHYSICAL EDUCATION 9 One Credit
This course is a diversified program of developmental activities suited to needs, capabilities, and limitations of students who may not safely, successfully, or with personal satisfaction engage in activities included in a regular physical education program. Through carefully designed movement experiences students should gain knowledge about skills, fitness, and the applications to their lives. This course includes health education for half of the year and special physical education for half of the year.

HP703 HEALTH AND SPECIAL PHYSICAL EDUCATION 10 One Credit
This course is a diversified program of developmental activities suited to needs, capabilities, and limitations of students who may not safely, successfully, or with personal satisfaction engage in activities included in a regular physical education program. Through carefully designed movement experiences students should gain knowledge about skills, fitness, and the applications to their lives. This course includes health education for half of the year and special physical education for half of the year.

HP709 HEALTH AND PHYSICAL EDUCATION LEVEL 1 One Credit
This course is designed for students to apply a variety of health concepts, skills, and behaviors when making health-related decisions. The health education content focuses on nutrition, fitness, substance prevention, first aid and family life education. In physical education emphasis is placed on students becoming confident and competent in performing lifetime physical activities. Fitness experiences and individual fitness assessments are integrated throughout the year.

HP710 HEALTH AND PHYSICAL EDUCATION LEVEL 2 One Credit
This course is designed for students to continue applying health concepts, skills, and behaviors when making health-related decisions. The health education content focuses on driver education, personal and community health and wellness, violence prevention and family life education. In physical education emphasis is placed on students'
confidence and competence in physical activities they are likely to participate in throughout life.

**HP711 ADVANCED PHYSICAL EDUCATION 1** One Credit
This elective course stresses participation in a variety of lifetime activities. The course includes recreational activities, fitness activities, and individual, dual, and team sports. Possible activities are aerobics and aerobic games, badminton, basketball, canoeing, cycling, golf, pickle ball, soccer, swimming/water safety, strength training, and volleyball. Fitness experiences and individual fitness assessments are integrated throughout the year. Offered odd years only.

**HP712 ADVANCED PHYSICAL EDUCATION 2** One Credit
This elective course stresses participation in a variety of lifetime activities. The course includes recreational activities, fitness activities, and individual, dual, and team sports. Possible activities are aerobics and aerobic games, badminton, basketball, canoeing, cycling, golf, pickle ball, soccer, swimming/water safety, strength training, tennis, and volleyball. Fitness experiences and individual fitness assessments are integrated throughout the year. Offered even years only.

**HP713 DRIVER EDUCATION 10** No Credit
Classroom driver education

**HP715 DRIVER EDUCATION/STUDY** No Credit
Classroom driver education

**HP720 FITNESS FOR LIFE 1** One Credit
This elective course is designed for students to develop and maintain lifetime skills focused on strength training and conditioning. Emphasis is placed on students self-managing their programs.

**HP721 FITNESS FOR LIFE 2** One Credit
This elective course is designed for students to develop and maintain lifetime skills focused on strength training and conditioning. Emphasis is placed on students self-managing their programs.

**HP741 YOGA-PILATES** One Credit
Yoga-Pilates is a class for students to gain strength, flexibility, stamina and concentration with a variety of movements that will improve their balance, posture and self esteem. Yoga-Pilates combines the slow controlled breathing and stretching of Yoga with the core tightening and strengthening of Pilates. A variety of tools like bands, blocks, and rings will help maximize the students’ experience. Yoga-Pilates will pay attention to building strength and endurance of the core to gain stability, enhancing posture and creating a fit, streamlined shape.

**HP743 FITNESS FOR LIFE 3** One Credit
This elective course is designed for students who want to improve their overall strength, speed and cardiovascular endurance. Seniors are assigned teaching (instructor) duties to work with fellow students.

**HP722 SPORTS MEDICINE 1** One Credit
This elective course is designed for students to explore sports medicine and its related fields. Emphasis is placed on the specific management, teaching, and administrative skills involved in the athletic training field.

**HP722H SPORTS MEDICINE 1 HONORS** One Credit
This elective course is designed for students to explore sports medicine and its related fields. Emphasis is placed on the specific management, teaching, and administrative skills involved in the athletic training field.

**HP742 SPORTS MEDICINE 2** One Credit
This course of studies is taught by a certified athletic trainer and provides students with knowledge of topics such as injury prevention, nutrition, first aid/CPR/AED, exercise physiology, and biomechanics. Students study basic human anatomy and physiology, medical terminology, legal and ethical issues in sports medicine, and career preparation. Course competencies have been constructed so as not to go beyond the professional scope of aide/assistant level. Mastery of the material in this course would provide students with a strong background should they wish to pursue certification in areas such as first aid, CPR, AED, and/or personal trainer.

**HP742H SPORTS MEDICINE 2 HONORS** One Credit
This course of studies is taught by a certified athletic trainer and provides students with knowledge of topics such as injury prevention, nutrition, first aid/CPR/AED, exercise physiology, and biomechanics. Students study basic human anatomy and physiology, medical terminology, legal and ethical issues in sports medicine, and career preparation. Course competencies have been constructed so as not to go beyond the professional scope of aide/assistant level. Mastery of the material in this course would provide students with a strong background should they wish to pursue certification in areas such as first aid, CPR, AED, and/or personal trainer.

**PERFORMING ARTS**

**PA111 THEATRE 1** One Credit
This is an introductory course which offers students the opportunity to study theatre including theatre, history, technical skills, and acting.
PA112 THEATRE 2 One Credit
This is an advanced elective course with emphasis on performing techniques and interpretation of dramatic literature, as well as an introduction to costuming and makeup. **Pre-requisites:** PA111 Theatre 1; teaching staff recommendation

PA113 THEATRE 3 One Credit
This is an advanced elective course with emphasis on directing, play writing, and advanced acting projects. It is designed for those students who are highly advanced in dramatic techniques and who may pursue the study of theatre arts. **Pre-requisites:** PA112 Theatre 2; teaching staff recommendation

PA114 THEATRE 4 One Credit
This course is designed for students who are highly advanced in dramatic techniques, rehearsal process and performance and who wish to pursue a career in theatre beyond high school. The major objective is to give advanced students a clear understanding of elements involved in developing characters from analysis to performance. The fourth year student is expected to assimilate the acquired skills learned in Theatre 1, 2, 3 and demonstrate knowledge in the rehearsal/performance process. The students will understand that effort promotes achievement, develop a spirit of cooperation and positive self-esteem, experience enrichment through participation, respect individual and cultural differences, and continue to acquire stage presence and etiquette. **Pre-requisites:** Theatre 1, 2, and 3; theatre teacher recommendation

PA121 THEATRE PRODUCTION 1 One Credit
This introductory course is designed to give students the opportunity to study technical production, set construction, lighting, sound and makeup. Students enrolled in this course will need a recommendation from the theatre teacher. **Theatre teacher recommendation**

PA122 THEATRE PRODUCTION 2 One Credit
Students enrolled in Theater Production 2 will study advanced techniques in all phases of theatrical production. Students enrolled in this course will need a recommendation from the theatre teacher. **Pre-requisites:** PA121 Theatre Production 1; theatre teacher recommendation

PA123 THEATRE PRODUCTION 3 One Credit
This course is designed for students who will be pursuing theatre studies beyond high school. The class consists of contracted projects designed to meet the needs of the particular student. The content includes the highest level of theatre which incorporates light, sound, costuming, and makeup. **Pre-requisites:** PA122 Theatre Productions 2 and interview with the theatre teacher

PA124 THEATRE PRODUCTION 4 One Credit
The content is designed for the students who want to pursue further study in theatre. The course will include specific projects that meet the requirements for the particular student. This course differs from other theatre production courses in that the study and projects will be specific to theatre design and production management skills. Selection by interview with the theatre teacher

PA141 INDEPENDENT STUDY THEATRE One Credit
This course is taken in conjunction with the Theatre 4 or Theatre Production 4 courses. In order to enroll in independent study students must have permission from their instructor. The objective is to allow advanced level students the opportunity to explore in-depth studies of specific techniques and develop proficiency in theatre. **Pre-requisites:** Instructor evaluation

PA171 MUSICAL THEATRE WORKSHOP One Credit
A survey of musical theatre as an art form. Students will study, analyze, and perform a variety of selections from musical theatre shows spanning multiple time periods and styles. **Prerequisite:** Theatre I

PA180 LIGHTING AND SOUND FOR THE STAGE One Credit
Explore, analyze, manipulate and evaluate the technology used for stage lighting and sound.

PA310 BEGINNING BAND One Credit
High school students will have the opportunity to learn a band instrument (brass, woodwind, percussion) and completes Level 1 as specified in the HS band curriculum. Student must provide their own instruments and method book. Appropriate instrument selection will be accomplished during the first two weeks of school. Instruments may be rented or purchased from local music dealers. At the discretions of the band teacher, the music dept may provide larger instruments such as tubas, baritone, saxophones, bassons, etc., if they are available. Performances are mandatory and are part of the overall grade in this class. Special attire may be required for performances.

PA311 INTERMEDIATE BAND One Credit
This course is open to students who have previous band experience. The course will focus on the sequential development of music skills. Students enrolled in this course are expected to attend mandatory performance/rehearsals, provide their own instrument (large instruments will be provided if available). Marching band may be a part of this course and special clothing may be required for performances. There is a yearly usage fee for uniforms. **Pre-requisites:** Instructor evaluation
PA312 ADVANCED BAND One Credit
This course is designed to continue music skills developed on the middle school level. Students will study ensemble playing, musical interpretation, and appropriate band literature. Students enrolled in this course are expected to attend mandatory rehearsals/performances, provide their own instrument (large instruments will be provided if available). Marching band may be a part of this course and special clothing may be required for performances. There is a yearly usage fee for uniforms. **Pre-requisites: Instructor evaluation**

PA313 SYMPHONIC BAND One Credit
This course is for the accomplished high school instrumentalist. The course will focus on technical facility, musicianship, tone quality, maturity, and musical interpretation. This course is open to selected students through audition by the instructor. Students enrolled in this course are expected to attend mandatory rehearsals/performances and provide their own instrument (large instruments will be provided if available). Instrumentation will be at the discretion of the director. Marching band may be a part of this course and special clothing may be required for performances. There is a yearly usage fee for uniforms. **Prerequisites: Instructor evaluation**

PA314 INTERMEDIATE JAZZ BAND One Credit
Intermediate Jazz Band class is a study of the basic literature, rehearsal, and performance techniques performed in jazz band. This course will focus on the development of improvisational skills and analysis of chord structure. Students enrolled in this course are expected to attend mandatory rehearsals/performances and provide their own instrument (large instruments will be provided if available). Instrumentation will be at the discretion of the director. Marching band may be a part of this course and special clothing may be required for performances. There is a yearly usage fee for uniforms. **Pre-requisites: Audition and instructor evaluation**

PA315 ADVANCED JAZZ BAND One Credit
Advanced Jazz Band class is the study of literature, rehearsal, and performance techniques of various jazz styles. Students will study and perform advanced jazz styles and literature representing a variety of historical periods. It is open to selected students of advanced proficiency through audition by the instructor. Students enrolled in this course are expected to attend mandatory rehearsals/performances and provide their own instrument (large instruments will be provided if available). Marching band may be a part of this course and special clothing may be required for performances. There is a yearly usage fee for uniforms. **Pre-requisites: Audition and Instructor evaluation**

PA316 INSTRUMENTAL ENSEMBLE (brass, woodwinds, percussion) One Credit
This course is designed to study the literature and performance techniques of small music ensembles for brass, woodwind, strings, and percussion instruments. Students enrolled in this course are expected to attend mandatory performances and/or rehearsals, provide their own instrument (Large instruments will be provided if available). Marching band may be a part of this course and special clothing may be required for performances. There is a yearly usage fee for uniforms. **Pre-requisites: Instructor evaluation**

PA319 WIND ENSEMBLE One Credit
The Wind Ensemble course is designed to develop, in a sequential pattern, those skills learned in Symphonic Band. Emphasis will be on improved ensemble playing and continued improvement of the playing skills and music interpretation of each student. It is a performance-oriented class in which all members must participate. Wind Ensemble and Symphonic Band literature will be used as well as other material suitable to the needs of the class. Students must be willing and able to perform with the ensemble at out-of-school functions. Attendance at scheduled performances and rehearsals is mandatory. The student provides his/her own instrument. (If available, large or expensive instruments will be loaned by the school.) Marching Band may be part of this program. There is a yearly fee for uniforms. Special clothing may be required for performances. **Pre-requisites: Audition by and permission of director; attainment of proficiency of Symphonic Band; instrumentation at the discretion of the director**

PA318 STRING ENSEMBLE One Credit
This course is designed to study the literature and performance techniques of small music ensembles for brass, woodwind, strings, and percussion instruments. Students enrolled in this course are expected to attend mandatory performances and/or rehearsals, provide their own instrument (Large instruments will be provided if available) special clothing may be required for performances. **Pre-requisites: Instructor evaluation**

PA611 INTERMEDIATE ORCHESTRA One Credit
Intermediate Orchestra provides an opportunity for students to further develop skills on their instrument. Students will study and perform appropriate orchestra literature. Students enrolled in this course are expected to attend mandatory rehearsals/performances and provide their own instrument (large instruments will be provided if available). Special clothing may be required for performances. **Pre-requisites: Instructor evaluation**

PA612 CONCERT ORCHESTRA One Credit
Concert Orchestra provides an opportunity for students to study strings and full orchestra, and ensemble literature. In
addition, students will continue to develop the technical advancement skills needed for their instrument. Students enrolled in this course are expected to attend mandatory rehearsals/performances and provide their own instrument (large instruments will be provided if available). Special clothing may be required for performances. **Pre-requisites: Instructor evaluation**

**PA317 GUITAR ENSEMBLE** One Credit
This course is designed to study the literature and performance techniques of small music ensembles for guitar. Students enrolled in this course are expected to attend mandatory performances and/or rehearsals, provide their own instrument. **Students must provide their own instrument and method book. Pre-requisites: Instructor evaluation**

**PA520 BEGINNING GUITAR (Semester)** One-half Credit
This introductory course is designed to give the beginning guitarist an opportunity to develop the fundamentals of guitar. The course study will include note reading, chord structure, scale patterns, fingerings, strumming rhythms, finger picking, flat picking and performance. **Students must provide their own instrument and method book.**

**PA521 BEGINNING GUITAR** One Credit
This introductory course is designed to give the beginning guitarist an opportunity to develop the fundamentals of guitar. The course study will include note reading, chord structure, scale patterns, fingerings, strumming rhythms, finger picking, flat picking and performance. **Students must provide their own instrument and method book.**

**PA522 ADVANCED GUITAR** One Credit
In this course, students will further develop and refine guitar techniques and musical skills. These will include multiple note reading, forming more complex chords, scale patterns, fingerings, strumming rhythms, finger picking, flat picking, and composing. **Students must provide their own instrument and method book. Pre-requisite: Intermediate Guitar**

**PA523 INTERMEDIATE GUITAR** One Credit
This course will build upon the skills learned in Beginning Guitar. **Students must provide their own instrument and method book. Pre-requisites: Beginning Guitar**

**PA411 TREBLE CHORUS** One Credit
This course is open to any interested student with a treble (unchanged) voice. This class will build on the student’s knowledge of music reading, sight-singing, vocal technique and basic music theory. Students enrolled in this course are expected to attend mandatory rehearsals/performances. Special dress apparel may be required for performances. **Pre-requisites: Instructor evaluation**

**PA412 MIXED CHORUS** One Credit
This course is designed to focus on multipart singing and the continued development of the voice. Fundamentals will include music reading, sight-singing, musical interpretation and vocal technique. Students enrolled in this course are expected to attend mandatory rehearsals/performances. Special dress apparel may be required for performances. **Pre-requisites: Instructor evaluation**

**PA413 ADVANCED MIXED CHORUS** One Credit
This course is open to students of advanced choral ability to increase musical development. Students will be considered for this group only on recommendation of the director. Students enrolled in this course are expected to attend mandatory rehearsals/performances. Special dress apparel may be required for performances. **Pre-requisites: Instructor evaluation**

**PA414 JAZZ/SHOW CHOIR MIXED** One Credit
These courses provide the opportunity for select music students to learn jazz vocal music in a show atmosphere. Students will study vocal technique, microphone technique, choreography, and stage presence. This course is open to selected students through audition by the instructor. Students enrolled in this course are expected to attend mandatory rehearsals/performances. Special dress apparel may be required for performances. **Pre-requisites: Instructor evaluation**

**PA415 JAZZ/SHOW CHOIR BOYS** One Credit
These courses provide the opportunity for select music students to learn jazz vocal music in a show atmosphere. Students will study vocal technique, microphone technique, choreography, and stage presence. This course is open to selected students through audition by the instructor. Students enrolled in this course are expected to attend mandatory rehearsals/performances. Special dress apparel may be required for performances. **Pre-requisites: Instructor evaluation**

**PA416 JAZZ/SHOW CHOIR GIRLS** One Credit
These courses provide the opportunity for select music students to learn jazz vocal music in a show atmosphere. Students will study vocal technique, microphone technique, choreography, and stage presence. This course is open to selected students through audition by the instructor. Students enrolled in this course are expected to attend mandatory rehearsals/performances. Special dress apparel may be required for performances. **Pre-requisites: Instructor evaluation**

**PA417 VOCAL ENSEMBLE 1** One Credit
This course provide an opportunity to select students to participate in the highest forms of vocal art. Students will be chosen at the discretion of the teacher. Students enrolled in
this course are expected to attend mandatory rehearsals/performances. Special dress apparel may be required for performances. Pre-requisites: Instructor evaluation

PA418 VOCAL ENSEMBLE 2 One Credit
This course provides an opportunity to select students to participate in the highest forms of vocal art. Students will be chosen at the discretion of the teacher. Students enrolled in this course are expected to attend mandatory rehearsals/performances. Special dress apparel may be required for performances. Pre-requisites: Instructor evaluation

PA511 PIANO LABORATORY One Credit
This course is a study of the piano in a laboratory setting. The content will include music theory, technique, expression, structure and history. Students enrolled in this course may be asked to purchase a piano method book.

PA512 PIANO LABORATORY 2 One Credit
Piano Lab 2 will provide direct instruction to those students who have already mastered elementary piano skills. With a distinct curriculum from Piano Lab, Piano Lab 2 will enable intermediate-level students to progress more quickly towards advanced keyboard and musicianship skills. Students explore standard keyboard repertoire; improvise in blues and jazz modalities; play a variety of popular music styles; and perform in a variety of settings. Piano Lab 2 students further their study of music theoretical and analytical processes using keyboard theory books at the appropriate level.

PA513 PIANO LABORATORY 3 One Credit
Piano Lab 3 will provide direct instruction to those students who have already mastered intermediate piano skills. With a distinct curriculum from Piano Lab, Piano Lab 3 will enable intermediate-level students to progress more quickly towards advanced keyboard and musicianship skills. Students will acquire advanced/intermediate level piano performance and musicianship skills, further preparing them for college level general music classes and college level keyboard classes. Students explore standard keyboard repertoire; improvise in blues and jazz modalities; play a variety of popular music styles; and perform in a variety of settings. Piano Lab 3 students further their study of music theoretical and analytical processes using keyboard theory books at the appropriate level.

PA514 PIANO LABORATORY 4 One Credit
Piano Lab 4 will provide direct instruction to those students who have already mastered advanced piano skills. With a distinct curriculum from Piano Lab, Piano Lab 4 will enable advanced-level students to progress more quickly towards advanced keyboard and musicianship skills. Students will acquire piano performance and musicianship skills, further preparing them for college level general music classes and college level keyboard classes. Students explore standard keyboard repertoire; improvise in blues and jazz modalities; play a variety of popular music styles; and perform in a variety of settings. Piano Lab 4 students further their study of music theoretical and analytical processes using keyboard theory books at the appropriate level.

PA711 INDEPENDENT STUDY - MUSIC One Credit
This course is taken in conjunction with an advanced level music course. In order to enroll in independent study students must have permission from their instructor. The objective is to allow advanced level students the opportunity to explore technique and develop proficiency in music. Pre-requisites: Instructor evaluation

PA712 MUSIC THEORY One Credit
This course is designed to expose students to the mechanics of written music through the analysis of music forms and composition, ear training, melody, counter melody, harmony, rhythmic structure, scales and music history. Pre-requisites: Instructor evaluation

PA712H IB MUSIC One Credit
IB Music class is an overview of Music Theory, Western Music History, World Music, Musical Forms, and Musical Analysis.

PA713 AP MUSIC THEORY One Credit
This course is designed to develop the student's ability to recognize, understand and describe basic materials and processes of music that are heard or presented in a musical score. Students will study aspects of melody, harmony, texture, rhythm and form, through musical analysis and elementary composition, history and style. In addition, student will study the various aspects of history and style as it relates to musical composition.

PA556 TECH ASSIST MUSIC One Credit
This course allows student performers the opportunity to learn how to create sound maps and basic recording techniques while creating original compositions. Some basic keyboard applications will be taught. Students will learn to collaborate with others to create a production plan for performance and recordings, microphone selection and placement, explore the use of electronic and software-based instruments to create music alongside traditional acoustic instruments. Both "tracking" and "looping" techniques will be explored. Students will utilize multiple software-based tools to accomplish these objectives. Students will become active music makers, creators and responders to music.
VA9110 ART 1  One Credit
Art 1 is a basic foundation course designed to build the student's confidence in using a variety of art media, to encourage the student's creativity, and to increase the student's awareness of art in world cultures. The elements and principles of design will be stressed in all techniques and media explored and in the study of visual arts heritage. Lab fee is required. 

Pre-requisites: VA9110 Art 1 or teacher recommendation

VA912 ART 2  One Credit
In Art 2 the student will continue to develop technical skills and an understanding of why artists create. Emphasis will be placed on student involvement in making choices and expressing ideas. Through studying visual arts heritage, the student will learn about art in America. Lab fee is required. 

Pre-requisites: VA9110 Art 1 or teacher recommendation

VA913 ART 3  One Credit
Art 3 is an advanced art class in which the student will begin to plan a course of study with the art teacher. The student will be assisted in strengthening personal style and increasing competency in media areas of interest. Visual arts heritage emphasis will be placed on contemporary art and art careers. A student who is applying for scholarships or to college art programs will be given assistance in preparing portfolios. Lab fee is required. 

Pre-requisites: VA9110 Art 1 or teacher recommendation

VA9140 ART 4  One Credit
Art 4 is an advanced art class in which the student will plan with the art teacher an individualized course of study. The student will choose media areas in which to work in-depth and will study the visual arts heritage associated with the chosen media areas. A student who is applying for scholarships or to college art programs will prepare portfolios. Lab fee is required. 

Pre-requisites: VA913 Art 3

VA915 ART 5  One Credit
The student in ART 5 will continue to explore in greater depth the aspects and relationships of both the commercial and studio artist. The student should have prior skills, competencies, and maturity to assume some assignments on a contractual basis. The student will be responsible for selecting several areas in which to problem solve with the teacher serving as the facilitator. Lab fee is required. 

Pre-requisites: VA914 Art 4

VA920 ART AESTHETIC/HISTORY  One Credit
Students will study and experience a select number of major periods in art and the history and aesthetics associated with them. This course is intended for both art students and non-art students. Students will be engaged in Socratic discussion, studio work and the analysis of cultural expression. Students will gain an appreciation of art and the cultures that create it. Students will learn how to discuss major issues in art and aesthetics. Students will gain insight into innovations and techniques through the study experience.

VA921 CRAFTS/3-D DESIGN 1  One Credit
In Crafts 1 the student will explore a wide variety of media and techniques in fibers, jewelry, pottery, and sculpture. Emphasis will be placed on craftsmanship and the elements and principles of design as applied to functional and nonfunctional crafts in many cultures. Lab fee is required. 

Pre-requisites: VA9110 CRAFTS/3-D DESIGN 1

VA922 CRAFTS/3-D DESIGN 2  One Credit
In Crafts 2 the student will continue to develop technical skills while learning to make choices and express personal ideas in a variety of craft media. Individual craft artists and artists from other cultures will be studied. Lab fee is required. 

Pre-requisites: VA9110 CRAFTS/3-D DESIGN 1

VA923 CRAFTS/3-D DESIGN 3  One Credit
In Crafts 3 the student will plan a course of study with the art teacher in which the student will work in-depth in one or more craft areas. Research on the areas chosen will reflect the historical aspects of the craft. Lab fee is required. 

Pre-requisites: VA9110 CRAFTS/3-D DESIGN 1

VA924 AP CRAFTS/3-D DESIGN  One Credit
This course is an advanced 3-D design studio course for the college-bound and career-oriented art student. Emphasis is placed on 3-D design principles as they relate to the integration of space, volume and surface through any three-dimensional approach, included to but not limited to, figurative or nonfigurative sculpture, architectural models, metal work, ceramics, glass work, installation, performance, assemblage and 3-D fabric/fiber arts. Students will complete a portfolio that fulfills the College Board requirements. Successful submission and high scores on the submitted portfolio entitles students to receive college credit at participating colleges and universities. Lab fee is required. 

Pre-requisites: CRAFTS/3-D DESIGN 1 or art teacher recommendation.

VA931 PHOTOGRAPHY 1  One Credit
This introductory course in black and white photography is available to students in grades 9-12. Through a study of pinhole photography, the student will explore basic photographic processes. These skills and techniques will be applied to the introduction to 35mm dark room photography. Aesthetic and historic awareness of photography will be emphasized. A 35mm SLR camera and a lab fee are required. 

VA932 PHOTOGRAPHY 2  One Credit
Photography 2 is an intermediate course in black and white photography. Basic photographic processes and skills covered in Photography 1 will be reviewed with emphasis being
placed on perfecting and fine-tuning these skills. The student will explore in-depth creative approaches to solving photographic problems. A 35mm SLR camera and a lab fee are required. **Pre-requisites: VA931 Photography 1 or teacher recommendation**

**VA933 PHOTOGRAPHY 3**  One Credit
Photography 3 is an advanced course in photography. This course is for the student who has a special interest in and aptitude for photography and is considering photography as a possible career choice. Through a contract an individual course of study will be designed by each student with the aid of the art teacher. A 35mm SLR camera and a lab fee are required. **Pre-requisites: VA932 Photography 2**

**VA935 AP TWO DIMENSIONAL DESIGN: PHOTOGRAPHY**  One Credit
This course is designed for motivated students who wish to explore advanced conceptual and formal photographic techniques. AP curriculum enables students to produce a body of work exhibiting a mastery of basic concepts in photography. In addition to advancing design elements and principles in their work, students develop critical decision-making and problem-solving skills related to creativity, inventiveness, and originality. AP Photography is developed as a college-level course geared to high school students. AP Photography portfolios are compiled as the end of the year. Successful completion, submission and scoring of the portfolio (scores of 4 and above) entitles students to receive college credit from participating colleges and universities. Lab fee is required. **Pre-requisites: VA933 and/or instructor approval**

**VA942 DIGITAL MEDIA & GRAPHIC DESIGN**  One Credit
In Computer Art and Graphics the student will have the opportunity to explore and expand creative knowledge in the field of electronic imaging and graphic communications. The student will learn the technical skills necessary for artistic problem solving using the elements and principles of design. Current and ongoing developments in the field will be addressed. Emphasis will be on approaching the computer as a creative and practical tool. Lab fee is required. **Pre-requisites: VA942 Computer Art and Graphics**

**VA943 AP ART HISTORY**  One Credit
This course is designed to introduce students to works of art. The course begins with the ancient world and continues with lectures and assignments that cover the history of art into the twentieth century. Students who have done well in history, literature, humanities or advanced art are encouraged to enroll. AP Art History is developed as a college level course for high school students. Students will take the College Board’s AP Art History test at the end of the year, which allows students to receive college credit from participating colleges and universities.

**VA944 AP STUDIO ART**  One Credit
This course is an advanced drawing studio course for the college-bound and career-oriented art student. Emphasis is placed on drawing skills and incorporating drawing skills into other types of artwork. AP Studio Art is developed as a college level course for the high school student. Students will complete a portfolio that fulfills the College Board requirements. Successful submission and high scores on the submitted portfolio entitles students to receive college credit at participating colleges and universities. Lab fee is required. **Pre-requisites: Art 3 or art teacher recommendation.**

**VA945 AP TWO-DIMENSIONAL DESIGN: Computer Graphics**  One Credit
This course is an advanced Computer Art and Graphics course for the career-oriented student. Emphasis is placed on purposeful, artful decision making while demonstrating proficiency in a variety of graphics software for creating works of art. Students will complete a portfolio that fulfills College Board requirements. Successful submission and high scores on submitted portfolios entitles students to receive college credit at participating colleges and universities. A lab fee is required. **Pre-requisites: Computer Art and Graphics 2 or teacher recommendation.**

**VA950 DIGITAL MEDIA & GRAPHIC DESIGN**  One Credit
This course will continue the knowledge gained from Computer Art and Graphics 1 Students will further their studies by using the computer as an art form and exploring multimedia and 3-D design. Computer Art and Graphics 2 is intended to prepare students for a future in the technology arts by exposing them to diverse creative opportunities with sophisticated hardware and software. Students will learn how to use technology as a means to achieve a creative end and appreciate the computer as a viable art form. **Pre-requisites: VA942 Computer Art and Graphics**

**VA951 INDEPENDENT STUDY Semester**  One-half Credit
This course is taken in conjunction with an advanced level course, such as Art 4/5, Crafts/3-D Design 3, or Photography 3, and with prior permission of the instructor. The objective is to allow advanced level students the opportunity to explore technique and develop proficiency in a selected medium. **Seniors only.**

**VA952 INDEPENDENT STUDY**  One Credit
This course is taken in conjunction with an advanced level course, such as Art 4/5, Crafts/3-D Design 3, or Photography 3, and with prior permission of the instructor. The objective is to allow advanced level students the opportunity to explore technique and develop proficiency in a selected medium. **Seniors only.**
VA953 DIGITAL MEDIA & GRAPHIC DESIGN  One Credit
This course will enable students to explore more advanced skills in the field of computer graphics and commercial art. Students will develop work suitable for an extensive portfolio, which is needed in order to become a professional graphic designer. Students will learn to plan, design and create images for multiple industries in the forms of displays, billboards, brochures, packaging, catalogs, books, magazines, newspapers, television and the internet. They will use the computer to aid them in learning commercial design techniques in order to use them in real world applications. Lab fee is required. Pre-requisites: Computer Art and Graphics 2

VA955 FILM/VIDEO PRODUCTION  One Credit
This advanced art/photography course is designed to introduce students to the film-making process. Students will explore the different roles of production through the completion of film projects. Emphasis will be placed on the student's development of visual storytelling techniques. The artistic critique of current and historical films will be a major component of the curriculum. Mass Communications students may take this course for Mass Communications credit. Lab fee is required. Pre-requisites: Any of the following: Art 1, Photo 1, Mass Comm. 1, Theatre 1 or teacher recommendation

VA956 VIDEO PRODUCTION 1 HONORS  One Credit
In Video Production Honors students will learn to edit, produce, film and organize their own videos using modern video equipment. Student will be in charge of creating a school wide video program.

VA957 VIDEO PRODUCTION 2 HONORS  One Credit
In Video Production Honors students will learn to edit, produce, film and organize their own videos using modern video equipment. Student will be in charge of creating a school wide video program.

DE104 DUAL ENROLLMENT ENTREPRENEURSHIP  One Credit
Presents the various steps considered necessary when going into business. Includes areas such as; product services analysis, market research evaluation, financing options, business operations, franchising options, marketing plans, business plans and start ups.

DE201 KEYBOARDING  One-half Credit
This course is designed for secondary school students to develop and enhance touch skills for entering alphabetic, numeric, and symbol information on a keyboard. Students learn to produce simple technical and non-technical documents.

IT201 KEYBOARDING  One Credit
Students develop skills for entering alphabetic, numeric, and symbol information on a keyboard. Students apply keyboarding skills to produce a variety of personal and business documents.

IT301 ACCOUNTING  One Credit Grades 10-12
This course is an opportunity for students who are highly motivated in the field of business and/pr accounting. Students will develop advanced knowledge and skills for the accounting field. A variety of supplemental activities will be used to enhance the program to further develop interests, talents, and leadership skills.

IT302 ACCOUNTING COMPUTER APPLICATIONS  One Credit Grades 11-12
Honors' level accounting computer applications is an opportunity for students who are highly motivated in the field of business and/or accounting. Students will develop advanced knowledge and skills for the accounting field. A variety of supplemental activities will be used to enhance the program to further develop interests, talents, and leadership skills. Pre-requisites: IT301 Accounting

IT461 OFFICE ADMINISTRATION  One Credit Grades 10-12
Students enhance word processing and communication skills as they develop competencies needed by administrative support professionals. Students study office procedures such as machine dictation/transcription, telecommunications, electronic records management, and financial records management. Pre-requisites: IT 202 Keyboarding Applications

IT471 OFFICE SPECIALIST 1  One Credit
The Office Specialist course sequence is intended to develop employable office skills at a slower pace. Students may enter this program in Office Specialist 1 or 2 and continue the sequence. The Office Specialist students develop skills in the following areas: keyboarding, word processing, office
procedures, records management, calculating, communications, personal employability skills, and technology, which will include Word, Excel, PowerPoint, and the Internet.

**IT472 OFFICE SPECIALIST 2** One Credit
The Office Specialist course sequence is intended to develop employable office skills at a slower pace. Students may enter this program in Office Specialist 1 or 2 and continue the sequence. The Office Specialist students develop skills in the following areas: keyboarding, word processing, office procedures, records management, calculating, communications, personal employability skills, and technology, which will include Word, Excel, PowerPoint, and the Internet.

**IT473 OFFICE SPECIALIST 3** One Credit
The Office Specialist course sequence is intended to develop employable office skills at a slower pace. Students may enter this program in Office Specialist 1 or 2 and continue the sequence. The Office Specialist students develop skills in the following areas: keyboarding, word processing, office procedures, records management, calculating, communications, personal employability skills, and technology, which will include Word, Excel, PowerPoint, and the Internet.

**DE482 BUSINESS MANAGEMENT** One–half Credit
**IT482 BUSINESS MANAGEMENT** One-half Credit
**IT482 BUSINESS MANAGEMENT HONORS** One-half Credit
Students study basic management concepts and leadership styles as they explore business ownership, planning, economics, international business, and human relations issues such as employee motivation and conflict resolution. Student leadership skills may be enhanced by internship experiences.

**DE483 BUSINESS MANAGEMENT**
**IT483 BUSINESS MANAGEMENT** One Credit
**IT483 BUSINESS MANAGEMENT HONORS** One Credit
Grades 11-12
Students study basic management concepts and leadership styles as they explore business ownership, planning, economics, international business, and human relations issues such as employee motivation and conflict resolution. Student leadership skills may be enhanced by internship experiences.

**DE485 FINANCE** One-half Credit
**IT485 FINANCE** One-half Credit
**IT485 FINANCE HONORS** One-half Credit
Students explore many facets of financial decision-making involved in daily life. Skills in money management, record keeping, and banking are enhanced through the study of basic concepts of economics, insurance, credit, and other related topics. As a year offering, the course will also prepare students occupationally to plan, manage, and analyze the financial and monetary aspects and performance of personal, business enterprises, banking institutions, or other organizations.

**IT486 FINANCE** One Credit Grades 11-12
**IT486 FINANCE HONORS** One Credit
Students explore many facets of financial decision-making involved in daily life. Skills in money management, record keeping, and banking are enhanced through the study of basic concepts of economics, insurance, credit, and other related topics. As a year offering, the course will also prepare students occupationally to plan, manage, and analyze the financial and monetary aspects and performance of business and personal enterprises, banking institutions, or other organizations.

**IT487 PC HARDWARE AND SOFTWARE** One-half Credit
This is an in-depth exposure to computer hardware and operating systems. Through hands on activities and labs, students learn how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. Completion of the course prepares the student to take A+ Industry Certificate.

**Prerequisite:** Basic Computer Skills

**IT488 NETWORK OPERATING SYSTEMS** One-half Credit
Is an intensive study of multi-user, multi-tasking, network operating systems. Characteristics of the Linux, Windows 2000, NT, and XP network operating systems will be discussed. Students will explore a variety of topics including installation procedures, security issues, back up procedures and remote access. Completion of the course prepares the student to take A+ Industry Certificate.

**Prerequisite:** PC Hardware and Software

**DE583 BUSINESS MANAGEMENT**
**IT583 BUSINESS MANAGEMENT** Two Credits
Students study basic management concepts and leadership styles as they explore business ownership, planning, economics, international business, and human relations issues such as employee motivation and conflict resolution. Student leadership skills may be enhanced by internship experiences. Cooperative Education is an essential part of this class; therefore, employment is required. Students will be coordinated by the CTE coordinator. Students are required to work a total 396 hours to receive two credits. Interested students should drive or have adequate transportation. Maturity to handle technical employment is essential.
IT100 INFORMATION TECHNOLOGY FUNDAMENTALS 1
One Credit  Grades 9-11
The IT Fundamentals course is an introductory class that introduces basic skills needed for specialized programs in IT. It provides background in four major IT areas: software, hardware, network systems and interactive media. The IT Fundamentals course is designed as a "hands on" class that teaches basic IT skills. The class is designed around an integrated delivery system that allows students to rotate through four core skill areas in 16 modules. After mastering the exploratory activities, students can then select to pursue an information technology specialty area that can lead to industry recognized certification such as A+, MOS, CISCO, etc.

IT101 COMPUTER APPLICATIONS
One-half Credit
Students develop or review correct keyboarding techniques and gain a basic knowledge of word processing, spreadsheet, database, and graphics applications. Students demonstrate an understanding of computer concepts through application of knowledge. Students learn software packages and the operation of equipment such as word processors, printers, copiers, and computers.

DE604 COMPUTER INTEGRATED APPLICATIONS HONORS
One Credit

IT102 COMPUTER INTEGRATED APPLICATIONS
One Credit
Computer Integrated Applications (CIA) is designed for those students who have successfully developed the touch method of keyboarding at middle school and would like to further their computer applications skills. An accelerated review of proper keying techniques through speed building exercises will take place at the beginning of the course but with no minimum speed requirement. Students will utilize integrated software to build on their knowledge of word processing, spreadsheets, database, and graphics using an integrated approach. Ethical issues related to computers, equipment maintenance, employability skills, and keeping current with technology updates will be addressed. Pre-requisites: Keyboarding proficiency

IT103 INTRODUCTION TO COMPUTER INFORMATION SYSTEMS
One-half Credit
This course introduces students to general concepts of and careers related to computer information systems. Students will learn computer terminology and the effects of computers on daily life. They will discuss ethical and global information technology issues in addition to hardware and software applications. Students will be exposed to system development processes. Meadowbrook High School only

IT110 BUSINESS COMPUTER APPLICATIONS
One Credit Grades 10-12
Students develop computer skills and use a case-based, problem solving approach to create basic word processing, spreadsheet, database, and multimedia presentation applications. Students explore telecommunications. Pre-requisites: BUS 201 Keyboarding or teacher approval based on demonstrated skills

IT111 MANAGEMENT INFORMATION SYSTEMS
One Credit Grades 11-12
Students apply advanced integrated computer skills and problem solving to develop professional results using word processing, spreadsheet, database, multimedia presentation, and personal productivity organizer software. Students explore desktop publishing and web page design. Course content incorporates the skills covered on the Microsoft Office User Specialist expert-level exams.
IT102 Computer Integrated Applications

IT201 Keyboarding and IT101 Computer Applications or IT202 Keyboarding Applications or will demonstrate the use of electronic mail and create Web pages using software and HTML commands. Students develop an understanding of the Internet, how it works, and its potential to get maximize time on-line. Students will develop proficiency in using desktop publishing software to create a variety of business publications. Students work with sophisticated hardware and advanced software to develop publications, presentations, and web pages. Pre-requisites: IT202 Keyboarding Applications and recommend IT110 Business Computer Applications

DE625 DESKTOP PUBLISHING
IT122 DESKTOP PUBLISHING One-half Credit Grades 11-12
Students develop proficiency in using desktop publishing software to create a variety of business publications. Students work with sophisticated hardware and advanced software to develop publications, presentations, and web pages. Pre-requisites: IT202 Keyboarding Applications and recommend IT110 Business Computer Applications

IT130 ADVANCED ARTIFICIAL INTELLIGENCE (EXPERT SYSTEMS) HONORS One Credit Grades 11-12
This course is designed to enhance the knowledge and skills students learned in the introductory level of Artificial Intelligence. Utilizing the computer, artificial intelligence software, and software utilized in today's society, students solve various problems such as college selections; marketing applications; accounting applications; and professional applications from lawyers, doctors, insurance brokers, instructors, and operation managers. Pre-requisites: IT132 ARTIFICIAL INTELLIGENCE (EXPERT SYSTEMS) HONORS

IT132 ARTIFICIAL INTELLIGENCE (EXPERT SYSTEMS) HONORS One Credit Grades 11-12
This course is designed to provide opportunities for students to analyze data and use simulations to solve business problems using a computer programming language and/or software applications. Students' attention will be focused on knowledge, representation, and development of applications to optimize solving problems. This course would be appropriate as an offering for talented and gifted students. Computer Science students may enroll with instructor approval.

IT134 COMMUNICATIONS VIA THE INTERNET One-half Credit
This course is designed to increase understanding, efficiency, and potential to get maximize time on-line. Students will develop an understanding of the Internet, how it works, and the use of a browser and different search engines. Students will demonstrate the use of electronic mail and create Web pages using software and HTML commands. Pre-requisites: IT202 Keyboarding Applications or IT201 Keyboarding and IT101 Computer Applications or IT102 Computer Integrated Applications

DE135 ELECTRONIC COMMUNICATION
IT135 ELECTRONIC COMMUNICATION
DE135 ELECTRONIC COMMUNICATION HONORS One Credit/Grades 10-12
This course presents a broad overview of mass media techniques within the context of electronic communication. Using HTML and a variety of electronic tools such as quick cam, digital camera, scanner, camcorder, Web, and desktop publishing software, the student will develop projects to communicate within the school, community, workplace, and around the world. Pre-requisites: Keyboarding Proficiency

IT138 WEB PAGE ASSISTANT One Credit
Web Page Student Assistant will help design and maintain the school's home page. Students will learn to become web page masters. The knowledge gained from developing and maintaining a school web site will sharpen skills needed to enter the job market as Web Designers and will help the school maintain a state of the art web site. May be taken multiple years for credit. Pre-requisites: Webmaster or teacher recommendation

DE139 WEBMASTER HONORS
IT139 WEBMASTER HONORS One Credit Grades 11-12
Webmaster introduces students to web technologies and Web design techniques necessary to prepare for a career in the Web Design industry. Students will develop Web pages using HTML authoring and Web software. Web pages will be developed incorporating such features as JavaScript, CGI scripts, animated content, and graphics. In addition, students will build customer feedback forms and FTP web files. Pre-requisites: Keyboarding proficiency

IT161 WORD PROCESSING One-half Credit
Students develop intermediate to advanced level word processing skills using a variety of software functions, including graphics and desktop publishing. Students gain competence integrating other applications such as database and spreadsheet into word processing activities. Classroom experiences also provide for skill development in communication. Pre-requisites: IT201 Keyboarding or demonstrated keyboarding proficiency

DE167 WORD PROCESSING
IT162 WORD PROCESSING One Credit
Students develop intermediate to advanced level word processing skills using a variety of software functions, including graphics and desktop publishing. Students gain competence integrating other applications such as database and spreadsheet into word processing activities. Classroom experiences also provide for skill development in communication. Pre-requisites: IT201 Keyboarding or demonstrated keyboarding proficiency
IT453 VISUAL BASIC PROGRAMMING HONORS One Credit
Visual Basic Programming introduces students to
programming in the Windows environment. Concepts of
structured and object-oriented programming are introduced.
Students will plan and create interactive Windows
applications and write If...Then...Else, Select Case, Do...While,
Do...Until, and for...Next statements, as well as create and
manipulate sequential access files.

DE357 VISUAL BASIC PROGRAMMING
Semester, One-half Credit
This course uses Visual Basic for Windows, an object-
oriented/event-driven language, to teach programming
concepts. Students will learn how to plan and create
interactive Windows applications and will be able to write
If...Then...Else, Select Case, Do...While, Do...Until, and
For...Next statements, as well as create and manipulate
sequential access files and arrays. Students will also learn
how to create executable files and how to include multiple
forms in a project. GUI design skills are emphasized and
advanced skills such as accessing information in a database
and using OLE are taught.

DE491 CISCO NETWORKING 1 HONORS
Semester One-half Credit (JTCC, 3 Credits)
This course will cover OSI model and industry standards,
Network topologies, IP addressing, including subnet masks,
Networking Components, and basic network design.

DE492 CISCO NETWORKING 2 HONORS
Semester One-half Credit (JTCC, 3 Credits)
This course will cover beginning router configurations and
routing and routed protocols.

DE493 CISCO NETWORKING 3 HONORS
Semester One-half Credit (JTCC, 3 Credits)
This course will cover advanced router configurations, LAN
switching theory, VLANs, and advanced LAN and LAN
switched design, Novell IBX, and threaded case studies.

DE494 CISCO NETWORKING 4 HONORS
Semester One-half Credit (JTCC, 3 Credits)
This course will cover WAN theory and design, WAN
technology, PPP, frame relay, ISDN, Network troubleshooting,
national SCANS skills, and threaded case studies.

DE495 CISCO NETWORKING 1-2 HONORS
One Credit
This course will cover OSI model and industry standards,
Network topologies, IP addressing, including subnet masks,
Networking Components, and basic network design. Students
will practice beginning router configurations and routing and
routed protocols.

DE496 CISCO NETWORKING 3-4 HONORS One Credit
This course will cover advanced router configurations, LAN
switching theory, VLANs, and advanced LAN and LAN
switched design, Novell IBX, and threaded case studies.

DE640 INTRODUCTION TO COMPUTER INFORMATION
Semester, One-half Credit (JTCC, 3 Credits)
This course introduces students to general concepts of
computer information systems. It presents terminology and
effects of computers on daily life. Available hardware and
software and their applications are discussed. Students are
exposed to the system development process.

BM101 PRINCIPLES OF BUSINESS AND MARKETING
Students discover the roles of business and marketing in the
free enterprise system and the global economy. Basic
financial concepts of banking, insurance, credit, inheritance,
taxation, and investments are investigated to provide a
strong background as students prepare to make sound
decisions as consumers, wage earners, and citizens. The real-
world impact of technology, effective communication, and
interpersonal skills is evident throughout the course. This
course also supports career development skills and explores
career options.

BM103 INTERNATIONAL BUSINESS AND MARKETING
HONORS
With an ever changing world economy, students must
develop an understanding of the business and marketing
techniques implemented by today's global firms. Because no
country's economy operates independently of another's,
students will be exposed to the United States' role in
international trade. Other topics addressed will be political,
economic, and cultural diversity's effect on international
trade, the importance of properly organizing and managing
an international business, the use of technology, the
application of marketing principles and practices, and an
introduction to career opportunities. Topics will be reinforced
through guest speakers, the Internet, current events, and
projects.
BM200 INTRODUCTION TO MARKETING  One Credit
This elective course will acquaint students with the field of
marketing and its role in our society. The class surveys career
opportunities and introduces economic concepts in addition
to teaching employment techniques and communication skills
needed in today’s business world.

BM201 MARKETING  One Credit
Classroom instruction includes advertising, economics,
marketing research, and selling. Computer simulations are
also used to help develop mathematical and critical thinking
skills necessary in business. Marketing Cooperative Education
is an option.

DE202 MARKETING  Two Credits
BM202 MARKETING  Two Credits
Classroom instruction includes advertising, economics,
marketing research, and selling. Computer simulations are
also used to help develop mathematical and critical thinking
skills necessary in business. Cooperative Education is an
essential part of this class; therefore, employment is
required. Students will be coordinated by the CTE
coordinator. Students are required to work a total 396 hours
to receive two credits. Interested students should drive or
have adequate transportation. Maturity to handle technical
employment is essential.

BM211 FASHION MARKETING  One Credit Grades 11-12
This specialized curriculum elective in the Marketing
Education Program is designed for students with a career
objective in the fashion field. Students develop general
marketing skills necessary for successful employment in
fashion marketing, general marketing skills applied to the
apparel and accessory industry, and specialized skills unique
to fashion marketing.

BM221 ADVANCED MARKETING  One Credit
Emphasis is placed on the managerial level of marketing and
preparation for full-time employment or continuing
education in the field of marketing Cooperative Education is
an essential part of this class; therefore, employment is
required. Students will be coordinated by the CTE
coordinator. Students are required to work a total 396 hours
to receive two credits. Interested students should drive or
have adequate transportation. Maturity to handle technical
employment is essential. Pre-requisites: BM201, BM202, BM203
Marketing or BM211 Fashion Marketing

DE222 ADVANCED MARKETING  Two Credits
BM222 ADVANCED MARKETING  Two Credits
Emphasis is placed on the managerial level of marketing and
preparation for full-time employment or continuing
education in the field of marketing. Marketing Cooperative
Education for two or three credits is an option. Pre-

BM224 ADVANCED FASHION MARKETING  One Credit
Supervised cooperative job training is highly recommended
as part of the instruction. Students receive instruction in
areas of entry-level management such as hiring techniques,
merchandising, training, planning stock, communication,
promotions, and mathematical skills applicable to the apparel
and accessory fields. Pre-requisites: BM211 Fashion
Marketing

BM225 ADVANCED FASHION MARKETING  Two Credits
Students receive instruction in areas of entry-level
management such as hiring techniques, merchandising,
training, planning stock, communication, promotions, and
mathematical skills applicable to the apparel and accessory
fields. Cooperative Education is an essential part of this class;
therefore, employment is required. Students will be
coordinated by the CTE coordinator. Students are required to
work a total 396 hours to receive two credits. Interested
students should drive or have adequate transportation.
Maturity to handle technical employment is essential. Pre-
requisites: BM211 Fashion Marketing

BM227 SPORTS, ENTERTAINMENT AND RECREATION
MARKETING/HONORS  One Credit
This course is designed to introduce students to a major
element of our modern economy—sports, entertainment and
recreational fields generate billions of dollars each year for
our society. Students will develop an understanding of the
knowledge and skills necessary to be successful in this field.
The following topics will be addressed: economics, marketing,
business structure, market research, communications,
interpersonal relationships, product planning, promotion,
selling, sponsorship development, developing public
relations/publicity programs, advertising, branding,
developing an idea/event, dealing with agents/personal
managers, and product licensing. Prerequisite: Successful
completion of either Sports, Entertainment and Recreation
Marketing or Sports, Entertainment and Recreation
Marketing -Honors.

BM228 ADVANCED SPORTS, ENTERTAINMENT AND
RECREATION MARKETING/HONORS  One Credit
Students will build on prior knowledge of sports,
entertainment, and recreation marketing. This course
focuses on the principles of management and planning
supported by research, financial, and legal concepts.
Students will be able to plan and execute an event; develop a
career plan, and establish a sports, entertainment, and
recreation product/business. Academic skills (mathematics,
science, English, and history/social science) related to the
content are a part of this course. Computer/technology
applications supporting the course are studied.
BM232  MARKETING MANAGEMENT/HONORS  One Credit
This course is offered to the student who is planning to attend college with a concentration in marketing. This is a specialized course designed to provide an understanding of planning, implementing, and controlling marketing activities in business. Students combine classroom instruction with school and community-based projects such as a supervised shadowing project in a business. Computer simulations also provide a challenging opportunity for students to use critical thinking skills used in business.

BM301  CAREER AWARENESS THROUGH MENTORSHIP
One-half Credit  Grades 11-12
This is a course designed to provide students with a means to expand their knowledge of career opportunities. Through classroom instruction and mentorship experience, students will develop the knowledge, skills, and attitudes necessary to make informed career decisions. **Pre-requisites:** Students enrolled in this course must take BM302 Free Enterprise in a Global Society Honors second semester

BM301  CAREER AWARENESS THROUGH MENTORSHIP
HONORS  One-half credit
This is a course designed to provide students with a means to expand their knowledge of career opportunities. Through classroom instruction and mentorship experiences, students will develop the knowledge, skills and attitudes necessary to make informed career decisions. **Pre-requisites:** Students enrolled in this course must take BM 302 Enterprise in a Global Society/Honors second semester

BM302  FREE ENTERPRISE HONORS  One-half Credit  Grades 11-12
This course is designed to expose students to the field of economics. The relationship between economics and our free enterprise system will be addressed throughout the course. In addition, global concepts will be discussed. **Pre-requisites:** BM301 Career Awareness Through Mentorship Honors

BM302  FREE ENTERPRISE HONORS  One-half credit
This course is designed to expose students to the field of economics. The relationship between economics and our free enterprise system will be addressed throughout the course. In addition, global concepts will be discussed. **Pre-requisites:** BM301 Career Awareness Through Mentorship/ Honors

BM303  ELECTRONIC COMMERCE HONORS  One Credit  Grades 11-12
This course is designed for those students who plan further study in marketing and business and for those who plan to own or manage an electronic commerce business or a business of which electronic commerce is a part. Included in this course is an overview of the history and diverse nature of electronic commerce; economic concepts; the Internet as a marketing tool; technological aspects of web-based electronic commerce; ethical, legal, and security issues; and the planning for implementation of an electronic commerce site.

BM303  INTERNET MARKETING  One Credit  Grades 11-12
This course is designed for those students who plan further study in marketing and business and for those who plan to own or manage an electronic commerce business or a business of which electronic commerce is a part. Included in this course is an overview of the history and diverse nature of electronic commerce; economic concepts; the Internet as a marketing tool; technological aspects of web-based electronic commerce; ethical, legal, and security issues; and the planning for implementation of an electronic commerce site.

DE661  PRINCIPLES OF MARKETING  Semester, One-half Credit  (JTCC, 3 Credits)
This course presents principles, methods, and problems involved in the distribution and marketing of goods and services to industry and ultimately consumers. It introduces various marketing middlemen: wholesaler, retailer, broker, agent including cooperative and trade associations, shippers, stores, and facilitators. Present-day problems and associations, shippers, stores, and facilitators are discussed. Also discussed are present-day problems and policies connected with distribution and sale of products, pricing, promotion, and buyer motivation. Variations of the marketing mix and market research, plus legal, social, and ethical considerations in marketing are discussed.

TECHNOLOGY EDUCATION

DE895  AUTOCAD 1  Semester, One-half Credit  (JTCC 3 Credits)
Students study computer-aided drafting concepts and equipment designed to develop a general understanding of components of a typical CAD system and its operation.

DE896  AUTOCAD 2  Semester, One-half Credit  (JTCC 3 Credits)
Students learn about working drawings and advanced operations in computer-aided drafting. **Pre-requisites:** DE895 AutoCAD 1

TE101  CONSTRUCTION TECHNOLOGY  One Credit
Students design and build scale or full-size structures and work with projects that help them understand the jobs of architects, carpenters, electricians, plumbers, surveyors, contractors, masons, design engineers, and a variety of other construction careers. They also explore aspects of the construction industry.
TE102 MATERIALS AND PROCESSES TECHNOLOGY

This course enables students to focus on industrial/technical materials and processes as they fabricate usable products and conduct experiments. Activities include processing and testing several industrial materials. Students will examine careers in the materials processing industries. Lab fee is required.

TE104 PRODUCTION SYSTEMS

Students plan, design, develop, and market products while studying techniques used in industry, such as computer-aided manufacturing, computer numerical control, and robots used in manufacturing systems. Learning activities in analyzing the market, developing prototypes, and planning potential new businesses may be included. Lab fee is required.

TE105 TECHNOLOGY FOUNDATIONS

In this beginning high school course, students acquire a foundation in technological resources including material, energy, and information and apply processes associated with the technological thinker. Challenged by laboratory activities, students create new ideas and innovations, build systems, and analyze technological products to learn further how and why technology works. They work in groups to build and control systems using engineering design in the development of a technology.

TE107 MANUFACTURING SYSTEMS

Students organize and operate a manufacturing company to explore careers and work habits typical of the American industry's free enterprise system. Students make projects or products in the "company" which can be sold. Students experience the work of planners, designers, engineers, machine operators, personnel managers, and a variety of other manufacturing careers. Throughout this course, students will gain an understanding of manufacturing through an emphasis on career, building and marketing concepts and how they relate to the industrial manufacturing profession.

TE301 BASIC TECHNICAL DRAWING

This beginning technical drawing course gives students the opportunity to experience the language of industry and technology. It provides a variety of experiences that allow students to gain a background of basic skills and understanding in the broad scope of drafting. In addition this class will prepare college bound and technology-oriented students for the many fields relating to architecture, engineering, and the arts, and those exploring personal interests. While Basic Technical Drawing focuses on drafting skills, it also serves to develop problem solving skills and critical thinking ability. Lab fee is required.

TE302 ENGINEERING DRAWING

Engineering Drawing provides students the opportunity to experience the graphic language of industry for engineers, manufacturers, and technicians. It provides experiences with greater depth in drawing problems, skills, and techniques. Emphasis is placed on interpretation of industrial prints, ability to use handbooks with other resource materials, and adherence to established standards for drafting. An important aspect of the course is the application of drafting principles to typical engineering drawing and design problems. Lab fee is required. **Pre-requisites: TE301 Basic Technical Drawing**

TE303 ARCHITECTURAL DRAWING

Architectural Drawing provides students the opportunity to learn about the principles of architecture and related drafting practices and techniques. This class provides information helpful for the future home owner and is especially beneficial to the future architect, interior designer, or home builder. A final project is required, in which students plan, design, and draw a complete set of working drawings for a single-family residence for later blueprinting and model building. Lab fee is required. **Pre-requisites: TE301 Basic Technical Drawing**

TE304 ADVANCED DRAWING INSTRUCTION

Instruction in this course focuses on advanced architectural and engineering drawing to include instruction on the computer using computer-aided drafting (CAD) software. Drawings are developed in compliance with the American National Standards Institute (ANSI). This course is designed to prepare students for employment by using modern technology, technical writing skills, and critical thinking skills to solve common problems. **Pre-requisites: TE301 Basic Technical Drawing and TE302 Engineering Drawing or TE303 Architectural Drawing**

TE307 ADVANCED ARCHITECTURAL DRAWING

Instruction in this course focuses on advanced architectural drawing concepts and fundamentals to include instruction in computer-aided drafting/design software. Drawings are developed in compliance with building codes and requirements suitable for construction. This course is designed to prepare students for employment by using modern technology, technical writing, and critical thinking skills to solve common problems.

TE308 ADVANCED ENGINEERING DRAWING

Instruction in this course focuses on advanced engineering drawing concepts to include aeronautics, structural, robotics, rapid prototyping, and advanced instruction in computer-aided drafting/design software. Drawings are developed in compliance with ANSI (American National Standards Institute), and prototyping models are constructed to demonstrate the understanding of learned principles. This course is designed to prepare students for employment by
using modern technology, technical writing, and critical thinking skills to solve common problems.

**TE310 AUTO CAD** One-half credit
Students will study computer-aided drafting concepts and equipment designed to develop a general understanding of components of a typical CAD system and its operation.

**TE367 HEAVY EQUIPMENT I** One Credit
This program provides both the knowledge and the hands-on skills needed to secure a job as a construction equipment operator. Students learn about site grading and development, excavation, concrete structures, pipe laying, road building, and other topics.

**TE401 AUTOMATED PRODUCTION SYSTEMS 1** One Credit
Students use state-of-the-art computer technology to study automation, process control, and modern production methods. Technical skills are acquired through the study of core technology modules, such as design processes, mechanical systems, principles and applications of robotics, fluid power systems, and electrical systems. Lab fee is required.

**TE402 AUTOMATED PRODUCTION SYSTEMS 2** One Credit
Students apply computer technology in performing advanced procedures that are incorporated into the most up-to-date high-tech production facilities. Units of study include topics such as thermal systems, advanced electrical systems, advanced fluid power systems, advanced principles and applications of robotics, and quality assurance. To receive three credits, students are enrolled in the course and have an opportunity for an industry-sponsored internship. Lab fee is required. **Pre-requisites: TE 401 Automated Production Systems 1**

**TE501 COMMUNICATIONS TECHNOLOGY** One Credit
Students study visual and telecommunication systems, processes, and organization. Learning experiences include the study of numerous technical developments such as the radio, television, offset printing, photography, and telecommunications. Lab fee is required.

**TE502 GRAPHICS COMMUNICATIONS** One Credit Grades 11-12
This course explores the history of communication and its written and visual components. Students learn about various printing methods with special emphasis on silk screen printing. They produce a television broadcast from start to airtime and improve basic computer skills with particular emphasis on desktop publishing. **Pre-requisites: TE501 Communications Technology**

**TE503 DIGITAL VISUALIZATION** One Credit Grades 11-12
This course is designed to help students develop the knowledge needed to begin to prepare for careers in a variety of computer graphics and related field. The course will enhance the technology education curriculum by providing students the opportunity to continue on a specialized career track in engineering, and broadens a student’s employable attributes to where a student is fully prepared to enter the workforce in civil engineering, geospatial technology, drafting, designing, GIS research and advising, science and mathematics. Professional 3D modeling in architecture and engineering, animation and rendering for film and television visual effects and animation, game development, scientific visualization, forensic analysis, criminal analysis, and design visualization is evident in all facets of media.

**TE505 GEOSPATIAL TECHNOLOGY** One Credit Grades 11-12
This course will explore the various fields of engineering, science, mathematics, and geography while enhancing a student’s computer application, technical writing, and critical thinking skills. Students will explore the analyze the natural and human-made world, locally and globally, to identify and interpret spatial relationships, while using various information technology tools, processes, and techniques to create, store, and access data (including location/geographic components) to solve human challenges.

**TE550 SUSTAINABILITY AND RENEWABLE TECHNOLOGIES** One Credit
Sustainability and Renewable Technologies explores issues that affect global citizens in the area of economics, culture, and the environment. The course introduces students to the historic, economic, political, environmental, and cultural issues that impact the global community and its’ future. Students will address issues affecting the health of our environment and explore solutions offered by sustainable agriculture, energy efficient building design, and renewable energy sources.

**TE601 POWER AND TRANSPORTATION TECHNOLOGY** One Credit
Students learn about sources of energy and how energy is used to produce power to perform work. The use of control devices in energy and power systems is explored. Students learn techniques of servicing and repairing machines and equipment powered by small engines. Lab fee is required. **Pre-requisites: TE601 Power and Transportation Technology**

**TE602 ENERGY AND POWER TECHNOLOGY** One Credit
Students learn about sources of energy and how energy is used to produce power to perform work. The use of control devices in energy and power systems is explored. Students learn techniques of servicing and repairing machines and
equipment powered by small engines. Lab fee is required. **Pre-requisites: TE601 Power and Transportation Technology**

**TE701 METALS TECHNOLOGY** One Credit
Students use basic metalworking tools, machines, and processes in making metal projects as they study the metalworking industry. Students plan, design, and manufacture products which involve the use of lathes, welders, foundry, and sheet metalworking equipment. Creativity and problem solving are emphasized as students develop their interests, talents, and abilities. Lab fee is required.

**TE801 COMPUTER SYSTEMS** One Credit
This course presents the basic operation of computers and the basic procedures involved in repairing and upgrading personal computers. It is designed to be a hands-on experience that provides students the knowledge to assemble a working computer and to troubleshoot common computer problems. This course prepares students for A+ Certification. Lab fee is required.

**TE805 MODELING AND SIMULATION TECHNOLOGY** One Credit
Students will explore the use of modeling, simulation, and game development software to solve real-world problems in science, technology, engineering, and mathematics (STEM). The activities will include evaluating and testing engineering designs, modeling geospatial data, observing and analyzing physics simulations, programming games for educational purposes, and creating visualization systems with 3D models. Student will develop an understanding of the systems, processes, tools, and implications of the field of modeling and simulation technology.

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### FAMILY AND CONSUMER SCIENCES

**FC019 RESOURCE MANAGEMENT** One Credit
Students enrolled in Independent Living focus on managing resources to achieve individual goals; making informed consumer choices; creating and maintaining a living environment that supports the well-being of individuals; living in a global environment; making decisions related to nutrition, clothing, and housing; and managing a household. Critical thinking, practical problem solving, and entrepreneurship opportunities within the area of resource management are emphasized. Teachers highlight the basic skills of mathematics, science, and communication when appropriate in content.

**FC101 INDIVIDUAL DEVELOPMENT** One Credit
Students enrolled in Individual Development focus on responsible and independent behaviors. Units of study include instruction and activities in managing personal and family responsibilities, developing interpersonal relationships, making individual economic decisions, managing nutrition and health, and planning career goals. Communications and practical problem-solving are emphasized throughout. This course is recommended for all program sequences in Family and Consumer Sciences. Lab fee is required.

**FC109 NUTRITION AND WELLNESS** One Credit
Students enrolled in Nutrition and Wellness focus on making choices that promote wellness and good health; analyzing relationships between psychological and social needs and food choices; choosing foods that promote wellness; obtaining and storing food for self and family; preparing and serving nutritious meals and snacks; selecting and using equipment for food preparation; and identifying strategies to promote optimal nutrition and wellness of society. Critical thinking, practical problem solving, and entrepreneurship opportunities within the area of nutrition and wellness are emphasized. **Pre-requisites: FC101 Individual Development (recommended)**

**FC201 NUTRITION AND WELLNESS SEMESTER** One-half Credit
Students enrolled in Nutrition and Wellness focus on making choices that promote wellness and good health; analyzing relationships between psychological and social needs and food choices; choosing foods that promote wellness; obtaining and storing food for self and family; preparing and serving nutritious meals and snacks; selecting and using equipment for food preparation; and identifying strategies to promote optimal nutrition and wellness of society. Critical thinking, practical problem solving, and entrepreneurship opportunities within the area of nutrition and wellness are emphasized. **Pre-requisites: FC101 Individual Development and FC201 Nutrition and Wellness Semester**

**FC202 INTRO TO CULINARY ARTS SEMESTER** One-half Credit
The competencies focus on identifying and exploring the individual careers within the food service industry. Units of study include food science and technology, dietetics and nutrition services, diverse cuisines and service styles, current trends, food and beverage production and preparation, and food safety and sanitation. **Pre-requisites: FC101 Individual Development and FC201 Nutrition and Wellness Semester**

**FC203 INTRODUCTION TO HOSPITALITY, TOURISM AND RECREATION SEMESTER** One-half Credit
Students enrolled in Introduction to Hospitality, Tourism, and Recreation focus on developing professional skills and using emerging technologies to prepare for employment in this global industry rich in diverse career opportunities. The program includes instruction in the industries of lodging, food and beverage, travel and tourism, and recreation and fitness. **Pre-requisites: FC101 Individual Development and FC201 Nutrition and Wellness Semester (recommended)**
FC210 INTRO TO CULINARY ARTS  One Credit
Grades 10-12
The competencies focus on identifying and exploring the individual careers within the food service industry. Units of study include food science and technology, dietetics and nutrition services, diverse cuisines and service styles, current trends, food and beverage production and preparation, and food safety and sanitation.

FC211 CULINARY ARTS 1  Two Credits
Grades 11-12
Students practice managerial, production, and service skills used in government, commercial, or independently owned institutional food establishments and related food industry occupations. Students plan, select, store, purchase, prepare, and serve food and food products; study basic nutrition, sanitation, and food safety; the use and care of commercial equipment; and the operation of institutional food establishments. Critical thinking, practical problem solving, and entrepreneurship opportunities within the field of culinary arts are emphasized. Teachers highlight the basic skills of mathematics, science, and communication when appropriate in content. **Pre-requisites: FC210 INTRO TO CULINARY ARTS**

FC212 CULINARY ARTS 2  Two Credits
Culinary Arts II provides students an opportunity to refine skills in serving, dining room management, and other skills learned in Culinary Arts I. Students prepare for occupations such as chef/cook, baker/pastry helper, pastry decorator, hospitality worker, dietetic aide/assistant, food demonstrator, and entrepreneur. Critical thinking, practical problem solving, and entrepreneurship opportunities within the field of culinary arts are emphasized. Teachers highlight the basic skills of mathematics, science and communication when appropriate in content. The cooperative education method is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year. **Pre-requisites: CULINARY ARTS 1 & 2**

FC213 CULINARY ARTS 2 COOP  Three Credits
Culinary Arts II provides students an opportunity to refine skills in serving, dining room management, and other skills learned in Culinary Arts I. Students prepare for occupations such as chef/cook, baker/pastry helper, pastry decorator, hospitality worker, dietetic aide/assistant, food demonstrator, and entrepreneur. Critical thinking, practical problem solving, and entrepreneurship opportunities within the field of culinary arts are emphasized. Teachers highlight the basic skills of mathematics, science and communication when appropriate in content. The cooperative education method is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year. Students must work in a foods related position for a minimum of 396 hours to receive the additional one hour of credit not offered in FC212.

FC223 INTRODUCTION TO HOSPITALITY, TOURISM & RECREATION  One Credit
Students enrolled in Introduction to Hospitality, Tourism, and Recreation focus on developing professional skills and using emerging technologies to prepare for employment in this global industry, rich in diverse career opportunities. The program includes instruction in the industries of lodging, food and beverage, travel and tourism, and recreation and fitness. **Carver College & Career Academy Only.**

FC311 CULINARY ARTS 1 COOP  Three Credits
Students practice managerial, production, and service skills used in government, commercial, or independently owned institutional food establishments and related food industry occupations. Students plan, select, store, purchase, prepare, and serve food and food products, study basic nutrition, sanitation, and food safety; the use and care of commercial equipment; and the operation of institutional food establishments. Critical thinking, practical problem solving, and the entrepreneurship opportunities within the field of culinary arts are emphasized. Teachers highlight the basic skills of mathematics, science, and communication when appropriate in content. The cooperative education method is available for this course.

FC401 PARENTING  One-half Credit
This course is designed to allow students to explore the rewards and responsibilities of parenting and to introduce students to the skills needed to work with young children. The course focus is on decisions relating to parenting, prenatal growth and development, principles of child growth and development, learning experiences for children, and principles of guiding children in a healthy and safe environment. Technology skills will be integrated where applicable. Lab fee is required.
FC403  INTRODUCTION TO CHILDHOOD EDUCATION
One Credit
Grades 10-12
Students focus on the principles of child growth and development; development of self-concepts and building self-esteem; appreciation of diversity; learning experiences for children; principles of guiding children in a positive manner; healthy and safe environments; career development; and careers related to early childhood professionals through hands-on exploration, projects, and group learning.

FC421  CHILD DEVELOPMENT & PARENTING
One Credit
Students enrolled in Child Development and Parenting focus on analyzing parenting roles and responsibilities, ensuring a healthy start for mother and child, evaluating support systems that provide services for parents, and evaluating parenting practices that maximize human growth and development. Critical thinking, practical problem solving using case studies, and entrepreneurship opportunities within the area of parenting responsibilities and child development are emphasized. Teachers highlight the basic skills of mathematics, science, and technology when appropriate. The cooperative education method is available for this course; in this method, classroom instruction is combined with on-the-job training in an approved position, supervised continuously throughout the school year to broaden the students’ education experiences.

FC422  CHILD DEVELOPMENT & PARENTING
Two Credits
Students enrolled in Child Development and Parenting focus on analyzing parenting roles and responsibilities, ensuring a healthy start for mother and child, evaluating support systems that provide services for parents, and evaluating parenting practices that maximize human growth and development. Critical thinking, practical problem solving using case studies, and entrepreneurship opportunities within the area of parenting responsibilities and child development are emphasized. Teachers highlight the basic skills of mathematics, science, and technology when appropriate. The cooperative education method is available for this course; in this method, classroom instruction is combined with on-the-job training in an approved position, supervised continuously throughout the school year to broaden the students’ education experiences. Students must work in a child development related position for a minimum of 396 hours to receive the additional one hour of credit not offered in FC421.

FC423  CHILD DEVELOPMENT & PARENTING
Three Credits
Students enrolled in Child Development and Parenting focus on analyzing parenting roles and responsibilities, ensuring a healthy start for mother and child, evaluating support systems that provide services for parents, and evaluating parenting practices that maximize human growth and development. Critical thinking, practical problem solving using case studies, and entrepreneurship opportunities within the area of parenting responsibilities and child development are emphasized. Teachers highlight the basic skills of mathematics, science, and technology when appropriate. The cooperative education method is available for this course; in this method, classroom instruction is combined with on-the-job training in an approved position, supervised continuously throughout the school year to broaden the students’ education experiences.

FC405  EARLY CHILDHOOD EDUCATION
Two Credits
Students prepare to be primary providers of home-, family-, or institution-based child care services by focusing on the planning, organizing, and conducting of meaningful play and learning activities; child monitoring and supervision; record keeping; and referral procedures. Critical thinking, practical problem solving and entrepreneurship opportunities within the field of early childhood education are emphasized. Practical experiences (e.g., on-site lab, local daycare centers, elementary schools, other institutions) under the supervision of the instructor are required. Students also prepare for continuing education leading to careers in early childhood fields (e.g., medical, social services, and education). Work-based learning methods of instruction are encouraged for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year.

FC612  ECONOMICS AND PERSONAL FINANCE HONORS
One Credit
The standards of Learning for Economics and Personal Finance present economic concepts that help students interpret the daily news, understand how interdependent the world’s economies are, and anticipate how events will impact their lives. On a personal level, students learn that their own human capital (knowledge and skills) is their most valuable resource and that investing in education and training improves the likelihood of their future economic success. The standards also help students develop thinking skills that include analyzing real-world situations, economic reasoning, decision making, and problem solving.

FC702  LEADERSHIP AND PROFESSIONAL DEVELOPMENT
One Credit Grades 11-12
The Leadership and Professional Development course focuses on the development of positive self-concept through leadership roles and responsibilities. Units of study include assessing personal leadership traits, utilizing productive
leadership skills, managing effective meetings, understanding group dynamics, practicing practical problem solving, creating a professional image, practicing professional behavior, identifying career development techniques, and balancing work and family roles and responsibilities. Activities include the practice of interpersonal, oral, and written communication skills; participation in community, home, and workplace learning projects; exploration of volunteerism; and the transference of leadership and citizenship skills to career development. Lab fee is required.

**FC712 LIFE PLANNING** One Credit Grades 11-12
Life Planning equips students with the skills to face the challenges in today's society. Students will develop a life-management plan which includes Developing Career, Community, and Life Connections; Applying Problem-Solving Processes to Life Situations; Creating and Maintaining Healthy Relationships; Developing Strategies for Lifelong Career Planning; Developing a Financial Plan; Examining Components of Individual and Family Wellness; and Demonstrating Leadership within the Community. Critical thinking and practical problem solving are emphasized through relevant life applications.

**FC221 TEACHERS FOR TOMORROW** One Credit
Virginia Teachers for Tomorrow (VTfT) fosters student interest, understanding, and appreciation of the teaching profession and allows secondary students to explore careers in education. Students build a foundation for teaching; learn the history, structure and governance of teaching; apply professional teaching techniques in the VTfT classroom; and reflect on their teaching experiences. Additional educational leadership opportunities are offered through the student organization, Future Educators Association.

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**TRANSITIONING**

**TR101 CAREER EDUCATION** One-half Credit Grades 9-11
Career Education is the first in a sequence of classes that introduces students to the world of work and career planning. Emphasis is placed on exploring career options, career assessment, and pre-employment skills training.

**TR102 CAREER EDUCATION** One Credit Grades 9-11
Career Education is the first in a sequence of classes that introduces students to the world of work and career planning. Emphasis is placed on exploring career options, career assessment, career research, pre-employment skills training, communication skills, and life skills needed to become a successful worker and citizen. Skills such as problem solving, critical thinking, decision making and organization are integrated into the class. Career Education provides an excellent opportunity for exploration into ANY of the career pathways.

**TR201 COOPERATIVE CAREER EDUCATION 1** Three Credits Grades 11-12
Students have the opportunity to prepare for employment related to the many fields within the areas of trade, industrial, or technical occupations. Each student receives on-the-job training and instruction related to his or her chosen trade area. Industrial and professional establishments provide employment and supervised on the job training. Classroom instruction includes pre-employment and employment skills, communication, career research, interpersonal relationships, work ethics, budgeting and life skills, taxes, banking, and some computer application. Employment will be coordinated by the CCE coordinator, and students are required to work a total of 540 hours to receive three credits. Interested students should drive or have adequate transportation. Maturity to handle technical employment is essential.

**TR202 COOPERATIVE CAREER EDUCATION 2** Three Credits Grade 12
Students have the opportunity to prepare for employment related to the many fields within the areas of trade, industrial, or technical occupations. The cooperative education method is available for this course. Each student receives on-the-job training and instruction related to his or her chosen trade area. Industrial and professional establishments provide employment and supervised on the job training. Classroom instruction includes pre-employment and employment skills, communication, career research, interpersonal relationships, work ethics, budgeting and life skills, taxes, banking, and some computer application. Employment will be coordinated by the CCE coordinator, and students are required to work a total of 540 hours to receive three credits. Interested students should drive or have adequate transportation. Maturity to handle technical employment is essential.

**Pre-requisites: TR201 COOPERATIVE CAREER EDUCATION 1**

**TR203 COOPERATIVE CAREER EDUCATION 2 SENIOR INTENSIFIED** Two Credits Grade 12
This course is for seniors who have completed a sequence of classes in other career and technical education areas or have completed a series of classes in a particular career path. The cooperative education method is available for this course. Each student receives on-the-job training and instruction related to his or her chosen trade area. Industrial and professional establishments provide employment and supervised on the job training. Classroom instruction includes pre-employment and employment skills, communication, career research, interpersonal relationships, work ethics, budgeting and life skills, taxes, banking, and some computer application. Employment will be coordinated.
by the CCE coordinator and students are required to work a total of 396 hours to receive two credits. Interested students should drive or have adequate transportation. Maturity to handle technical employment is essential.

Pre-requisites: A Career and Technical Education sequence of classes

TR204 COOPERATIVE CAREER EDUCATION 2 SENIOR INTENSIFIED Three Credits Grade 12
This course is for seniors who have completed a sequence of classes in career and technical education areas or have completed a series of classes in a particular career path. The cooperative education method is available for this course. Each student receives on-the-job training and instruction related to his or her chosen trade area. Industrial and professional establishments provide employment and supervising on the job training. Classroom instruction includes pre-employment and employment skills, communication, career research, interpersonal relationships, work ethics, budgeting and life skills, taxes, banking, and some computer application. Employment will be coordinated by the CCE coordinator and students are required to work a total of 540 hours to receive three credits. Interested students should drive or have adequate transportation. Maturity to handle technical employment is essential.

Pre-requisites: A Career and Technical Education sequence of classes

TR212 COOPERATIVE CAREER EDUCATION 1 Two Credit
Students have the opportunity to prepare for employment related to the many fields within the areas of trade, industrial, or technical occupations. Each student receives on-the-job training and instruction related to his or her chosen trade area. Industrial and professional establishments provide employment and supervising on the job training. Classroom instruction includes pre-employment and employment skills, communication, career research, interpersonal relationships, work ethics, budgeting and life skills, taxes, banking, and some computer application. Employment will be coordinated by the CCE coordinator and students are required to work a total of 396 hours to receive two credits. Interested students should drive or have adequate transportation. Maturity to handle technical employment is essential.

TR222 COOPERATIVE CAREER EDUCATION 2 Two Credit
Students have the opportunity to prepare for employment related to the many fields within the areas of trade, industrial, or technical occupations. The cooperative education method is available for this course. Each student receives on-the-job training and instruction related to his or her chosen trade area. Industrial and professional establishments provide employment and supervising on the job training. Classroom instruction includes pre-employment and employment skills, communication, career research, interpersonal relationships, work ethics, budgeting and life skills, taxes, banking, and some computer application. Employment will be coordinated by the CCE coordinator, and students are required to work a total of 396 hours to receive two credits. Interested students should drive or have adequate transportation. Maturity to handle technical employment is essential.

TR314H LEADERSHIP DEVELOPMENT PROJECT MANAGEMENT HONORS One Credit
Students will develop competencies in identifying individual aptitudes in relation to effective leadership skills, understanding organizational behavior, using effective communication in the workplace, handling human resources and organizational problems, supervising and training employees, resolving conflict, and planning for the future. Continuing education in leadership is emphasized as well as practical leadership experiences in cooperation with school and community leaders. Clover Hill High School only.

TE360 BUILDING TRADES One Credit
This group of instructional programs prepares students to erect, install, maintain, and repair structures. Students will learn basic skills in several of the trade areas including: carpentry, plumbing, masonry, electricity, and drywall.

TE361 BUILDING TRADES II One Credit
Students will extend and expand skills learned in Building Trades 1, preparing for employment in the construction industry. More in depth work will be completed in concrete, masonry, tile, finish carpentry, wall framing, roof framing, plumbing, electrical, communications, sheetrock and painting. Pre-requisite: Teacher Recommendation

TE364 WELDING One Credit
Welding is required by a wide variety of industries, anywhere fusible materials and high heat are needed to manufacture, repair, or alter tools and products. Professional welders are in high demand and can earn accordingly. Students in Welding I are taught to use manual welding, cutting, and electric arc welding processes to fabricate and weld metal parts according to diagrams, blueprints, and specifications. Students will also receive all safety-related practices and techniques, including the OSHA 10 card.

DE383 MASONRY One Credit
The course covers Masonry as currently described in course offering guide. In addition, the course provides college level experience in fundamentals of masonry practices. Includes foundations, block laying skills, mortar mixing, measuring and introduction to bricklaying techniques. Emphasizes hands-on application of block and brick technique. This course is 3 college credits through the VCCS. Carver College & Career Academy Only.
**TE383 MASONRY**

One Credit  
The course covers Masonry as currently described in course offering guide. In addition, the course provides college level experience in fundamentals of masonry practices. Includes foundations, block laying skills, mortar mixing, measuring and introduction to bricklaying techniques. Emphasizes hands-on application of block and brick technique. This course is 3 college credits through the VCCS.  

**Carver College & Career Academy Only.**

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**TR401 JOBS FOR VIRGINIA GRADUATES**  
Manchester High School only  
Jobs for Virginia Graduates (JVG) provides twelfth grade students facing adverse education, personal, and family barriers with the tools to develop core skills that encourage independent, responsible, and productive living. The JVG curriculum addresses thirty competencies in career development, job attainment, and job survival, as well as basic competencies in written and verbal communications and mathematical calculations. The program promotes the Career Association, a student-led organization designed to aid students in leadership development, organizational skills development, team building, and demonstrating the ability to accomplish a set of goals. In a twelve-month follow-up upon graduation, the job specialist assists the student participants in successful job placements, military appointments, or further educational opportunities.  

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**TR402 JOBS FOR VIRGINIA GRADUATES**  
Jobs for Virginia Graduates (JVG) provides twelfth grade students facing adverse education, personal, and family barriers with the tools to develop core skills that encourage independent, responsible, and productive living. The JVG curriculum addresses thirty competencies in career development, job attainment, and job survival, as well as basic competencies in written and verbal communications and mathematical calculations. The program promotes the Career Association, a student-led organization designed to aid students in leadership development, organizational skills development, team building, and demonstrating the ability to accomplish a set of goals. In a twelve-month follow-up upon graduation, the job specialist assists the student participants in successful job placements, military appointments, or further educational opportunities.  

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**TR403 JOBS FOR VIRGINIA GRADUATES COE**  
Jobs for Virginia Graduates (JVG) provides twelfth grade students facing adverse education, personal, and family barriers with the tools to develop core skills that encourage independent, responsible, and productive living. The JVG curriculum addresses thirty competencies in career development, job attainment, and job survival, as well as basic competencies in written and verbal communications and mathematical calculations. The program promotes the Career Association, a student-led organization designed to aid students in leadership development, organizational skills development, team building, and demonstrating the ability to accomplish a set of goals. In a twelve-month follow-up upon graduation, the job specialist assists the student participants in successful job placements, military appointments, or further educational opportunities.  

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**TE530 LANDSCAPING 1**  
This course includes instruction in plant nutrition, soil science, basic botany, grounds maintenance, turf grass, and landscape design. Students study the proper care of lawns, trees, shrubs, annuals and perennials. Students will actually grow commonly used perennials and annuals. Instruction in the proper use of landscape/gardening tools, machinery, and chemicals is an essential part of the course. Using the knowledge they acquire from studying plants used in landscaping, students will plan and draw a landscape design. Students who successfully complete this course may pursue career opportunities at parks, golf courses, nurseries, country clubs, garden centers, and with tree and landscaping companies.  

**Pre-requisite: Teacher recommendation**

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**TE531 LANDSCAPING 2**  
This course continues on the foundation established in Landscaping 1. Instruction includes instruction in plant nutrition, soil science, basic botany, grounds maintenance, turf grass, and landscape design. Students study the proper care of lawns, trees, shrubs, annuals and perennials. Students will actually grow commonly used perennials and annuals. Instruction in the proper use of landscape/gardening tools, machinery, and chemicals is an essential part of the course. Using the knowledge they acquire from studying plants used in landscaping, students will plan and draw a landscape design. Students who successfully complete this course may pursue career opportunities at parks, golf courses, nurseries, country clubs, garden centers, and with tree and landscaping companies.  

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**TR901 SUCCESS 1**  
Enrollment restricted to rising freshmen. The class is multi-faceted: students will be exposed to a character education, curriculum which includes, but is not limited to, Chesterfield County’s Core Values of honesty, respect, accountability, and responsibility; positive decision making; conflict resolution; bullying prevention; and study methods and organizational strategies. Students will participate in journal writing, self-reflection, and college/career exploration. Students will receive academic and state assessment support from teachers, tutors and student mentors. Students are also encouraged to participate in numerous community outreach activities throughout the year.
TR902 SUCCESS 2  One Credit
Successful completion of Success 1 is highly recommended. Curriculum is a continuation of topics covered in Success 1. Students will participate in journal writing, reflection of selected readings and involvement/promotion of Success Program Community Outreach projects throughout the entire school year. Students will continue to receive academic and state assessment support from teachers and tutors. Students will develop the skills and qualities necessary to participate in Success Peer Facilitator Program.

INTERNATIONAL STUDY ABROAD

Through specific courses, students experience learning about languages and culture while studying in content areas. Experiential learning is a positive means for students to enhance the skills learned in the academic program. Through association with agencies in various parts of the world, CCPS has designed specific courses of study for students who are interested in travel and in learning abroad. International Studies courses must fit the criteria of an extension of the school learning environment, focus on educational goals, embrace language learning, and include exposure to diversity and cultures of other peoples’ nations. Courses offered in International Studies require extensive student time, are in compliance with hourly requirements for credit, and involve learning activities with performance assessed by CCPS teachers. Grades, however, are on a pass-no pass system.

IS580 SPANISH LANGUAGE STUDY IN SPAIN  One elective credit
Students engage in Spanish instruction for 120 hours over a 3-week period at the Centro de Idiomas El Mar in La Herradura (Granada), Spain. The emphasis in the class is on conversational Spanish and students are placed in classes appropriate to their level of spoken Spanish. In addition students spend 36 hours in organized field trips and small group activities learning about the history of Spain, its culture, arts, and social fabric. These field trips include visits to nearby cities and towns. Students stay in homes of Spanish citizens. Students complete logs of activities and develop a paper on a special project and/or prepare for a presentation to be given to their Spanish class back at their high schools in the fall. Spanish Immersion students have additional, specific requirements as stated by the program.

ENGLISH FOR SPEAKERS OF OTHER LANGUAGES (ESOL)

ESOL courses are designed for English Learners (ELs) whose language dominance is not English and offered only at selected Secondary ESOL Centers. Classes are structured for direct instruction and total immersion in all four domains of language learning: reading, writing, speaking and listening in English. ESOL students are identified during school registration through a screening process that determines appropriate English language development (ELD) level and school placement. The levels of English language learning are Entering (1), Emerging (2), Developing (3), Expanding (4), and Bridging (5). The time it takes for ESOL students to acquire English language proficiency depends on a variety of factors, and all ELs will be required to participate in a language development assessment each year until proficiency is achieved.

ES028 TUTOR  One Credit
This course provides the opportunity for students not actively participating in the ESOL program to tutor English Learners (ELs). Tutors help ELs to communicate in English, complete assignments, and understand U.S. school culture.

ES104 ENGLISH 1  One Credit
This course is designed for English learners (ELs) who are at a language proficiency level of 1. Listening, speaking, reading, and writing skills are developed through the use of WIDA English Language Development (ELD) Standards. Through differentiated instruction and scaffolded support, ELs will progress in language development and academic achievement.

ES105 ENGLISH 2  One Credit
This course is designed for English learners (ELs) who are at a language proficiency level of 2. Listening, speaking, reading, and writing skills are developed through the use of WIDA English Language Development (ELD) Standards. Through differentiated instruction and scaffolded support, ELs will progress in language development and academic achievement.

ES106 ENGLISH 3  One Credit
This course is designed for English learners (ELs) who are at a language proficiency level of 3. Listening, speaking, reading, and writing skills are reinforced through the use of WIDA English Language Development (ELD) Standards. Through differentiated instruction and scaffolded support, ELs will advance in language development and academic achievement. Complex grammatical structures are included in the instruction of speaking and writing skills.
ES107  ENGLISH 4  One Credit
This course is designed for English learners (ELs) who are at a language proficiency level of 4 who are preparing to exit the ESOL program. This course is designed to expand and refine English language skills across the four domains and is to be taken concurrently with English 9, 10, or 11.

ES108  ENGLISH 5  One Credit
This course is designed for ELs who are at an English language development level of 5, but have not yet exited the ESOL program based on ACCESS English language proficiency scores. This course is intended to expand and refine English language skills across the four domains and is to be taken concurrently with English 9, 10, 11, or 12. Preparation for WIDA Access testing, as well as Reading and Writing SOL assessments necessary to meet graduation requirements, will be emphasized.

ES124  READING SKILLS 1  One Credit
This course is for English learners (ELs) who are at a language proficiency level of 1 and is designed to introduce beginning students to basic word attack skills with emphasis on phonics, pronunciation, and sight word recognition. This class is intended to provide direct language instruction to beginners with an emphasis on the receptive domains of reading and listening.

ES125  READING SKILLS 2  One Credit
This course is designed with a focus on literacy instruction for English learners with a language proficiency level of 2. Content developed to extend reading skills with the continued emphasis on vocabulary development and academic language. This class will place an emphasis on the domains of reading and listening comprehension across content areas.

ES126  READING SKILLS 3  One Credit
This course is designed to continue instruction for ELs with an overall language proficiency or literacy level of 3. Curriculum developed to expand reading and listening comprehension and processing skills in English. Students will read, comprehend and analyze a variety of fiction and nonfiction texts.

ES132  READING IN THE CONTENT AREA 1  One Credit
This course is designed to prepare beginning level English learners for courses in math and science. Course concentration will be on basic content vocabulary presented in conjunction with basic concepts. Through the curriculum, ELs will build the language necessary to communicate information, ideas, and concepts necessary for academic success in the content areas of Math and Science.

ES133  READING IN THE CONTENT AREA 2  One Credit
This course is designed to give English learners additional exposure to content instruction in the areas of math and science and is recommended for ELs who need further literacy development prior to entering rigorous core courses. The academic language and content vocabulary to communicate information, ideas, and concepts necessary for academic success in the content area of Science, with an emphasis Biology, will be addressed.

ES142  LANGUAGE AND CULTURE 1  One Credit
This course is designed to help beginning level English learners acquire basic vocabulary and study skills adjust to life in their community and school environment. ELs will be immersed in a language-rich environment and develop the language necessary to communicate for social and instructional purposes within the school setting.

ES143  LANGUAGE AND CULTURE 2  One Credit
This course is designed to help English learners at proficiency levels 2 and 3 develop the academic language and content vocabulary to communicate information, ideas, and concepts necessary for academic success in the content area of Social Studies. An emphasis will be placed on building background knowledge in the areas of American history, geography, and government.

ES159  HILD MATH  One Credit
This course is designed to give newcomers the opportunity to master basic math vocabulary and skills. Through the curriculum, English learners will build the language necessary to communicate information, ideas, and concepts necessary for academic success in the content area of Math.

SPECIAL EDUCATION

All curriculum course offerings are available as appropriate for students with disabilities. For students expected to meet grade level expectations, refer to the general education course descriptions. Classes offered may be collaboratively taught, meaning general and special educators plan and instruct together. Special education is provided in accordance with an Individualized Education Plan (IEP). The following classes are designed to meet unique educational needs and are taught at the students' instructional levels which may be different from students' grade levels.

IP032  STUDY HALL  No Credit
This course is designed for students who require assistance in completing class assignments or monitoring of homework assignments on a daily basis. Students may be admitted to the course only if it is indicated as a need on the Individualized Education Program (IEP).
IP100 ESSENTIAL ENGLISH SKILLS  No Credit
This course is designed to teach the student skills for everyday survival. Instruction will focus on reading labels, directions, schedules, and maps and writing friendly letters and letters of complaint.

IP101 LIFE SKILLS ENGLISH  No Credit
This course is designed to help students learn the skills they will need in real-life situations. Emphasis will be placed on building vocabulary to improve written communication skills. This course will also include learning how to use reference books and community resources.

IP102 LANGUAGE ARTS FUNDAMENTALS  One-half Credit
This course is designed for students who need to refine basic skills in comprehension and writing. Course content emphasizes strategies to memorize vocabulary, analyze reading passages, frame concepts, and organize ideas into written paragraphs and themes using assignments from general education courses. This class is an elective credit for students with an IEP and does not meet credit requirements in any content area. Class repeats for credit.

IP103 LANGUAGE ARTS FUNDAMENTALS  One Credit
This course is designed for students who need to refine basic skills in comprehension and writing. Course content emphasizes strategies to memorize vocabulary, analyze reading passages, frame concepts, and organize ideas into written paragraphs and themes using assignments from general education courses. This class is an elective credit for students with an IEP and does not meet credit requirements in any content area. Class repeats for credit.

IP104 MULTISENSORY STRUCTURED LANGUAGE 1  One Credit
This course is designed for students whose word analysis and decoding skills are below fifth grade level and who have significant deficits when reading independently, but comprehend material when it is read to them. Word structure is presented sequentially, step-by-step. Students learn how to decode and spell with direct multi-sensory methods. This class is designed as an elective credit for students with an IEP and does not meet requirements for any content area. **Prerequisite: Current diagnostic reading evaluation**

IP105 MULTISENSORY STRUCTURED LANGUAGE 2  One Credit
This course is designed for students who need continued remediation in word analysis and decoding skills. Course content includes introduction of new linguistic concepts; controlled vocabulary stories that build on mastered concepts; abstract, figurative, and pragmatic language development; composition; and oral language activities. This class is designed as an elective credit for students with an IEP and does not meet requirements for any content area. **Prerequisite: IP104 Multisensory Structured Language 1**

IP132 STUDY SKILLS METHODOLOGY  One-half Credit
This course is designed to teach study skills and learning strategies that will enhance student performance in general and vocational classes. The course follows a specified curriculum and students apply strategies learned to assignments from content classes. Curriculum focuses on understanding content material, taking tests effectively, organizing time and materials, accessing and utilizing resource materials for oral and written projects, and developing technology and self-advocacy skills. This class is open only to students whose IEP goals and objectives indicate a need for study skills and learning strategies instruction. This class is designed as an elective credit for students with an IEP and does not meet requirements for any content area.

IP133 STUDY SKILLS METHODOLOGY  One Credit
This course is designed to teach study skills and learning strategies that will enhance student performance in general and vocational classes. The course follows a specified curriculum and students apply strategies learned to assignments from content classes. Curriculum focuses on understanding content material, taking tests effectively, organizing time and materials, accessing and utilizing resource materials for oral and written projects, and developing technology and self-advocacy skills. This class is open only to students whose IEP goals and objectives indicate a need for study skills and learning strategies instruction. This class is designed as an elective credit for students with an IEP and does not meet requirements for any content area.

IP134 FOCUS READING  One Credit
This course focuses on instruction for the student who is reading significantly below grade level. Instruction will be individualized to meet the specific needs of each student. Word recognition, vocabulary development, comprehension, and functional reading skills will be stressed. **(IP234 LEVEL 2, IP334 LEVEL 3, IP434 LEVEL 4)**

IP138 STUDY SKILLS FOR THE COLLEGE BOUND  One-half Credit
This course is individualized to meet the unique needs of college bound students with disabilities. Course objectives include extension of skills taught in Study Skills Methodology and emphasis on methods of research, use of technology, learning strategies, and higher order thinking skills as they relate to academic courses. This class is open only to students whose IEP goals and objectives indicate a need for study skills and learning strategies instruction. This class is designed as an
elective credit for students with an IEP and does not meet requirements for any content area.

**IP139 STUDY SKILLS FOR THE COLLEGE BOUND** One Credit
This course is individualized to meet the unique needs of college bound students with disabilities. Course objectives include extension of skills taught in Study Skills Methodology and emphasis on methods of research, use of technology, learning strategies, and higher order thinking skills as they relate to academic courses. This class is open only to students whose IEP goals and objectives indicate a need for study skills and learning strategies instruction. This class is designed as an elective credit for students with an IEP and does not meet requirements for any content area.

**IP201 SOCIAL STUDIES/SCIENCE ENHANCEMENT 9** One Credit
This elective class is designed for students enrolled in Earth Science and World History/Geography, to 1500 AD, who need to develop effective strategies to understand, organize, and recall curriculum content. Course objectives focus on improving time management, comprehension, memory, note taking, study, and test taking skills. Course assignments are directly related to the content in these specific science and social studies courses.

**P202 SOCIAL STUDIES/SCIENCE ENHANCEMENT 10** One Credit
This elective class is designed for students enrolled in Biology and United States History who need to develop effective and efficient strategies to understand, organize, and recall curriculum content. Course objectives focus on improving time management, comprehension, memory, note taking, study, and test taking skills. Course assignments are directly related to the content in these specific science and social studies courses.

**IP240 CIVICS 1** One Credit
This course is for students with disabilities whose curriculum focuses on life skills. The course will focus on state and local government, the rights and responsibilities of citizens and how to affect change in the community.

**IP241 CIVICS 2** One Credit
This course is for students with disabilities whose curriculum focuses on life skills. The course will focus on how three branches of government, and the rights and responsibilities of citizens.

**IP302 MATHEMATICS FUNDAMENTALS** One-half Credit
This course is designed to allow students the opportunity to continue to refine basic arithmetic skills. This course also provides necessary support for students to be successful while learning fundamental algebra topics and basic geometric principles. Concepts and skills presented in general education math courses will be reinforced. This class is designed as an elective credit for students with an IEP and does not meet requirements for any content area. Class repeats for credit.

**IP303 MATHEMATICS FUNDAMENTALS** One Credit
This course is designed to allow students the opportunity to continue to refine basic arithmetic skills. This course also provides necessary support for students to be successful while learning fundamental algebra topics and basic geometric principles. Concepts and skills presented in general education math courses will be reinforced. This class is designed as an elective credit for students with an IEP and does not meet requirements for any content area. Class repeats for credit.

**IP309 LIFESKILLS MATH** One Credit
This course is designed to reinforce basic computational skills in the context of real-life situations. Course content will include instruction and practice on basic math operations, including whole numbers, fractions, decimals, percents, and measurements. This course is designed as an elective for students with an IEP.

**IP310 PRACTICAL MATH** One Credit
Practical Math will focus on applying basic math skills in the home and in the community. It will include paying taxes, buying food, banking, managing a household, and shopping for clothes. This course is designed as an elective for students with an IEP.

**IP380 COMPUTER APPLICATIONS 1** One Credit
This course is designed to teach basic skills in areas of keyboarding, data entry, word processing, and simple graphic programs.

**IP381 COMPUTER APPLICATIONS 2** One Credit
This course is designed to teach basic skills in areas of keyboarding, data entry, word processing, and simple graphic programs.

**IP602 FUNDAMENTALS OF KEYBOARDING** One Credit
This course focuses on acquiring basic keyboarding skills at the rate and pace students are able to learn.

**IP650 WORK RELATED BEHAVIORS** No Credit
Manchester High School only

**IP770 Occupational Orientation** No Credit
This course will provide employment and education opportunities for selected individuals with significant disabilities. The program is dedicated to workforce development that benefits the individual, community and
workplace. It is based on a collaborative effort with Chesterfield Employment Services, Department of Rehabilitative Services, Chesterfield County Government and CCPS. It is modeled after Project Search the nationally recognized vocational preparation program.

**IP780 EMPLOYABILITY SKILLS**  One Credit
Emphasis will be placed on teaching students those skills needed to acquire and retain a job. Job acquisition skills will include matching individual skills with job requirements, identifying and practicing appropriate work related behaviors, understanding the job application process, and developing money management skills.

**IP786 TRANSITION TO COLLEGE**  One Credit
This course is designed to teach students self-advocacy and self-determination skills needed to be successful in college. Hands-on activities will be included to expose and prepare students to the expectations of college life. This course is designed as an elective for students with an IEP.

**IP788 TRANSITION TO EMPLOYMENT**  One Credit
This course is designed to teach students self-advocacy and self-determination skills needed to be successfully employed. Hands-on activities will be included to expose and prepare students to the expectations of employment. This course is designed as an elective for students with an IEP.

**IP790 COPING SKILLS 1**  One Credit
This course is designed to teach thinking skills, problem solving techniques, and social skills to students in special education who require instruction in these areas. Students may be admitted to this course only if it is indicated as a need on the Individualized Education Program (IEP).

**IP791 COPING SKILLS 2**  One Credit
This course places emphasis on having students refine and apply the skills developed in Coping Skills 1. Improvements in overall behavior are achieved by developing the student's ability to use thinking skills and social skills to solve personal and interpersonal problems. Students may be admitted to this course only if it is indicated as a need on the Individualized Education Program (IEP).

**IP801 COMMUNITY SKILLS**  No Credit
This course is designed to provide instruction to develop functional skills needed to be successful in the community. It includes reading simple signs, using skills that facilitate successful participation in community activities, and money handling skills.

**IP802 RECREATION/LEISURE**  No Credit
This course is designed to provide instruction in how to participate in age-appropriate activities that facilitate friendship building and enhance socialization, communication, and language skills.

**IP803 HOME ECONOMICS/TECHNICAL EDUCATION**  No Credit
This course is designed to provide instruction in basic cooking and simple household responsibilities.

**IP804 VOCATIONAL SKILLS**  No Credit
This course is designed to provide instruction in the areas of developing appropriate work related behavioral expectations and developing skills to complete simple job tasks.

**IP808 BUILDING MAINTENANCE 1**  One Credit
This course is designed to teach basic skills in areas of floor maintenance, landscape and design, woodworking/carpentry, light fixture maintenance (i.e. changing light bulbs), self-employment strategies and facility office/room setup.

**IP809 BUILDING MAINTENANCE 2**  One Credit
This course is designed to teach basic skills in areas of floor maintenance, landscape and design, woodworking/carpentry, light fixture maintenance (i.e. changing light bulbs), self-employment strategies and facility office/room setup.

**IP886 LIFE SKILLS**  One Credit
Emphasis will be placed on teaching students those skills that will enable them to be independent in the home, community, and work place. Students will be taught how to work with others, care for their personal needs, make responsible expenditures, and utilize community resources.