

# *Curriculum Guide*

*2017 - 2018*



*Roanoke Catholic School  
621 North Jefferson Street  
Roanoke, Virginia 24016  
540-982 3532  
Fax: 540-345-0785  
[www.roanokecatholic.com](http://www.roanokecatholic.com)*

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*Please return completed Course Selection forms to Mrs. Futrell, Academic Advisor.*

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**ROANOKE CATHOLIC SCHOOL**  
**GRADING AND RANKING POLICIES**

1. **GENERAL STATEMENT:** Roanoke Catholic Upper School divides the academic year into quarters. Report cards are issued 4 times a year. Examinations are given each semester and count 20% of the semester grade. Each quarter grade counts 40% of the semester grade. The final grade is the average of the two semester grades.
2. **GRADING SCALE:** Effective with the 2013-2014 academic year, in accordance with the Office of Catholic Education of the Diocese of Richmond, Roanoke Catholic School uses the following grading scale:

<i>Grading Scale</i>	<i>Unweighted</i>	<i>Honors</i>	<i>AP/DE</i>
<b>A+ 97-100</b>	<b>4.3</b>	<b>4.8</b>	<b>5.3</b>
<b>A 96-93</b>	<b>4.0</b>	<b>4.5</b>	<b>5.0</b>
<b>A- 92-90</b>	<b>3.7</b>	<b>4.2</b>	<b>4.7</b>
<b>B+ 89-87</b>	<b>3.3</b>	<b>3.8</b>	<b>4.3</b>
<b>B 86-83</b>	<b>3.0</b>	<b>3.5</b>	<b>4.0</b>
<b>B- 82-80</b>	<b>2.7</b>	<b>3.2</b>	<b>3.7</b>
<b>C+ 79-77</b>	<b>2.3</b>	<b>2.83</b>	<b>3.3</b>
<b>C 76-73</b>	<b>2.0</b>	<b>2.5</b>	<b>3.0</b>
<b>C- 72-70</b>	<b>1.7</b>	<b>2.2</b>	<b>2.7</b>
<b>D+ 69-67</b>	<b>1.33</b>	<b>1.8</b>	<b>2.3</b>
<b>D 66-63</b>	<b>1.0</b>	<b>1.5</b>	<b>2.0</b>
<b>D- 62-60</b>	<b>.07</b>	<b>1.2</b>	<b>1.7</b>
<b>F 59 and Below</b>	<b>0</b>	<b>0</b>	<b>0</b>

Because of the level of difficulty of their subject matter, Calculus, and Calculus II are considered Honors courses. For the 2016-2017 academic year, Advanced Placement (AP) courses are offered in English Composition, English Literature, U.S. History, Biology, Chemistry, and Physics. AP English Composition and AP English Literature are also Dual Enrollment (DE) courses.

3. **LETTER GRADE CONVERSION:** When students transfer to Roanoke Catholic with letter grades, or when summer school grades are reported as letter grades, the letter grades must be converted to conform with Roanoke Catholic's use of number grades. Grades will be converted as follows:  
 A = 95      B = 85      C = 75      D = 65      F = 55
4. **GRADES FOR ADVANCED COURSES:** A differential of 3% is added to grades issued for Advanced Placement courses as well as for Honors courses: Calculus I and Calculus II.
5. **HONOR ROLL:** To qualify for the honor roll, students must meet the following criteria:  
 First Honors—all grades of 90 or above  
 Second Honors—all grades of 80 or above
6. **EXAM EXEMPTION FOR SENIORS:** For one-credit courses, no exam exemptions are offered for the first semester. In order to be exempted from a second semester exam, a senior must be in good standing with the school, have the concurrence of the teacher, and meet the following criteria:  
 a cumulative average no lower than 90 for the second semester;  
 no more than nine (9) absences from school for the second semester;

teacher approval

In order to be exempted from a semester courses of 0.5 credit, a senior must be in good standing with the school, have the concurrence of the teacher, and meet the following criteria:  
a cumulative average of no lower than 90 for the semester;  
no more than nine (9) absences for the semester

Any senior who exceeds the number of absences because of prolonged illness or family emergency may request a waiver from the administration at least one week before exam week.

7. CLASS RANK: Roanoke Catholic School (RCS) does not rank students; instead, RCS computes a cumulative grade average.
8. SUMMER SCHOOL WORK: Grades earned for summer school work will be identified as such on the student's cumulative record. A letter grade received for summer school work will be converted to a numeric value according to the school's standard as stated in paragraph 3 of this section. Such grades will be averaged with the grades earned in the RCS courses and included in the GPA. Both grades are recorded on students' records.



### ◆ COURSE SELECTION CONSIDERATIONS ◆

1. Students in grades 8, 9, and 10 are required to take seven (7) major subjects (including Theology) a year; students in grades 11 and 12 are encouraged to take seven (7) courses and are required to take a minimum of six (6) courses (including Theology).
2. Roanoke Catholic's academic program is centered on a core curriculum of traditional subjects in a college preparatory setting. A student graduating from Roanoke Catholic will have completed, in most cases, the requirements for the Advanced Studies Diploma as outlined by the Board of Education of the Commonwealth of Virginia
3. Academic averages and the number of advanced courses taken are important considerations to colleges with competitive admission standards.
4. Students should study the same foreign language for at least two years. Students also should plan to begin the first level of a foreign language no later than grade 10. In some cases, students who receive 3 or more credits in the same foreign language may not be required to fulfill a foreign language requirement in college. However, if students intend to study the same language in college, they should take the third or fourth year of the language during their senior year. For the Advanced Studies diploma, students are required to take a minimum of three years of a single language or two credits each of two languages.
5. Admission to courses with large enrollments will be granted according to the following criteria:
  - a. class size not to exceed the school's standards;
  - b. grade level (seniors first, then juniors, then sophomores, etc.)
  - c. the date by which the course selection sheet was submitted.
6. An elective course will be offered only when a sufficient number of students select the course. The school reserves the right to cancel a course for which there is not a teacher available or for which there is inadequate enrollment.
7. College entrance requirements vary; therefore, it is essential that a college-bound student understand the entrance requirements of the college of his/her choice as early as possible.

8. Any students interested in the challenge of Advanced Placement (AP) courses and/or the possibility of receiving college credit based on AP exam scores must apply for admission to the AP classes offered by Roanoke Catholic School: For 2016-2017 the following AP courses will be offered: AP Biology, AP Chemistry, AP English: Language and Composition, AP English: Literature and Composition, AP United States History, and AP Physics.

Selection for AP courses will take place before regular course selection. During the AP course selection process, rising juniors and seniors receive information about application procedures and acceptance criteria, which are based on students' grades, standardized verbal test scores, teachers' evaluations, and essays assigned by the individual AP teachers.

9. Selection of courses should be done only after serious, careful, and thoughtful consultation among students, parents, teachers, and the Academic Advisor. Therefore, once a student chooses courses and these choices are verified by the students, parents, and approved by the Academic Advisor, the student will not be allowed to change course selections after the first nine weeks for year courses or after the first five weeks for semester courses.
10. Students may make adjustments in their course loads using the following guidelines:
  - a. Students need to be aware of their progress in each class and should ask teachers for help as needed.
  - b. Changes in students' schedules must be approved in writing by the Academic Advisor. The form must be signed by the students, the parent, and the Academic Advisor.
  - c. Courses may not be dropped without penalty after the date on which first quarter interims are distributed. No year course may be dropped after the first nine weeks; no semester course may be dropped after the first five weeks.
  - d. If a student drops a class after the first quarter interim, this change will be considered a withdrawal. At the time of withdrawal, if the student is failing the class, WF (withdrawal/failing) will be recorded on the student's transcript. If the student is passing at the time of withdrawal, WP (withdrawal/passing) will be recorded. "WF" and "WP" are not considered in the computation of the grade point average, and no credit will be awarded. For eligibility purposes, WF is considered "failing."
11. The following reasons for change of course will not be considered:
  - a. Dissatisfaction with a course or teacher
  - b. Displeasure with one's schedule
  - c. Change of mind
12. If students fail a course at Roanoke Catholic School, they must repeat the course for credit. Summer school offers some courses; Roanoke Catholic School does not offer summer school classes. While it is the responsibility of students to register for summer school, the Guidance Office must approve their selection of summer school courses. Information regarding summer school options can be obtained in May from the Guidance Office of Roanoke Catholic School.
13. Students may choose to retake any course taken during the school year or during summer school in order to enhance their knowledge of the subject or to improve their average. (See number 8 on page 2.)
14. In the event students fail and do not make up the course failed, their college or career recommendations and their graduation from Roanoke Catholic School may be jeopardized.
15. The Guidance Office of Roanoke Catholic School must approve all issues regarding academic credit in advance. The following minimum cumulative credits are required for promotion:

TO GRADE	CREDITS
9	6
10	12
11	18
12	24

16. Students who fail two or more courses during any one academic year may be required to repeat the entire grade.

**◆ ◆ ◆ USE OF THE INTERNET ◆ ◆ ◆**

Roanoke Catholic School strives to prepare its students to use the latest technology. In order to use the school's Internet connection, students and parents must agree to abide by the Roanoke Catholic School Internet User Agreement. Both students and parents sign the agreement when students enter Roanoke Catholic School.

**◆ ◆ ◆ GRADUATION REQUIREMENTS ◆ ◆ ◆**

Roanoke Catholic School confers two diplomas reflecting different academic programs. The content of specific courses is presented in the sections following the descriptions of requirements for each diploma.

AP Language or AP Literature fulfills the English 12 (World Literature) requirement. AP U.S. History fulfills the requirement for U.S. History.

Satisfactory completion of the *senior research project* is a requirement for graduation. See the section on the Research Program.

*GRADUATION REQUIREMENTS FOR THE ROANOKE CATHOLIC SCHOOL DIPLOMAS GRADES 9 through 12\**

SUBJECT	STANDARD DIPLOMA	ADVANCED COLLEGE PREPARATORY
Theology	4	4
English	4	4
Mathematics	4	4
Lab Science	4	4
Social Studies	4	4
Foreign Language		3 units of one language or 4 units of two languages
Phys. Ed/Health	2	2
Fine Arts/Career & Technical Education	1	1
Personal Finance	1	1
Electives	4	0/1
<b>TOTAL CREDITS</b>	<b>28</b>	<b>28</b>

\* Effective with the graduating Class of 2015; at least 26 standard units of credit required for graduation including one credit in Personal Finance.

In addition, effective with the Class of 2017, a student must successfully complete one virtual course, which may be non-credit bearing, to graduate with an Advanced Studies Diploma.

## ROANOKE CATHOLIC UPPER SCHOOL

### SUBJECT COURSES IN SEQUENCE

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**Theology** Theology 8 - *Creed and Prayer*; Theology 9 - *Revelation of Christ in Scriptures and Who is Christ?*; Theology 10 - *The Mission of Jesus Christ and Life in Jesus Christ*; Theology 11 - *Jesus Christ's Missions Continues and Encounters with Christ*; Theology 12 – *Apologetics I & II*

**English** *Regular Sequence:* English 8, Introduction to Literature, American Literature, British Literature, World Literature  
*Advanced Sequence:* English 8, American Literature, British Literature, AP English Language\* ♦, AP English Literature\* ♦  
*Electives:* Forms of Discourse\* +, Books to Film\* +, Advanced Composition\* ~ ♦, AP English Language\* ♦, AP English Literature\* ♦

**Mathematics** *Regular Sequence:* Pre-Algebra, Algebra I, Geometry, Algebra II, Advanced Algebra with Trigonometry  
*Advanced Sequence:* Algebra I, Geometry, Algebra II, Advanced Algebra with Trigonometry, Math Analysis\* or Pre-Calculus  
*Accelerated Sequence:* Geometry, Advanced Algebra II, Pre-Calculus, Calculus I, Calculus II\* ♦  
*Electives:* Math Analysis\*

**Science** *Regular Sequence:* Geo Science, Physical Science, Environmental Science, Applied Biology or Chemistry  
*Advanced Sequence:* Geo Science, Physical Science, Chemistry, Biology, plus one additional course  
*Accelerated Sequence:* Geo Science, Physical Science, Chemistry, and/or AP Chemistry AP Biology, plus at least one additional higher level science elective  
*Electives:* AP Chemistry\* ♦, AP Biology\* ♦, AP Physics\* ♦  
 Anatomy & Physiology\*, National Parks Experience \* Astronomy\*  
 Environmental Science\*, Applied Biology\*+ (alternate years)

**Social Sciences** Civics and Economics, World History and Geography I, World History and Geography II, VA/U.S. History, American Government & Politics~~, Comparative Government & Politics ~~  
*Electives:* Psychology\* ~~, AP U.S. History\* ♦

**Foreign Language** French I, II, III, IV, V or AP\* ♦ (as offered)  
 Spanish I, II~~, III~~, IV~~, V~~ or AP\* ♦ (as offered)  
 Latin I\*  
 (Advanced College Preparatory Diploma requires:  
 3 years of one language or 2 years of two languages)

**Personal Finance**

**Health & PE** Health & PE 8,9,10

**Electives** From any of the above and/or

**Fine Arts/Career/Technical Education**

Band, Drawing Fundamentals\*, Art I\*, Art Expo I: Ceramics and Mosaics\*, Art Expo II: Ceramics\* Photojournalism I and/or II \*

Computer Programming Introduction (Python Programming/Electronic Circuits)\*

**TOTAL REQUIRED CREDITS:** **32/35**

\* Course is offered only if there is sufficient enrollment and teacher availability ♦ Application and/or teacher recommendation required ♦ Dual enrollment opportunity available through Virginia Western, fee assessed, ~~ Dual Enrollment through Richard Bland College, fee assessed, +Not offered 2016-2017

◆ ◆ ◆ ◆ **THE RESEARCH PROGRAM** ◆ ◆ ◆ ◆

REQUIREMENTS FOR MAJOR RESEARCH PAPERS

GRADE	MAXIMUM LENGTH	MINIMUM SOURCES
8	3-5 typed pages	4; 3 cited in text
9	4-6 typed pages	5; 4 cited in text
10	5-7 typed pages	6; 5 cited in text
11 11AP	6-8 typed pages 9 typed pages	7; 6 cited in text
12	10-12 typed pages	10; 8 cited in text

For all courses, grade level papers may not exceed the above standards. English teachers introduce, reinforce, or review the research process, the skills, and the techniques necessary to plan, research, and write formal papers, according to Modern Language Association (MLA) guidelines. Throughout the process, students are also encouraged to learn to use technology to locate information and to prepare their manuscripts.

Students must satisfactorily complete the English research paper before advancing to the next level English class.

Satisfactory completion of the *senior research project* is a requirement for graduation. This project combines the formal research paper and presentation of the *senior speech*. The grade for this project is recorded separately on students' transcripts.



**COURSE OFFERINGS**

◆ ◆ ◆ **THEOLOGY** ◆ ◆ ◆

Students at Roanoke Catholic Upper School are required to take a class in Theology each year. Credits are adjusted for transfer students. The curriculum fosters a thorough academic education in Catholic Christianity and opportunities for personal spiritual formation. All grade levels plan and participate in class liturgies and prayer experiences. Students are required to perform works of community service, both as class projects and as individuals. Individually, students are required to complete a minimum of 40 hours of community service each year.

**THEOLOGY 8**

**050 CREED & PRAYER**

**1 Credit; Required**

This survey course provides an overview of Catholic Christianity as students study each part of the Nicene Creed. It includes the study of the persons of the Trinity, the paschal mystery, Mary, the Virgin Mother of God, the Church's origin and mission, the Church as One, Holy, Catholic and Apostolic, sin and forgiveness, and the end times – purgatory, the last judgment. The second semester of this course focuses on prayer. Students who complete this part of the course will be able to identify and participate in various types and kinds of prayer and be able to explain the essential role of prayer in a person's spiritual life.

## **THEOLOGY 9**

### **061 THE REVELATION OF JESUS CHRIST IN SCRIPTURE**

**Semester 1 0.5 Credit; Required**

The purpose of this course is to give students a general knowledge and appreciation of the Sacred Scriptures. Through their study of the Bible they will come to encounter the living Word of God, Jesus Christ. In the course they will learn about the Bible, authored by God through Inspiration, and its value to people throughout the world. If they have not been taught this earlier, they will learn how to read the Bible and will become familiar with the major sections of the Bible and the books included in each section. The students will pay particular attention to the Gospels, where they may grow to know and love Jesus Christ more personally.

### **062 WHO IS JESUS CHRIST?**

**Semester 2 0.5 Credit; Required**

The purpose of this course is to introduce students to the mystery of Jesus Christ, the living Word of God, the Second Person of the Blessed Trinity. In this course students will understand that Jesus Christ is the ultimate Revelation to us from God. In learning about who he is, the students will also learn who he calls them to be.

## **THEOLOGY 10**

### **071 THE MISSION OF JESUS CHRIST (THE PASCHAL MYSTERY)**

**Semester 1 0.5 Credit; Required**

The purpose of this course is to help students understand all that God has done for us through his Son, Jesus Christ. Through this course of study, students will learn that for all eternity, God has planned for us to share eternal happiness with him, which is accomplished through the redemption Christ won for us. Students will learn that they share in this redemption only in and through Jesus Christ. They will also be introduced to what it means to be a disciple of Christ and what life as a disciple entails.

### **072 LIFE IN JESUS CHRIST**

**Semester 2 0.5 Credit; Required**

The purpose of this course is to help students understand that it is only through Christ that they can fully live out God's plans for their lives. Students are to learn the moral concepts and precepts that govern the lives of Christ's disciples. Students will participate in the Theology of the Body Program for Teens, in conformity with the USCCB Document Formation in Chaste Living.<sup>1</sup>

## **THEOLOGY 11**

### **081 JESUS CHRIST'S MISSION CONTINUES IN THE CHURCH**

**Semester 1 0.5 Credit; Required**

The purpose of this course is to help the students understand that in and through the Church they encounter the living Jesus Christ. They will be introduced to the fact that the Church was founded by Christ through the Apostles and is sustained by him through the Holy Spirit. The students will come to know that the Church is the living Body of Christ today. This Body has both divine and human elements. In this course, students will learn not so much about events in the life of the Church but about the sacred nature of the Church.

### **082 SACRAMENTS AS PRIVILEGED ENCOUNTERS WITH CHRIST**

**Semester 2 0.5 Credit; Required**

The purpose of this course is to help students understand that they can encounter Christ today in a full and real way in and through the sacraments, and especially through the Eucharist.

Students will examine each of the sacraments in detail so as to learn how they may encounter Christ throughout life.

## **THEOLOGY 12**

**091 and 092 Apologetics I & II**

**Semester 1 0.5 Credit; Required**  
**Semester 2 0.5 Credit; Required**

For the final year of Theology, students will firm the foundation of Catholic theology and belief through a year-long course in Catholic apologetics. Students will be able to defend the teaching and belief of the Catholic faith in the areas of Theology of God, the Authority of the Catholic Church, the Sacraments of the Church, and the selected Moral teachings of the Church. Particular emphasis on the dangers of relativism will be faced, while building a strong and competent understanding of a full life within the Catholic Church.

*\*Doctrinal Elements of a Curriculum Framework for the Development of Catechetical Materials for Young People of High School Age, United States Conference of Catholic Bishops, © 2008, United States Conference of Catholic Bishops, Washington, D.C. All rights reserved. Used with permission.*

## **◆ ◆ ◆ ENGLISH ◆ ◆ ◆**

Each quarter, all students enrolled in the English courses described below are required to read one work chosen from the appropriate reading list. In addition, students are also required to read two works from the list during the summer break. Students will write about the works they read as directed by their English teachers. Students in the Advanced Placement English courses have different requirements.

**150 ENGLISH 8**

**1 Credit; Required**

English 8 focuses on the fundamentals of composition and literature. Students study the writing process, concentrating on the structure and types of sentences, paragraphs, and essays and on the use of standard grammar and usage. The study of literature highlights the characteristics of the short story, the novel, poetry, and drama. Students also study the procedures and techniques of the research process. The school-wide vocabulary program, introduced in grade 6, continues. Library use and media study are other areas of emphasis.

**160 INTRODUCTION TO LITERATURE**

*Prerequisite:* English 8

**1 Credit; Required**  
Exemption possible

This course aims to develop skills in literature, composition, and vocabulary. Considerable emphasis is placed on the writing process from pre-writing through final proofreading and on the use of standard grammar and usage. Literature study focuses on the characteristics and conventions of the technique devices used in a variety of genres. Weekly vocabulary study is designed to build students' own vocabulary and related skills, as well as to develop their understanding of the structure of the English language. In addition, students reinforce their research skills. Whenever appropriate, media techniques and influences will be discussed.

**170 AMERICAN LITERATURE**

*Prerequisite:* Introduction to Literature or teacher recommendation

**1 Credit; Required**

In American Literature, the study of literature is a chronological survey of American literature, emphasizing the development, influences, and characteristics of literary movements and writers' use of literary techniques and devices. Students continue their work on writing skills, mastery of standard grammar and usage, research skills, and vocabulary.

**180 BRITISH LITERATURE****1 Credit; Required***Prerequisite:* American Literature or teacher recommendation

British Literature is a chronological survey of major British works from Beowulf through those of the twentieth century, including an intensive study of works by Shakespeare. The course combines in-depth reading with analytical composition skills. Students also review research procedures and skills and continue their vocabulary study.

**190 WORLD LITERATURE****1 Credit; Required***Prerequisite:* British Literature or teacher recommendation

In this survey of world literature, students study a variety of works representative of many cultures and different historical periods. Composition assignments are literature-based with emphasis on critical thinking skills. The fundamentals of good writing style are also reviewed. Students continue their study of vocabulary and review research procedures and skills.

**195 AP ENGLISH: LANGUAGE AND COMPOSITION****1 Credit; Elective***Prerequisite:* minimum 92 in previous English course, application, and teacher recommendations

AP Language is open to juniors and seniors interested in the study of the writer's craft and, specifically, in journalistic writing. Students learn effective research techniques for journalistic writing through the reading and analysis of appropriate nonfiction, such as feature articles, newspaper and magazine columns, and cross-disciplinary writings. The course is designed to prepare students to take the Advanced Placement Examination in Language and Composition, administered for a fee by the College Board. Successful performance on this exam may earn students college credit and/or course exemptions. This seminar class is limited to enrollment. This course is also offered as a dual-enrollment option with the potential of receiving 3 to 6 credits through Virginia Western Community College. A fee will be assessed for each semester offering of English 111 and English 112.

**185 AP ENGLISH: LITERATURE AND COMPOSITION****1 Credit; Elective***Prerequisite:* minimum 92 in previous English course, application, and teacher recommendations

AP Literature is open to seniors who have critical thinking ability and competent writing skills. In-depth studies of short stories, novels, poetry, drama, and literary criticism are hallmarks of the course. Students are expected to develop interpretive, analytical and evaluative skills which they demonstrate through discussions, presentations, and essay writing. In addition, each month students independently read and write about one novel or play. Students are encouraged to take the Advanced Placement examination in Literature and Composition (fee required). Successful performance on this exam may earn students' college course exemptions and/or credits. This course is also offered as a dual-enrollment option with the potential of receiving 3 to 6 credits through Virginia Western Community College. A fee will be assessed for each semester offering of English 251 and English 252.

**175 ADVANCED COMPOSITION****1 Credit; Elective**

This course is intended for students who need to improve their command of standard written English and those who wish to polish their writing skills. The course is designed to offer extensive one-on-one instruction. In addition, it is especially helpful in preparing students for the various written assignments encountered at the college level. This course is also offered as a dual-enrollment option with the potential of receiving 3 credits through Virginia Western Community College for English 111. A fee will be assessed for this option.

**193 FORMS OF DISCOURSE****0.5 Credit; Elective**

This course offers an integrated approach to the study of public speaking and creative writing. During the semester, students have the opportunity to create and present original working a supportive environment. Classic film and short readings are used as “prompts” for directed discussion and group or individual projects. The ultimate objective is to assist students in developing ease of expression while discovering hidden talents.

**194 BOOKS TO FILM****0.5 Credit; Elective**

A study of great novels turned into films forms the basis of this course. In addition to studying the transformation of novels into film and the evolution of cinema techniques, students will examine the challenges of narrative in order to develop a more sophisticated grasp of the artist’s task.

**◆ COURSE SEQUENCE ◆**

GRADE	REGULAR	ADVANCED
8	English 8	English 8
9	Introduction to Literature	American Literature
10	American Literature	British Literature
11	British Literature	AP Language or World Literature
12	World Literature	AP Literature or AP Language or World Literature

**◆ ◆ ◆ MATHEMATICS ◆ ◆ ◆****250 PRE-ALGEBRA** Prerequisite for Algebra I**1 Credit; Required**

This course is designed to help students develop the mathematical skills and preliminary concepts necessary for Algebra I. Some of the major concepts introduced include working with integers, solving basic equations, simplifying rational expressions, and two-dimensional graphing. Applications and modeling are also used to develop problem-solving skills. The use of a calculator is minimal in this course

**255 ALGEBRA I****1 Credit; Required***Prerequisite:* Pre-Algebra

This course is the study of the applications of the properties and operations of the real number system applied to variable expressions, linear equations, and linear inequalities. Graphing using algebraic techniques, factoring, and algebraic notation are emphasized. Quadratic functions and the quadratic formula are introduced.

**260 GEOMETRY****1 Credit; Required***Prerequisite:* Algebra I

This course places emphasis on logical reasoning through a variety of proof styles and their applications. Topics studied include points, lines, planes, angles, polygons, circles, congruence, and similarity. In addition, algebraic skills are reinforced.

**265 ALGEBRA II****1 Credit; Required***Prerequisite:* a minimum grade of 77 in Algebra I or department recommendation

This course expands the topics studied in Algebra I. Roots and rational exponents, functions, and complex numbers are studied. Emphasis is given to the solving of quadratic equations using three methods: factoring, completing the square, and the quadratic formula. Graphing of linear and quadratic functions using algebraic techniques is a central topic.

**272 ADVANCED ALGEBRA II****1 Credit; Elective***Prerequisite:* minimum of 88 in Algebra I and Geometry and department recommendation

This course reviews the topics introduced in Algebra I. Roots and rational exponents, functional notation and operations on higher order equations, and complex numbers are studied. Emphasis is given to the solving of quadratic equations using three methods: factoring, completing the square, and the quadratic formula. Exponential, logarithmic, and trigonometric functions are introduced. Graphing techniques and the transformations of graphs produced by changes in equations is a central topic.

**275 ADVANCED ALGEBRA/TRIGONOMETRY****1 Credit; Elective***Prerequisite:* Geometry, Algebra II

This course covers the same topics as those covered in Algebra II but with greater emphasis on application. Transformation in the graphs of the functions is introduced and applied to all subsequent topics. Trigonometry is introduced during the latter part of the course. Students study the domain, range, graphs, transformations, inverses, and applications of trigonometric functions. They also study solving right triangles, the Law of Sines, and the Law of Cosines. Other topics include simplifying trigonometric expressions, solving trigonometric equations, and proving trigonometric identities

**285 PRECALCULUS****1 Credit; Elective***Prerequisite:* Honors Algebra II with a minimum grade of 88 and department recommendation; or Advanced Algebra with Trigonometry and department recommendation.

This course is an introduction to the concepts and language necessary to begin the study of Calculus. Topics from all previous math courses are integrated and reinforced. Algebraic, logarithmic, exponential, and trigonometric functions and the methods for graphing these functions are studied in great depth.

**283 MATH ANALYSIS****1 Credit; Elective***Prerequisite:* Advanced Algebra/Trig or Precalculus

This course expands the topics studied in Algebra II and Advanced Algebra/Trigonometry while introducing matrices, determinants, probability, and statistics. This course is designed to introduce subjects that students can expect to see in a college level algebra class. The first semester will focus on quadratic and polynomial functions, systems of equations and inequalities, and matrices and determinants. The second semester will address probability and statistics while covering summarizing data, fundamental counting principles, permutations, combinations, normal and binary distributions, estimates and sample size, correlation and regression, and variance. Additionally, this course will cover methods used in conducting polls and surveys to include errors and bias sampling.

**290 CALCULUS****1 Credit; Elective***Prerequisite:* Precalculus with a grade of A or B and/or department recommendation

The objective of this course is the study of the two fundamental concepts of calculus, the derivative and the integral, in terms of the concept of limit. Students become familiar with the

techniques of differentiation and integration. These concepts, as well as their practical applications for solving problems, are emphasized throughout the course.

**295 CALCULUS II**

**1 Credit; Elective**

*Prerequisite:* Calculus I with a minimum grade of 88; department recommendation

This course thoroughly reviews the derivative and its applications, the antiderivative and the integral and its application to area, volume, physics, and engineering; inverse trigonometric and hyperbolic functions and their derivatives and integrals; L'Hospital's Rule; various methods of integration; exponential and logarithmic functions, their integrals, derivatives, and applications.

**◆ COURSE SEQUENCE ◆**

GRADE	REGULAR	ADVANCED	ACCELERATED
8	Pre-Algebra	Algebra I	Geometry
9	Algebra I	Geometry	Honors Algebra II
10	Geometry	Advanced Algebra II or Algebra II	Precalculus, Adv. Alg./Trig
11	Algebra II	Precalculus, Adv. Alg/Trig	Precalculus, Math Analysis, Calculus I
12	Advanced Algebra with Trigonometry	Math Analysis, Precalculus, Calculus I	Calculus I, Calculus II

**◆ ◆ ◆ SCIENCE ◆ ◆ ◆**

**4601 GEO SCIENCE**

**1 Credit; Required**

The objective of this course is to help students understand the many aspects of the environment. The course is a practical study of the earth: its features, its forces, and its place in the universe. This eighth grade course earns high school credit.

**450 PHYSICAL SCIENCE**

**1 Credit; Required**

*Prerequisite:* Geo Science

This course is a study of basic chemistry, covering topics such as the periodic chart and chemical changes, as well as a study of basic physics, covering topics such as motion, forces, and energy. Physical Science stresses the basic concepts, processes, and activities of science

**465 ENVIRONMENTAL SCIENCE**

**1 Credit; Elective  
(Offered 2016-2017)**

*Prerequisite:* Earth Science and Physical Science

This course is a hands-on course with in-school laboratories and fieldwork incorporated into the curriculum. The course examines topics such as the effects of toxins on ecosystems and humans, the effects of non-chemical pollution, such as noise and urban sprawl. Students study the problems inherent in the simplification of ecosystems and the occurrence of extinct species. Solutions to environmental problems on a local and global level are explored.

**472 APPLIED BIOLOGY**

**1 Credit; Elective  
(Not Offered 2016-2017)**

*Prerequisite:* Earth Science and Physical Science

This lab science course is a survey of organic chemistry, cell structure, photosynthesis, cell reproduction, Mendelian genetics, organisms and human anatomy and physiology.

**480 CHEMISTRY****1 Credit; Elective***Prerequisite:* C or above in Physical Science

This is primarily a theoretical course complemented by experimentation. The course includes the study of the following: the structure of the atom, the periodic table, writing formulas, balancing equations, stoichiometry, gases, equilibrium, acids and bases, oxidation, and reduction.

**485 AP CHEMISTRY****1 Credit; Elective***Prerequisites:* minimum of 92 in Chemistry, application including teacher recommendation

This course is a college level treatment of the following topics: atomic structure and theory, chemical bonding, gas laws, kinetic-molecular theory of gases, solution chemistry, chemical reaction types, equilibrium, kinetics, and thermodynamics. Appropriate lab work is included.

**470 BIOLOGY****1 Credit; Required***Prerequisites:* Geo Science, Physical Science, and Chemistry

In this course, students study biological and biochemical principles as they apply to organisms from bacteria to protista. They also study the three domains of living organisms and the systems needed for life to exist.

**475 AP BIOLOGY****1 Credit; Elective***Prerequisite:* minimum of 92 in Chemistry, application with teacher recommendation

This AP Biology course is designed to thoroughly explore concepts in an introductory level college biology course. This course emphasizes the unity and the diversity of life forms. Basic chemistry, cell biology, and genetics precede information about life processes, homeostasis of organisms, human anatomy and physiology, ecosystems, and environmental issues. Students will also participate in laboratory investigations consistent with the AP curriculum guide by The College Board. Students will be expected to stay after school on a few occasions to complete labs or to participate in AP test review.

**496 AP PHYSICS****1 Credit; Elective***Prerequisites:* must have taken or be taking Precalculus, Chemistry, and teacher recommendation.

This Advanced Placement course is equivalent to a first semester college course in algebra-based physics. Topics covered include Newtonian mechanics, work and energy, waves and sound, and electric currents.

**499 NATIONAL PARKS EXPERIENCE****1 Credit; Elective  
National Park TBA***Prerequisite:* open to juniors and seniors only

Students will learn about the geology, ecology, and history of a National Park. Topics covered will include Native American culture and history, geology and ecology of the area. The class culminates with a five-day excursion during spring break. Estimated cost of trip is \$1500. Class size is limited.

**482 ANALYTICAL CHEMISTRY****0.5 Credit; Elective***Prerequisite:* C or above in Chemistry

This course will introduce students to more advanced laboratory techniques, both qualitative and quantitative. Students will be expected to work well in lab setting, both independently and cooperatively.

**498 ASTRONOMY****0.5 Credit; Elective***Prerequisite:* open to juniors and seniors only

Astronomy is the study of the universe around us. This course deals with the history of our knowledge of the solar system; the nature of light and matter; characteristics of stars; the birth, evolution, and death of stars; neutron stars; black holes; galaxies; the Big Bang; cosmology;; and the principles of Einstein's' theory of relativity.

**473 ANATOMY & PHYSIOLOGY****1 Credit; Elective***Prerequisite:* Biology

Students will study the structure and function of the human body. This course will explore the systems of the human body: digestive, cardiovascular, muscular, nervous, respiratory, endocrine, lymphatic, and reproduction. Also included is dissection of frog, fetal pig, and cat.

◆ **COURSE SEQUENCE** ◆

GRADE	REGULAR	ADVANCED	ACCELERATED
8	Geo Science	Geo Science	Geo Science
9	Physical Science	Physical Science	Physical Science
10	Applied Biology or Environmental Science	Chemistry	Chemistry
11	Environmental Science or Chemistry or Applied Biology	Biology	Anatomy & Physiology AP Chemistry AP Biology
12	Chemistry or elective(s)	Anatomy & Physiology or elective(s)	AP Biology AP Physics Anatomy & Physiology

◆ ◆ ◆ **SOCIAL SCIENCES** ◆ ◆ ◆**370 ECONOMICS****0.5 credit; Required**

This course provides a basic introduction of the free enterprise system. The emphasis is on understanding fundamental principles of economics and on developing consumer decision-making skills. Students discuss current economic events and apply the principles of micro- and macro-economics. This course also includes the basics of personal finance and financial responsibility.

**372 CIVICS****0.5 credit; Required**

This course provides a study in the basic elements of government at the local, state, and national level with particular emphasis on the three branches of government. Students will master key concepts and terminology which will introduce them to the skills necessary for becoming an active and responsible citizen.

**350 WORLD HISTORY/ GEOGRAPHY I****1 Credit; Required**

This course is the first part of a two-year study integrating world history, geography, and current events. Students examine the progress of civilization from prehistoric time through the Renaissance period of Western Europe.

**360 WORLD HISTORY/ GEOGRAPHY II****1 Credit; Required***Prerequisite:* World History I

This course is the second part of a two-year study integrating world history, geography, and current events. Students examine the progress of civilization with emphasis on the relations among nations from the Renaissance period of Western Europe to the present time.

**380 VIRGINIA AND US HISTORY****1 Credit; Required**

This course is a survey of Virginia and US history from the Age of Exploration to the present with emphasis on economics and politics as well as intellectual and cultural development.

**382 SCREENING AMERICA: US HISTORY THROUGH FILM SINCE 1900***Prerequisite:* open to 11<sup>th</sup> and 12<sup>th</sup> graders only**1 Credit; Elective**

This course will explore feature films as a primary source in U.S. history. The films as both cause and effect of U.S. culture during the 1900s will be evaluated along with the films' effectiveness of relaying dominant themes of an era. Reading of short primary documents is required. Assessment will be class participation and out-of-class writing. *(will meet the Fine Arts or Career & Technical Education component)*

**385 AP U.S. HISTORY****1 Credit: Elective***Prerequisite:* application and teacher recommendation

This course, which may replace Virginia and U.S. History, is intended for juniors and seniors who wish to study U.S. History in greater depth. The course is a chronological survey of American History from the Age of Exploration to the present with special emphasis on the following topics: the history of diplomacy, economics, and politics as well as intellectual and cultural development. Students may elect to take the Advanced Placement exam in U.S. History (fee required). Successful performance on this exam may earn students college course exemptions and/or credits.

**US GOVERNMENT****1 Credit; Required**

Dual Enrollment in cooperation with Richard Bland College. A fee will be assessed for each semester offering of Gov 201 and Gov 203.

**392 American Government and Politics  
GOV 201****0.5 Credit: Required  
Dual Enrollment 3 credits**

This course provides students an introduction to American government and politics, emphasizing both the practical aspects of governmental operations and the understanding of politics as an ongoing, active process. Arranged topically, the course explores the nature and functions of government, politics, and governmental organization. Civil liberties, civil rights, the role of the media and industry, and public opinion are also covered.

**393 Comparative Government and Politics  
Gov 203****0.5 Credit: Required  
Dual Enrollment 3 credits**

This course introduces the comparative analysis of politics. It studies the political cultures, structures and processes of politics in diverse parts of the world in order to compare how the nations emerged and developed, how the culture of a society influences politics in that nation, and how various national structures affect a nation's ability to determine policy goals and attempt to implement them. It also seeks to bring some coherence to the analysis of an otherwise diverse array of system types, and to heighten sensitivity to matters of race, class, and gender and increase tolerance for different cultures. A fee will be assessed.

**397 PSYCHOLOGY - General Psychology 201  
PSY 201**

**0.5 Credit: Elective  
Dual Enrollment 3 credits**

This course is an introduction to psychology with particular attention given to personality development, learning, motivation, mental health, and interpersonal relationships. Topics covered in the first semester are thinking and learning processes, workings of mind and body, awareness of the word, motivation, emotion, states of consciousness, and human development. Dual enrollment through Richard Bland College. A fee will be assessed.

**398 PSYCHOLOGY - General Psychology 202  
PSY 202**

**0.5 Credit: Elective  
Dual Enrollment 3 credits**

*Prerequisite:* General Psychology 201

This course is an introduction to psychology with particular attention given to personality development, learning, motivation, mental health, and interpersonal relationships. Topics covered in the second semester includes such topics as human relations, theories of personality, positive adjustment to contemporary society, disorders, therapy and change, psychological testing and applications of psychology. Dual enrollment through Richard Bland College.

**◆ COURSE SEQUENCE ◆**

<u>GRADE</u>	<u>COURSE</u>
8	Civics and Economics
9	World History and Geography I
10	World History and Geography II
11	Virginia /U.S. History or AP U.S. History
12	Virginia / U.S. Government; Elective—AP U.S. History, Psychology, Screening of America

**◆ ◆ ◆ FOREIGN LANGUAGES ◆ ◆ ◆**

*See the diploma requirements for foreign language.*

**◆ FRENCH ◆**

**551 FRENCH I**

**1 Credit; Elective**

French I introduces elementary spoken and written French, covering basic grammar and three verb tenses. Emphasis is on the four areas of language acquisition: listening, speaking, reading, and writing. In class, the active use of the language, including correct pronunciation, is emphasized. Written work is usually assigned as homework in order to build on the concepts introduced in class. Students also study French culture and civilization.

**552 FRENCH II**

**1 Credit; Elective**

*Prerequisite:* French I and teacher recommendation

French II builds on the material introduced in French I. Class business is increasingly conducted in French, and greater emphasis is placed on conversation and immediate translation. Throughout the year, students explore French culture, history, geography, and art.

**553 FRENCH III****1 Credit; Elective***Prerequisite:* French II and teacher recommendation

Students in French III will study the more complex principles of French grammar and will be encouraged to incorporate more sophisticated constructions in their speaking and writing. Selections from literature will supplement the reading material in class.

**554 FRENCH IV****1 Credit; Elective***Prerequisite:* French III and teacher recommendation

French IV both reviews and amplifies the student's knowledge of grammar and will be encouraged to incorporate more sophisticated constructions in their speaking and writing. Selections from literature will supplement the reading material in class.

**555 FRENCH V or AP FRENCH (as offered)****1 Credit; Elective***Prerequisite:* French IV and teacher recommendation

The goal of this class is fluency in the language by emphasizing both prepared and impromptu speaking, reading, and writing skills. The grammar review will consist primarily of exceptions to standard rules and idiomatic constructions. Students who do well in this class are encouraged to take the Advanced Placement Exam in French Language.

**◆ SPANISH ◆****571 SPANISH I****1 Credit; Elective**

Spanish I introduces basic grammatical concepts of the Spanish language. It focuses on pronunciation, vocabulary building, syntax, and sentence structure.

**Effective 2015-2016 the following Spanish courses are Dual Enrollment offerings in cooperation with Richard Bland College. No fee will be assessed for these courses.**

**572 SPANISH II****1 Credit; Elective***Prerequisite:* Spanish I and teacher recommendation**SPAN 101: 3 credits (DE)**

Spanish II builds upon the basic language skills acquired in Spanish I. In this level students expand vocabulary and knowledge of sentence structure. The emphasis is on applying language concepts through listening comprehension, situational speaking, and elementary writing.

**573 SPANISH III****1 Credit; Elective***Prerequisite:* Spanish II**SPAN 102: 3 credits (DE)**

Spanish III reinforces and expands the basic linguistic concepts learned in Spanish I and II. The course emphasizes the study of basic grammar, the development of reading and conversational skills, and practice writing such as letters, e-mails, and thank-you notes.

**574 SPANISH IV****1 Credit; Elective***Prerequisite:* Spanish III and teacher recommendation**SPAN 201: 3 credits (DE)**

Spanish IV requires that students put into practice the grammar concepts learned in the first three levels of Spanish. Students continue to develop their listening, speaking and writing skills, and grammar study focuses on advanced concepts. Readings are selections from Spanish and Latin-American literature as well as magazine articles on a variety of contemporary topics.

**578 SPANISH V***Prerequisite:* Spanish IV and teacher recommendation**1 Credit; Elective  
SPAN 202: 3 credits (DE)**

Spanish V emphasizes speaking and understanding the spoken language. Situational conversations and role playing are an integral part of the class. The class will discuss the culture and current events of Spanish-speaking countries. Vocabulary acquisition, grammar review, and writing skills are coordinated with regular reading selections.

**◆ LATIN ◆****561 LATIN I****1 Credit; Elective**

The student learns the fundamentals of this classical language. Emphasis is placed on learning to read and translate Latin through simple Latin paragraphs and stories. Comparison to English grammar and increasing the student's English vocabulary through Latin root words are emphasized. Students gain an appreciation of the Roman contributions to Western civilization and the Latin influence on the development of the English language

**◆ ◆ HEALTH AND PHYSICAL EDUCATION ◆ ◆**

All courses alternate between classroom instruction, described below, and directed physical activities.

**PHYSICAL EDUCATION 8, 9, & 10****0.5 Credit each; Required**

The Physical Education program centers on the development of individual skills, positive self-esteem, and strategies of individual, team sports and lifetime sports. The level of instruction is adjusted to the age and skill level of the particular grade level. The lifetime sports of golf, badminton, and tennis are introduced in the 9<sup>th</sup> grade and further developed in the 10<sup>th</sup> year. A change of clothes (gym clothes) is required.

**750 HEALTH 8****0.5 Credit; Required**

This course will cover all three sides of the health triangle and the values of eating healthy foods combined with a daily routine of diet and exercise. Other areas of study include: personal health issues, understanding stress and stress management, bullying, peer pressure, and understanding nutrition labels. The class will address ways in improving our environment and societal safety issues.

**760 HEALTH 9****0.5 Credit; Required**

This course will cover personal health care as well as identifying the different body systems such as: skeletal, nervous, muscular, cardiovascular, respiratory, digestive, endocrine, and reproductive. In addition, topics such as understanding the use and abuse of alcohol, tobacco, over-the-counter, and illegal drugs will be targeted. Other areas covered will be communicable and non-communicable diseases, safety and prevention, and community and environmental health. Concepts and applications of First Aid and CPR will be taught including training in emergency first aid, cardiopulmonary resuscitation, and the use of automated external defibrillators, including hands-on practice of the skills necessary to perform cardiopulmonary resuscitation..

**770 HEALTH 10****0.5 Credit; Required**

During the first three quarters, this course will include comprehensive classroom instruction in Driver Education Theory. Basic highway safety, right-of-way concepts, operating vehicle control devices, standard vehicle reference points, lane changes, parking, and vehicle function as and malfunctions are among the topics covered. Also, the affects of alcohol and drugs on driving as well as distracted driving will be covered.

## ◆ ◆ ◆ PERSONAL FINANCE ◆ ◆ ◆

Per the Office of Catholic Schools of the Diocese of Richmond, effective with the graduating Class of 2015, students must meet the requirement of one credit of Personal Finance for graduation.

### **822 PERSONAL FINANCE**

**1 Credit; Required**

This online course fulfills the Personal Finance and Economics requirement for students graduating 2015 and beyond. In preparing students to function effectively as “consumers, savers, investors, entrepreneurs, and active citizens,” students will also learn how economies and markets operate and how the United States’ economy is interconnected with the global economy. A self-paced course with minimal teacher intervention, students may successfully complete this requirement in any high school year; however, this course is limited to twenty-five students per session and priority given to seniors. There are minimum and maximum time restrictions for successful completing the course session.

## ◆ ◆ ◆ FINE ARTS or CAREER & TECHNICAL EDUCATION ◆ ◆ ◆

### **660 DRAWING FUNDAMENTALS**

**0.5 Credit; Elective**

*Prerequisite:* None / 1st semester course

This course is designed to improve basic drawing skills. Based on the methods of Dr. Betty Edwards, students will complete a wide range of guided drawing activities. While expanding their understanding of the five foundational skills of drawing, students explore many subjects including still life, landscape, portrait, and imaginative works. Students will experiment with a variety of drawing mediums, such as pen and ink, charcoal, and Conte crayon. Students will be assessed on reading, vocabulary, class lectures, and projects through the use of homework, quizzes, tests, and project rubrics. A fee may be assessed; students may provide their own materials.

### **661 ART APPRECIATION**

**0.5 Credit; Elective**

*Prerequisite:* None / 2nd semester course

By blending art criticism, art history, aesthetics, and studio production together, this course provides the building blocks necessary to appreciate, understand, and create great works of art. Students will experiment with a variety of media such as drawing, painting, printmaking, ceramics, sculpture, and other crafts. Open to all skill levels, the instructor will provide both technical instruction and guidance in order to foster talent and encourage creativity. Students will be assessed on reading, vocabulary, class lectures, and projects through the use of homework, quizzes, tests, and project rubrics. A fee may be assessed; students may provide their own materials.

### **657 ART EXPOS I: CERAMICS AND MOSAICS**

**0.5 Credit; Elective**

*Prerequisite:* open to juniors and seniors only

This course will introduce students to a variety of hand building techniques and the vocabulary and art history associated with it. Students will create a variety of useful and sculptural pieces in clay and have the opportunity to work in mosaics. Students will investigate and test various glazing techniques while producing useable pieces of art. Students will be assessed on reading, vocabulary, class lectures, and projects through the use of homework, quizzes, tests, and project rubrics. A fee may be assessed; students may provide their own materials.

**654 ART EXPOS II: CERAMICS****0.5 Credit; Elective***Prerequisite:* Art Expos I

Building on the skills learned in ceramics and mosaics, students will continue to expand their knowledge of hand building techniques through the creation of self directed projects within specific parameters set by the instructor. Students will receive technical instruction and guidance in order to foster talent and encourage creativity on an independent level. Students will end the year by curating a show reflecting their progress and individuality. A fee may be assessed; students may provide their own materials.

**652 STUDIO ART****1 Credit; Elective***Prerequisite:* Art I and/or teacher permission

This is a studio art class in which students are expected to develop considerable skills in several selected media. Students are expected to keep a sketchbook and to complete assignments outside of the classroom. Students will expand their understanding of the interrelationships of aesthetic, art criticism, and art history. Students will maintain a digital portfolio and learn to create artistic statements as they reflect back on their work and the work of other artists. In addition to required coursework, students will receive technical instruction and guidance in order to foster talent and encourage creativity. A fee will be assessed; students may provide their own materials.

**655 BAND****0.5 Credit; Elective***Prerequisite:* previous instrumental instruction

Students interested in continuing their instrumental music education may enroll in this class. In addition to improving their technical skills, they will have opportunities to perform in the concert, marching and pep bands. Currently band meets as a zero period at 7:30 a.m. Monday through Friday.

**649 PHOTOJOURNALISM I****1 Credit; Elective**

This course is for students interested in producing the student yearbook/annual, *The Key*. In addition, members of the class serve as editors of the school newspaper, *The Celtic Rambler*. Through the course requirements, students will explore ethical journalism issues and develop advanced technology skills (computer and digital photography), enhance peer management techniques, and acquire an appreciation of the diversity of the school community.

**659 PHOTOJOURNALISM II****1 Credit; Elective***Prerequisite:* successful completion of Journalism I

An extension of Photojournalism I, this course is for students who can work independently and effectively produce *The Key* using an Internet based program.

**680 COMPUTER PROGRAMMING INTRODUCTION****1 Credit; elective**

Introduction to computer programming is designed so that students can move at their own pace with no previous programming experience required. The language taught is Python, an object oriented language. The course is designed to teach students the basic building blocks of programming such as debugging, variables, functions, conditionals and other concepts with fun programming projects such as colorful "Turtle Designs", or "Launching a Shuttle through a Port in Outer Space." Upon completion of the course, students should have a solid understanding of basic concepts that can be parlayed into other programming languages. Second semester offers introduction to basic electronic circuits and then builds into projects with the Arduino microprocessor board! The projects such as a lie detector test, generating a circuit that can be programmed to play a tune, "Magic Eight Ball" to tell the future and more fun projects are very doable and can be as difficult as a student's understanding allows. The student is also required to complete a project in the last four weeks of class.