

***John Bapst Memorial High School***



***Program of Study  
2010-2011***

# Table of Contents

<b><u>English Department.....</u></b>	<b><u>5</u></b>
<u>English I: Ninth Grade Literature Survey and Composition.....</u>	<u>5</u>
<u>English II: American Literature and Composition.....</u>	<u>7</u>
<u>English III: British and Irish Literature and Composition.....</u>	<u>9</u>
<u>Advanced Placement Literature and Composition.....</u>	<u>11</u>
<u>English IV: World Literature and Composition.....</u>	<u>13</u>
<u>Advanced Placement Language and Composition.....</u>	<u>15</u>
<u>Creative Writing.....</u>	<u>17</u>
<u>Speech.....</u>	<u>19</u>
<u>Journalism.....</u>	<u>21</u>
<b><u>Fine Arts Department.....</u></b>	<b><u>22</u></b>
<u>Drawing.....</u>	<u>22</u>
<u>Basic Design.....</u>	<u>23</u>
<u>Graphic Design.....</u>	<u>24</u>
<u>Sculpture and Ceramics.....</u>	<u>25</u>
<u>Painting.....</u>	<u>26</u>
<u>Advanced Art / AP Studio Art.....</u>	<u>27</u>
<u>Introduction to Band.....</u>	<u>28</u>
<u>Concert Band.....</u>	<u>29</u>
<u>Concert Band/Jazz.....</u>	<u>30</u>
<u>Chamber Ensemble.....</u>	<u>31</u>
<u>Chorale.....</u>	<u>32</u>
<u>Honors Chorale.....</u>	<u>33</u>
<u>Music Theory.....</u>	<u>34</u>
<b><u>Health &amp; Physical Education Department.....</u></b>	<b><u>35</u></b>
<u>Physical Education.....</u>	<u>35</u>
<u>Wellness I: Ninth Grade Seminar.....</u>	<u>36</u>
<u>Wellness II: Wellness, Fitness and Lifestyle Management.....</u>	<u>37</u>
<b><u>Mathematics Department.....</u></b>	<b><u>38</u></b>
<u>Algebra One.....</u>	<u>38</u>
<u>Geometry Nine.....</u>	<u>39</u>
<u>Geometry.....</u>	<u>40</u>
<u>Algebra Two.....</u>	<u>41</u>

<u>Honors Algebra Two.....</u>	<u>42</u>
<u>Precalculus.....</u>	<u>43</u>
<u>Honors Precalculus.....</u>	<u>44</u>
<u>Honors Calculus.....</u>	<u>45</u>
<u>Functions, Statistics, and Trigonometry.....</u>	<u>46</u>
<u>Advanced Placement Calculus-BC.....</u>	<u>47</u>
<u>Advanced Placement Statistics.....</u>	<u>48</u>
<u><i>Modern &amp; Classical Languages.....</i></u>	<u>49</u>
<u>Chinese One.....</u>	<u>49</u>
<u>Chinese Two.....</u>	<u>51</u>
<u>Chinese Three.....</u>	<u>53</u>
<u>French One.....</u>	<u>54</u>
<u>French Two.....</u>	<u>55</u>
<u>Honors French Three.....</u>	<u>56</u>
<u>Honors French Four/Advanced Placement French.....</u>	<u>57</u>
<u>Latin One.....</u>	<u>58</u>
<u>Latin Two.....</u>	<u>59</u>
<u>Honors Latin Three.....</u>	<u>60</u>
<u>Advanced Placement Latin: Vergil.....</u>	<u>61</u>
<u>Spanish One.....</u>	<u>62</u>
<u>Spanish Two.....</u>	<u>63</u>
<u>Honors Spanish Three.....</u>	<u>64</u>
<u>Honors Spanish Four/Advanced Placement Spanish.....</u>	<u>65</u>
<u><i>Science Department.....</i></u>	<u>66</u>
<u>Biology.....</u>	<u>66</u>
<u>Honors Biology.....</u>	<u>67</u>
<u>Chemistry.....</u>	<u>68</u>
<u>Honors Chemistry.....</u>	<u>70</u>
<u>Physics.....</u>	<u>72</u>
<u>Honors Physics.....</u>	<u>73</u>
<u>Anatomy and Physiology.....</u>	<u>74</u>
<u>Astronomy.....</u>	<u>75</u>
<u>Ecology.....</u>	<u>77</u>
<u>Geology.....</u>	<u>78</u>
<u>Meteorology: Weather and Climate.....</u>	<u>79</u>
<u>Oceanography.....</u>	<u>80</u>

<u>Advanced Placement Biology.....</u>	<u>81</u>
<u>Advanced Placement Chemistry.....</u>	<u>81</u>
<u>Advanced Placement Physics.....</u>	<u>84</u>
<b><i><u>Social Science Department.....</u></i></b>	<b><i><u>85</u></i></b>
<u>World History.....</u>	<u>85</u>
<u>American History.....</u>	<u>86</u>
<u>Advanced Placement American History.....</u>	<u>87</u>
<u>European History/Advanced Placement European History.....</u>	<u>89</u>
<u>Advanced Placement Political Science.....</u>	<u>90</u>
<u>Economics.....</u>	<u>91</u>
<u>Comparative World Cultures.....</u>	<u>92</u>
<u>Contemporary World Issues.....</u>	<u>93</u>
<u>Cultural Anthropology.....</u>	<u>94</u>
<u>Cultural Anthropology II.....</u>	<u>95</u>
<u>History Seminar: Sub-Saharan Africa.....</u>	<u>96</u>
<u>Psychology.....</u>	<u>96</u>
<u>Sociology.....</u>	<u>98</u>
<b><i><u>Technology Department.....</u></i></b>	<b><i><u>99</u></i></b>
<u>Technology: Ninth Grade Seminar.....</u>	<u>99</u>
<u>Digital Imagery: Making and Editing Digital Images.....</u>	<u>100</u>
<u>3-D Modeling: Sculpture on the Computer.....</u>	<u>101</u>
<u>Digital Audio.....</u>	<u>102</u>
<u>Digital Video Production.....</u>	<u>103</u>
<u>Introduction to Programming.....</u>	<u>104</u>
<u>Advanced Placement Computer Science A.....</u>	<u>106</u>
<u>Intermediate Programming.....</u>	<u>108</u>
<u>Advanced Programming.....</u>	<u>110</u>

# English Department

## *English I: Ninth Grade Literature Survey and Composition*

Grade 9; 1 credit  
Prerequisite: None

English I is the foundation of literature and composition studies at John Bapst Memorial High School. Because John Bapst's students come from many different schools, their experience with literature and writing varies significantly; therefore, a major goal of Ninth Grade Literature Survey and Composition is to bring all students to a common but substantially higher level of knowledge and skills that prepares them to meet the challenges of the succeeding years. Teachers strive to provide an environment that encourages students to participate and that challenges all students to deepen the levels at which they think and raise the levels at which they speak, read, and write.

The literature of the course is divided into major genre-based units, and through readings, discussions, and writing assignments, students are immersed in the concepts and vocabulary of analysis and interpretation that they will need in their English classes for the following three years. We place specific emphasis on developing their skills of literary analysis because these skills open all literature and because students must learn to interpret literature for themselves rather than look to their teachers for "official" interpretations. Indeed, students in their eleventh and twelfth grade years, whether they take college preparatory English or either of our Advanced Placement courses, must be able to analyze and interpret literature independently and authentically.

In order to develop their analytical skills and the confidence to use them independently, we teach students to be close readers—to develop habits of mind that encourage engagement with the text through consideration of narrative structure, syntax, diction, imagery, tone, and literary and rhetorical devices—as they craft persuasive, text-based, authentic interpretations of literature. Our emphasis on close reading ensures that students will be able to analyze thoughtfully the elements of a work on their way to understanding the complexities of the work as a whole.

In addition, as the foundation of John Bapst's Writing Program, English I emphasizes the primary aspects of composition: the writing process, organization, topic development, use of detail, sentence structure, grammar, usage, and mechanics. Students write in each of the four modes of discourse (description, narration, exposition, and persuasion), and they learn, using full in-text documentation, to integrate quotations from a single primary source into their essays.

Finally, English I introduces students to library skills—the use of standard reference books, the library catalog, and computer-based research—in cooperation with the librarian; moreover, throughout the year, English I cultivates student technology skills by asking students to implement those skills in their assignments.

### Course Topics

- Short Fiction
- Nonfiction
- Poetry
- Shakespearean Drama
- Mythology, the Archetype
- *The Odyssey*
- Stories from the Bible
- The Novel
- Literary Terms, Concepts, and Techniques

- Grammar and Composition

## **Methods**

- close reading of texts (paraphrasing, drawing inferences from, explicating)
- using acronymic tools for analysis, such as SOAPS-Tone (Speaker, Occasion, Audience [Dramatic Situation], Purpose, Subject, and Tone) and FIDDLES (Figurative language, Images, Diction, Details, Language, Effect, Sentence structure) to open texts up for analysis
- discussion and dialogue
- vocabulary building from the readings and discussions
- quizzes and examinations emphasizing a range of knowledge and abilities, including mastery, critical thinking skills, and on-demand writing skills
- frequent discursive, analytical, critical, experiential, and creative writing assignments that enable students to develop their understanding of the readings
- studying writing models from both course readings and student writing
- proof reading and self editing, peer editing, close correction by and conferencing with the teacher in service of revision
- oral reading in class
- presentations from memory
- public speaking with emphasis on kinesics, voice and expressiveness, command of material, organization, and development

## ***English II: American Literature and Composition***

Grade 10; 1 credit

Prerequisite: English I

English Two is a survey course focused on the study of American Literature, a subject that spans nearly five centuries in the written tradition and vastly longer in the oral tradition of America's earliest inhabitants. Inherent to the study of a body of national literature is the study of the society from which the literature emerged; hence, English II is also concerned with the history and culture of the United States and serves, therefore, as a complementary course to American History One and Two.

In the composition component of English II, students study closely all the primary aspects of composition: the writing process, organization, topic development, use of detail, sentence structure, grammar, usage, and mechanics (including MLA format). The primary subjects of composition assignments, however, are American Literature and literary subjects. In the second semester of the course, students learn how to do literary research, and they begin to integrate secondary sources into their analytical essays while learning correct methods of quotation integration and documentation. In cooperation with the library, students learn literary research skills; they make full use of library materials, computer-based resources, databases, independent web sites, and inter-library loan. The substantial composition component of English Two directly reinforces and builds upon the word processing skills students acquire in their required ninth grade Technology course.

Throughout the tenth grade year, students give considerable attention to vocabulary expansion, and they improve oral communication skills through class discussion and oral presentations. Finally, students work in conjunction with the Guidance Office and their English II teachers to prepare for the Preliminary Scholastic Aptitude Test (PSAT).

### **Course Topics**

- New Land, Early Colonial American Literature
- Age of Reason, Revolutionary War Literature
- Romantic and Transcendentalism
- Realism and Literature of the Civil War
- Modernism
- Post Modernism and Contemporary Literature
- The Novel
- Twentieth Century Drama
- Literary Terms, Concepts, Techniques
- Composition and Grammar
- Literary Research

### **Methods**

- discussion and dialogue
- oral reading in class
- presentation of poems from memory
- public speaking with emphasis on kinesics, voice and expressiveness, command of material, organization and development
- quizzes and examinations, emphasizing a range of knowledge and abilities from mastery to critical thinking skills.
- vocabulary quizzes built from the readings and discussions

- frequent discursive, analytical, critical, experiential, and creative writing assignments, that enable to students to explore and develop their understanding of the readings
- writing models from both course readings and student writing
- peer editing, close correction, and conferencing in service of revision

## ***English III: British and Irish Literature and Composition***

Grade 11; 1 credit

Prerequisite: English II

English Three is a survey of the literature of Great Britain and Ireland from Anglo-Saxon times to the present—a span of 1200 years. Inherent to the study of such an extensive body of literature over so long a time is the study of the language, history, and culture from which that literature emerged; hence, linguistic, historical, and cultural topics are studied as they inform the literature of the various periods.

The composition component of English Three takes as its primary subject the literature and its cultural context, with the general aim of training the student further in all aspects of academic writing and of building on the skills taught in English I and English II. Eleventh grade English students are expected to research broadly in primary and secondary sources and to make extensive, sophisticated use of research in their two major (3000 to 4000 word) research-informed essays. Students will also experience comprehensive correction of their essays and will be encouraged to revise them for additional credit.

Students practice, expand, and refine their literary research skills as they make more extensive, independent use of the John Bapst Memorial High School Library and as they make use of other local libraries, including the University of Maine's Fogler Library.

Throughout the English Three year, students give considerable attention to vocabulary expansion and the improvement of oral communication skills through class discussions and oral presentations. Finally, students work in conjunction with the Guidance Office and their English Three teachers to prepare for and to analyze the results of the PSAT in preparation for the SAT.

### **Course Topics**

- The Anglo-Saxon Period (c. 500-1066)
- The Middle Ages (1066-1485)
- The Renaissance (1485-1660)
- The Restoration and the 18<sup>th</sup> Century (1660-1800)
- The Romantic Period (1798-1832)
- The Victorian Period (1832-1901)
- The Rise of Modernism and the Twentieth Century
- The 19<sup>th</sup> Century Novel
- The 20<sup>th</sup> Century Novel
- Literary terms, Concepts, Techniques, and Research
- Composition and Grammar

### **Methods**

- discussion and dialogue
- oral reading in class
- presentation of poems from memory
  - public speaking with emphasis on kinesics, voice and expressiveness, command of material, organization and development
  - quizzes and examinations, emphasizing a range of knowledge and abilities from mastery to critical thinking skills
- vocabulary quizzes built from the readings and discussions

- frequent discursive, analytical, critical, experiential, and creative writing assignments, that enable to students to explore and develop their understanding of the readings
- writing models from both course readings and student writing
- peer editing, close correction, and conferencing in service of revision

## ***Advanced Placement Literature and Composition***

Grade 11; 1 credit

Prerequisites: English II, and a 90% average in English & Teacher Recommendation

Advanced Placement Literature and Composition serves those students who intend to pursue advanced placement in college by taking the Advanced Placement Literature and Composition Exam. The course of study is geared to the same content as English Three (the literature of Great Britain and Ireland); however, in preparation for the Advanced Placement Literature and Composition Exam, students work extensively with AP materials: AP publications, recent AP Exams, and information collected from AP conferences attended by their teachers. Through practice exams (timed writings and multiple-choice questions on complex readings) students gain the experience needed for the actual AP Literature and Composition Exam—a rigorous three hour exam through which students may gain advanced placement in college courses and, often, earn college credits.

Students in Advanced Placement English Three must have a substantial capacity to work independently, for both the reading and writing requirements are intensive. Daily work requires close reading and critical analysis of imaginative literature from every genre, developing awareness of literary and critical traditions, and focus on the complex ways in which imaginative literature builds upon the ideas and works of authors of earlier times. Finally, students pursue writing not only as a means to demonstrate understanding of literature and language, but also as a creative, knowledge engendering mode of thought in itself.

In order to be admitted to AP Literature and Composition, students must have a sincere interest in literary studies. They must be highly self-motivated and willing both to participate in the most challenging classroom environment (class participation figures prominently in their grades) and to meet the most exacting standards in their reading and writing assignments. They must also have maintained a 90% or better average in English II and have the recommendation of their English Instructor. Students who do not meet the grade average requirement may apply for admission to AP English Three, a process that requires a review of their writing portfolio as well as the recommendation of their English Two instructor. Applications are available from the English Department Chair.

### **Course Topics**

- The Anglo-Saxon Period (c. 500-1066)
- The Middle Ages (1066-1485)
- The Renaissance (1485-1660)
- The Restoration and the 18<sup>th</sup> Century (1660-1800)
- The Romantic Period (1798-1832)
- The Victorian Period (1832-1901)
- The Rise of Modernism and the Twentieth Century
- The 19<sup>th</sup> Century Novel
- The 20<sup>th</sup> Century Novel
- Literary terms, Concepts, and Techniques
- Composition and Grammar
- Literary Research

### **Methods**

- discussion and dialogue
- oral reading in class
- presentation of poems from memory

- public speaking with emphasis on kinesics, voice and expressiveness, command of material, organization and development
- quizzes and examinations, emphasizing a range of knowledge and abilities from mastery to critical thinking skills
- vocabulary quizzes built from the readings and discussions
- frequent discursive, analytical, critical, experiential, and creative writing assignments, that enable to students to explore and develop their understanding of the readings
- writing models from both course readings and student writing
- peer editing, close correction, and conferencing in service of revision

## ***English IV: World Literature and Composition***

Grade 12; 1 credit

Prerequisite: English III

English IV is a study of World Literature from classical times to the present in which students grapple with the universal themes of human experience—for example, finding and creating meaning and identity, understanding in both personal and universal terms the concept and complexities of love, contending with the ostensible finality of death, determining worth and value, distinguishing appearance from essence and vanity from aspiration, pursuing dreams and goals, and struggling with absurdity and the possibility of meaninglessness. Although teachers enjoy considerable liberty in choosing literature, all students read and study in all the major forms: poetry, drama, short fiction, long fiction, and non-fiction. Viewing and analyzing film as literature is also part of class work. Teachers approach the course in a variety of ways—by theme, by nation, by genre, by world literary movements—but in all cases, as the final course in John Bapst Memorial High School’s English Program, World Literature and Composition is designed to bring to fulfillment the work of the previous years by demanding of students their best work as readers and writers and as classroom participants and oral presenters.

The composition component of the course takes as its primary subject the literature and its cultural context. Students deepen and sharpen their critical abilities through close analysis of individual literary elements (point of view, tone, style, theme, character, symbol, and irony, for example), which they demonstrate regularly in their written work; they then bring these skills to their major papers, which are evaluated by the most exacting standards. Students are also expected to show considerable independence in choosing literature for their major essays, in choosing subjects to write about, and in researching and documenting primary and secondary sources.

The primary resource for vocabulary expansion continues to be the literature; however, primary responsibility for vocabulary expansion falls to the student. For the purpose of improving communication skills, class participation is strongly encouraged and oral presentations are required. Students work extensively with the librarians to enhance research skills and with the Technology Department in the production of their papers. Finally, students work closely with their teachers and the Guidance Department to facilitate the writing of college application essays and resumes.

### **Course Topics**

- Universal themes of human experience
- National and international literary movements
- Poetry through the Ages: Structure, Sound, and Sense
- The Novel
- The Rise of Modernism and the Twentieth Century
- Post Modernism and Contemporary Literature
- Classical Theater, Shakespearian Drama, Nineteenth Century Drama
- Early Modern Theater, Twentieth Century Drama
- Nonfiction: short and long
- Literary Terms, Concepts, Techniques
- Composition and Grammar
- Literary Research

### **Methods**

- discussion and dialogue
- formal debates of cultural issues raised by the literature
- oral interpretive reading in class, including scenes from plays
- presentation of poems from memory
- public speaking with emphasis on kinesics, voice and expressiveness, command of material, organization and development
- evaluation through quizzes and examinations, emphasizing a range of knowledge and abilities from mastery to critical thinking skills
- vocabulary quizzes built from the readings and discussions
- frequent discursive, analytical, critical, experiential, and creative writing assignments that enable to students to explore and develop their understanding of the readings
- review of writing models from both course readings and student writing
- peer editing, close correction, and conferencing in service of revision
- critical viewing and reviewing of film

## ***Advanced Placement Language and Composition***

(Grade 12, 1 credit)

Prerequisites: English III, 90% Average in English & Teacher Recommendation

Advanced Placement Language and Composition serves those students who intend to pursue advanced placement in college by taking the Advanced Placement Language and Composition Exam. The reading component of the course focuses on the rhetorical principles, strategies, and techniques at work in literature (nonfiction primarily), with the aim of giving students an understanding of the rhetorical and linguistic choices of authors. The writing component seeks to give students extensive practice in the “expository, analytical, argumentative [synthetic, and research-informed] writing that forms the basis of academic and professional writing as well as the personal and reflective writing that fosters the development of writing facility in any context” (The College Board). In preparation for the Advanced Placement Language and Composition Exam, students work extensively with Advanced Placement materials: AP publications, the content of recent AP Exams, and information collected from AP conferences attended by their teachers. Through practice exams, including multiple-choice questions and timed writings, students gain the practical experience needed for the actual Advanced Placement Language and Composition Exam—a rigorous three hour exam through which students may gain advanced placement in college courses and, often, earn college credits.

Students in AP Language and Composition must have a substantial capacity to work independently, for both the reading and writing requirements are intensive. Daily work requires close reading and critical-rhetorical analysis of both nonfiction and imaginative literature from every genre. Students develop awareness of rhetorical strategies and fluency in the idiom of rhetorical and literary analysis. They also gain insight into the complex ways in which language makes meaning, by which arguments are developed, and by which imaginative literature builds upon the ideas and traditions of the past. Disciplined work in AP Language and Composition also aids those students who wish to take the Advanced Placement Literature and Composition Exam but who did not take AP Literature and Composition in eleventh grade. Finally, students pursue writing not only as a means to demonstrate understanding of language and literature but also as a creative, knowledge-engendering mode of thought in itself.

In order to be admitted to AP Language and Composition, students must have a sincere interest in language and literary studies. They must be not only highly self-motivated but also willing to participate in the most challenging classroom environment (class participation figures prominently in their grades) and to meet the most exacting standards in their reading and writing assignments. They also must have maintained a 90% or better average in their eleventh-grade English course and have the recommendation of their instructor. Students who do not meet the grade average requirement may apply for admission to AP Language and Composition, a process that requires a review of their writing portfolio as well as the recommendation of their English Three instructor. Applications are available from the English Department Chair.

### **Course Topics**

- Nonfiction: the essay, the editorial and the opinion piece, the epistle
- Rhetorical Modes and Strategies: example or illustration, classification, comparison and contrast, analogy, process analysis, cause and effect, definition, description, narration, induction and deduction
- Great Speeches (persuasive, informative, occasional) and Rhetorical Analysis
- Classical Theater, Shakespearean Drama, Nineteenth Century Drama

- Early Modern Theater, Twentieth Century Drama
- Poetry through the Ages: Structure, Sound, and Sense
- The Novel
- Universal Themes of Human Experience
- Argumentation and Argument Analysis (Principles of Logic & Logical Fallacies)
- Literary & Rhetorical Terms, Concepts, Techniques
- Composition and Grammar
- Literary Research

## **Methods**

- discussion and dialogue
- formal debates of cultural issues raised by the literature
- oral interpretive reading in class, including scenes from plays
- presentation of poems from memory
- public speaking with emphasis on kinesics, voice and expressiveness, command of material, organization and development
- evaluation through quizzes and examinations, emphasizing a range of knowledge and abilities from mastery to critical thinking skills
- vocabulary quizzes built from the readings and discussions
- taking and analyzing sample AP Language and Composition Exams
- frequent discursive, analytical, critical, experiential, and creative writing assignments that enable to students to explore and develop their understanding of the readings
- review of writing models from both course readings and student writing
- peer editing, close correction, and conferencing in service of revision
- critical viewing and reviewing of film

## ***Creative Writing***

Grades 10, 11, 12; 1 credit

Prerequisite: English I, and permission of the department for Grade 10

Creative Writing is a year-long elective course that gives students the opportunity for significant creative expression through the writing of poetry and prose (both fiction and nonfiction). Appropriately, it may be used to satisfy the fine arts graduation requirement. Class periods include direct instruction, individual student-teacher conferencing and coaching, and the sharing and critiquing of works with classmates, all of which support the goal of establishing a trusting, dedicated, and productive community of creative writers. Overall, the course encourages students to be careful, reflective, and creative observers of the world—from the minute to the monumental—to experience life deeply, and to process their observations and experiences in writing as a way to communicate, as well as to discover and create, meaning. At the same time, the courses seek to increase students’ sensitivity to, and therefore appreciation of, language as an artistic medium.

Students study poetry primarily through the “structure, sound, and sense” rubric of interpretation, analysis, and appreciation. In consideration of their study they are required to write poetry in free verse and closed forms that reflects sensitivity to the elements of the rubric. Most of their work in poetry, however, is in forms that suit their individual tastes, talents, inspirations, and ideas. The success of their work is judged by such criteria as clear subject, definable impact on the reader, unity and completeness, coherence and consistency, and precision and clarity. Bringing students to appreciate the importance of “showing and doing” rather than telling in their poetry is a primary goal; therefore, students spend considerable time learning and practicing the careful use of detail and the dynamics of both imagery and figurative language.

Through the close study of various models, students review the elements of fiction and nonfiction with the aim of imitating and creating them in their own writing. In regard to fiction, special emphasis is given to indirect characterization and tight, unified construction; in regard to nonfiction, special emphasis is given to the personal essay and clarity of voice. However, students are encouraged to work on individual projects of their own design. Overall, students are expected to write about twenty pages of graded prose.

Students maintain journals in which they generate material for their actual assignments, and they maintain portfolios of their assigned formal writing in both digital form and as hard copy in file folders. In their file folder portfolios, students keep chronologically every version, every writing and rewriting, of all their works as a way to monitor their own creative writing processes. Much of the students’ work eventually is published in John Bapst Memorial High School’s literary magazine Passages.

### **Course Topics**

- Poetry: Structure, Sound, and Sense
- Fiction
- Nonfiction: Exposition, Narration, Description
- Literary and Rhetorical Terms and Devices

### **Methods**

- direct instruction on all Course Topics
- close reading of poetry and prose models
- regular oral interpretive reading of poetry and prose models

- regular discussion of poetry and prose models through the rubric of immediate response, reflective response, analytical, critical, and evaluative response
- application of literary and rhetorical terminology in discussion of poetry and prose models
- writing, rewriting, peer reviewing and conferencing, teacher conferencing, revision, editing, polishing
- student-writer presentation of works

## *Speech*

Grades 10, 11, 12; 1 credit

Prerequisites: English I, and permission of the department for Grade 10

Speech is a year-long, elective course that offers students the opportunity to develop the necessary speaking and listening skills to grapple confidently and effectively with the difficulties of interpersonal, group, and public communication. The course seeks to improve student awareness of the processes and mechanisms of speech so that they are able to control them to achieve their goals. It is a performance-based course with two primary components—Speech Communication and Oral Interpretation. Appropriately, Speech satisfies the Fine Arts graduation requirement.

In the Speech Communication component, students prepare for delivering formal speeches by focusing first on both the complexities of communication itself and the great variety of communication situations, interpersonal and group, they may face where an individual does not stand before an audience. Students then proceed to public speaking. Students study the history and theory of speech, including great speeches of history, and then proceed to write and deliver a series of speeches of their own of varying length, formality, and purpose. As their skills increase, the challenge of their assignments, as well as the standards of performance to which they are held, increase. Usually, students give a minimum of six formal, substantial speeches, primarily informational and persuasive, but also, as time allows and circumstances inspire, autobiographical, introductory or welcome, demonstration, entertainment, commemorative or dedicative, commencement or farewell, and tribute speeches. Students also role play and give impromptu speeches as a means to overcome self-consciousness, to improve confidence, and to practice for real world situations.

The Oral Interpretation component actually begins with the recreation of great speeches of the past in order to understand and experience oral interpretation as a method of breathing life into literature, which is their goal in their subsequent oral presentations of poetry and prose.

### **Course Topics**

- Interpersonal Communication, Group Communication, Public Communication
- Debate and Parliamentary Procedure
- Active Listening
- Vocal Anatomy
- Poise: Voice and Body Awareness
- Giving and Receiving Criticism
- Methods of Speech Organization and Delivery
- Persuasive Appeals, Assertion and Support
- Rhetorical Techniques and Devices
- Propaganda and Logical Fallacies
- Oral Interpretation: Speeches from History, Poetry, Prose

### **Methods**

- direct instruction on all Course Topics
- role playing in various communication situations
- debates
- peer evaluation of presentations
- use of speech and oral interpretation evaluation rubrics
- speech analysis

- speech presentation
- oral interpretive reading

## ***Journalism***

Grades 10, 11, 12; 1/2 credit

Prerequisites: English One, and permission of the department for Grade 10

Journalism is a semester-long elective course that examines the practices, procedures, and daily challenges of print, broadcast, and cyber journalism, although the primary focus is writing for print media, including newspapers and magazines. The course is writing intensive and provides students a basic knowledge of the different styles of news writing—hard news, features, editorials, and reviews, for example. Students can expect to work on several projects simultaneously, including regular synopses of news stories found in local, national, and international news media. Much class time is spent in the computer lab, where students receive individualized instruction and coaching on various projects. In the computer lab, students are challenged to write copy quickly and concisely in order to gain a sense of the deadline-driven environment in which an actual newspaper or magazine is produced. Finally, the computer lab provides students with access to breaking news as well as in-depth reports through various web sites.

### **Course Topics**

- Interviewing Techniques
- Elements of a News Story
- Differences and Similarities between Column and Editorial writing
- Travel Writing
- Political Cartoons
- Ethical Issues Facing the Journalist
- Elements of the Feature Story
- Creative Nonfiction
- Writing Movie, Theater, Book, and Music Reviews
- Reading Books by Journalists: *The Mole People*, *Tuesdays with Morrie*, *Three Cups of Tea*
- Discussion and Utilization of New Technology: Internet News Sites, Blogs, and Podcasts
- Analyzing Media Outlets

### **Methods**

- group work and projects
- class discussions, debates, and news analysis
- homework assignments, response papers, news writing, and journaling

# Fine Arts Department

## *Drawing*

Grade 9; ½ credit

Prerequisite: none

Drawing is a semester course offered to budding artists as well as the person who thinks he/she “can’t draw”. The emphasis of this course is to enhance the right-brain’s function by experiencing right-brain activities and learning a new method of “seeing” while utilizing proportion, contour lines, angles, shading, and observed or imagined perspective and the Elements of Art. Students primarily work in black and white media, including pencil, charcoal and ink. Students produce their own works of art, maintain an artist’s journal, and complete a portfolio. Relevant areas of art history are studied to enhance student projects. Students become familiar with the visual language of art and the practice of aesthetic valuing through critiques. Each student is required to participate in the school art shows. This course encourages students to experience life from the point of view of an artist.

### **Course Topics**

- Right-Brain/Left-Brain differences
- Right Brain exercises
- Contour line and expressive use of line
- Light-logic in shading techniques
- Chiaroscuro and Tenebrism
- Shading techniques in pencil and charcoal
- Shading techniques in ink washes when considering “gesture”
- One- and two-point perspective
- Scale and proportion techniques/tools used for drawing accurately
- Portraiture
- Sumi-e painting
- Art History (ie: cave paintings, Renaissance drawing/painting and artists, Impressionists drawing/painting and artists, contemporary drawing/ painting artists, etc.)

### **Methods**

- Studio Work
- Student Critiques
- Artist’s Journals
- Portfolio
- Art Show exhibition
- Final Exam...written and performance based

## ***Basic Design***

Grade 9, 10, 11, 12; ½ credit

Prerequisite: Drawing

Basic Design is a semester course. It is an option for students to take after they have completed Drawing. Students will focus on Color Theory and how to utilize color media in their works, including but not limited to dry pastel, colored pencil, and watercolor. Students will also be introduced to sculptural processes in clay and will understand the firing process of earthenware in the kiln. In addition they will review the eight Elements of Art and be introduced to the Principles of Design (balance, proportion, movement, contrast, pattern, rhythm and repetition, emphasis, variety, harmony and unity) and how artwork is organized. Students produce their own works of art, maintain an artist's journal, and complete a portfolio. Relevant areas of art history are studied to enhance student projects. Students become familiar with the visual language of art and the practice of aesthetic valuing through critiques. Each student is required to participate in the school art shows. This course encourages students to experience life from the point of view of an artist.

### **Course Topics**

- Color Theory
- Principles of Design (the organization of the Elements of Art)
- Review and Enhancement of Right Brain Drawing
- Watercolor techniques and terminology
- Dry Pastels techniques and terminology
- Collage techniques and terminology
- Colored Pencil techniques and terminology
- Clay sculptural techniques and terminology
- Firing techniques and terminology

### **Methods**

- Studio Work
- Visiting Artists
- Student Critiques
- Grading Rubrics (stated before assignment is completed)
- Quizzes on terminology and techniques of media
- Artist's Journals
- Art Show exhibition
- Final Project (written and performance based)

## ***Graphic Design***

Grades 9, 10, 11, 12; ½ credit

Prerequisites: Drawing and Basic Design

Graphic Design is a semester course allowing an opportunity for students to consider how art is related to aspects of our lives not normally considered “art”...from magazine layout techniques to product design and the marketing of products, someone has to be creative and consider the target audience (those the product is marketed towards) and create the bottle, the packaging, the advertising, etc that will *sell* the product. This is the Graphic Designer’s job. Students will be introduced to concepts and rules pertaining to the venues of Graphic Design and will complete a portfolio of work showing experimentation with layout, concept developments and product marketing to specific target audiences. Students will be required to show their work in the semester art show.

### **Course Topics**

- Terminology for Target Audience, Layout, Marketing, etc.
- Greeting Card Design and marketing
- Magazine layout
- Product Marketing
- Product Packaging
- Elements of Art and the Principles of Design in Graphic Arts
- Color’s influence on purchasing/marketing
- Watercolor techniques
- Colored Pencil techniques
- Pen-n-Ink Techniques
- Other potential art media (scratchboard, acrylic paint, etc)

### **Methods**

- Studio Work
- Student Critiques
- Grading Rubrics
- Artist’s Journals
- Portfolio
- Art Show Exhibition
- Quizzes and Tests
- Final Project...written and performance based

## ***Sculpture and Ceramics***

Grades 10, 11, 12; ½ credit

Prerequisites: Drawing and Basic Design

Sculpture is a semester course considering the 3<sup>rd</sup> dimension of form. Students will be exposed to classical and contemporary sculptors as they create works of art, problem solving the mysteries of that 3<sup>rd</sup> dimension. Students work will thoughtfully consider the use of the Principles of Design as well as the techniques and principles behind appropriate media (such as clay, plaster, or soapstone). Students will be required to display their work in the semester art show and complete a portfolio of work they might want to submit when applying to colleges.

### **Course Topics**

- Additive Processes of plaster, clay, sculptamold and papier mache.
- Subtractive Processes of plaster, clay, and soapstone.
- Elements of Art and the Principles of Design and how they are applied and can be applied to sculptural works of art.
- Greek and Roman Architectural characteristics
- Portraits/Busts (examples of classic and contemporary sculptors)
- Contemporary Sculpture (examples of classic and contemporary sculpture, use of principles playing a vital part in creating a well organized sculpture)
- Sculpting in Clay - Earthenware hand-building techniques, Earthenware firing principles, Terminology (Additive/Subtractive methods, coil, slab, firing, cones, hollowing-out, leather hard, greenware, bisqueware, glazenware, underglazing, etc)

### **Methods**

- Studio Work
- Student Critiques
- Grading Rubrics
- Artist's Journals
- Portfolio
- Art Show Exhibition
- Quizzes and Tests
- Final Project...written and performance based

## ***Painting***

Grades 10, 11, 12; ½ credit

Prerequisites: Drawing and Basic Design

Painting is a semester course the student will explore the various techniques in watercolor, ink washes, guache and acrylic painting. We will focus primarily on works from life; however the course will not be confined to realism exclusively. Students will study the techniques and styles of important painting periods such as Impressionism, Futurism, Color Field Painting and other 20th century styles. The students will experience techniques used by famous artist such as Vermeer, Michelangelo, van Gogh, Gauguin, Mondrian, and many more. Students will be required to maintain a portfolio in addition to participating in the school art show.

### **Course Topics**

- Traditional & Non-traditional watercolor techniques.
- Traditional & non-traditional guache techniques.
- Various watercolor paper types...effects achieved on each type of paper.
- Traditional & non-traditional acrylic painting techniques.
- Canvas stretching & preparing.
- Traditional & non-traditional ink painting techniques.
- Pen & Ink Techniques to apply to works.
- Traditional & non-traditional painting media.
- Purchasing, clean-up and maintenance of materials.

### **Methods**

- Studio Work
- Student Critiques
- Grading Rubrics (stated before assignment is complete)
- Artist Journals
- Portfolio
- Art Show Exhibition
- Final Project...written and performance based

## ***Advanced Art / AP Studio Art***

Grades 10, 11, 12; 1 credit

Prerequisites: Drawing, and Basic Design and permission of the department

Advanced Art is a year long class for the Intermediate or Advanced Artist. It continues to explore the media and ideas presented in Drawing, Basic Design and Applied Art, only in more depth. Students will first concentrate on interpreting the real world first in a media, then will explore the possibilities the media will allow for them when creating a more contemporary/abstract/non-objective work. Most works will be rooted in the student's personal reaction to the world around them through music, art, socialism and politics. In preparation for future endeavors in art, students are to tap-into their creative side and explore visual media and idea relationships, as would the practicing artist. Students will be expected to exhibit in, and attend each semester art show, while compiling work in their portfolio.

### **Course Topics**

- Principles of Design and their application in works of art.
- The Human Figure
- Portraiture
- Landscapes
- Realistic, Abstract and Non-Objective works and what qualifies them
- Printmaking...history, artists and techniques
- Silk Painting...history, artists and techniques
- Acrylic Painting...history, artists, techniques and differences between acrylic and oil painting.
- Pen and Ink...history, artists and techniques
- Oil Pastels...history, artists and techniques
- Clay Sculpting...history, artists and techniques

### **Methods**

- Studio Work
- Student Critiques
- Grading Rubrics (stated before assignment is complete)
- Artist Journals
- Portfolio
- Art Show Exhibition
- Final Project...written and performance based

## ***Introduction to Band***

Grades 9, 10, 11, 12; ½ credit

Prerequisite: none

This course is designed both for students without prior musical training and for those who wish to review the fundamentals. Students learn to play a concert band instrument, how to read music, as well as how to increase the joy of playing in a musical ensemble. Students are required to attend all band performances as part of their skills development. Anyone wishing to study keyboard or guitar must spend half the year studying a traditional instrument.

### **Course Topics**

- Tone production
- Technique
- Reading
- Auditory Perception
- Expression – knowing differences in dynamics, & tempi
- Ensemble – performing

### **Methods**

- Oral and written quizzes
- Written midyears and finals
- Playing midyear and finals
- Quarterly playing tests
- Public performance

## ***Concert Band***

Grades 9, 10, 11, 12; ½ credit

Prerequisite: Experience playing a concert band instrument for at least one year

This course, involving a large instrumental ensemble, is designed for students with at least one year of experience playing a concert band instrument. This course continues to improve performance skills and knowledge of music theory, as well as promoting a life-long appreciation for music. Students are required to attend all band performances. Students wishing to study keyboard or guitar must spend half the year learning to play a traditional band instrument.

### **Course Topics**

- Tone Production
- Technique
- Reading
- Auditory Perception
- Expression
- Ensemble

### **Methods**

- Oral and written quizzes
- Written midyears and final
- Playing midyears and final
- Quarterly playing tests

## ***Concert Band/Jazz***

Grades 9, 10, 11, 12; ½ credit

Prerequisite: Audition

This course, involving a small instrumental Jazz Ensemble is offered in conjunction with Concert Band and is designed to challenge the student in the art of improvisation and the style of playing jazz music. Students must be enrolled in Concert Band in order to audition and to participate in Jazz Band. Students are required to attend all Concert Band and Jazz Band performances.

### **Course Topics**

- Reading
- Ensemble
- Improvisation
- Harmony
- Performance
- Tone Production
- Technique
- Auditory perception
- Expression

### **Methods**

- Written midyears and finals
- Playing midyears and finals
- Quarterly playing tests
- Attendance at performances

## ***Chamber Ensemble***

Grades 9,10,11,12

Strings Prerequisite: At least one year of private lessons

Wind Players Prerequisite: Audition

Chamber Ensemble as a course is offered with rehearsals during the school day supplemented by some rehearsals after school. Credit is earned by attending so many hours per week.

The course will involve repetition of basic skills, and in tune playing progressively for all instruments.

Focusing mostly on the classical style repertoire, musicians will also be challenged in the art of performing jazz, mariachi, vocal accompaniment, pop and various musical cultural differences.

Chamber Ensemble is also available to those who do not have time to schedule it during the day.

Students are required to attend 2 rehearsals per week after school. They will perform in the winter and Spring Concerts as well as the pit band of the Spring Musical... Spontaneous “gigs” are flexible.

### **Course Topics**

- Hearing and playing in tune
- Ensemble listening and playing
- Responsibility of harmony and lead parts
- Musical Expression

### **Methods**

- Attendance at 2 rehearsals per week is mandatory
- Participation in Winter & Spring Concerts, as well as the musical is mandatory
- Other performances as necessary

## ***Chorale***

Grades 9, 10, 11, 12; ½ credit

Prerequisite: none

This course, involving a large vocal ensemble, is designed to challenge students whose musical abilities are diverse and to channel their abilities into the art of song. Many different aspects of music are explored, such as listening skills, vocal warm-ups, note reading, vocal blending, musical interpretations, solfege (singer's alphabet), stage presence (posture) and performance skills. Students are required to attend all chorale performances.

### **Course Topics**

- Tone production – demonstrate understanding of more developed breathing skills to accommodate the changing voice. demonstrate expanded vocal ranges within each section. Further develop proper vocal placement.
- Reading – To be able to sight sing simple four part harmony (e.g., Hymns) and to recognize more complex rhythm patterns and chromaticism.
- Auditory Perception – Recognize and reproduce minor, diminished and augmented intervals.
- Expression - Continue to recognize expressive qualities of tone color, dynamics tempo and phrasing in music.
- Ensemble - demonstrate the ability to articulate precisely the components of blend and balance, and the ability to perform independent parts by singing in quartets. develop an increased understanding of the conductor's musically interpretive gestures.
- Communication – Adhere to proper etiquette principles as they apply to the concert situation, continue to perform repertoire from a variety of style period in several languages. demonstrate understanding of effects of facial and body expression on reception of chorale group.
- Basic Theory: Staff, Letter, Key Signatures, Ear Training, Notes & Rhythm
- Written Intervals: Accidentals, Ear Training.
- Triads & Inversions: Seventh Chords and Symbols, Dynamics, Ear Training.
- Seventh Chords: Seventh Chords & Inversions, Ear Training, Rhythmic Diction.
- Scales, Modes, Ear Training, Melodic

### **Methods**

- Oral and written quizzes
- Written midyears and finals
- Singing midyear and final
- Quarterly singing tests
- Attendance at Performances

## ***Honors Chorale***

Grades 9, 10, 11, 12; ½ credit

Prerequisite: Audition

This course, involving a small vocal ensemble, is offered in conjunction with Chorale and is designed to challenge students with strong vocal skills. Students must be enrolled in Chorale in order to audition and to participate in Concert Choir. Member of the Concert Choir are held to a higher performance standard than Chorale members because the pieces chose for Concert Choir are more difficult to perform than those chosen for Chorale. Rehearsals are held during Chorale in addition to one morning a week. Students are required to attend all Chorale and Concert Choir performances.

### **Course Topics**

- Tone production
- Reading
- Auditory perception
- Expression
- Communication

### **Methods**

- Oral and written quizzes
- Written midyears and final
- Singing midyear and final
- Quarterly tests
- Attendance at performances

## ***Music Theory***

Grades 9, 10, 11, 12; ½ credit

Prerequisite: none

This course is designed to challenge students who wish to learn about the written and auditory structures of music. Students are required to write an original tune for their final project. Through this procedure the students will learn all the concepts which are described under the course objectives.

### **Course Topics**

- Staff, letter names, key signatures, ear training, notes & rhythm
- Written intervals, accidentals, ear training
- Triads & Inversions, seventh chords & symbols, dynamics, ear training
- Seventh chords & inversions, ear training, rhythmic dictation
- Scales, modes, melodic dictation
- Writing, transpositions, arranging, sight singing
- Write for full ensemble, original tune
- Organization
- Rhythm section writing

### **Methods**

- Oral tests
- Composition
- Arrangements

# Health & Physical Education Department

## *Physical Education*

Grade 9, 10, 11, 12; ½ credit

Prerequisite: None

Physical Education is offered both the freshman and sophomore years. One credit in Physical Education is required for graduation. Physical Education provides students with knowledge and skills that can be used in recreational activities and physical fitness throughout their lives. A positive sense of self is of great importance in young people, and the Physical Education Department strives to foster an atmosphere of positive attitudes and acceptance, no matter the level of an individual student's skills. Our program focuses on improving student self-esteem, attaining better wellness, becoming less susceptible to stress and increasing the quality of life. The program is instill in students the basic human values of fair play, self-esteem, self-confidence and respect.

### **Course Topics**

- Physical Fitness
- Running
- Rope Jumping
- Weight Training
- Ultimate Frisbee
- Bowling
- Floor Hockey
- Table Tennis
- Indoor Soccer
- Basketball
- Softball
- Volleyball
- Badminton
- Tennis
- Golf
- Pickleball
- Other Lifelong activities

### **Methods**

- Explanation
- Demonstration
- Step-by-step participation

### **Resources**

- Quality Lesson Plans for Secondary Physical Education, 2<sup>nd</sup> Edition, Dorothy Zakrajsek, Lois Carnes and Frank Pettigrew, Jr.
- Physical Education Assessment Tool, Liz Giles-Brown

## ***Wellness I: Ninth Grade Seminar***

Grade 9, ¼ credit

Prerequisite: None

The Wellness component of the 9<sup>th</sup> Grade is a quarter-long required course that alternates with a technology component during the semester. It is designed to address a number of developmentally appropriate topics that focus on coping skills and strategies to better equip students to meet the challenges they will face both in and out of school. Topics will include mental health, self-esteem, decision-making, refusal skills, stress management, suicide and violence prevention, nutrition, weight control and communication.

### **Course Topics**

- Shaping Your Physical, Mental/Emotional and Social Health.
- Achieving Psychological Wellness.
- Nutrition for Wellness.
- Maintaining A Healthy Weight.
- Stress Assessment and Management Techniques.
- Suicide and Violence Prevention

### **Methods**

- class discussion and dialogue.
- group work and projects.
- research projects.
- simulations.
- videos and movies.
- quizzes and examinations.

### **Resources/Materials**

- course text: “Glencoe Health”. Merki & Merki, McGraw-Hill Publishing, 2004.
- “Promoting Health Sexuality” by Pree, et al. at Family Planning of Maine. Published by the Maine Department of Education, 1993.
- additional reading for more current perspectives.
- additional audiovisual materials.
- community agencies and speakers.

## ***Wellness II: Wellness, Fitness and Lifestyle Management***

Grade 11, 12; ¼ credit

Prerequisite: Ninth Grade Seminar: Wellness

The Wellness component of the Seminar is a quarter-long course required of all juniors or seniors. This course is designed using an independent study approach and will include the topics of drug prevention and addiction, prevention of diseases, consumer and safety issues, sexuality and reproduction, nutrition and wellness for life.

### **Course Topics**

- Addictive Behaviors and Wellness
- Wellness for Life
- Cancer Risk Management
- Prevention of Diseases
- Sexuality and Reproduction
- Consumer and Safety Issues

### **Methods**

- class discussion and dialogue.
- independent group work and projects.
- independent research projects.
- simulations.
- videos and movies.

### **Resources/Materials**

- Focus on Health, 8<sup>th</sup> Edition, Dale B. Hahn, Wayne A. Payne, and Ellen B. Lucas
- Fit & Well, Core Concepts and Labs in Physical Fitness and Wellness, 5<sup>th</sup> Edition, Thomas D. Fahey, Paul M. Insel, and Walton T. Roth.
- Glencoe Health, Merki & Merki, McGraw-Hill Publishing, 2004.
- “Promoting Health Sexuality” by Pree, et al. at Family Planning of Maine. Published by the Maine Department of Education, 1993.
- additional reading for more current perspectives.
- additional audiovisual materials.
- community agencies and speakers.

## Mathematics Department

### *Algebra One*

Grade 9; 1 credit  
Prerequisite: none

Algebra One introduces the student to the use of symbolic notation and mathematical modeling in problem solving. The major topics covered include simplifying algebraic expressions, solving and graphing equations and inequalities, functions, and data analysis.

#### Course Topics

- algebraic foundations
- linear functions
- exponents and exponential functions
- quadratic equations and functions
- polynomial functions, rational functions and radical functions

#### Methods

- group work
- class discussions
- calculator/computer labs
- homework assignments
- projects
- quizzes
- tests
- departmental midyear and final exams

## ***Geometry Nine***

Grade 9; 1 credit

Prerequisite: placement exam and permission of the department

Geometry introduces the student to the use of inductive and deductive reasoning. The major topics covered include parallel lines, congruent and similar polygons, circles, right triangles, areas and volumes of solids, and coordinate and transformational geometry.

### **Course Topics**

- reasoning in geometry
- geometric shapes and properties
- perimeter and area
- three-dimensional space
- similar shapes
- circles
- trigonometry

### **Methods**

- group work
- class discussions
- calculator/computer labs
- homework assignments
- projects
- quizzes
- tests
- departmental mid-year and final exam

## ***Geometry***

Grade 10; 1 credit

Prerequisite: Algebra One

Geometry introduces the student to the use of inductive and deductive reasoning. The major topics covered include parallel lines, congruent and similar polygons, circles, right triangles, areas and volumes of solids, and coordinate and transformational geometry.

### **Course Topics**

- reasoning in geometry
- geometric shapes and properties
- perimeter and area
- three-dimensional space
- similar shapes
- circles
- trigonometry

### **Methods**

- group work
- class discussions
- calculator/computer labs
- homework assignments
- projects
- quizzes
- tests
- departmental mid-year and final exam

## ***Algebra Two***

Grade 11; 1 credit

Prerequisites: Algebra One and Geometry

Algebra Two completes the structure of the real and complex number systems. The major topics covered include mathematical modeling in problem solving and graphing equations and inequalities, a comprehensive study of algebraic functions, and an introduction to logarithmic functions, exponential functions, and discrete math and data analysis.

### **Course Topics**

- numbers and functions
- functions, their graphs and techniques for solving their equations
- conic sections
- discrete mathematics

### **Methods**

- group work
- class discussions
- calculator/computer labs
- homework assignments
- projects
- quizzes
- tests
- departmental mid-year and final exam

## ***Honors Algebra Two***

Grade 10, 11; 1 credit

Prerequisites: 90% average in Algebra One and Geometry  
(corequisite with permission of the department)

Honors Algebra Two completes the structure of real and complex number systems. The major topics covered include mathematical modeling in problem solving, graphing equations and inequalities, a comprehensive study of algebraic functions, and an introduction to logarithmic functions, exponential functions, discrete math and data analysis. This course is designed for students who excel in mathematics and plan to take Honors Precalculus the following year.

### **Course Topics**

- numbers and functions
- functions, their graphs and techniques for solving their equations
- conic sections
- discrete mathematics

### **Methods**

- group work
- class discussions
- calculator/computer labs
- homework assignments
- projects
- quizzes
- tests
- departmental mid-year and final exam

## ***Precalculus***

Grade 11, 12; 1 credit

Prerequisites: Algebra Two and Geometry

Precalculus is designed for students who have completed Algebra Two or Honors Algebra Two and plan to take Honors Calculus the following year. A comprehensive study of transcendental functions and discrete math and their applications is included.

### **Course Topics**

- functions
- trigonometric functions
- sequences and probability
- introduction to calculus

### **Methods**

- group work
- class discussions
- calculator/computer labs
- homework assignments
- projects
- quizzes
- tests
- departmental mid-year and final exam

## ***Honors Precalculus***

Grade 11, 12; 1 credit

Prerequisites: 90% average in Honors Algebra Two and Geometry

Honors Precalculus is taken by students who have completed Honors Algebra Two and plan to take AP Calculus or AP Statistics the following year. A comprehensive study of transcendental functions and discrete math and their applications, and an introduction to calculus are included. Solving problems algebraically, numerically, and graphically is the major emphasis of this course.

### **Course Topics**

- functions
- algebraic functions and transcendental functions
- trigonometric functions
- polar coordinates, vectors and analytic geometry
- sequences, counting and probability
- a preview of calculus

### **Methods**

- group work
- class discussions
- calculator/computer labs
- homework assignments
- projects
- quizzes
- tests
- departmental mid-year and final exam

## ***Honors Calculus***

Grade 12; 1 credit

Prerequisite: 90% average in Precalculus or Honors Precalculus

Honors Calculus is designed for students needing a review of Precalculus. Following this review, topics will include differentiation, integration of algebraic functions and transcendental functions, along with applications.

### **Course Topics**

- functions, graphs, and limits
- derivatives
- integrals

### **Methods**

- group work
- class discussions
- calculator/computer labs
- homework assignments
- projects
- quizzes
- tests

## ***Functions, Statistics, and Trigonometry***

Grade 12; 1 credit

Prerequisites: Algebra Two and Geometry

Introduction to College Math is designed for students who need review in algebra and geometry. This will be followed by a study of trigonometry, discrete math and statistics. Other topics may vary yearly depending on the background and interests of the students and teacher.

### **Course Topics**

- functions
- trigonometric functions
- other topics

### **Methods**

- group work
- class discussions
- calculator/computer labs
- homework assignments
- projects
- quizzes/tests

## ***Advanced Placement Calculus-BC***

Grade 12; 1 credit

Prerequisite: 90% average in Honors Precalculus

Advanced Placement Calculus-BC satisfies all the requirements designed by the College Board and is equivalent to one semester of college level calculus. Students who enroll in this course are required to take the AP Calculus exam in May. Upon taking the AP test, they will receive scores for both AP Calculus AB and BC. The differentiation and integration of algebraic and transcendental functions with applications are the major topics.

### **Course Topics**

- functions, graphs, and limits
- derivatives
- integrals

### **Methods**

- group work
- class discussions
- calculator/computer labs
- homework assignments
- projects
- quizzes
- tests
- labs

## ***Advanced Placement Statistics***

Grade 12; 1 credit

Prerequisite or corequisite: 90% average in Honors Precalculus

Advanced Placement Statistics satisfies all the requirements for the curriculum as designed by the College Board and is equivalent to one semester of college level non-calculus-based statistics. Students who enroll in this course are required to take the AP Statistics exam in May. The four major areas covered by the course are exploring data, planning a study, anticipating patterns, and statistical inference.

### **Course Topics**

- exploring data
- planning a study
- anticipating patterns
- statistical inference

### **Methods**

- group work
- class discussions
- calculator/computer labs
- homework assignments
- projects
- quizzes
- tests

# Modern & Classical Languages

## *Chinese One*

Grades 9-12; 1 credit

Prerequisite: none

Chinese One is a one-year course in Mandarin designed to teach students to speak and understand practical Chinese, to read and write in Chinese, and to understand Chinese culture. Chinese is spoken as much as possible in class. Students will learn how to greet, how to order food in a restaurant, how to count, and how to ask questions about everyday situations. Students will engage in activities using authentic materials designed to help them better understand and appreciate what they are learning.

### **Course Topics**

- Greeting people and saying “goodbye”
- Finding out a person’s name
- Finding out a person’s status
- Time
- Family titles
- Numbers
- How to say ordinal numbers
- Asking for directions
- Inquiring about and explaining one’s holiday plans
- Sports: ball games
- Asking and answering “why?” questions
- Asking and answering “Yes” and “No” questions
- Cultural information, calligraphy, chopsticks, folk music, traditions
- Verbs:
- Personal pronouns
- Present tense
- Past tense
- Inquiring of and speaking about a sum of money
- Describing someone’s features
- Colors
- Weather
- Inquiring about an exact location
- Food
- Visiting a doctor’s office
- Happy Birthday
- Course Names: Chinese, English French
- Ordering food
- Asking about time, date, and year
- Chinese music
- Writing a letter

### **Methods**

- paired and group work

- small-group exercises
- competitions
- role play
- class discussion
- homework
- quizzes and tests

## ***Chinese Two***

Grades 10-12

Prerequisite: Chinese One

Chinese Two is a one-year course designed for students who have successfully completed Chinese One. Chinese Two is designed to help students with longer conversational exchanges, to write more complex sentences, to read more for meaning and to have a deeper understanding of Chinese culture. Chinese is spoken as much as possible in class. Students should be willing to participate, practice, study and do homework on a regular basis, and to learn the grammar, structure, tenses, and the vocabulary of Chinese at a more proficient level.

### **Course Topics**

- Making introductions
- Describing locations and surroundings
- Expressing a plan
- Means of commuting
- Borrowing things from others
- Explaining that an event has concluded
- Expressing urgency
- Showing regrets
- Offering something
- Expressing opinions
- Exchanging festive greetings
- Expressing ambitions
- Passing along information
- Consulting with others
- Soliciting opinions
- Offering apologies and forgiveness
- Tastes and dislikes for food
- Making an invitation
- Offering advice and suggestions
- Asking about and expressing physical feelings
- Offering compliments and praise
- Discussing birth years and the Chinese signs of the zodiac
- Making comparisons
- Giving reasons and results
- Expressing prohibition
- Offering assistance
- Requesting cooperation

### **Methods**

- paired and group work
- small-group exercises

- competitions
- role play
- class discussion
- homework
- quizzes and tests

## ***Chinese Three***

Grade 11; 1 credit

Prerequisite: Chinese Two

This course emphasizes speaking, reading, writing and comprehension of the Mandarin Chinese language. Through the reading of various Chinese works, and continuing to improve their spoken proficiency, the students become better acquainted with the Chinese language and culture. There is a continual review of grammar throughout the course, which is conducted primarily in Chinese.

### **Course Topics**

- Review of Chinese One and Chinese Two Material
- Grammar (by unit)
- Situational applications of the above (by unit)

### **Methods**

- group work
- paired work
- skit
- small group exercises
- homework assignments
- quizzes and tests
- compositions
- oral presentations

## ***French One***

Grade 9; 1 credit

Prerequisite: none

French One is a one-year course designed to teach the student to speak and understand practical French, to read and write in French, to use basic syntax, and to develop an appreciation of the French language and culture. French is spoken in the classroom as much as possible. The student will use present tense, the near future, the past, and commands. Dialogues are used frequently to teach basic conversation. The importance of active participation is stressed during some basic and practical question-and-answer sessions.

### **Course Topics**

- Vocabulary
- Grammar
- Pronunciation

### **Methods**

- group work
- paired work
- small-group exercises
- skits
- class discussions
- homework assignments
- quizzes and tests

## ***French Two***

Grade 10; 1 credit

Prerequisite: French One

French Two is a one-year course for students at John Bapst Memorial High School to be offered to students who have successfully completed French One. French Two is designed to help the student with longer conversational exchanges, writing more complex sentences, and reading for meaning. French is spoken in the classroom as much as possible. The student will use reasonable accuracy in communication with the teacher and others. Students should be willing to participate, practice, study and do homework on a regular basis to learn the grammar, structure, tenses, and vocabulary of this level.

### **Course Topics**

- Review of French One material
- Vocabulary
- Grammar
- Pronunciation

### **Methods**

- group work
- paired work
- small-group exercises
- skits
- class discussions
- homework assignments
- standardized quizzes and tests

## ***Honors French Three***

Grade 11; 1 credit

Prerequisite: 90% in French Two or teacher recommendation

This course emphasizes speaking, reading, writing and comprehension of the French Language, and is conducted almost entirely in French. Fluency will be promoted through Proficiency Conversations, which will be based on units of study, incorporating new grammar and vocabulary, and will occur throughout the year. Authentic pronunciation will be enhanced through the in-depth study of the French phonetic sound system. Culture, literature, history, and geography of the French speaking world will be included, as well as an in-depth study of *Le Petit Prince*.

### **Course Topics**

- Review of French Two material
- Grammar
- Vocabulary
- Pronunciation

### **Methods**

- paired work
- group work
- proficiency conversations
- quizzes and tests

## ***Honors French Four/Advanced Placement French***

Grade 12; 1 credit

Prerequisite: 90% average in French Three or permission of the department

This course emphasizes a high level of speaking, reading, writing and comprehension of the French Language, and is conducted almost entirely in French grammar and vocabulary, . Authentic pronunciation will be enhanced through the in-depth study of the French phonetic sound system. Fluency will be promoted through in class discussions and oral presentations.

Culture, literature, history, and geography of the French speaking world will be included. Various literary works will be studied along with an in-depth study of *Les Misérables* and *L'Etranger*. Students in this course have the option of taking it as an Advanced Placement course.

### **Course Topics**

- Review of French Three
- Vocabulary
- Grammar
- Pronunciation

### **Methods**

- paired work
- group work
- oral presentations
- tests

## ***Latin One***

Grade 9; 1 credit

Prerequisite: None

Latin One is the first of four courses for students in the Latin curriculum. The emphasis of the course is on study of vocabulary and basic grammar that will prepare students to read and understand Latin. Other aspects of the course include English derivatives from Latin, Graeco-Roman mythology, and Roman history from its founding through the early Republic.

### **Course Topics**

- Pronunciation
- Concepts of Syntax
- Forms
- Verbs

### **Methods**

- lecture
- class discussion
- group work
- homework assignments
- games
- reports and projects
- quizzes and tests

## ***Latin Two***

Grade 10; 1 credit

Prerequisite: Latin One

Latin Two is the second of four courses for students in the Latin curriculum. The course includes a review of all elements of Latin One and continues the study of vocabulary and basic grammar as students begin to read and understand more advanced Latin. English derivatives and Roman history through the beginning of the empire are other aspects of the course.

### **Course Topics**

- Syntax and Forms
- Verbs

### **Methods**

- lecture
- class discussion
- group work
- homework assignments
- games
- reports and projects
- quizzes and tests

## ***Honors Latin Three***

Grades 11, 12; 1 credit

Prerequisite: 90% in Latin Two or teacher recommendation

Latin Three provides a review and strengthening of Latin grammar and syntax of the previous courses and completes the foundation for reading more complex works. Students will read and translate selections from a variety of authors including Caesar, Cicero, Catullus, Ovid, Horace, Vergil, and Pliny. The historical period covers from the Gallic Wars (58 BCE) through the second century CE, when the Roman Empire was at its greatest extent.

### **Course Topics**

- Latin grammar and syntax
- History of Rome 58 B.C. – 117 A. D.
- Caesar's *Commentarii de Bello Gallico*
- Cicero's Orations
- Poetry of Catullus
- Poetry of Ovid
- Poetry of Horace
- Poetry of Vergil
- Pliny's *Epistulae*

### **Methods**

- lecture
- discussion
- translation
- research
- composition

## ***Advanced Placement Latin: Vergil***

Grade 11, 12: 1 credit

Prerequisite: 93% or higher in Latin Three

In Advanced Placement Latin: Vergil, students read, translate, understand, analyze and interpret the 1,875 lines of the *Aeneid* that appear on the course syllabus. In addition, students will read in English the entire *Aeneid* and will compare sections of it with corresponding sections of the *Iliad* and the *Odyssey*. The course includes the study of the cultural, social, and political context of the *Aeneid* and of Rome of the Augustan Age. Critical appreciation of the *Aeneid* as poetry also includes learning to read aloud the verses with attention to scansion and phrasing.

## ***Spanish One***

Grade 9, 1 credit

Prerequisite: None

This course teaches the fundamentals of Spanish grammar and develops oral skills necessary for basic communication in the Spanish language. Careful stress is placed on communication, grammar acquisition, pronunciation, and the development of reading and writing skills. Through videos, class discussions, and readings, students are also introduced to the culture and geography of the Spanish-speaking world.

### **Course Topics**

- Introduction to the World of Spanish
- Vocabulary
- Grammar
- Pronunciation

### **Methods**

- paired work
- group work
- homework assignments
- quizzes and tests
- oral door quizzes
- proficiency conversations

## ***Spanish Two***

Grades 10, 11, 12; 1 credit

Prerequisite: Spanish One

Spanish Two is a one-year course for students at John Bapst Memorial High School to be offered to students who have successfully completed Spanish One. Spanish Two is designed to help the student with longer conversational exchanges, writing more complex sentences, and reading for meaning. Spanish is spoken in the classroom as much as possible. The student will use reasonable accuracy in communication with the teacher and others. Students should be willing to participate, practice, study and do homework on a regular basis to learn the grammar, structure, tenses and vocabulary of this level.

### **Course Topics**

- Review of Spanish One Material
- Grammar
- Other linguistic topics (phonology, syntax, pronunciation, etc.)
- Situational applications of above

### **Methods**

- group work
- paired work
- small group exercises
- skits
- class discussions
- homework assignments
- quizzes and tests
- oral door quizzes
- proficiency conversations

## ***Honors Spanish Three***

Grade 11; 1 credit

Prerequisite: 90% in Spanish Two or teacher recommendation

This course emphasizes speaking, reading, writing and comprehension of the Spanish language. Through the reading of the works of various authors, the students become better acquainted with the Hispanic culture. These readings also serve as a basis for oral presentations, discussions, and compositions. There is a continual review of grammar throughout the course, which is conducted primarily in Spanish.

### **Course Topics**

- Review of Spanish One and Spanish Two Material
- Grammar (by unit)
- Situational applications of the above (by unit)

### **Methods**

- group work
- paired work
- skit
- small group exercises
- homework assignments
- quizzes and tests
- compositions
- oral presentations

## ***Honors Spanish Four/Advanced Placement Spanish***

Grade 12, 1 credit

Prerequisite: 90% average in French Three or permission of the department

Honors Spanish Four is a course for advanced students who want to achieve proficiency in speaking, understanding, reading and writing Spanish and to develop an appreciation of Spanish and Hispanic culture through literature. It is a course based on literature from Spain and Latin America chosen to promote meaningful conversations through relevant themes. Students also read and discuss current events from a wide variety of publications available online. Students in this course have the option of taking it as an Advanced Placement course.

### **Course Topics**

- poetry and song
- prose: short stories, essays, excerpts from longer works
- cultural and historical background of literary selections
- current events
- systematic review of grammar

### **Methods**

- lecture
- class discussion
- group work
- homework assignments
- compositions
- quizzes and tests
- oral presentations

# Science Department

## *Biology*

Grades 9, 10; 1 credit

Prerequisite: None

Biology is a required, one-year course for 9<sup>th</sup> grade students. Major units of this course include cellular biology, genetics, evolution, and ecology. The themes of "Form Fits Function," "Emergent Properties," "Unity in Diversity," "Homeostasis," and "Levels of Organization" are woven through the curriculum. Laboratory activities are designed to provide conceptual reviews, basic laboratory skills, and an opportunity to practice methods of science. Because recent and future breakthroughs in biotechnology will require our students to challenge their value systems and ethical standards, they will be required to go beyond simply gaining knowledge of biological concepts. They will practice analyzing, synthesizing, and evaluating that knowledge in order to develop the ability to make wise decisions for themselves, and as contributing members of society.

### **Course Topics**

- Cellular Biology
- Genetics
- Evolution
- Ecology
- Diversity of Organisms

### **Methods**

- laboratory experiments
- group work
- class discussions
- homework assignments, including projects
- quizzes and tests

## ***Honors Biology***

Grades 9, 10; 1 credit

Prerequisite: Placement by examination

Biology is a required, one-year course for 9<sup>th</sup> grade students. Major units of this course include cellular biology, genetics, evolution, and ecology. The themes of "Form Fits Function," "Emergent Properties," "Unity in Diversity," "Homeostasis," and "Levels of Organization" are woven through the curriculum. Laboratory activities are designed to provide conceptual reviews, basic laboratory skills, and an opportunity to practice methods of science. Because recent and future breakthroughs in biotechnology will require our students to challenge their value systems and ethical standards, they will be required to go beyond simply gaining knowledge of biological concepts. They will practice analyzing, synthesizing, and evaluating that knowledge in order to develop the ability to make wise decisions for themselves, and as contributing members of society. A semi-college pace, greater depth of coverage, several new topics, as well as a considerably greater amount of reading and student responsibility, distinguish this from the regular biology course.

### **Course Topics**

- Cellular Biology
- Genetics
- Evolution
- Ecology
- Diversity of Organisms

### **Methods**

- laboratory experiments
- group work
- class discussions
- homework assignments, including projects
- quizzes and tests

## ***Chemistry***

Grades 10, 11, 12; 1 credit

Prerequisites: Biology and Algebra One

This course introduces the students to the fundamental concepts of chemistry. It strongly emphasizes a kinetic/molecular approach where chemical action is explained in terms of moving molecules and changes in energy levels. The course prepares the student for the further study of chemistry and gives them a "molecular view" of matter. Topics covered include atomic and molecular structure, quantum theory, types of reactions, stoichiometry, energy, periodicity, bonding, kinetic theory, properties of matter, solutions, reaction rates, equilibrium, acids, bases, redox, and some organic chemistry. Laboratory work serves to introduce and reinforce ideas as well as to test both knowledge and skill.

### **Course Topics**

- the field of chemistry and its branches
- classification of matter and its changes (physical and chemical)
- introduction to the periodic table and types of elements
- the scientific method
- SI units of measure, conversion factors, and density determination
- significant figures, percent error, accuracy and precision
- the historical and experimental development of our modern understanding of the atom
- properties of subatomic particles and isotopes
- the mole and Avogadro's number
- principles of electromagnetic radiation
- development of the Bohr model of the atom
- quantum theory, electronic structure of atoms, and relevant notations
- development of the periodic table
  - periodicity of the elements including atomic radii, ionization energy, electron affinity, and electronegativity
- covalent, ionic, and metallic bonding
- molecular geometry
- the VSEPR and hybridization theories
- nomenclature of binary ionic and molecular compounds
- formula and molar mass, percent composition, empirical and molecular formulas
- chemical equations
- basic chemical reactions and the activity series
- stoichiometry
- limiting reactants and percent yield
- kinetic molecular theory
- characteristics of gases
- gas laws, the ideal gas law, and effusion and diffusion
- phase changes and phase diagrams
- solutions, suspensions, and colloids
- solubility and concentrations
- aqueous solutions and net ionic equations
- colligative properties
- acid and base theories

- autoionization of water
- acid-base reactions
- pH scale
- titrations and related calculations
- heat and temperature
- nuclear reactions
- half-life and methods for detecting radiation

## **Methods**

- lecture and discussion
- in-class quantitative problem solving
- laboratories
- independent reading and study
- group work
- homework assignments
- informal and formal laboratory reports
- quizzes and exams
- research projects
- videos
- field trips

## ***Honors Chemistry***

Grades 10, 11, 12; 1 credit

Prerequisite: Honors Algebra Two (may be concurrent), Biology with an average of 93%, Honors Biology with an average of 90%, or permission of the department;

This course introduces the students to the fundamental concepts of chemistry. It strongly emphasizes a kinetic/molecular approach where chemical action is explained in terms of moving molecules and changes in energy levels. The course prepares the student for the further study of chemistry and gives them a "molecular view" of matter. Topics covered include atomic and molecular structure, quantum theory, types of reactions, stoichiometry, energy, periodicity, bonding, kinetic theory, properties of matter, solutions, reaction rates, equilibrium, acids, bases, redox, and some organic chemistry. Laboratory work serves to introduce and reinforce ideas as well as to test both knowledge and skill. A semi-college pace, greater depth of coverage, several new topics, as well as a considerably greater amount of reading and student responsibility, distinguish this from the regular chemistry course.

### **Course Topics**

- the field of chemistry and its branches
- classification of matter and its changes (physical and chemical)
- introduction to the periodic table and types of elements
- the scientific method
- SI units of measure, conversion factors, and density determination
- significant figures, percent error, accuracy and precision
- the historical and experimental development of our modern understanding of the atom
- properties of subatomic particles and isotopes
- the mole and Avogadro's number
- principles of electromagnetic radiation
- development of the Bohr model of the atom
- quantum theory, electronic structure of atoms, and relevant notations
- development of the periodic table
- periodicity of the elements including atomic radii, ionization energy, electron affinity, and electronegativity
  - covalent, ionic, and metallic bonding
  - molecular geometry
  - the VSEPR and hybridization theory
  - nomenclature of binary ionic and molecular compounds
  - formula and molar mass, percent composition, empirical and molecular formulas
  - chemical equations
  - basic chemical reactions and the activity series
  - stoichiometry
  - limiting reactants and percent yield
  - kinetic molecular theory
  - characteristics of gases
  - gas laws, the ideal gas law, and effusion and diffusion
  - phase changes and phase diagrams
  - solutions, suspensions, and colloids
  - solubility and concentrations

- aqueous solutions and net ionic equations
- colligative properties
- acid and base theories
- autoionization of water
- acid-base reactions
- pH and pOH scale
- titrations and related calculations
- heat, temperature, Hess's law, and enthalpies of reactions
- calorimetry
- entropy and free energy
- reaction mechanisms and the collision theory
- reaction rate and rate laws
- chemical equilibrium and LeChâtelier's principle
- common-ion effect and buffers
- solubility equilibrium including precipitation calculations
- nuclear reactions
- half-life and methods for detecting radiation

## **Methods**

- lecture and discussion
- in-class quantitative problem solving
- laboratories
- independent reading and study
- group work
- homework assignments
- informal and formal laboratory reports
- quizzes and exams
- research projects
- videos
- field trips

## ***Physics***

Grade 11, 12, 1 credit

Prerequisites: Biology and Chemistry

This course introduces students to the fundamental principles which underlie the physical world. Topics include the scientific method, metrics, kinematics, Newtonian dynamics, energy and momentum, electricity, magnetism, light, optics, and relativity. The focus is on the application of basic principles to solve physical problems. The course also includes an extensive program of laboratory exercises, which will assist the student in the understanding of fundamental physical concepts.

### **Course Topics**

- Measurement and Methods of Scientific Investigation
- Rectilinear Kinematics: Describing Motion
- Dynamics: Newton's Laws of Motion
- Motion in Two Dimensions
- Gravitation
- Energy and Momentum
- Electricity and Magnetism
- Light and Optics
- Physics Project

### **Methods**

- lectures
- class discussions
- demonstrations
- laboratory experiments
- regular homework assignments
- Written laboratory reports
- Whiteboard presentations of homework problems and laboratory findings
- quizzes and tests
- projects
- student presentations of physics projects
- written project reports

## ***Honors Physics***

Grades 11, 12; 1 credit

Prerequisites: Biology; Precalculus or Honors Precalculus (may be a corequisite);  
a 90% average in prior science courses or permission of the department

Honors Physics is a calculus-based introductory course for the student who is willing to accept the challenge of an advanced physics curriculum. The scope of this course is the same as that of the regular physics course; however, the topics are covered in greater depth, and there is a stronger emphasis on mathematical problem solving. Laboratory experiments are much more extensive, with stress on the proper application of the scientific method in the integration of physical events.

### **Course Topics**

- Measurement and Methods of Scientific Investigation
- Rectilinear Kinematics: Describing Motion
- Dynamics: Newton's Laws of Motion
- Motion in Two Dimensions
- Gravitation
- Energy and Momentum
- Electricity and Magnetism
- Light and Optics
- Physics Project

### **Methods**

- lectures
- class discussions
- demonstrations
- laboratory experiments
- regular homework assignments
- Written laboratory reports
- Whiteboard presentations of homework problems and laboratory findings
- quizzes and tests
- projects
  - student presentations of physics projects
  - written project reports

## ***Anatomy and Physiology***

Grades 11, 12; ½ credit

Prerequisite: Biology Nine or Biology One

This one semester advanced course focuses on the anatomy and physiology of humans. The structure and function of the human body is studied using a systems approach. Laboratory investigations compliment the course by including microscopic investigations of histological specimens, physiological experiments, and dissections. In addition, as the structure and function of each organ system is investigated, students will also learn about how disease and disorder can affect the individual systems and human organism as a whole.

### **Course Topics**

- introduction to anatomy and physiology
- skin and the integumentary system
- support and movement: the skeletal and muscular systems
- the nervous system
- the endocrine system
- the digestive system
- the respiratory system
- the cardiovascular system
- the urinary system
- laboratory investigations

### **Methods**

- lecture presentations including multi-media graphics and video
- classroom questions and discussions
- laboratory investigations and reports
- homework assignments
- quizzes and tests

## *Astronomy*

Grades 10, 11, 12; ½ credit

Prerequisite: Biology Nine for grade 10 students

Astronomy is a one-semester course that allows students to explore the structure and dynamics of the universe at its largest scales. Special emphasis is placed upon what one can actually observe under starry skies and upon discovering how astronomers interpret their observations to create a deeper understanding of universal processes. Topics covered include: the night sky, methods of astronomical measurement, telescopes, the earth-moon system, dynamics of the solar system, planets and their structure, stars and stellar evolution, black holes, galaxies, and cosmology, including Big Bang theory. Hands-on activities and projects give students practice in making astronomical observations and introduce them to modern methods of astronomical investigation.

### **Course Topics**

- The Sky at Night
- Astronomical Instruments and Measurements
- The Earth-Moon System
- The Copernican Revolution and Gravitation
- The Planets
- Comets, Asteroids and the Evolution of the Solar System
- The Sun: Our Closest Star
- Stars and Stellar Evolution
- Galaxies and the Large-Scale Structure of the Universe
- Cosmology
- Observing Project

### **Methods**

- In-class presentations using PowerPoint and many video animations help students grasp major concepts.
- Class discussions allow students to process new ideas and share opinions on controversial topics.
- Regular homework assignments allow students to assimilate concepts and to practice problem-solving skills taught in class.
- Whiteboard presentations of homework problems allow for peer-to-peer evaluation of problem-solving skills.
- Written laboratory reports allow the teacher to assess students' understanding and application of laboratory skills. Such skills include: designing experiments, making measurements, identification and control of experimental errors, data analysis, and making inferences from data analyses.
- Whiteboard presentations of student laboratory experiments allow for peer-to-peer evaluation of laboratory skills and experimental results.
- Unit quizzes and tests allow the teacher to assess students' understanding of concepts as well as their ability to apply these concepts.
- Student presentations of astronomy projects allow for peer-to-peer as well as teacher evaluation of students' performance in applying physical concepts in novel investigations of

astronomical phenomena.

- Observing logs submitted by students allow the teacher to assess students' observation and recording skills, as well as skills in using basic astronomical tools.

## ***Ecology***

Grades 10, 11, 12; ½ credit

Prerequisite: Biology One; or Biology Nine for grade 10 students

This semester advanced biology course provides the student with an overview of ecological science. The topics covered include an introduction to the earth's major terrestrial and aquatic ecosystems, population and community biology, biological diversity and speciation, succession, nutrient cycling, and mathematical modeling statistics. Topics such as evolution, bioethics, and natural resource management will be common threads throughout this course. Students will also complete a long term project involving both laboratory and library research.

### **Course Topics**

- populations
- communities
- ecosystems
- biomes
- behavioral ecology
- human ecology

### **Methods**

- lecture presentations including multi-media graphics and video
- classroom questions and discussions (including Socratic dialogue)
- laboratory investigations and reports
- research projects
- homework assignments
- quizzes and tests

## ***Geology***

Grades 10, 11, 12; ½ credit

Prerequisite: Biology Nine for grade 10 students

This semester course focuses on the earth: its history, its structure, factors that cause change, and the effects of those changes. Topics covered include the structure of the earth, rocks and minerals, plate tectonics, the water cycle, erosion, and deposition. Hands on activities and projects are done to deepen student understanding. Special emphasis is placed on the geology and geological history of Maine, as well as on current global environmental issues.

### **Course Topics**

- Plate Tectonics
- Volcanoes
- Earthquakes
- Mountain Building
- Glaciers
- Stream Erosion and Transportation
- Maps and Map Scales
- Atomic Structure of Matter and Composition of Minerals
- Mineral Identification
- Rocks

### **Methods**

- Class presentations using Powerpoint and video clips to illustrate concepts
- Class discussions
- Regular homework assignments
- Quizzes and tests
- Laboratory activities
- Whiteboard presentation of laboratory results
- Written laboratory reports
- Group research projects
- Poster presentations of research projects
- Written reports of research projects
- Field trip to Mt. Desert Island geological sites

## ***Meteorology: Weather and Climate***

Grades 10, 11, 12; ½ credit

Prerequisite: Biology Nine for grade 10 students

This is a one semester elective course. Students learn about the factors that affect weather and climate, methods of measuring weather conditions, technologies used to assist in measuring weather conditions, and using these observations to make reasonable weather forecasts. The concepts in this course are reinforced through short laboratory activities. One of the goals of this course is to provide students with a level of understanding that will enable them to make decisions about weather and climate, such as precautions to take during severe weather, and where to live based upon their climate preferences.

### **Course Topics**

- The Atmosphere
- Humidity
- Atmospheric Pressure and Winds
- Weather Forecasting and Climate

### **Methods**

- Class presentations using Powerpoint and video clips to illustrate concepts
- Class discussions
- Regular homework assignments
- Quizzes and tests
- Laboratory activities
- Whiteboard presentation of laboratory results
- Written laboratory reports
- Group research projects
- Poster presentations of research projects
- Written reports of research projects

## ***Oceanography***

Grades 10, 11, 12; 1 credit

Prerequisite: Biology Nine for grade 10 students

This elective course focuses on the Earth's oceans: their history, physical and chemical oceanography, ocean currents and their impact on the global climate, waves, tsunamis, land-sea interactions, relationships between the biotic communities and abiotic factors. The effect of erosion and deposition on geologic oceanography is also studied. Man's relationship with the sea, and how human activity has affected the world's oceans are also explored.

### **Course Topics**

- Origins of the Universe
- Earth's Structure and Plate Tectonics
- Ocean Basins
- Sediments
- Water
- Atmospheric Circulation
- Ocean Circulation
- Waves
- Coastlines
- Benthic and Pelagic Communities
- Use and Abuse of Oceans

### **Methods**

- Written testing – both subjective and objective
- Research projects using project criterion sheets
- Oral presentations
- Creation of a hands-on lesson
- Lab work and reports
- Dissections
- Class work
- Homework
- Class participation
- Field Sampling and Analysis

## ***Advanced Placement Biology***

Grades 10, 11, 12; 1 credit

Prerequisites: Biology with a grade of 93%, or permission of the department;  
Chemistry *or* Honors Chemistry [may be concurrent])

The Advanced Placement Biology course is designed to be the equivalent of a college introductory biology course usually taken by biology majors during their first year. It aims to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal with the rapidly changing science of biology. After showing themselves to be qualified on the AP Examination, some students, as college freshmen, are permitted to undertake upper-level courses in biology or to register for courses for which biology is a prerequisite. Other students may have fulfilled a basic requirement for a laboratory-science course and will be able to undertake other courses to pursue their majors.

The growth of biological thought and information is accelerating at an exponential rate, and the integration of this material into a logical, teachable format presents an extraordinary challenge to college and AP teachers alike. The major goal of the AP Biology course is to provide a learning environment that enables students to develop a solid understanding of the principal concepts in biology. The AP Biology course and AP Biology Examination will stress the basic facts and the synthesis of these facts into major concepts and themes.

### **Course Topics**

- Biological chemistry
- Cells
- Energy transformations
- Genetics and Evolution
- Organisms and Populations
- Animals
- Ecology

### **Methods**

- lecture
- class discussion
- group work
- homework assignments
- laboratories
- laboratory reports
- objective tests
- essay tests
- student research projects
- AP Biology Exam

## ***Advanced Placement Chemistry***

Grades 11, 12; 1 credit

Prerequisites: Chemistry *or* Honors Chemistry with a grade

of 93% (or permission of the department)

Advanced Placement Chemistry is the equivalent of a general introductory chemistry course at the college level. It fully satisfies the AP Chemistry curriculum requirements stipulated by The College Board. The course includes several laboratory experiments in addition to the ones required in the curriculum and a small amount of time is allotted to examine the questions of research ethics as well as career opportunities in the field of chemistry. Students who take this course are encouraged, but not required, to take the AP Chemistry exam in the spring.

### **Course Topics**

- atomic and molecular perspective of chemistry
- classification and properties of matter
- units of measure, uncertainty in measurement, and dimensional analysis
- atomic theory of matter
- discovery of atomic structure and our modern view of it
- atomic weight, formula weight, and molecular weight
- the mole and Avogadro's number
- molecules and molecular compounds
- ions and ionic compounds
- naming inorganic compounds
- stoichiometry
- chemical equations
- combination, decomposition, and combustion reactions
- aqueous solutions and precipitation reactions
- nature of energy
- enthalpy and enthalpies of reactions
- calorimetry
- Hess's Law
- quantum theory and electronic structure of atoms
- Bohr's model of the atom and line spectra
- orbitals and electron configurations
  - the periodic table
  - periodicity of the elements including ionization energy, electron affinity, and electronegativity
  - ionic and covalent chemical bonding
  - Lewis structures, resonance structures, and formal charges
  - molecular geometry and bonding theories
  - characteristics of gases
  - the gas laws and ideal gas equation
- real gases vs. ideal gas behavior
- intermolecular forces of liquids and solids
- phase changes
- structure of solids and bonding
- the solution process
- solubility and concentration
- colligative properties
- colloids
- chemical kinetics
- reaction mechanisms
- catalysis

- the concept of equilibrium
- Le Châtelier's Principle
- acid and base theories
- autoionization of water
- pH scale and other "p" scales
- acid-base properties of salt solutions
- common-ion effect and buffers
- titration
- entropy
- Gibbs Free Energy
- oxidation-reduction reactions
- cell EMF
- batteries and fuel cells
- coordination compounds
- organic molecules
- nuclear chemistry

## **Methods**

- lecture and discussion
- in-class quantitative problem solving
- laboratories
- independent reading and study
- group work
- homework assignments
- formal laboratory reports
- quizzes and exams
- research projects
- videos
- field trips

## ***Advanced Placement Physics***

Grades 11, 12; 1 credit

Prerequisite: Grade of 93% in prior science courses (or permission of the department).

Corequisite: Calculus

Advanced Placement Physics is a calculus-based introductory course for the student who is willing to accept the challenge of an advanced placement physics curriculum. As a first year introductory physics course, the primary purpose of this course is to prepare students to successfully complete the mechanics portion of the AP Physics C test. The topics in this class are therefore restricted primarily to mechanics (the study of motion), with electricity and magnetism being studied as time allows. A primary focus of the class is the development of strong problem-solving skills in each student. Higher-level mathematical skills on the part of the student are assumed, and calculus is used extensively in the derivation of physical concepts. This class also incorporates an extensive laboratory program, with emphasis on acquiring strong observational and analytical skills.

### **Course Topics**

- Measurement and Methods of Scientific Investigation
- One-dimensional Kinematics: Describing Motion
- Motion in Two Dimensions
- Dynamics: Newton's Laws of Motion
- Gravitation
- Work, Energy and Power
- Momentum and Its Conservation
- Rotational Kinematics
- Rotational Dynamics, Rotational Energy and Angular Momentum
- Periodic Motion
- Other Topics (As time permits)
- Physics Project (As time permits)

### **Methods**

- lectures
- class discussions
- demonstrations
- laboratory experiments
- regular homework assignments
- Written laboratory reports
- Whiteboard presentations of homework problems and laboratory findings
- quizzes and tests
- projects
- student presentations of physics projects
- written project reports

## Social Science Department

### *World History*

Grade 9; 1 credit

Prerequisite: None

This course focuses on the political, social, economic, and religious trends which have helped shape the societies of the world. The course covers pre-history to the modern era with special focus on the Western traditions. There is an emphasis on effective note-taking, analytical reading and writing, cooperative and independent activities, and classroom discourse. Primary and secondary readings, video, and computer technology are also incorporated to enhance understanding of various periods. Students are introduced to the MLA format and are instructed to use library research in their essay writing. In keeping with the school mission, completion of this course provides students with strong skills in time-management, organization, and research skills necessary for college success.

### Course Topics

- Roots – the study of prehistory to the development of civilization
- Lasting Legacies – the study of Classical Civilizations
- Guiding Principals – a comparative study of the world’s major religions and how they have changed history
- Darkness and Light – the study of the Middle Ages and the creation of a new order
- “How Noble in Reason” – Renaissance and Reformation
- Powerful States and Powerful People – the impact of the Enlightenment ideas leading to the French Revolution and the rise and containment of Napoleon
- Total War – Nationalism creates powerful states that engage in two world wars helping to shape the modern world
- Roads to the Future – The growth of the Cold War through the contemporary world

### Methods

- Readings of primary and secondary sources
- Class discussions
- Debates
- Simulations and Trials
- Homework assignments
- Quizzes and tests
- Essays
- Research papers
- Cooperative group activities

## ***American History***

Grade 10; 1 credit

Prerequisite: World History

This course begins with a discussion of Native American cultures prior to European arrival in the Americas. The course then turns to the founding of European settlements in North America, with particular emphasis on the different methods, reasons, and results of these settlements. Building on this knowledge of British North America, the course examines the creation of American democracy, the American Revolution, and the drafting of the Constitution. The emphasis of the course then is on the New Republic, with particular emphasis on Jeffersonian and Jacksonian America. Considerable time and effort are devoted to setting the context of the Civil War through exploration of America's industrial revolution, westward expansion, and immigration. The course continues with a thorough examination of the Civil War and the subsequent Reconstruction, then turns to the rapid industrialization of the United States, with special emphasis on the rise of immigration, westward expansion, and the emergence of a capitalist system. Building on this knowledge of the country's changing landscape, the course examines progressive movements and budding internationalism at the turn of the century. The emphasis of the course then is American involvement in World War I and the roaring twenties. Considerable time and effort are devoted to the Jazz Age, the Great Depression, the administration of Franklin D. Roosevelt, and the New Deal. This course then turns to World War II, the Cold War, and the Vietnam War. If time permits the course concludes with a brief examination of the modern era, including the administrations of Ronald Reagan, Bill Clinton and George W. Bush.

Students are expected to read a variety of primary and secondary sources considered essential to building an informed historiography of American history. Classroom activities include a mock trial, historical reenactments, and possibly interviews of military veterans.

### **Course Topics**

- cultural conflict and the development of British North America
- the American Revolution and the creation of the Constitution
- the New Republic, including Jeffersonian and Jacksonian democracy
- sectional conflict and the Civil War
- the growth of industrial capitalism and the convergence of business and politics
- domestic and foreign development and America's rise to superpower
- the American consumer culture
- political, economic, and social changes in the Cold War era

### **Methods**

- course readings supplemented by outside readings
- small-group and class discussions
- group projects and presentations
- videos
- debates
- research projects
- peer-reviewed essays
- quizzes and tests

## ***Advanced Placement American History***

Grade 11 or 12; 1 credit

Prerequisite: 93% average in American History  
or permission of the department

Advanced Placement U.S. History is designed to introduce students to specific, in-depth content and historical interpretations of this content in order to prepare them to think critically about U.S. history. Emphasis is placed on understanding changes over time and on helping students make informed judgments about past events based on specific factual information. A significant amount of effort is dedicated to developing conclusions about American history based on specific evidence in the form of persuasive essays.

This AP course begins with an examination of the founding of European settlements in North America, with particular emphasis on the Atlantic world in the eighteenth century. The course then turns to the creation of American democracy, the American Revolution, and the Constitution. The emphasis of the course then is on the New Republic, with particular focus on Jeffersonian and Jacksonian America. Considerable time and effort are devoted to setting the context of and then examining the Civil War. This course then turns to Reconstruction and other prominent issues in the late-nineteenth century, including immigration, westward expansion, and the emergence of an industrialized capitalist system. The focus then is on the early years of the twentieth century, touching on topics such as imperialism, progressivism, and World War I. A lengthy period is devoted to the Great Depression, the administration of Franklin D. Roosevelt, and the New Deal, setting up an examination of the causes and results of World War II. The focus then turns to the resulting Cold War. Special emphasis is placed on the consumer culture of the 1950s, the social and political unrest of the 1960s, the Vietnam War, and the economic and political developments of the 1980s. The course concludes with a brief overview of the modern era, including the presidencies of Bill Clinton and George W. Bush.

Advanced Placement American History is equivalent to an introductory college-level course; thus, class time is devoted to discussing outside readings. Students are expected to read a variety of primary and secondary sources considered essential to building an informed historiography of American history. To enhance the learning experience and to prepare for the Advanced Placement exam, students practice free-response and document-based essays on a regular basis.

### **Course Topics**

- the growth of industrial capitalism and the convergence of business and politics
- domestic and foreign development and America's rise to superpower
- the American consumer culture
- political, economic, and social changes in the Cold War era

### **Methods**

- course readings supplemented by outside readings
- small-group and class discussions
- group projects and presentations
- lectures
- mock trials
- role-play simulations
- videos
- debates
- research projects
- peer-reviewed essay

- quizzes and tests that require students to demonstrate their understanding of specific content and thematic issues

## ***European History/Advanced Placement European History***

Grade 11 or 12; 1 credit

Prerequisite: 93% average in American History  
or permission of the department

European History presents a chronological study of European history from the Renaissance to the present while focusing students on the advanced ideas of historical understanding, interpretation, and research. The course strives to build a competent framework for understanding the themes of modern European history. These themes are organized around several guiding principles—the power of the human intellect, the reflection of human activity in popular culture, political organization, diplomacy and negotiation, economic organization, and the evolution of society. Students have the option of taking this course as an Advanced Placement course.

### **Course Topics**

- Late Middle Ages, Renaissance, Reformation, European Expansion, and Absolutism and Constitutionalism
- Scientific Revolution, Enlightenment, French Revolution and Napoleonic Europe
- Industrial and Social Transformation and 19th Century Political Upheaval
- Imperialism, World War I, World War II, Cold War, and Collapse of Communism

### **Methods**

- group work and projects
- class discussions, debates and primary source analysis
- homework assignments, response papers, and journals
- Unit Examinations (objective and essay)

## ***Advanced Placement Political Science***

Grade 11 or 12; 1 credit

Prerequisite: 93% average in American History  
or permission of the department

In this course students commence the study of American politics at the university level. We begin with a thorough examination of the founding of the American republic, with particular emphasis upon the differences between democratic and republican forms of government, the drafting of the Constitution, and the tenets of Federalism. We next turn our focus to American political culture, public opinion, political participation, and the formation of political parties. With a nod to the modern age we examine the roles of special interest groups and the media before rounding out the course with a look at the three branches of government and how they fashion policy.

### **Course Topics**

- the “American System”
- the Constitution
- federalism
- American political culture
- public opinion, special interests, and political organizations.
- political participation, home and abroad
- political parties
- political media
- Congress
- the Executive branch
- the Judicial branch

### **Methods**

- lecture/discussion format
- videos
- film analysis
- short papers on editorial cartoons
- preliminary exams
- guest speakers

## ***Economics***

Grades 10, 11, and 12; 1 credit

Prerequisite: None

No matter where students go, or what they do when they graduate, they will encounter economic issues. This year-long course is designed to foster an appreciation for economic issues and give students a solid foundation in economic analysis. The first semester focuses on the fundamentals of Microeconomics - everything from the operation of a lemonade stand to complex banking operations and the analysis of business models and business decisions. Students will not only study business, but also create a small business as a means of gaining an understanding of essential business operations and thinking. The second semester will broaden the view and concentrate on Macroeconomic issues. We will look at governmental and international goals, policies, and decision-making. Students will learn essential economic analysis through readings, graphical analysis, current events, hands-on projects, experiments, and participation in class discussions.

### **Course Topics**

- Microeconomic Concepts
- Macroeconomic Concepts

### **Methods**

- Lecture
- In-class and online discussions
- Homework
- Economic observation and experimentation
- Student presentations
- Small business enterprise

## ***Comparative World Cultures***

Grades 11 or 12; ½ credit

Prerequisites: None

The Comparative World Cultures course is an interdisciplinary course designed to increase student awareness of ways of life in other parts of the world. The study of social relationships and institutions, ideas and belief systems, religion, literature and history across cultures will allow students to gain an appreciation of cultural pluralism and develop specific knowledge of diverse societies. Geographic areas upon which the class will focus span the world and will also include the experiences of indigenous populations within the broader context of the regions in which they live. As students will study cultures around the globe, world geography will be a component of this course. After course completion, students will have a better understanding of multiculturalism and its importance in today's increasingly plural world.

### **Course Topics**

- Social Issues including:
  - Adaptive Strategies
  - Gender
  - Poverty
  - Human Rights
  - Immigration and Emigration
  - Education
  - Industry
  - Tourism
- Religion
- History
- Literature/Art/Music
- Geography
- Current Events

### **Methods**

- Course readings supplemented by outside readings
- Small group and class discussions
- Group projects and presentations
- Videos
- Research projects
- Quizzes and tests

## ***Contemporary World Issues***

Grades: 10, 11, 12; ½ credit

Prerequisites: None

This one-semester course takes contemporary events from around the globe and puts them into a thorough historical and cultural perspective. The goal of this course is for students to better understand the issues and events shaping the modern world in context. Through readings, discussion, statistical analysis, research projects, and presentations students will explore the issues that are currently shaping the history of the planet. The subject matter of this course will change from year to year in order to reflect ongoing events, crises, and news. The semester will be broken into 4 units, each of which will be focused on a contemporary issue affecting the world, with an emphasis on issues outside of the United States.

### **Course topics**

- Iran's Relationship with the West
- The Rise of China
- The African AIDS Epidemic
- The Economic Unification of Europe
- The Role of the United Nations
- Global Climate Change
- American Involvement in Iraq & Afghanistan
- Brazil's Growth in Economic & Environmental Perspective

### **Methods**

- Lecture/Discussion
- Readings
- Statistical Analysis
- Research Projects
- Student Presentations

## ***Cultural Anthropology***

Grades 11, 12; ½ credit

Prerequisite: None

In Cultural Anthropology we look at some of the wondrous ways in which we express and define our common humanity.

### **Course Topics**

- what is “culture”?
- language development and dissemination
- societal characteristics
- economic subsistence patterns
- comparative religion and mythology
- ethnomusicology
- gender constructs and marriage
- family structure and kinship reckoning

### **Methods**

- lecture/discussion format
- videos
- film analysis
- short paper
- preliminary exams
- museum/gallery visits

## ***Cultural Anthropology II***

Grades 11 and 12; ½ credit

Prerequisite: None

This course will consist of two units taught largely within the traditional Socratic method, with a final ethnographic project to be done as a tertiary unit outside of the classroom. The purpose of this course will be to provide serious anthropology students with the chance to cut their teeth on ethnographic fieldwork as a capstone experience to their studies here. The first two units will be drawn from William Haviland's Cultural Anthropology and Marvin Harris' Our Kind, while the ethnographic material will come from William Spradley's The Ethnographic Interview. Grades will be based upon group performance, the unit exams, and the ethnographic project.

### **Course Topics**

- Sex and Marriage
- Family and Household
- Kinship and Descent
- Age and Class
- Political Organization and Social Control
- Cultural Change

### **Methods**

- Socratic Seminar
- Ethnographic Interviews
- Readings
- Discussion

## ***History Seminar: Sub-Saharan Africa***

Grades 11, 12; ½ credit

Prerequisite: None

This one semester course provides a survey of the history and culture of selected sub-Saharan African countries and regions over four distinct periods of African history. Students will trace the histories of Mali, Ghana, Nigeria, The Congo, South Africa, Zimbabwe, Kenya, and Ethiopia through the study of primary and secondary source documents, research projects, and classroom discussions from the pre-colonial period through the colonial, and post-colonial periods and develop an understanding of the issues facing contemporary Africa.

The main focus of this class will be student research and student-led presentations. Groups of two to three students will be assigned one of the selected countries to research for the entire semester. Student groups will make four presentations, one for each time period. The groups will also complete four corresponding research papers on their region in which they will be expected to synthesize information from both primary and secondary source documents.

At the end of this course I expect students to be familiar with the history and cultures of sub-Saharan Africa in general and to have a considerable depth of knowledge in the history and culture of their region of focus. Students will understand the historical forces that shaped sub-Saharan African history as well as the issues currently facing the African continent within a historical context.

### **Course Topics**

- Mali
- Ghana
- Nigeria
- The Congo
- South Africa
- Kenya
- Zimbabwe
- Ethiopia
- Pre-Colonial History
- The Colonial Period
- The Post-Colonial Period

### **Course Methods**

- Individual research projects
- Student Presentations
- Primary source readings
- Secondary source readings

## ***Psychology***

Grades 11, 12; ½ credit

Prerequisite: None

This survey course provides an overview of the major areas in the field of psychology with a special focus on: major figures and their contributions to the science of psychology, major perspectives, major principles of memory, intelligence, research methods, theories of personality, social psychology, the structure of the human brain and the biological bases for behavior, principles of learning, development across the life span, stress, psychological disorders, treatment, and wellness.

### **Course Topics**

- What is Psychology?
- Theories of Personality
- The Elements of Personality
- Development of the Life Span
- Neurons, Hormones and the Brain
- Sensation and Perception
- Thinking and Intelligence
- Memory
- Learning
- Behavior in Social and Cultural Contexts
- Psychological Disorders
- Approaches to Treatment and Therapy
- Emotion, Stress, and Health
- The Major Motives of Life: Love, Sex, Food, and Work

### **Methods**

- Lecture
- Readings of primary and secondary sources
- Response journals
- Class discussions
- Debates
- Quizzes and tests
- One comprehensive research project per quarter
- Cooperative group activities

## ***Sociology***

Grades 11, 12; ½ credit

Prerequisite: None

In Sociology our students examine how human society organizes and replicates itself. We commence with a unit on how “conventional wisdom” can so often be wrong and continue with a film and discussion on how we acquire our “cultural lenses.” We next turn our focus to the various schools of sociology (and the politics each has) and the perils of doing social science research. Our second unit deals with human socialization methods and the various institutions that bring this socialization about. We conclude with a final unit on social class and deviance.

### **Course Topics**

- sociology - what is it?
- the problems with “conventional wisdom”
- the schools of sociology
- anomie- the cost of profound cultural separation
- statistical concepts and the research dangers therein
- human socialization
- the flexible notion of “deviance”
- the division bell - how societies segment themselves

### **Methods**

- lecture/discussion format
- videos
- film analysis
- preliminary exams
- group “culture/subculture” project

# Technology Department

## *Technology: Ninth Grade Seminar*

Grade 9: ¼ credit

Prerequisite: None

This quarter-long course is designed to provide students with the basic technology and research skills they will need throughout their high school career and beyond. In this class students will explore the impact of technology on our daily lives, and our education. Students will learn about researching on the internet and how the internet works. Students also learn about collaboration on the internet with their peers, and about Intellectual Property law. Students also briefly explore spreadsheets and graphing. In this course we use only open source software that is freely available on the internet. This course is a hybrid inclass on-line course, so students are expected to be able to work and collaborate at any time of the day or week.

### **Course Topics**

- Application Use
- Information Literacy Skills
- Technology and Society

### **Methods**

- class discussion and dialogue
- group work
- homework assignments
- quizzes and tests
- presentation
- research project on technology

## ***Digital Imagery: Making and Editing Digital Images***

Grade 9, 10, 11 or 12: ½ Fine Arts Credit

Prerequisite: None

In this course students explore digital image creation and modification. This is a fine arts class in which students will weekly produce works of art in digital media. Students will learn about image construction both in an artistic sense and from the standpoint of the digital world. By the end of the semester each student will have their own image portfolio with a written description of the work they have completed.

In this class we use only open source software, thus it is available at home for all students with a computer free of charge. We explore image creation, logo design, advertisements, animation, and photo manipulation. The course is designed as a series of weekly or bi-weekly projects introduced by a short lecture at the beginning of each segment, and individualized help as the project progresses. This course is offered once every two years in the Fall of odd numbered years.

### **Course Topics**

- Image creation
- Scene composition
- Layering
- Transparency techniques
- Scalar graphics(mathematical images versus bitmaps)
- Gif animations
- Photo Manipulation
- Logo creation
- Digital signatures
- Advertisement construction

### **Methods**

- Mini-lecture
- Demonstrations
- Small Projects

## ***3-D Modeling: Sculpture on the Computer***

Grade 9, 10, 11 or 12: ½ Fine Arts Credit

Co-requisite: Geometry

In this course students learn about creating content in three dimensions. This is a fine arts class in which students will work on a series of small projects through out the semester. As each project completes, students will have the opportunity to print their art works in plastic when available. By the end of the semester each student will have their own 3-D portfolio with a written description of the work they have completed.

In this class we use only open source or freely available software, thus it is available at home for all students with a computer free of charge. We explore both the theory and techniques behind three dimensional imagery. The course is designed as a series of one to four week long projects initiated by a short lecture at the beginning of each segment concerning the principles and techniques being explored with the upcoming project, and individualized help as the project progresses. This course is offered once every two years in the Spring of school years with an odd numbered Fall.

### **Course Topics**

- Primitives creation
- Composition of 3-D primitives into composite objects
- Architectural design
- Building to scale models
- 3-D modeling software
- Vectors
- Textures
- Lighting
- Motion
- Normal planes
- Viewing areas

### **Methods**

- Mini-lecture
- Demonstrations
- Small Projects

## ***Digital Audio***

Grade 9, 10, 11 or 12: ½ Fine Arts Credit

In this course students learn about creating capturing and editing digital audio content. This class will involve theory of sound and music. Students will conduct recordings of voice and music. Students will create sound effects, and musical tracks from raw waveforms. Audio manipulation will also be a major component of this course. This is a fine arts class in which students will work on a series of small projects through out the semester. By the end of the semester each student will have their own audio portfolio with a written description of the work they have competed.

In this class we use only open source or freely available software, thus it is available at home for all students with a computer free of charge. We explore both the theory and techniques behind audio creation and capture. The course is designed as a series of one to three week long projects initiated by a short lecture at the beginning of each segment concerning the principles and techniques being explored with the upcoming project, and individualized help as the project progresses. This course is offered once every two years in the Fall of even numbered school years.

### **Course Topics**

- Theory of sound
- Waveforms
- Modulation of waves
- Sound effects
- Music as frequencies
- Voice recording
- Digital audio editing
- Digital audio manipulation

### **Methods**

- Mini-lecture
- Demonstrations
- Small Projects

## ***Digital Video Production***

Grade 9, 10, 11 or 12: ½ Fine Arts Credit

In this course students learn about the art of digital video production. Students will explore the theory behind scene creation from planning to setup, to recording, to editing. Various video forms will be explored as well, such as documentary, parody, night filming, special effects creation. Students will create a series of short pieces which will become part of a video portfolio each containing written documentation of the work and the procedure used in its creation. When possible, the course will culminate in a film festival at the end of the school year.

In this class we use professional video editing software, so it is expected that students work in the media labs both during class, and outside of class. There is an expectation that students conduct filming outside of the school day. The course is designed as a series of two to four week long projects initiated by a short lecture at the beginning of each segment concerning the principles and techniques being explored with the upcoming project, and individualized help as the project progresses. This course is offered once every two years in the Spring of school years with an even numbered Fall.

### **Course Topics**

- Story boarding
- Scene setup
- Audio recording and overlays
- Video track overlays
- Masking
- Special effects
- Film varieties
- Digital video editing
- Digital video manipulation

### **Methods**

- Mini-lecture
- Demonstrations
- Small Projects

## ***Introduction to Programming***

Grades 9, 10, 11, 12; 1 credit

Pre-requisite: Algebra I

This full year course will introduce students to the discipline of computer programming. Students do not need any prior programming experience in order to take this course. Students taking this course will be able to write their own computer programs by the end of the course, and have a solid understanding of computer science principles.

Course topics include core language structures, program flow and logic, algorithm development, introduction to data structures, proper documentation techniques, and graphical game development. The course consists of a series of lectures and small programming projects that will culminate in the creation of a personal computer game by the end of the year.

### **Course Topics**

- Formal Logic
  - Statements
  - Connectors
  - Truth Tables
  - Fallacies
  - Tautologies
- Program design and documentation
  - Specifications
    - reading and writing
  - Flowcharts
  - Pseudo-code
  - in-line documentation
- Program components
  - Structure
    - procedures
    - recursion
    - functions
    - objects
  - Data
    - data types
    - literals
    - arrays
    - manipulation
    - evaluation
  - Statements
    - looping controls
    - decision controls
    - procedure or function calls
- Program Design
  - Planning

- Layout
- Linear programming vs. object oriented design
  - Debugging techniques

## **Methods**

- Lecture
- Classroom based hands-on examples
- Independent programming projects
- Homework assignments
- Quizzes

## ***Advanced Placement Computer Science A***

Grades 9, 10, 11, 12; 1 credit

Pre-requisite: Algebra I

This full year course will introduce students to the discipline of computer programming. Students do not need any prior programming experience in order to take this course. Students taking this course will be able to write their own computer programs by the end of the course, and have a solid understanding of computer science principles. Students in this course are required to take the Advanced Placement Computer Science exam in the late Spring. A portion of this course will involve specific preparation for the AP exam, and may require meeting times outside of normal class meetings.

Course topics include core language structures, program flow and logic, algorithm development, introduction to data structures, proper documentation techniques, and graphical game development. The course consists of a series of lectures and small programming projects that will culminate in the creation of a personal computer game by the end of the year.

### **Course Topics**

- Formal Logic
  - Statements
  - Connectors
  - Truth Tables
  - Fallacies
  - Tautologies
- Program design and documentation
  - Specifications
    - reading and writing
  - Flowcharts
  - Pseudo-code
  - in-line documentation
- Program components
  - Structure
    - procedures
    - recursion
    - functions
    - objects
  - Data
    - data types
    - literals
    - arrays
    - manipulation
    - evaluation
  - Statements
    - looping controls
    - decision controls
    - procedure or function calls

- assignment
- Program Design
  - Planning
  - Layout
- Linear programming vs. object oriented design
  - Debugging techniques

## **Methods**

- Lecture
- Classroom based hands-on examples
- Independent programming projects
- Homework assignments
- Quizzes

## ***Intermediate Programming***

Grades 10, 11, 12; 1 credit

Prerequisite: Introduction to Programming or AP Computer Science A

Co-requisite: Algebra II

In this course students will dig more deeply into low level programming languages. Students will gain a greater appreciation for the true power a programmer has and a respect for that power. Memory management, complex data structures, efficiency, cryptography, image processing, library creation, and network programming are a few of the topics to be covered. This course has as its prerequisite one year of computer programming courses at this school, or permission of the instructor. This course culminates in the creation of a group project where students collaborate to build a single program from multiple parts.

Course topics include: Program documentation, program control flow, developing algorithms, creation and manipulation of data structures, using references, memory management, efficient program design, and creating and using application interfaces. Students will apply each skill in a series of small projects that will be used by the end of the semester in a computer game designed and implemented as a group.

### **Course Topics**

- Logic
  - Boolean connectors
  - Bitwise comparisons
  - Order of precedence
  - Efficient use of Logic
- Program components
  - Basic components
  - Keywords
  - Operation/Execution
  - Preprocessor
  - Functions
  - C Libraries
  - Looping
  - Conditionals
  - Statements
  - Declaration
  - Assignment
- Data
  - Data Types
  - Literals
  - Arrays
  - Manipulation
  - Evaluation
- Program design

- Linear Programming
- Debugging techniques
- Data Structures
  - Parsing Text
  - Use of the “struct” and “union”
  - Sorting algorithms
  - Linking lists
  - Memory management
  - File manipulation

## **Methods**

- Lecture
- Classroom based hands-on examples
- Independent programming projects
- Homework assignments
- Quizzes

## ***Advanced Programming***

Grade 11, 12: 1 credit

Pre-requisite: Intermediate Programming

Co-Requisite: Pre-Calculus

This course has as a pre-requisite Intermediate Programming. This course is designed with the student that intends on pursuing a mathematics, science, engineering or computer science focused major in college. It is largely conducted in the format of an independent study, where students in the class will work together or separately in a self guided way with the instructor as a mentor to complete a project or series of projects identified at the beginning of the year. Given the nature of this class it may be taken more than once.

Course topics may include: Object oriented programming, Graphical programming, efficient coding, advanced data management, device programming, and interface design. It is expected that the students in this course will work together on a student determined project as a team and that they will publish the product of their semester work on the internet. Projects will focus primarily on non-networked applications.

### **Course Topics**

Course topics may vary widely, as the course work is largely determined by students pending the approval of the instructor.

### **Methods**

- Individualized instruction
- Collaboration with classmates
- Independent research
- Small lectures as required