

Sandia Preparatory School

# Upper School Curriculum Guide

**2009-2010**

SANDIA  PREP

Sandia Preparatory School

532 Osuna Road NE

Albuquerque, NM 87113

505.338.3000 • fax 505.338.3099

[www.sandiaprep.org](http://www.sandiaprep.org)

## **OUR MISSION**

Sandia Prep is an independent coeducational school with a college preparatory program for grades 6 through 12 on one campus. The joy of learning and living is at the center of all we do. We provide a well-balanced program where the school, as an extension of families, supports the quest for human excellence and individual growth.



## **TABLE OF CONTENTS**

|                                     |           |
|-------------------------------------|-----------|
| <b>Graduation Requirements.....</b> | <b>1</b>  |
| <b>Communications .....</b>         | <b>2</b>  |
| <b>English .....</b>                | <b>3</b>  |
| <b>Fine Arts.....</b>               | <b>5</b>  |
| <b>History.....</b>                 | <b>8</b>  |
| <b>Mathematics.....</b>             | <b>11</b> |
| <b>Modern Languages .....</b>       | <b>12</b> |
| <b>Physical Education.....</b>      | <b>15</b> |
| <b>Science.....</b>                 | <b>15</b> |
| <b>Special Programs .....</b>       | <b>17</b> |

## **CURRICULUM OVERVIEW**

Our Upper School curriculum is designed to provide students with the opportunity to test their talents and to develop their skills in a variety of academic disciplines. We require students to take courses in English, Fine Arts or Communications, History, Mathematics, Modern Languages, Physical Education, and Science. We also offer students the opportunity to pursue their academic interests in depth either in elective courses in the various disciplines or in an independent study program. Students may elect to take advanced courses at the University of New Mexico through our concurrent enrollment program.

## **CLASS LOAD AND PROMOTION**

A normal class load is six courses per year. While the school makes no guarantee that additional classes may be scheduled, exceptions may be made.

A 2.00 grade point average (GPA) is the cutoff grade for promotion. A student must have a 2.00 GPA at the end of each marking period and a cumulative 2.00 at the end of each school year to be asked to continue.

## **GRADUATION REQUIREMENTS**

Students must have 23 high school credits and a cumulative GPA of at least 2.00 to graduate. Of the 23 credits, 18 are to be distributed as described below and taken during Upper School years; 5 are electives.

---

| <b>Subject</b>                                    | <b>Number of Credits</b> | <b>Required Courses</b>   |
|---|--------------------------|---|
| <b>English</b>                                    | 4                        | The Hero and the Quest (1)<br>The Self and Its Culture (1)<br>Rhetoric, Composition, and Style (1/2)<br>3 semester-length English courses (1/2 credit each) |
| <b>History</b>                                    | 3                        | World History I (1)<br>World History II (1)<br>American History (1)   |
| <b>Mathematics</b>                                | 3                        | Algebra II (1)<br>Geometry (1)<br>1 year-long math course (1)   |
| <b>Science</b>                                    | 3                        | Geology (1)<br>Biology (1)<br>A third year of laboratory science (1)  |
| <b>Modern Languages</b>                           | 2                        | 2 years of 1 language in the Upper School   |
| <b>Fine Arts or Communications</b>                | 2                        | 2 years   |
| <b>Physical Education</b>                         | 1                        | 1 year-long course in 9th grade (1/2)<br>1 year-long course in 10th - 12th grades (1/2)   |
| <b>Successful Completion of Senior Experience</b> |                          |   |

## COMMUNICATIONS

Our Communications program teaches students to read, write, speak, and report with sensitivity, accuracy, and intelligence. We expect our students to express their ideas with logic and clarity and to work collaboratively with one another. All courses in this department offer students the opportunity to gain practical experience and to apply the skills and disciplines taught in the course.

**Requirements to Graduate:** Students need **two** credits from the Fine Arts or Communications departments. Courses in Computer Applications and Computer Programming do **not** satisfy this requirement.

### Journalism & Media Design Grades 9-12

This course serves as a foundation for the newspaper, yearbook, and broadcast production classes. It is required of all students who wish to enroll in Journalism II (Newspaper), Journalism III (Yearbook), or Journalism IV (Broadcasting). The class introduces students to the skills used to produce a newspaper, yearbook, or broadcast program. Students complete a series of projects in which they write and edit copy, take digital photographs, crop and size photos, prepare graphics, create ads, design pages, shoot video, and record broadcast segments.

### Journalism II (Publications/Newspaper) Grades 10-12

For students interested in producing the monthly school newspaper, the Sandia Prep Times, this is the class. In this student-managed course, staff members are responsible for planning the content of the newspaper; conducting interviews; writing news stories, features, editorials, columns, and reviews; editing stories; writing headlines; taking and editing photographs; and designing the newspaper using desktop publishing.

**Prerequisite:** Journalism & Media Design or consent of the instructor

### Journalism III (Publications/Yearbook) Grades 10-12

This journalism class is primarily concerned with the production of the school's yearbook, the *Sandglass*. In this class, students work together to complete a 250-270 page all digital, full color publication for distribution at the end of the school year. Students use Adobe InDesign, Adobe Illustrator and Adobe Photoshop to design layouts and headlines, digitally crop and prepare photos for placement, and write captions and yearbook copy to capture the events and highlights of the school year. In addition, staff members are responsible for taking photos, conducting interviews, organizing and

helping with senior pages, and working with parents on the senior ad section. Staff members work cooperatively with editors and the advisor to make sure that all deadlines are met on time.

**Prerequisite:** Journalism & Media Design or consent of instructor.

### Journalism IV (Broadcasting/Multimedia Journalism) Grades 10-12

This journalism course will prepare students to produce multimedia news broadcasts. Course topics include the basics of digital video cameras, sound and video editing, interviewing techniques, lighting effects, creating television news and feature stories, public speaking, and presentation skills for television news anchors. We will explore the idea of the "backpack journalist," carrying a laptop, camera, and microphone, producing a multimedia story, and broadcasting it on the web at any time. Students will be using high-end cameras, audio and lighting equipment, as well as professional video and audio editing software.

**Prerequisite:** Journalism & Media Design or consent of instructor

### Computer Applications Grades 9-12

This full-year Upper School elective is designed to give students experience with the computer in many different areas. The course includes a thorough orientation to the Microsoft Office suite, including word processing, database management, spreadsheets, and multimedia slide shows. Students will learn to create and manipulate photographic images and original illustrations. Animation, page layout, multimedia design, and video editing are other topics learned in this course. Students will also delve into programming and web page design using HTML and WYSIWYG editors. All students will be expected to create and maintain a portfolio of their work.

### Advanced Computer Applications Grades 10-12

This full-year extension of the Computer Applications class delves into more advanced techniques using high-end software such as Adobe Photoshop, Illustrator, InDesign, and Flash. Students will learn about vector, bitmap, and 3D graphics, desktop publishing/page layout, video and sound editing, animation, and multimedia design, as well as standard office suite software. Additionally, students will be expected to build and maintain a web site using WYSIWYG editors and author a professional quality DVD using their own

work as the content. Knowledge of computer networks, simple programming, and technology vocabulary will be expected as well as the ability to complete cooperative group projects online and off campus.

**Prerequisite:** *Computer Applications*

## **Programming in C++**

### **Grades 11-12**

This full-year elective is designed to introduce students to computer science. The course will use the programming language C++ to teach the basic concepts of structured computer programming. Students will work individually and in small groups to create programs in C++. These programs will be a vehicle for learning about data types, control structures, functions, classes, and graphics.

**Prerequisite:** *Computer Applications recommended or consent of instructor*

## **ENGLISH**

*Our English program provides students with the opportunity to explore Western literature in depth, with a particular emphasis on American and British works. We seek to teach our students to identify recurring themes in this literature and to help them gain a familiarity with the various forms of literature. One of the most essential components of our English curriculum is writing. We expect, teach, and encourage our students to gain skill and power in many forms of their own written expression.*

**Requirements to Graduate:** *Students need four credits in English. These credits include The Hero and the Quest in 9th grade, The Self and Its Culture in 10th grade, and four semester-length courses for students in the 11th and 12th grades, including Rhetoric, Composition, and Style.*

## **The Hero and the Quest**

### **Grade 9**

In this course students explore the notion of the hero as expressed in modern and classical literature. What are the characteristics of a hero? Do heroes emerge in response to challenges they confront? Are heroes born or made? Must heroes have a quest? Using the rich and vigorous classroom discussions such questions engender, we engage with literature — both classical and contemporary — and expository essay-writing to enhance analytical thinking.

We teach our students how to strengthen their skills as writers of formal literary criticism. We encourage student editing when appropriate. Informal in-class writing and regular vocabulary study are also included in the course.

### **TEXTS MAY INCLUDE:**

*Old Man and the Sea, Ernest Hemingway*  
*The Catcher in the Rye, J.D. Salinger*  
*Nine Stories, J.D. Salinger*  
*The Merchant of Venice, William Shakespeare*  
*Oedipus Rex, Sophocles*  
*Antigone, Sophocles*  
*Fences, August Wilson*  
*Black Boy, Richard Wright*  
*Night, Elie Wiesel*  
*The Heart is a Lonely Hunter, Carson McCullers*  
*A Small Place, Jamaica Kincaid*

## **The Self and Its Culture**

### **Grade 10**

Sophomore English introduces the student to literature of the Western World, through a look at works chosen from many cultures, studied with an eye to their point of view or to the narrator's context within his/her culture. The course stresses the themes of "the individual within society" and "the self's growth or struggle toward freedom in its society."

The emphasis is on the student's development of his or her writing, the student's interpretive skills, and the student's greater craft in structuring an argument and in using precise language in presenting that argument. We wish as well to foster an interest in literature as an examination of the human condition.

### **TEXTS MAY INCLUDE:**

*A Clockwork Orange, Anthony Burgess*  
*Ellen Foster, Kaye Gibbons*  
*Macbeth, William Shakespeare*  
*Master Harold and the Boys, Athol Fugard*  
*Sula, Toni Morrison*  
*The Glass Menagerie, Tennessee Williams*  
*The Tempest, William Shakespeare*  
*The Metamorphosis, Franz Kafka*  
Various short stories and poetry

## **Fall Semester Offerings 2009**

### **Shakespeare's Histories and Comedies**

#### **Grades 11 & 12**

#### **Fall Semester 2009**

In the course students examine the structure, element and motifs of Shakespearian comedy and history as well as the beliefs and cultural norms the plays reflect. The course takes a look at the time period in which the plays were written as well as the issues raised by the works; comedy is often the best way to address serious issues.

**TEXTS:**

*Twelfth Night*  
*Measure for Measure*  
*Much Ado About Nothing*  
*Henry IV, Part I*  
*Henry V*

**Contemporary Short Stories****Grades 11 & 12****Fall Semester 2009**

Many of the finest American, Canadian, and South American writers of the 20th and 21st centuries have chosen the short story form. In fact, many of these writers have never written a play or a novel, and those who have written “larger” works have excelled at the short story form. This course will study contemporary short story writers with an eye to what exactly makes a short story, to what a short story must do, to what variety there exists within the form. Students will write one short story and two or three autobiographical pieces as well as analytical essays about the stories we study.

**WRITERS INCLUDE:**

Hemingway, Faulkner, Margaret Atwood, Raymond Carver, Andre Dubus, Tobias Wolff, Alice Munro, John Updike, Susan Minot

**The Literature of Love****Grades 11 & 12****Fall Semester 2009**

In Cameron Crowe’s semi-autobiographical film *Almost Famous*, the legendary rock critic Lester Bang says, “Yeah, great art is about conflict and pain and guilt and longing and love.” In fact, one could argue that all great art is centered on conflict and pain and guilt and longing and, especially, love. This course looks at love in its many different forms: love of self, love of others, love of things, love of place, love of country. It looks at love from many perspectives: short fiction, the novel, non-fiction and poetry, both classical and contemporary. Love is one of the most fundamental human emotions, and it provides the backdrop to our lives and to our stories.

**TEXTS:**

*Wuthering Heights*, Bronte  
*High Fidelity*, Hornby  
*The End of the Affair*, Graham Greene  
*Fifth Business*, Robertson Davies

**The Detective as Hero****Grades 11 & 12****Fall Semester 2009**

At least since Greek drama, literature has often cast the hero as a detective, someone who must work out the

entire problem in order to save a city, a civilization, or a self. And, of course, murder makes the best introduction of a problem. This course focuses on four works with an eye to how the detective framework allows authors to explore issues such as “What is action? What is guilt, if everyone bears responsibility? What is truth—and is there such a thing if no one knows it?”

**TEXTS:**

*Hamlet*, Shakespeare  
*The Talented Mr. Ripley*, Patricia Highsmith  
*The Stranger*, Albert Camus  
*The Quiet American*, Greene

**Voices of the South****Grades 11 & 12****Fall Semester 2009**

What can we as readers hear in a work of literature? Through this course we will explore the powerful, curious, and often contradictory voices of Southern writers as they try to explain the conflicting forces of Civil War defeat, racial tension, and deeply set religious and moral convictions. From the grotesque to the comedic to the sweepingly tragic, we will read many Southern works and attempt to understand these unique perspectives.

**TEXTS MAY INCLUDE:**

*The Sound and the Fury*, William Faulkner  
*Wise Blood*, Flannery O’Connor  
*Streetcar Named Desire*, Tennessee Williams  
*Ballad of the Sad Café*, Carson McCullers

**Spring Semester Offerings 2010****Rhetoric, Composition, and Style****Grade 11****Spring Semester 2010**

An intensive expository writing course designed to solidify and expand each student’s writing strengths, the course asks students to try a range of essay types — narrative, descriptive, analytical, and persuasive — and to focus on finding a strong personal prose voice, one which is attentive to proper grammar, paragraph form, the use of a metaphor, and careful word choice. Course materials will include *The Elements of Style* and *The Bedford Reader*. The most important source, however, will be the students’ own essays and their writing journal exercises. At semester’s end, every student should find good or better writing within her or his grasp and have the confidence to use it powerfully as she or he enters the senior year.

## **Society and Self: A Study in Alienation** **Grade 12**

### **Spring Semester 2010**

Much modern literature deals with the conflict an individual has between being a separate self and being a part of a social group. This conflict can result in an individual's disconnecting himself or herself from society, from family and even from sanity. This course will look closely at alienation in all guises as we study a variety of fiction and poetry and the role of the artist in presenting alternative truths to society's truths.

#### **TEXTS:**

*Heart of Darkness*, Conrad  
*Nine Stories*, Salinger  
*Slaughterhouse Five*, Vonnegut  
*One Flew Over the Cuckoo's Nest*, Kesey  
*The Bell Jar*, Plath

## **Philosophies of the East**

### **Grade 12**

#### **Spring Semester 2010**

This course focuses on the traditions of Hinduism, Buddhism, and Taoism, exploring how Eastern philosophy differs from Western concepts concerning time and spirituality. This course will assess how these differences affect our daily lives and discuss manifestations of these philosophies in our personal lives and will culminate in a writing project that defines a personal, individual life philosophy. The texts the course focuses on have much to offer as literature: their emphasis on narrative suggests that story form is often the only way to convey truth clearly.

#### **TEXTS:**

*The Tao of Pooh*, Hoff  
*Tao te Ching*, Lao Tzu  
*Siddhartha*, Hesse  
Excerpts from *The Art of War* (Sun Tzu), *We Are All Doing Time* (Bo Lazoff), and *Mahabharata* (Ramayana)

## **Contemporary Apocalyptic Scene**

### **Grade 12**

#### **Spring Semester 2010**

How do people conduct themselves when their way of life comes to an end, when society as they know it changes so drastically that they lose their cultural bearings and, in some cases, their very identities? This course will examine the strength of the human spirit through the eyes of authors whose characters cope with isolation against a backdrop of loss, of revolution or of social engineering. We will study contemporary works that deal with the apocalyptic within the family structure, with the realm of spirituality, and within the world of politics.

#### **TEXTS:**

*Life of Pi*, Martel  
*The Road*, Cormac McCarthy  
*Onyx and Crake*, Atwood  
*1984*, Orwell

## **FINE ARTS**

Our Fine Arts program includes classes in the visual arts, drama, and music. We seek to instill in our students an appreciation for their own and others' creations. All our Fine Arts classes include activities to help our students acquire and develop technical skills. We also work to help them become familiar with the vocabulary, techniques, and materials specific to these Fine Arts. Finally, we seek to open our students' minds to the possibilities for self-expression through visual arts, drama, and music.

**Requirements to Graduate:** Students need **two** credits from the Fine Arts or Communications departments. Courses in Computer Applications and Computer Programming do **not** satisfy this requirement.

## **VISUAL ARTS**

### **Art I: Design and Composition**

#### **Grades 9-12**

In Art I the students will draw, paint, and work in clay. By using a wide range of materials and techniques grounded in the use of the fundamentals of design, we are providing the student the opportunity to explore some of the many visual arts possibilities. In doing so, we have created a basic class that we recommend as a prerequisite to all other visual art classes offered at Sandia Prep.

### **Clay and Sculpture I**

#### **Grades 10-12**

##### **Year-long**

In this class, we offer the student the opportunity to work in three dimensions through the comprehensive study of clay. This approach provides a deeper understanding of the materials which, in turn, will enable the student to work with confidence and imagination. Through a series of projects, the student will learn all the fundamental methods and techniques for working in clay as well as mixing and applying glazes.

**Prerequisite:** Art I

### **Clay and Sculpture II/III**

#### **Grades 11-12**

##### **Year-long**

This class is a continuation of Clay and Sculpture I.

The purpose is to provide the student with time, materials, and guidance for the continued development of skills and concepts in working with clay. As the student increases his or her abilities and confidence to work more independently, opportunities for creative application and outcomes will increase.

**Prerequisite:** *Clay and Sculpture I*

### **Drawing and Painting I**

**Grades 10-12**

**Year-long**

Drawing and Painting I is a yearlong course where two-dimensional media is emphasized. Students will focus on a variety of materials, techniques, and theories to strengthen their visual, perceptual skills. An introduction to art history and art movements will be a central theme for the course. There will be opportunities for the student to prepare for portfolio review and public exhibition.

**Prerequisite:** *Art I*

### **Drawing and Painting II**

**Grades 10-12**

**Year-long**

Drawing and Painting II is a yearlong course that invites students to continue their exploration of a variety of two-dimensional media, emphasizing a more individual approach to materials and themes. Students will learn specific, time-honored methods to improve technical and observational skills. Students will also explore new processes of making art, moving from realism to abstract, and conceptual problem solving. Group critiques and exhibitions will enhance visual literacy and cultivate students' abilities to articulate the intent behind their work.

**Prerequisite:** *Drawing and Painting I*

### **Drawing and Painting III**

**Grades 11 & 12**

**Year-long**

This yearlong advanced course offers students the opportunity to develop a personal body of work that explores their individual voices as developing, independent artists. Students will work one-on-one with the instructor to plan projects based on their particular interests and concerns, carefully selecting media, subject matter, and approach. Students will also participate in class exercises that broaden their understandings of specific techniques and modes of expression. This course allows students to create a coherent application of paint and psychological implication.

**Prerequisite:** *Drawing and Painting II*

### **Photography I**

**Grades 10-12**

Photography I introduces high school students to the materials, processes, concepts, and aesthetics of black-and-white photography. Through the first assignments, we learn how to use a 35mm camera, develop our own film, and make enlargements. While developing photo-fundamentals, we explore how photography can be used to communicate ideas and feelings by controlling framing and composition, point-of-view, shutter speed and aperture, and print contrast. We create portraits which reveal the personality of the subject and use photography to interpret poetry and music visually. Advanced darkroom techniques include the effective use of multiple exposures and the Sabattier process. Following each assignment students participate in a group critique to evaluate their work and the work of their classmates. In the critiques we learn to develop a vocabulary for talking about photographs. We also learn how to mount and present photographs and submit works for exhibition.

**Required materials:** *A manual 35mm camera. Students provide their own film and photo paper.*

### **Photography II**

**Grades 11 & 12**

Photography II is an advanced course in photography, which builds on the skills introduced and developed in Photography I. We employ the traditional silver process as well as explore alternative processes such as cliché-verre, the cyanotype, and handcoloring. We will use the camera to find and create abstract images by looking at organic and geometric forms, as well as seeing how these forms are expressed in the landscape and cityscape. We will also begin to work with color transparencies and Polaroid transfers. In this course we ask questions about ourselves as we create self-portraits and investigate the everyday object by setting up still lifes.

Students are encouraged to work independently by developing their own individual assignments throughout the year. We will begin a more focused study of the history of photography by doing a research project and making a presentation for the class. We will also continue to mat finished work and prepare for exhibitions.

**Prerequisite:** *Photography I*

**Required materials:** *A manual 35mm camera. Students supply their own film and photo paper.*

### **Photography III**

#### **Grades 11 & 12**

Photography III is an advanced photography studio course that continues the techniques and concepts of the previous photo classes. The emphasis will be on the individual's own course of study so students can follow the ideas that are most significant for them. For some this may mean the perfection of traditional black and white prints, while for others this may be the deconstruction of the photographic image by tearing, gluing, staining, painting, or by any number of other processes. Students will work towards creating small bodies of work by sticking with an idea and allowing it to grow and alter over a semester or an entire year.

**Prerequisite:** *Photography II*

**Required materials:** *A manual 35mm camera. Students supply their own films and papers.*

### **Digital Imaging**

#### **Grades 11 & 12**

##### **Year-long**

Through lecture, demonstration, and especially hands-on application, students discover and explore digital technology as a means of image making. Using the formal concepts of design, composition, and content from the visual arts and applying them to the latest technologies creates a place where art meets science. Students are introduced to the skills necessary to navigate and use an extensive variety of tools, palettes, and functions, leading to experimentation and individual and group projects. With the use of flat-bed and film scanners, as well as digital cameras, students will create, adjust, and manipulate their own images. This course will also look at the role of technology in our history and its impact on our global culture.

## **THEATER ARTS**

### **Theater Arts I**

#### **Grade 9**

##### **Year-long**

This full-year course provides students with the basic experience necessary to gain a strong foundation in every area of the theater arts. During the first semester students will learn basic acting skills, both physical and vocal, through improvisation games and exercises; pantomime and stage movement; monologues and scene work. Second semester focuses on learning the production process during which students will select a play, then organize, plan, and perform it. Not only will this project include additional acting training, but mini-units in scenery, costuming, props, lighting, sound, makeup, and marketing as well. Both semesters will culminate in a public performance of class activities.

### **Theater Arts II**

#### **Grades 9-12**

##### **Year-long**

This course will build on the strong foundations learned in the introductory classes. First semester is a much more in-depth study of acting, including dialects, beginning emotional exploration and audition techniques. Second semester begins with students learning and practicing the basics of directing, in which each student will direct a scene of their choice. The semester will end with a playwrighting unit in which students will create short one-act plays that will be performed for classes. Both the directing and the playwrighting units will have public performances of the students' work.

**Prerequisite:** *Introduction to Theater Arts I*

### **Advanced Acting**

#### **Grades 10-12**

##### **Year-long**

Advanced acting provides the experienced young actor with a much deeper foundation in many and varied acting methodologies and styles. Activities and projects will help the student develop his or her own individual method of rehearsal and character development by providing them with a wealth of different techniques. This course is especially beneficial to those students who are considering a college major or a career in acting or theater. Included will be intensive contemporary acting methods from Stanislavski to Viewpoints, film and television acting, musical theater acting, auditioning for college and professional theater, historical styles of acting and career exploration. Various units will include visits from guest artists from the local professional scene. Each semester will culminate in public performances of class projects and activities.

**Prerequisite:** *Introduction to Theater Arts I or II*

### **Technical Theater**

#### **Grades 9-12**

##### **Fall Semester, Spring Semester or Year-Long**

In this course students have the opportunity to light up the world of the Sandia Prep stage, as well as create sound effects on state-of-the-art equipment. In addition, student "techies" learn how to construct sets and create props for theatrical presentations.

### **Theater Design**

#### **Grades 9-12**

A project-oriented course that allows each student to work on specific projects in the areas of theatrical lighting, scene design, sound recording, and reinforcement for the stage. All participants will have

the opportunity to run sound and lights for several performances during the year. There is some (very flexible) after-school time required.

## **Filmmaking**

**Grades 9-12**

**Year-long**

Young filmmakers-in-training will learn everything they need to do to become the writer/producer/director of their first short film. The course includes tips and techniques on brainstorming, screen writing, scheduling, shooting, camera techniques, editing, and marketing. Each student will write, plan, shoot, and edit a five-minute film. Students will also have the opportunity to work on other films being made in this class. Each student will function as camera operator, gaffer, grip, sound engineer, art director, director of photography, assistant director, producer, and assistant producer for one of the many films created. This course will require several days of production outside of the normal school day.

## **MUSIC**

### **Upper School Chorus**

**Grades 9-12**

Upper School chorus is a non-auditioned ensemble which is open to anyone who enjoys singing and wishes to further his or her vocal development and musical skills. A variety of multicultural music will be explored, reflecting a diversity of historical time periods and traditions, culminating in various performances throughout the calendar year.

### **Jazz Band**

**Grades 9-12**

Jazz Band provides the basic understanding, knowledge and skills necessary for playing and performing jazz music. Instrumental skills are developed through an understanding and comprehension of jazz styles and jazz improvisation. Students will study scales, chords, common chord progressions and tone selection, and phrasing for all types of jazz playing. Students will also focus on fundamentals such as overall instrumental skills, preparing for performances, understanding music theory, composition and improvisation, in addition to jazz history.

### **Upper School Strings**

**Grades 9-12**

Open to students who already play violin, viola, cello, or bass and have some prior experience with music reading. Students will prepare and perform works of

various styles and genres. Emphasis will be placed on strengthening instrumental technique and developing ensemble skills.

## **DANCE**

### **Techniques of Dance**

**Grades 9-12**

**Year-long**

In this class students will be given the opportunity to explore many disciplines in dance technique. The class will investigate the areas of musical theater, jazz, ballet, modern dance, tap, and hip-hop. The class is designed to give students a basic understanding of the various types of dance used in the American Theater. Students of all abilities and experiences in dance are welcome.

## **HISTORY**

*Our History program strives to help students gain a historical perspective on the human experience. We believe that the study of history offers students an opportunity to understand the world better. It also affords us a chance to discuss issues with which adolescents struggle while putting these issues in a broader perspective. We encourage our students to approach questions analytically, to think critically, and to write thoughtfully.*

**Requirements to Graduate:** Students need **three credits** in History, including World History I, World History II, and American History.

### **World History I**

**Grade 9**

A survey of human history from the Neolithic revolution to the Reformation. The scope is global, and the class will examine the development of urban culture in the Fertile Crescent, Egypt, Greece, Rome, Asia, and Europe.

**Skills emphasized in the 9th-grade history course are developed in the following broad categories:**

- Critical-thinking
- Analytical writing
- Map-reading
- Discussion
- Research

**TEXT:**

*World History: The Human Odyssey*, Jackson S. Spielvogel

**TEXTS MAY INCLUDE:**

*The Epic of Gilgamesh*

*Mythology*

Selected teacher handouts

## **World History II**

### **Grade 10**

We begin with the Reformation and the exploration of the New World and the examination of the foundations of modern political structures. We then explore the assumptions underlying the economic and political systems in the 20th century. After examining the Industrial Revolution and the socialist response to capitalism, we look at the causes of World War I followed by the interwar period with the rise of fascism, Stalinism, and nationalism in world politics. The Cold War is then scrutinized closely. We encourage critical thinking over the last 200 years through a combination of primary source readings, lectures, discussions, debates, and simulations. Students take traditional essay exams, write papers, and perform roles in simulations or debates. Each student must produce a major research paper after an instructional field trip to the University of New Mexico libraries.

#### **TEXTS:**

*Crisis, Conscience, and Choices: Weimar Germany and the Rise of Hitler*, Brown University  
*King Leopold's Ghost*, Adam Ho  
*The Manchester Guardian Weekly*  
*World History: The Human Odysee*, Jackson S. Spielvogel

## **American History**

### **Grade 11**

This class surveys forces shaping American history from the colonial period to the present day. Students examine cultural and ethnic diversities, the contribution of women to the making of the United States, popular culture, and major works of American literature reflecting the national character and transformations within our society. Examination of the U.S. Constitution and discussion of relevant domestic and international current issues help prepare students for responsible life in a democratic society.

#### **TEXTS MAY INCLUDE:**

*The Brief American Pageant*, Thomas Bailey and David Kennedy  
*Devil in the Shape of a Woman*, Carol Erickson  
*The Grapes of Wrath*, John Steinbeck  
*A Student's Guide to History*, Jules R. Benjamin  
*Uncle Tom's Cabin*, Harriet B. Stowe  
*The American Reader*, Diane Ravitch  
*Wait Till Next Year*, Doris Kearns Goodwin

## **Contemporary American History Through Film**

### **Grade 12**

This year-long class provides a chronological narrative

history of the contemporary American experience using Hollywood films as a primary source through which to examine the formation of American values and ideology. Students learn how to "read" a film, mastering techniques of visual literacy and analysis. Students deal with myth, abstraction, and symbolism as they seek to place film within historical and cultural context. Thus, students might examine a classic film such as *High Noon* as a reflection of the values of the Cold War and McCarthyism rather than as a historical examination of the West.

Major topics considered in the class are: World War II, Cold War, Civil Rights Movement, Vietnam War, and Watergate era. Students investigate these topics through film screenings, discussion, document analysis, historical research, readings, and compositions.

#### **TEXTS:**

*A History of Our Time*, William Chafe  
*The Unfinished Journey*, William Chafe  
*The Autobiography of Malcolm X*, Alex Haley, ed.

#### **NUMEROUS FILMS, INCLUDING:**

*Bataan*, *Invasion of the Body Snatchers*, *Woman of the Year*, *The Green Berets*, *Best Years of Our Lives*, *The Graduate*, *On the Waterfront*, *Bonnie and Clyde*, *High Noon*, *Dr. Strangelove*, *Rebel Without a Cause*, *All the President's Men*

## **Introduction to World Cinema**

### **Grade 12**

One of the major avenues for breaking down cultural and national boundaries as well as ethnic stereotypes is through the medium of cinema—perhaps the most important art form of the twentieth century. This elective course will introduce students to a broad survey of world cinema that will address the human condition from diverse perspectives. The films will be placed within the historical and cultural contexts in which they were produced. The understanding of cinema must also incorporate film form and grammar. Thus, the films will be analyzed through the lens of nationality, history, genre, and the artistic contributions of individual filmmakers.

Students will be asked to prepare compositions based upon class readings and screening of films, and oral presentations of cinematic works viewed outside of class will be shared with classmates. In one course it will be impossible to equally address the broad spectrum of world cinema, so the films screened will be somewhat selective—providing students with some appreciation for the broad spectrum of world cinema and encouraging them to explore further the rich offerings of international film. The class, of course, is not for everyone as most of the films used in the course will include subtitles. But for those willing to tackle

the challenges of world cinema, the reward should be a deeper understanding of the diverse and complex world in which we reside as global citizens.

**TEXTS:**

*The Oxford History of World Cinema*,  
Geoffrey Nowell-Smith  
*Film Art*, David Bordwell and Kristen Thompson

**NUMEROUS FILMS, INCLUDING:**

*Battleship Potemkin, October, Metropolis, The Gold Rush, Citizen Kane, Tokyo Story, Seven Samurai, Rashomon, The Seventh Seal, Persona, Rules of the Game, Breathless, 400 Blows, The Bicycle Thief, La Dolce Vita, Amarcord, Pather Panchali, Lagaan, Raise the Red Lantern, Central Station, City of God, The Official Story, Z, A Taste of Cherry*

## **Global Studies**

### **Grade 12**

In this yearlong senior elective we will examine the state of the world today. We will investigate both current world events as well as larger global issues. We will use individual, group, and class projects to enhance our understanding of the world.

For the Current Events segment each student will be assigned a region of the world that he or she will be responsible for keeping up with by following a variety of online news sites in English. It will be important to examine several perspectives. There will also be some current events that the class will follow together. Each week students will summarize the news in their regions in addition to general discussions on the events the class is following together. For the Global Issues sessions we will study issues such as war, peace and global security, the environment, poverty, wealth and development, overpopulation, human rights, health, and energy. Discussions, papers and presentations, simulations, debates, pen pals as well as other projects that may grow out of the various interests of the students.

**SOURCES:**

We will rely on dozens of online newspapers and periodicals in English from all over the world, topical books, documentaries, guest speakers, interviews and anything else we can find that will give us insights into what's going on today on the planet Earth.

## **Western and Eastern Philosophy**

### **Year-long**

#### **Grades 11 & 12**

This two-semester course in Philosophy and the History of Ideas includes the foundations of philosophy in the west and east. Highlights of this course include readings from Western philosophy including Greek and Roman philosophy, Jewish and Christian philosophy,

European philosophy and the rise of scientific inquiry and existentialism, and the philosophy of gender. In Eastern Philosophy, we will dig deeply into Hindu, Buddhist, Taoist, and Confucian philosophy in addition to the rise of Japanese philosophy based on the spread of Buddhist and Shinto ideas. This course culminated in a second semester project in which students choose a current event or situation in the world and apply the knowledge they have learned to solve this problem.

Juniors and Seniors are welcome to be a part of this thought-provoking and dynamic class.

## **Economics**

### **Year-long**

#### **Grade 12**

Economics blends micro and macro economic theory and practice. At the micro level, each class member will open a trading account and will collaborate to run a sensor company. Students study macroeconomic through current events and through an examination of the partnership of national and global monetary and fiscal policy with free market theory/practice. From government intervention and regulation to the activities of the World Bank and IMF, students will be introduced to the complexities of our global market place. The goal of the course is to prepare students for further study of economics, business, and personal finance.

**PRIMARY TEXTS:**

*Hot, Flat, and Crowded*, Friedman  
*Economics Explained: Everything You Need to Know About How the Economy Works and Where It's Going*,  
Heilbroner and Thurow  
*Freakonomics*, Levitt and Dubner  
*Foundations Simulation*, Capsim

## **Slavery and Race in America**

### **Grade 12**

#### **Year-long, 2009-2010**

This course will be a two-semester history elective for 12<sup>th</sup> graders, offered in alternate years with the Critical Issues class.

New Mexico is a culturally diverse and historically rich state, with a legacy of multiculturalism and minority leadership. While racial tensions do exist here, many students from New Mexico do not understand the depth of feeling between races in other parts of the country.

Racial issues surrounding slavery have outlived the institution itself, and call for a larger understanding of the history of slavery and the struggle for equality, not only of Black Americans, but of all minorities. Developing this understanding will prepare students to enter the adult world with a well-founded compassion

for all races, cultures, and differences. While this should be a goal of all education, it can be particularly addressed through an upper-level course geared specifically to focus on these particular educational goals.

Slavery and Race will look at the American experience with slavery and the subsequent racial issues, and will include a comparative look at slavery in other countries in the 16<sup>th</sup> through the 19<sup>th</sup> Centuries, and beyond. The class will be discussion based, with a few research and written assignments, and readings including primary (including Jefferson and contemporaries, Douglass, Lincoln, Garvey, Washington, DuBois, Malcolm X, Carmichael, Steele) and secondary (Kolchin, Fairclough, possibly Ball, and others) scholarly works. Students should read American Slavery: 1619-1877 by Peter Kolchin before class begins in the fall.

## **Critical Issues in America**

### **Grade 12**

#### **Year-long, 2010-2011**

This course will be a two-semester history elective for 12th-graders, offered in alternate years with the Slavery and Race course. The class will begin with a review of the US Constitution, its principles, framing and ratification in historical context. The first semester will include participation in the elective process and discussion of the current and relevant issues of the election at hand. The course will continue with the development of American social and governmental policies with emphasis on contemporary issues such as race, individual rights, education, environment, defense, health care, immigration, and human rights. Skills emphasis will be on developing and supporting a position, problem solving, and participation in government. All political philosophies are welcome and will make for an exciting class.

#### **NOTE:**

During the first semester the students will gain a thorough understanding of the origins and development of constitutional principle, and application of that principle in modern times. They will also participate fully in the electoral process by volunteering for a campaign. In the second semester, we will address current issues, including race relations, individual rights, and reparations. We will also specifically look at local issues by participating with the State Legislature, following bills, and participating in a national eCongress.

Readings will include varied and many primary source documents as well as the US Constitution and other relevant documents. Additionally we will use Close Up Publishing's Current Issues, Howard Fineman's The Thirteen American Arguments, as well as other supporting materials.

## **MATHEMATICS**

*Our sequential Mathematics program introduces students to the essential mathematical skills necessary for success in academic and real-life environments. We stress problem-solving, deductive reasoning, and abstract thinking. We encourage an appreciation of the beauty of the mathematical process as well as an understanding of the need for proficiency in mathematics in a variety of fields.*

**Requirements to Graduate:** Students must complete a minimum of **three** credits in Mathematics in the Upper School including Algebra II, Geometry, and one year-long math course.

### **Algebra I**

This course develops facility in the use of mathematical concepts and provides a thorough foundation in basic Algebra essential to the study of advanced mathematics. Topics covered include (but are not limited to): operations involving integers, fractions, and polynomials; solving equations and inequalities; use of formulas; factoring polynomials; graphing linear equations; rational expressions and equations; quadratic equations; linear systems; word problems; and radical expressions and equations.

### **Algebra IB**

#### **Grade 9**

This course continues the exploration of algebraic concepts begun in Algebra IA. Topics include linear systems, properties of exponents, functions, polynomials, factoring, solving quadratic equations, rational expressions, radical expressions, and the Pythagorean theorem. This course, combined with Algebra IA, will provide students with a thorough foundation of Algebra.

**Prerequisite:** Algebra IA

#### **TEXT:**

*Algebra I Concepts & Skills*, Vol. 2, R. Larson, L. Boswell, T. Kanold, and L. Stiff

### **Algebra II**

#### **Grades 9 & 10**

We apply and extend the concepts studied in Algebra I. We study the concepts of real and complex number systems, factoring, function notation, exponents, radicals, quadratic equations, radical equations, conics, and basic trigonometry.

**Prerequisite:** Algebra I

#### **TEXT:**

*Algebra II*, R. Larson, L. Boswell, T. Kanold, and L. Stiff

## **Geometry**

### **Grades 10-12**

This course investigates Euclidean (plane) geometry with the emphasis on intuitive approaches and problem-solving. We cover formal proofs along with considerable work with constructions, logical reasoning, and right-angle trigonometry.

**Prerequisite:** Algebra I

**TEXT:** Geometry, J. Jurgensen, R. Brown, and R. Jurgensen

## **Precalculus**

### **Grades 11 & 12**

The course aims to develop a foundation for the continuing study of advanced mathematics through a focus on the central concepts of trigonometry and functions. Topics include trigonometric functions and their applications, vectors, graphing techniques, and various functional equations and inequalities (i.e., polynomial, rational, exponential, inverse, and logarithmic functions).

**Prerequisite:** Completion of Algebra II and Geometry and teacher recommendation

**TEXT:**

Precalculus, Larson & Hostetler

## **Calculus I**

### **Grades 11 & 12**

Students study and develop facility in applying the following fundamental concepts of calculus: functions, limits, continuities, derivatives, and integrals. In addition, time is allotted for us to investigate graphing, applications of derivatives and integrals, volumes, fluid forces, moments, and centers of mass.

**Prerequisite:** Completion of Precalculus and teacher recommendation

**TEXT:**

Calculus, George B. Thomas, Jr. and Ross L. Finney

## **Math Topics**

### **Grades 11 & 12**

This course consists of three major units: college math preparation, financial mathematics, and statistics. (The first two units are covered in the fall semester while the statistics unit is covered during the spring semester.) The college preparation unit will focus on reviewing concepts from algebra through geometry. The financial unit covers simple, compound, and continuous interest, annuities, mortgages, and investments. The statistics unit includes data classification, experimental design, sampling, probability, and distributions.

**Prerequisite:** Completion of Algebra II and Geometry

## **Trigonometry**

### **Grades 11 & 12**

This year-long course investigates the fundamental concepts of trigonometry. Topics include functions, identities, equations, graphs, and vectors. The course will emphasize real-life applications.

**Prerequisite:** Completion of Algebra II and Geometry

**TEXT:**

Trigonometry, R. Larson and R. Hostetler

## **Calculus II**

### **Grade 12**

This course is a continuation of the study of calculus. Topics include hyperbolic functions, integration by parts, improper integrals, infinite series, Taylor series, McLaurin series, calculus of parametric curves, integration in polar coordinates, and more. We use graphing calculators and computers to help complement the course. This course is offered only when a sufficient number of students request it.

**Prerequisite:** Calculus I

**TEXT:**

Calculus, George B. Thomas, Jr. and Ross L. Finney

## **MODERN LANGUAGES**

*Our Modern Languages program consists of courses in French and Spanish. In addition to developing proficiency in another language, students gain an understanding and appreciation of Francophone and Hispanic cultures and customs. Our program is designed to encourage students to become lifelong learners of language.*

**Requirements to Graduate:** Students need **two** credits of the same modern language in the Upper School.

## **FRENCH**

### **French I**

#### **Grades 9-12**

In this course, students discover the French language and culture through a variety of engaging communicative activities including skits, dialogs, role-playing, and field trips (our visit to a downtown French bakery is always a class favorite). Through these activities, we develop, above all, the speaking and listening skills of the French I student. By the end of the year, students are comfortable discussing a variety of topics related to everyday life (family, food, activities, likes and dislikes, for example) in the present and future tenses. They are also able to identify the past-tense construction, the passé composé, and have begun to use this tense in their speech. In addition, students can write short paragraphs about many of the topics used in

conversation. Upon completion of this course, students possess a solid foundation for their future studies of French.

## **French II** **Grades 9-12**

French II emphasizes communication in everyday situations and stresses interpersonal relationships in meaningful contexts such as being at home, going on vacation, shopping, going to school, and eating. During class, students will participate in a variety of activities to develop their speaking, listening, reading, and writing skills. Many of the activities will be done in pairs and small groups to stimulate conversation and promote cooperative learning. Students will also create original dialogues to simulate situations that they would encounter in a French-speaking country.

There are supplemental materials and activities such as videos, readings, contests and games, and holiday celebrations. Some special projects may include: Paris, a Francophone country poster or brochure, “create a story,” and a “soirée des stars”!

## **French III** **Grades 10-12**

In this course, students enter into the heart of the intermediate French program. They arrive already familiar with the format of a class conducted almost entirely in French; are able to express themselves in the present, past, and future tenses; and appreciate the diversity of the francophone world. French 3 builds upon this foundation. At the beginning of the year, we emphasize speaking and vocabulary building. Students retell stories, recount the plots of films, sing songs, engage in daily peer conversations, and play games that push the boundaries of their oral expression and develop their understanding of francophone culture. As students become comfortable with these activities, we add new layers of grammar and vocabulary to enhance the clarity, efficiency, and scope of their oral communication. During the second quarter, students begin to write regularly and learn to use a variety of print and on-line resources to assist them with their writing. Students continue to develop their oral and written expression throughout the year - working with, and supporting, one another along the way.

## **French IV** **Grades 11 & 12**

At the beginning of the year, this course follows a format that is familiar to the Sandia Prep French student. It is conducted in French and students enhance the learning experience of their peers through their

active participation in daily games and activities. Students review the tenses, moods, vocabulary and other grammar points learned in previous years and incorporate “connecting words” in their writing. Following this period of review, students continue their exploration of the grammatical structures of the French language. They also begin to read short stories written by authors from a variety of Francophone countries. These stories are woven into thematic units that include Colonialism, Collaboration and Resistance in France during the Second World War, and the Preservation of Bilingualism in Canada. In addition, students read three abridged novels. By the end of French 4, students have developed strategies to better comprehend French texts, have addressed historical and contemporary issues within the Francophone world, and have continued to develop their command of spoken and written French.

## **French V** **Grades 11 & 12**

In this an advanced-level course, students will review advanced grammar points will exploring a variety of topics including French literature. We will explore the world of Victor Hugo, 19<sup>th</sup> century author of the very famous « Notre-Dame de Paris », « Les Misérables » and countless other important and ground-breaking pièces of literature that helped shape the 19<sup>th</sup> century France. Victor Hugo was a major historical figure of the 19<sup>th</sup> century, as a thinker who did not believe in resigning to silence when a narrow-minded and violent leader of his country comes into power. Readings may also include : “*Shérazade, 17 ans, brune aux cheveux frisés*”. With this reading, we take a détour from « classic » French authors. Through this reading, we will explore an extraordinary author, originally from Algeria, Leïla Sebbar. In this fascinating novel, she recounts the adventures of a 17-year old adolescent in the “banlieue” of Paris who is trying to find herself. Writing will be a major component of this class as students will learn to analyze literary texts as well as critically discuss them. Our students will also be encouraged to develop their creative writing skills in French by creating poems for instance. Students will also expand their abilities to defend and explain their ideas by engaging in debates, or presenting a news report, for example. Students will be exposed to diverse types of documents utilizing different media, such as newspapers, magazines, TV weather reports and commercials.

## **SPANISH**

### **Spanish I** **Grades 9-12**

In this course, we present the simple structures of Spanish in common situational contexts. We incorporate a variety of activities to develop the students' listening, speaking, reading, and writing skills. By the end of this course, the students are able to greet others, introduce themselves and others, describe themselves and others, talk about likes and dislikes, and function with some ease in social interactions related to school, home, food, and family. Students can look forward to a gentle introduction to the language first quarter with increased pacing of material throughout the year. We explore culture through music and holidays.

### **Spanish II** **Grades 9-12**

In Spanish II we broaden and build on the foundation in vocabulary and grammar of the Spanish 1a/1b sequence or Spanish I. The class is conducted almost entirely in Spanish, and an emphasis is placed on listening and speaking skills. Through a range of communicative activities and media students learn to express themselves in the past tenses, give commands, and talk about the future. We study the cultures of Spain, Mexico, and the Caribbean. Students develop stronger writing skills in this course. For example, they write their own short biographies and write and present a newscast. Students in Spanish II acquire a wider active vocabulary and a more thorough understanding of fundamental ideas of grammar.

### **Spanish III** **Grades 9-12**

Spanish III is a bridge course between the introductory and advanced courses of the program. The course builds on the basic vocabulary and grammar structures previously examined using thematic units. The core objective of this year is to have the student achieve a level of relative ease in oral communication. Accordingly, the class is conducted almost exclusively in the target language and the student is directed to respond intuitively rather than mechanically in the target language. By the end of this course the student will have a stronger command in key vocabulary and structures necessary to communicate current and past reality; they will have a firm foundation in the ability to express desires, opinions, emotions; and he or she will have the fundamental skills necessary to indicate future and hypothetical situations. The student will also have attained a better understanding of the cultures

that form the Spanish-speaking world. The course incorporates a variety of projects and assignments meant to meet these goals: multi-media projects such as a study of Mexican artists and the Surrealist movement; examining the manner in which Central American countries are addressing environmental and ecological issues; and production of personal video and audio assignments.

### **Spanish IV** **Grades 10-12**

Spanish IV provides students with an opportunity to review grammar from Spanish 3 while reading, writing about, and discussing an eclectic mix of essays from Latin America, movies and documentaries. Students continue to refine their writing skills and learn to use a variety of reference resources to develop their command of written expression. They also complete research projects and present four oral presentations that may address art, Latin American pop-culture, music and politics, and debates on illegal immigration. These projects often lead to whole group discussions. Active participation in these discussions is essential to the development of each student's proficiency in the Spanish language. Indeed, by the end of this year, they can claim wholeheartedly to be intermediate speakers of Spanish.

### **Spanish V — Language and Culture** **Grades 11 & 12**

This year-long Spanish course emphasizes advanced conversational skills through contemporary films, literature, and class discussions. Oral participation is an integral part of Spanish 5 and all students are expected to further their critical thinking skills and share their thoughts and ideas. Exposure to selected cultural topics through texts, videos, idioms, and news clips allows students to continue to build vocabulary, refine more complex grammar structures, write essays, and present "mini-teatros" (situational skits), and debates. Cultural projects are also part of the course, and may include both a research and/or art/musical component. In recent classes students have researched a Latin American Social Protest musician, combining images from the internet, and a full-length painted rendition of the musician, as well as text. This course is conducted in Spanish.

**Prerequisite:** Successful completion of Spanish IV.

### **Spanish VI — Special Topics** **Grades 11 & 12**

In this year-long course students explore Hispanic and Latino cultures through socio-political topics, utilizing

readings (literature, critical and historical articles), film, music, and art. Students are provided with literary tools to enhance analytical thinking and encouraged to hone these skills through discussion and written work. Class discussions, thematic vocabulary, oral presentations, advanced grammatical structures, writing, mini-teatros and cultural explorations are some of the components of the course that will fine-tune students' experiences with the language. A recent project involved the creation of individual internet wiki sites around a Latin American musician representative of the Social Protest movement of the 60's, 70's and 80's. Students carried out extensive research, combining internet sources, videos, and text in order to present their projects to the class. This course is conducted completely in Spanish.

**Prerequisite:** Successful completion of Spanish IV and/or Spanish V and teacher authorization.

## PHYSICAL EDUCATION

The Physical Education program strives to educate students about their bodies, to teach them life-long habits of fitness, and to create enthusiasm for physical activities. By emphasizing the development and maintenance of an active and physically fit body, we encourage students to build good health habits that carry over into adulthood.

**Requirements for Graduation:** Students need **two** year-long classes totaling one credit in Physical Education — one in Grade 9 and a second in Grade 10, 11, or 12.

### Physical Education

#### Grade 9

This course takes a health-related approach to physical fitness. Placing particular emphasis on aerobic activities and weight training, students learn fitness activities and why fitness activities work. We facilitate fitness development by teaching training principles, anatomy, and physiology. Classes meet five times each week

### Physical Education

#### Grades 10-12

Our advanced physical education course rests on a health-related approach that stresses the importance of physical fitness. In this course we focus on lifetime activities — tennis, racquetball, golf, and archery — and fitness training. Classes meet four or five times each week.

## SCIENCE

The Science program provides a sequential understanding of the scientific method: the process of problem solving, observation, analysis, and conclusion. Courses strive to find a balance between lab work, mathematical analysis and the impact science has on our lives.

**Requirements for Graduation:** Students need **three** credits in science; they **must** take Geology and Biology, plus one other year-long lab science course.

### Geology I

#### Grade 9

This course provides an introduction to geology through the study of meteorology, historical geology and physical geology. Students become acquainted with methods, techniques, and tools used in the study of geology through lectures, labs, individual projects, and field trips. During the course, we emphasize a hands-on approach to learning.

**TEXT:** *Earth Science: Geology, the Environment and the Universe*, National Geographic Society

### Geology II

In Geology II, students study New Mexico geology using the Rio Grande rift as a field study area to learn about local rock formations, history of environments of deposition, and the structural history of this area. This leads to interpretive studies and problem solving in structural geology and stratigraphy. These areas will be correlated with laboratory work using satellite imagery, topographic maps and geologic maps. Field investigations include mapping of various structures and rock types. Second semester, students take an in-depth look at various research topics including historical geology; paleontology – the study of fossils in the geologic record; and geologic resources and their environmental, global and economic impact.

**Prerequisite:** Geology I with a grade of “B” or better and/or permission of the instructor, Algebra II.

### Biology

#### Grade 10

In our basic biology course, we introduce students to the fundamental processes that apply to all living organisms. We present the course as an intellectual discipline that provides a framework for students to relate to biological experiences they encounter throughout their lives. The course progresses from the simple to the complex. We strive to provide our students with a basic understanding of the unity in the diversity of living things. Subject areas include biochemistry, microscopy, respiration, photosynthesis, genetics, evolution, animal maintenance, plant

maintenance, reproduction and development, and ecology. We include many exciting and challenging laboratory investigations.

**TEXTS:**

*Modern Biology*, Holt, Rinehart and Winston  
or  
*Life: The Science of Biology: Volume I*

## **Advanced Biology**

### **Grades 11 & 12**

Students have an opportunity for in-depth study of microbiology, genetics, and biotechnology as they examine numerous relationships, such as those between humans and the microbial world, and those among humans, their genetic inheritance, and health. During first semester, students breed fruit flies and follow various characteristics through several generations. They grow genetic corn and other seeds, learning first-hand how traits are inherited. In spring, students culture bacteria and study staining techniques, physiological characteristics, and control of micro-organisms. During the final four weeks, students work on a bacterial “unknown” project.

**Prerequisite:** *Biology with grade of “B” or better and/or permission of the instructor.*

**TEXT:** *Carolina Drosophila Manual*, Raymond O. Flagg

## **Chemistry I**

### **Grades 11 & 12**

In this course we present a comprehensive study of the composition of matter. We introduce the principles and theories involved in chemical behavior. Students become acquainted with scientific methods and techniques used in chemistry as well as historic developments and current advances in the field. We correlate extensive laboratory work with reading assignments, problem-solving, class lectures, and discussion.

**Prerequisite:** *Algebra I*

**Co-requisite:** *Algebra II*

**TEXT:** *World of Chemistry*, Stephen S. Zumdahl

## **Chemistry II**

### **Grades 11 & 12**

Chemistry II provides students with the opportunity to investigate chemical topics in more detail and to apply chemical principles to a variety of thematic content areas. Topics include organic chemistry, chemical energy, fossil fuels, nuclear energy, medicinal chemistry, chemistry in art, materials science, and environmental chemistry. This course includes extensive laboratory work and projects. Emphasis is placed on the application of chemical principles to real

world problems such as the use of natural resources, generating energy, and selection of materials based on their chemical and physical properties.

**Prerequisite:** *Chemistry I with grade of “B” or better, Algebra II, and/or permission of the instructor.*

**TEXTS:** *The Extraordinary Chemistry of Ordinary Things 4th*, Carl. H. Snyder

## **Environmental Science**

### **Grades 11 & 12**

This year long science and technology curriculum is divided into two semesters. Each can be taken separately, but taking both is encouraged.

### **Environmental Science I – Fall Semester 2009**

Explore the science of ecology, how organisms interact with each other and with their changing environments. Explore how human activities alter ecosystems. This course focuses on biodiversity and extinction, climate change, urbanization and desertification. Emphasis is on the Southwest. The course includes several exciting field trips.

**Prerequisite:** *Biology I*

### **Environmental Science II – Spring Semester 2010**

Examine the sources of environmental pollution and understand the technologies used to prevent or clean-up pollution. Understand relationships between consumerism, consumption, waste generation, and waste management. Explore issues surrounding energy generation and use, and learn about technologies that will make consumption sustainable. Field trips to power plants, mining facilities, and recycling plants will make this an exciting experience.

**Prerequisite:** *Biology I (preference given to students who have completed Environmental Science I)*

## **Physics I**

### **Grades 11 & 12**

Physics is the study of interaction of matter and energy. We study both the concepts that explain these interactions and the mathematics that describe and predict them. Specific fields of study include: mechanics, heat, wave motion including sound and light, electricity and magnetism, atomic structure and nuclear phenomena. The course has a heavy emphasis on laboratory work.

**Co-requisite:** *Precalculus or Trigonometry*

**TEXT:** *Physics: Principles with Applications*, 5th Edition, Douglas C. Giancoli

## Physics II

### Grade 12

Open to students who have completed first year Physics, this course accomplishes two goals. First, we develop a few of the topics of classical physics from the first year course to a greater depth; these include rotational dynamics, advanced optics, and advanced electricity and magnetism. Second, we explore – at the introductory level – topics from 20<sup>th</sup> century physics including special and general relativity, elementary particle physics, quantum mechanics and solid-state (condensed matter) physics.

**Prerequisite:** *Physics I*

**TEXT:** *Physics: Principles with Applications*, 5th Edition, Douglas C. Giancoli

## Astronomy

### Grade 11 & 12

#### **One semester (Offered each semester)**

The study of astronomy includes the following topics: the formation and evolution of the stars, including our sun; the structure and scale of the Universe including solar systems, galaxies, clusters, interstellar matter and nebulae, quasars and other very distant objects; how measurements of distances are made and known; and cosmology.

**TEXTS:** *Astronomy: A Self-Teaching Guide*, 1996, 5th Edition, Dinah L. Moche

## Anatomy and Physiology

### Grade 11-12

#### **One Semester (Offered Each Semester)**

The Anatomy and Physiology course is constructed as an introductory course to the human body. With homeostasis as a key component of function, the fall semester course will focus on body organization, cellular anatomy, and the integumentary, skeletal, muscular and nervous systems, and how each play a role in balancing the body, allowing each human to function properly. The spring semester course will continue using homeostasis as a main feature as related to the cardiovascular, respiratory, digestive, urinary, reproductive, and endocrine systems. This class is considered an elective class and does not satisfy the science requirement.

## SPECIAL PROGRAMS

### Concurrent Enrollment

Seniors at Sandia Prep may enroll in one or more courses at the University of New Mexico. The course time must be compatible with the individual student's Sandia Prep schedule. Students must meet the university's requirements. Satisfactorily completed, the university course may be applied to the student's graduation credits or count as college credit. All proposals for off-campus work are subject to approval by the Director of Studies.

### Independent Study

Students at Sandia Prep may arrange for a one-half-credit independent study course if they meet the following requirements:

1. Find a teacher who agrees to supervise the work.
2. Complete the Request for Independent Study form which includes information on each student's planned activities, the work that will be submitted for evaluation, the number of meetings per week with a supervisor, and the completion date for the independent study.

3. Acquire approval from the Director of Studies.

*To qualify for independent study, students must already be taking six courses in addition to their proposed course.*

### Senior Experience

All Sandia Prep seniors who meet the following criteria have the opportunity to participate in a senior experience. During the last month of the school year, they may apprentice, on a volunteer basis, in an occupation or profession which particularly interests them. We assume that our students are sufficiently mature to meet the responsibilities of their senior experiences and to make them worthwhile.

#### **To participate fully in Senior Experience:**

1. Have at least a "C" average in every class.
2. Submit a formal written proposal to the senior experience evaluation committee in early February.
3. Be on the site of the senior experience at least 30 hours per week.
4. Keep a daily journal to be turned in for evaluation. The journal should contain a discussion of experiences, feelings, emotions, difficulties, and lessons, rather than a rote recitation of daily tasks.
5. Make a formal 10- to 15-minute presentation about the experience to fellow students.