

# Upper School Mini-Session Descriptions 2011

## Morning Sessions (8:30 – 11:30)

### *Introduction to the Sitcom and the Nature of Comedy [Miss Dickson]*

Where does comedy come from? What makes us laugh? These are the sorts of questions we will investigate as we examine one particular genre within comedy—the American sitcom. This course will introduce themes such as object power and stock characters and will study carefully the types of sitcoms such as the family sitcom, the animated sitcom, and the workplace sitcom. In addition, we will discuss how these particular television shows reflect history such as the feminist movement and issues pertaining to war.

### *Empowering Students Through English Proficiency [Dr. McGann]*

This course is designed for non-native English speakers who wish to enhance their educational and social experiences while at Sage Ridge. The emphases of language learning will be on grammar, pronunciation, and the art of conversation. Current academic requirements of enrolled students will provide the backdrop for the course, which will be tailored to the specific needs of each student. Instructor approval is required to enroll in this mini-session.

### *Proteomics [Ms. Bissonette] (also offered during the afternoon session)*

This course explores expression, purification, in vivo functions, and interactions of the proteins produced by the genes of an organism. We will focus on theory and laboratory techniques with emphasis on (I) the general scope of proteomics and basic immunology; (II) protein structure and function; (III) protein fractionation; (IV) chemical modifications including phosphorylation and glycosylation; (V) sequence analysis; (VI) protein domains; (VII) protein crosslinking; (VIII) enzyme reaction rates including Michaelis-Menton kinetics; (IX) humoral and cell mediated immune responses; and (X) antibody structure and function. Laboratory techniques include differential centrifugation, immunoprecipitation, SDS-PAGE and Western blotting, size exclusion chromatography, and affinity chromatography of histidine-tagged protein on a nickel column. The learning emphases include the following: utilizing specific vocabulary to thoroughly explain molecular biology phenomena, obtaining and analyzing data obtained in the laboratory, and mastering techniques such as sterile technique, precision measurement, and safe practices. **NOTE: Students may enroll in both the morning and afternoon sessions only with instructor approval.**

### **Mathematica: An Exploration [Mr. Cook]**

*Mathematica* software provides students with a platform to explore such topics as programming, mathematics, graphics, statistics, and digital music. The *Mathematica* mini-session is designed to allow students to explore their own area of interest using *Mathematica* as a programming and discovery tool. *Mathematica* is utilized in 100% of the top 100 universities in the world. Based on recent feedback, familiarization with *Mathematica* has given SRS college freshmen a significant advantage over other students. In this course, students will be given a guided tour of the main features of *Mathematica*, giving them enough tools to independently explore a large variety of mathematical problems. This will be a project-based course with content ranging from small daily assignments to larger publication-worthy endeavors. To account for the variety of mathematical ability in the course, students will be assigned to level-appropriate groups after learning the basics of *Mathematica*. Students taking this course must be enrolled in Algebra 2 or higher.

### **Once a Runner: an Investigation into all Things Running [Mr. VanCleve]**

Uncover the mysteries of the oldest and purest sport on the planet. Learn the history of the sport, its heroes, and the evolution of training techniques. Get answers to questions like: Why do kids love to run? Why do the Kenyans and Ethiopians dominate distance running? What are the human limits of speed endurance? What are the qualities of an elite distance runner? Who was Pre? Why do some runners wear such short shorts? Can women ever run as fast as men? Why has the U.S. not won a gold medal in a distance track event since 1972? Can you make a living as a professional runner? Is running actually good for you? Are humans really meant to run? Why are ever increasing numbers of people running road races--*for fun!*?

We will watch videos of the greatest Olympic races as well as the movie *Pre*. We will also read two of the greatest sports novels ever written: *Once a Runner* and *Again to Carthage*, which will be your only homework. You do not need to be a runner to take the course; all you need is a desire to learn about this wonderfully pure sport.

### **Leadership and Entrepreneurship in the 21<sup>st</sup> Century [Mr. Otis and Dr. Dhindsa]**

This course serves two related purposes: (1) to give students a fundamental and practical understating of leadership theory as it relates to mobilizing groups of people; and (2) to provide students with an introduction to creating a business beginning with the formulation of an original concept to the opening of its doors.

The course is team taught by instructors who are experienced in the fields of leadership, entrepreneurship, and business development. In the first part of the course, leadership theory, different leadership styles, and leadership skills and strategies will be discussed through lecture, practice, and case studies. The second portion of the class is devoted to basic business administration and principles including management and how to formulate and to compose business plan.

## ***Almost Human: Introduction to Primatology [Ms. Kimberly Hopkinson]***

This course will provide students with a general overview of the physical and behavioral characteristics of primates. The course will be split into two sections:

- Section 1: Physical Characteristics of Primates
  - Definition of a primate
  - Primate taxonomy and diversity
  - Primate evolution
  - Primate migrations, dispersals, and current geographic distribution
- Section 2: Behavioral Characteristics of Primates
  - Social complexity
  - Locomotion and subsistence strategies
  - Reproductive strategies and parental investment
  - Language, tool use, and problem solving

The course will end with a discussion of the ethics involved with the study, utilization, and management of humankind's closest living relatives.

Primatology, particularly the study of primate behavior, is heavily reliant on visual media. Therefore, material will be presented to the students through PowerPoint lectures, video clips, and other interactive media. Labwork will encourage critical thinking and utilize primate skeletal material and casts. A field trip to the Sierra Safari Zoo (with six species of primate in residence) is also proposed, where students can study in person the physical and behavioral characteristics discussed in class.

The class will be taught by Kimberly Hopkinson, MA. Assessments will include class participation, quizzes, lab work, and a short report on a primate species to be presented in class. Appropriate readings will be selected by the instructor and assigned as necessary to help students prepare for their primate report and for class. Students who participate in the *Almost Human* course will come away with an understanding of the general characteristics of primates and of the position of humans in relation to the rest of the Primate order.

## **Afternoon Sessions (12:15 – 3:15)**

### **Aviation and Aeronautics [Mr. Lowe]**

The Aviation mini-session is designed as an introduction to general civil aviation. Topics to be discussed include the history of aviation, the principles of flight, aviation weather, aircraft systems and instruments, navigation, airspace and air traffic control, basic flight maneuvers, aircraft performance, and flight planning. The class will be taught using (30%) lecture, (30%) field trips, (20%) flight simulators and evaluation, and (20%) video. The course is not intended to meet the FAA requirements of the Private Pilot ground syllabus, but rather provides students with a broad sampling of aviation-related topics. This course entails approximately one hour of daily reading and/or homework assignments. Students must have completed Algebra I and possess a TI-83/84 calculator and must be a US citizen.

### **The 10 Minute Play for Playwrights [Mr. Sloyan]**

Playwrights are “wrights” in the original Old English sense of the word: they are “constructive workers.” Just as the wheelwright had tools to shape the wheel, the playwright has tools to create the play; and, of course, the skills to use them can be learned. This course is designed to provide an introduction to the craft of playwriting through reading, writing, and performing drama. All students will complete the course having written their own “ten-minute play” which they may choose to submit to various drama writing contests around the country.

### **Stress Management [Ms. Taucare]**

Are you stressed? Do you sometimes feel overwhelmed by all your schoolwork or by problems in your social group? This mini-session course will identify common causes of stress and the various physical and psychological forms in which stress manifests itself. Since everyone responds differently to stress, this course will examine multiple coping strategies, including, but not limited to, exercise, relaxation techniques and time management strategies.

### **Art in Public Spaces [Mr. Brown]**

Art in Public Spaces is a STUDIO class in which students will examine various aspects of art which has been created for specifically for public spaces. We will consider funding for public art, types and purposes of public art (such as memorial and controversial art), sites, and the material used in public art. Projects for the class include the design and making of art to be installed in “public spaces” in the Sage Ridge Upper School building. A segment of the class includes written research, where reflection, dialogue, and reaction to existing public art and artist’s statements will take place.

### **Proteomics [Ms. Bissonette]**

This course explores expression, purification, in vivo functions, and interactions of the proteins produced by the genes of an organism. We will focus on theory and laboratory techniques with emphasis on (I) the general scope of proteomics and basic immunology; (II) protein structure and function; (III) protein fractionation; (IV) chemical modifications including phosphorylation and glycosylation; (V) sequence analysis; (VI) protein domains; (VII) protein crosslinking; (VIII) enzyme reaction rates including Michaelis-Menton kinetics; (IX) humoral and cell mediated immune responses; and (X) antibody structure and function. Laboratory techniques include differential centrifugation, immunoprecipitation, SDS-PAGE and Western blotting, size exclusion chromatography, and affinity chromatography of histidine-tagged protein on a nickel column. The learning emphases include the following: utilizing specific vocabulary to thoroughly explain molecular biology phenomena, obtaining and analyzing data obtained in the laboratory, and mastering techniques such as sterile technique, precision measurement, and safe practices.

### **Introduction to Speech and Debate [Ms. Lambrecht]**

Academic pursuits are a central element of the high school experience. Extracurricular activities, similarly, are an important part of student life. There is one place in which both of these worlds merge, culminating in a unique forum where students have the opportunity to compete in an extracurricular setting while strengthening their skills as academics. This forum is that of competitive forensics, and this class is dedicated to introducing freshmen to the world of speech and debate.

A combination of a comprehensive introductory text as well as a series of lessons teaching the most basic forensic skills will help students develop a solid foundation from which they can either begin their careers as forensics competitors or become better communicators. Along the way, students will learn about debate structures, study the culture of forensics, and gain skills in evidentiary research, speech writing and organization, and communicative strategies. Because one of the best ways to learn speech and debate is by experience the main assessment for this course will be student delivery of an individual speech and participation in a debate round consistent with NFL (National Forensics League) format and rules.

### **The Enlightenment [Dr. Bialkowski]**

In this course we will follow historians into the bowels of the cultural, intellectual, and social revolution that profoundly changed world civilization. Roughly speaking, the Enlightenment encompasses European history from the 1600s to the era of the French Revolution. Most historians view the Enlightenment as a critical turning point in Western history; the ideas underlying modern political and educational institutions can be traced back to the writings of Enlightenment thinkers. Philosophes, the propagandists of enlightenment, sought to debunk superstition and elevate Reason (i.e. rational thought) to divine heights. They

formulated the fundamental principles essential to our understanding of science, politics, fashion, and conversation.

***The Enlightenment [Dr. Bialkowski](continued)***

Looking back on the Enlightenment with a whimsical and critical gaze, we will spend the next two weeks asking ourselves to what extent do rules truly make us free? In this mini-session, we will touch on both the serious and lighter sides of the Enlightenment. Topics to be covered include the fuzzy border between science and magic, the organization of knowledge, Aesopian literature, comedy of manners, the historical significance of salons, salon word games, the popular reception of Enlightenment ideas, and the contemporary meaning of Enlightenment. In sum, we will look for those all those things that are completely different.

***Exercise Physiology [Mrs. Angela Cook, MPT]***

The key objectives of the Exercise Physiology (EP) mini-session will be learning the skills needed to enjoy a lifetime of physical activity, fitness, and fun. We will focus on the skills necessary to increase your fitness level, raise nutritional awareness, establish healthy habits, understand human muscular/skeletal anatomy, and to develop a positive attitude towards the benefits of physical activities and wellness. The course is designed around the five components of physical fitness: body composition, cardiovascular fitness, flexibility, muscular endurance, and strength. The course will be composed of approximately (25%) lecture, (25%) practical application (physical exercise), (20%) video, (20%) field trips and (10%) assessment. The EP course requires approximately one hour of homework daily in the form of reading or project preparation. Each student will be required to present a detailed and documented exercise plan based on what s/he has learned during the course.