

*Hot off the press!*

## **INTRODUCING THE NEW COURSES @ TPHS FOR 2017 -2018**

### **AP SEMINAR**

In the first year, you'll develop and strengthen your analytic and inquiry skills, exploring deeply topics and issues chosen by you and/or your teacher. You'll learn to consider an issue from multiple perspectives, evaluate the strength of an argument, and make logical, fact-based decisions. For example, you might explore the question of whether national security is more important than a citizen's right to privacy, or whether genetic engineering is beneficial to society. During the course, you'll complete a team project, an individual paper and presentation, and take a written end-of-course exam. Your AP Seminar Exam score will be based on all three assessments using the usual 1–5 AP scoring scale. In this course, you'll complete an independent research project on a topic of interest to you. For example, you can: Dig deeper into a topic you studied in an AP course, work across academic areas on an interdisciplinary topic, and study a new area of interest, perhaps one you'd like to study in college. At the end of the research project, you'll submit an academic thesis paper of about 5,000 words, present your findings, and orally defend your work. Your AP Research score will be based on your paper, the presentation, and the oral defense, using the 1–5 AP scoring scale.

### **ADVANCED BUSINESS MANAGEMENT**

Today's changing economy requires creative, resourceful and visionary students. This course will pick up where the Introduction to Business, Marketing and Accounting classes left off. This Capstone class will invite students to apply their Business knowledge to projects and case studies as well as an intense look at today's business environment. Students will use their developing leadership skills to run business simulations, cooperate with peers on group exercises, and study the current business environment through cases and field trips. Students will become fluent in the reading of business websites like Fortune.com, Inc.com, Advertising Age, Business Week, Yahoo Finance and the Wall Street Journal. Students will hone presentation skills through class presentations, group projects, and community interactions. Software & languages that may be used: Microsoft Excel, Word and PowerPoint, Adobe Photoshop, Illustrator, Google docs.

### **INTEGRATED MATH 2/3 HONORS ACCELERATED**

IM2/3H is an accelerated honors course that will advance students interested in STEM studies to calculus-based math courses in one academic year. IM2/3H is designed to challenge students who relish rigorous investigation and intense application of mathematical theory. This course seeks to continue the establishment of a strong mathematical foundation for learning by strengthening and connecting a broad base of mathematical concepts, delving into mathematically challenging problems, and developing computational, procedural, reasoning, and problem-solving skills. This course requires students to enroll in two separate periods for math in order to cover all IM2H and IM3H standards and topics in one academic year. Students will receive two years of math credit after completing IM2H in the first semester and IM3H in the second semester. The IM3H semester grades will be weighted. Students will meet daily for math instruction that will cover multiple topics with little review. Students can expect daily homework and an exam approximately every two weeks. Interested students should consult with their current IM1H teacher or the department chairs at TPHS robert.preske@sduhsd.net or kimberly.huston@sduhsd.net prior to enrolling.

### **STATISTICAL REASONING IN SPORTS**

This course teaches students how to use four-steps of the statistical process in the context of sports: ask questions, collect data, analyze data, and make conclusions. Each chapter will begin with a sports-related statistical question (e.g., Is there a home field advantage in the NFL?) and then students will learn how to collect appropriate data, how to analyze the data, and how to make reasonable conclusions. Although the context of the examples and exercises will be sports related, the primary focus of the class will be to teach students the basic principles of statistical reasoning. Major statistical topics include: analyzing distributions of univariate and bivariate data, both categorical and numerical, using graphs and summary statistics; correlation and least squares regression; using simulations to estimate probability distributions; theoretical probability distributions, including the binomial and normal distributions; rules of probability, including conditional probability and expected value; the logic of hypothesis testing, including stating hypotheses, calculating and interpreting p-values, drawing conclusions, and Type I and Type II errors; using confidence intervals to estimate parameters; and proper methods of data collection, including sampling and experimentation. Use of technology, including online applets and the graphing calculator will be prominent in the course. Throughout the course, students will complete investigations that require students to complete the four-step statistical process using athletes of their choice.

### **INTRODUCTION TO CALCULUS**

Introduction to Calculus focuses on the foundations and analysis of early material students will encounter in a college level calculus class. Through the context of calculus, students will strengthen their skills in solving equations, graphing functions, and analyzing features of functions and their graphs. This course provides a review of polynomials, exponential, logarithmic, and trigonometric functions. Each family of functions will include an exploration of related limits and derivatives. Students will have the opportunity to begin exploring integrals at the conclusion of the course.

### **AP PHYSICS 2**

AP Physics 2 is equivalent to the second semester of Algebra based college physics. The class is especially useful for those planning on pursuing study in health or life sciences. It covers electricity, magnetism, fluids, thermodynamics, and optics. Learning activities will include a large laboratory component. Recommended for students who have completed AP Physics 1 and are concurrently enrolled in or have taken Integrated Math 3 Honors or Pre-Calculus Honors.

*But WAIT! There's more!* →

## **RESEARCH METHODS**

The course is designed to prepare students to conduct scientific research. Students will be provided with the necessary strategies and techniques to read and evaluate research studies. They will learn fundamental concepts of research design and basic statistical procedures for analyzing data. Throughout the course emphasis will be on understanding the basic concepts underlying different skills and approaches to research design and analysis. Students will understand, design, and conduct preliminary analyses of research investigations related to applied topics.

## **SOCIAL JUSTICE**

This course will introduce students to current global and domestic economic and social problems related to human rights and the environment. Through project based collaboration, students will analyze the causes, effects and possible solutions to these problems and how we can make our world a better place for all. It's an inquiry rich class where students take the responsibility for their learning through in class research and projects.

## **ADVANCED DIGITAL IMAGING**

Advanced Digital Imaging is to be taken after Digital Imaging. Advanced Digital Imaging is designed for students who are interested in further developing art from a digital perspective. It has similarities to a traditional art class, such as Painting, but the tools are different. Instead of canvas and paint, in Advanced Digital Imaging, students use computers, Photoshop, Illustrator, scanners, cameras, and printers. This is a project-based class and success depends on the effort each student is willing to commit to the creative process. The first half of the term focuses on learning and demonstrating understanding of advanced Photoshop and Illustrator skills, color, typography, and the difference between fine art and design. In the second half of the term students choose individual concentrations and build a portfolio of 12 pieces. Students are required to give peer tutorials, presentations and critiques throughout this course.

## **GUITAR**

The Guitar Class at Torrey Pines High School requires no prior experience and all levels are welcome. Students will focus on proper playing techniques, staff notation and theory. Students will explore a wide variety of musical genres. Students will learn melody and chordal accompaniment to several pieces of music, both as a soloist and as an ensemble. The class will perform several times through the year at concerts, festivals and community events.

## **ADVANCED CHORUS**

This course is designed to provide experienced singers with challenging repertoire spanning the periods in classical music history, as well as non-western folk traditions. Students will study and perform in different languages, and learn performance practice specific to the genres. Special focus will be given to the rudiments of healthy vocal technique, advanced sight reading, aural skills, and part independence. The ensemble will rehearse daily for on-site and community performances. Repertoire covered in the course is intended for students who are proficient at sight reading, and have had previous choral ensemble experience. Students are encouraged to participate in honor choir, and pursue extracurricular ensembles and solo performance opportunities. Eligibility is based on audition; it is highly recommended for students to take Chorus prior to this class.

## **EMBEDDED SYSTEMS DESIGN W/ COMPUTER PROGRAMMING**

Embedded Systems Design with Computer Programming for Engineers is a yearlong course. Students have the choice of learning ArduinoC or Python for Raspberry Pi. Programming topics are centered around projects suitable for Arduino or Raspberry Pi. No previous electronics or programming is required. The class culminates in a final project.

## **CAD/FABRICATION**

CAD/FAB provides students with the skills needed to turn ideas for an object into a real physical product. Students will produce drawings using industry standard CAD programs. The drawings or files can be fed to devices like 3D printers for rapid prototyping or exported to blueprints for project completion. All projects support understanding of design, software, tools, and materials.

## **ADVANCED ENGINEERING TECHNOLOGY**

Advanced Engineering Project is a yearlong project based class. Students work in groups to complete a project. Projects can include, but are not limited to, robots, drones, go-karts, and aquaponics systems.