



ST. THOMAS HIGH SCHOOL  
BASILIAN FATHERS · 1900

## ADVANCED PLACEMENT COURSE OFFERINGS

### COMMUNICATIONS AND TECHNOLOGY

#### ➤ COMPUTER SCIENCE A

This is a fast-paced introduction to the Java programming language. Students learn advanced computer science concepts including user interfaces, searching, sorting, recursion, and working with classes which is a feature of object-oriented programming. The AP exam is taken in May. (Two semesters) *Prerequisite: Advanced Computer Science, Robotics, AP Computer Science Principles, or permission of the instructor.*

#### ➤ COMPUTER SCIENCE PRINCIPLES

This course covers a wide range of computer topics. Some of the topics covered are how the internet works, the impact of computers on society, cyber security as well as programming. The programming language for this course will be Python. Students learn problem-solving skills and collaboration skills as they work on group and individual projects. AP credit is assessed as follows: 60% of AP Exam in May, 16% Explore Project, and 24% Create Project. (Two semesters) *Pre-requisite: B in Advanced Math Class, or A- in Regular Math.*

### ENGLISH

#### ➤ ENGLISH III LANGUAGE AND COMPOSITION

This course focuses primarily on development of the well-organized, clear, coherent analytical and persuasive essay through a survey of American literature from colonial times to the present. Students will present their analyses of prose and poetry in writing as well as orally. Coordination with American history emphasizes the importance of literature as a primary source for historical interpretation. Special emphasis on rhetorical strategies helps prepare students for the Advanced Placement Exam in the spring. Credit for passing scores on the exam is awarded in the form of credit hours at most universities in the U.S. *Prerequisite: B in Advanced English II & recommendation of A- in English II & recommendation.*

#### ➤ ENGLISH IV LITERATURE AND COMPOSITION

This course is designed to satisfy requirements of a survey of literature course at the university level and to prepare students. In order to develop analytical skills to understand the author's purpose, students read widely from prose, poetry, drama, and nonfiction literature. They are expected to write cogently about the literature they study. The primary goal of the course is to prepare students to write for the Advanced Placement Examination in the spring. *Prerequisite: Writing sample from AP English Language/English III.*

### FINE ARTS

#### ➤ MUSIC THEORY

This course is designed to provide a college level Music Theory course including aural, written and performance-based components. Students develop the ability to sing melodies on sight and to notate music that they hear. They will learn the grammar of musical notation and analysis, how to meaningfully analyze melodic, rhythmic, harmonic and structural elements of music in words and with symbolic notation. Students will take the national AP exam in May. *Pre-requisite: a background in instrumental or vocal music and recommendation.*

## MATHEMATICS

### ➤ CALCULUS AB

AP Calculus AB is a two semester AP Calculus course covering the requirements set forth by the College Board for one semester of college calculus. The course is organized around the big ideas, which correspond to foundational concepts of calculus: limits, derivatives, integrals, and the Fundamental Theorem of Calculus, and series. The AP exam is taken in May. *Prerequisite: A in Pre-Calculus, C+ in Advanced Pre-Calculus. TI-84 Plus CE Calculator Required.*

### ➤ CALCULUS BC

Calculus BC is a two semester AP Calculus course covering the requirements set forth by the College Board for two semesters of college adults. The course is organized around the big ideas, which correspond to foundational concepts of calculus: limits, derivatives, integrals, The Fundamental Theorem of Calculus and series. The AP exam for both courses is taken in May. *Prerequisite: A in Advanced Pre-Calculus and teacher recommendation. TI-84 Plus CE Calculator required.*

### ➤ STATISTICS

The AP Statistics course is equivalent to a one-semester, introductory, non-calculus-based course in statistics. The course introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. There are four themes in the AP Statistics course: exploring data, sampling and experimentation, anticipating patterns, and statistical inference. Students use technology, investigations, problem solving, and writing as they build conceptual understanding. This class may be taken as a Junior or Senior math credit. *Pre-requisite: For Juniors: B- in Advanced Algebra II or B in Algebra II/Trigonometry. For Seniors: C- in Advanced Pre-Calculus or B in Pre-Calculus.*

## SCIENCE

### ➤ BIOLOGY

This curriculum is the equivalent of an introductory college biology course. Students are admitted to the course by recommendation only and must have successfully completed underclassman Advanced Biology and Chemistry. The AP Biology course differs significantly from the first high school biology course in the depth of topics covered, the types of laboratories completed, Students are required to take the national AP exam in lieu of the final for the course. *Prerequisite: B in Advanced Biology or A Biology, C Advanced Chemistry or B Chemistry, and recommendation.*

### ➤ CHEMISTRY

This course is designed for the second year chemistry student who wishes to obtain college credit in chemistry. The class covers topics recommended by the College Board such as atomic and molecular theory, kinetics, complex equilibria and advanced laboratory techniques. Students are successfully prepared to complete the national AP exam in chemistry given in May. *Prerequisite: A- in Advanced Chemistry and recommendation.*

### ➤ ENVIRONMENTAL SCIENCE

This course is equivalent of an introductory college course in environmental science, through which students engage with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world. The course requires that students identify and analyze natural and human-made environmental problems, evaluate the relative risks associated with these problems, and examine alternative solutions for resolving or preventing them. The course will focus on the seven content areas emphasized by the College Board. These areas are as follows: Earth Systems and Resources, The Living World, Population, Land and Water Use, Energy Resources and Consumption, Pollution & Global Change. Prerequisites: B- in Physics or B- in Chemistry and co-enrolled in Physics.

### ➤ PHYSICS I

This course is the equivalent of a first semester college course in algebra-based physics. The course covers Newtonian mechanics, work, energy and power, mechanical waves and sound. It also introduces electrical circuits. Students will take the national AP Physics 1 examination in May. *Prerequisite: A- Advanced Chemistry or B+ in AP Chemistry and recommendation; B Math and had Algebra II/Trig.*

➤ PHYSICS II

This course is the equivalent to a second semester college course in algebra-based physics. Topics include magnetism and electromagnetic induction; fluids, pressure and buoyancy; heat temperature and thermal physics, thermodynamics and ideal gas behavior; optics; nuclear physics and modern physics. Students will take the national AP Physics II exam in May. *Prerequisite: B- in Physics or B- in Chemistry and co-enrolled in Physics.*

## SOCIAL STUDIES

➤ WORLD HISTORY

This course focuses on developing students' understanding of world history from approximately 8000 B.C.E. to the present. The course has students investigate the content of world history for significant events, individuals, developments, and processes in six historical periods, and develop and use the same thinking skills and methods employed by historians when they study the past. The course also provides five themes that students explore throughout the course in order to make connection among historical developments in different times and places encompassing the five major geographical regions of the globe: Africa, the Americas, Asia, Europe, and Oceania. *Prerequisite: B in Advanced World Geography and Culture and teacher recommendation or with placement test.*

➤ UNITED STATES HISTORY

Selected students in this course will study the conceptual aspects of the growth of the United States from the colonial period to the 1990's. Students will experience American History using of a variety of educational methods and through the use of primary and secondary source reading materials in addition to the course text. Preparation for success in the Advanced Placement Exam for college credit is approached through historical thinking skills and the seven themes that students explore in order to make connections among historical developments in different times and places. A formal research paper emphasizing techniques and writing skills is required. *Prerequisite: B in AP World History or with placement test.*

➤ GOVERNMENT/ADVANCED ECONOMICS

Offered to selected students, this course is designed to meet all of the objectives of the regular government/economics course and to challenge the students' analytical abilities by presenting a variety of opinions on the basic concepts of government and economic systems. Preparation for success on the U. S. Government AP Exam for college credit is approached through analysis of primary and secondary materials. *Prerequisite: B in AP US World History or with placement test.*

## WORLD LANGUAGES

➤ SPANISH LANGUAGE and CULTURE

Students who have complete Advanced Spanish III are well prepared for this course. Instruction and classroom conversation are entirely in Spanish. Students thoroughly review Spanish grammar; several short stories and poems by major Hispanic authors are studied. Feature films in Spanish are viewed and there is a reading of a complete Spanish play. College credit may be granted for this course with success on the AP Spanish Language and Culture Exam in May. *Prerequisite: A- in Advanced Spanish III and recommendation.*

➤ AP LATIN IV

Fourth year Latin is a capstone to the Latin experience and a preparation course for the AP Latin test. Students will read the great Roman epic, Vergil's *Aeneid*, as well as selections from Julius Caesar's *De Bello Gallico*. Students will read and analyze passages using knowledge of style, literary devices, Roman history, and culture. After finishing this course, students will have read from and be conversant in the greatest works of Latin literature. *Prerequisite: B- in Advanced Latin III and teacher recommendation.*

➤ FRENCH LANGUAGE and CULTURE

Students who have completed French III are well prepared for this course. Instruction and classroom conversation are entirely in French. Students thoroughly review French grammar; several short stories and poems by major French authors are studied. A multi-unit video as well as feature films in French are viewed and there is a reading of a complete French play. College credit may be granted for this course with success on the AP French Language and Culture Exam in May. *Prerequisite: A- in Advanced French III and recommendation.*