GRAVITAS

A GLOBAL EXTENSION OF THE STONY BROOK SCHOOL

SUMMER 2022 COURSE CATALOG

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ENGLISH	English 11/12: Rhetoric & Composition (3 credits)
HISTORY	Humanities 9 (3 credits)
SCIENCE	Chemistry Honors (3 credits) Health & Human Flourishing I (1 credit) Health & Human Flourishing II (1 credit)
MATHEMATICS	Algebra I (3 credits) Geometry (3 credits) Algebra II Honors (3 credits) Pre-Calculus Honors (3 credits) Advanced Calculus
PHILOSOPHY & THEOLOGY	Faith and Philosophy (3 credits)
BUSINESS & ENTREPRENEURSHIP	Intro to Economics (1 credit) Advanced Microeconomics (1 credit) Advanced Macroeconomics (1 credit)
WORLD LANGUAGES	English as a Second Language (not for credit)
OTHER PROGRAMS	College Counseling (not for credit)

COURSE DESCRIPTIONS

ADVANCED MICROECONOMICS	The purpose of the advanced course in microeconomics is to give students a thorough understanding of the principles of economics that apply to the functions of individual decision makers, both consumers and producers, within the economic system. It places primary emphasis on the nature and functions of product markets and includes the study of factor markets and of the role of government in promoting greater efficiency and equity in the economy. (1 credit)
ADVANCED MACROECONOMICS	Advanced macroeconomics is an introductory college-level macroeconomics course. Students cultivate their understanding of the principles that apply to an economic system as a whole by using principles and models to describe economic situations and predict and explain outcomes with graphs, charts, and data as they explore concepts like economic measurements, markets, macroeconomic models, and macroeconomic policies. (1 credit)
ALGEBRA I	Building on arithmetic and Pre-Algebra skills, Algebra I serves to strengthen core problem-solving skills and thoroughly investigate the language and logic of basic algebraic thinking. In this course, students discover the beauty and order of mathematical relationships and acquire knowledge and skills related to mathematical expressions, multi-step equations, integers, rational numbers, inequalities, exponents, polynomials, factoring, linear graphing, systems of equations, absolute value equations, rational expressions, radicals, radical equations, relations and functions, quadratic equations, and quadratic graphs. Algebra I is intended for 7th-10th grade students and is considered the first year of the required high school math sequence. All 7th and 8th grade students enrolled in Algebra 1 must complete the year with a B+ or higher final average with an B+ on the final exam in order to receive credit for this high school course. (3 credits)

ALGEBRA II HONORS *Prerequisite is a B+ in Algebra I and Geometry.*	Building on Algebra I skills and the logical thinking acquired in Geometry, Algebra II serves to strengthen core problem-solving skills and thoroughly investigate the language and logic of advanced algebraic thinking. In this course, students discover the beauty and order of mathematical relationships and acquire knowledge and skills related to linear equations, linear graphs, quadratic functions and graphs, rational functions and graphs, complex numbers, exponents, logarithms, trigonometric functions, and basic trigonometric graphs. Honors-level Algebra II includes a more in-depth treatment of Algebra II topics because it is designed for the highly motivated mathematics student. (3 credits)
CHEMISTRY / CHEMISTRY HONORS *Prerequisite for Chemistry Honors is a B+ in the previous Science course.*	This course is designed to show students how chemical principles and concepts are developed and operate. Among the topics covered are atomic structure, chemical bonding, and the chemical behavior of solids, liquids, and gases. The course is centered around regular laboratory work. (3 credits)
COLLEGE COUNSELING *For rising seniors only. Not for credit.*	This personalized college counseling course guides students through the creation of the key aspects of a successful college application, including the application process, personal and supplementary essay writing, and school research. (Not for credit)
ENGLISH 11/12: Rhetoric & Composition *No prerequisites*	This course is designed to prepare students to become college-level readers and writers. Students will read a variety of texts, both older and contemporary, and texts from a variety of genres-- including plays, novels, short stories, poems, personal essays and persuasive essays. Students will grow in writing personal and persuasive essays, as well as in writing reflectively and creatively. (3 credits)
English as a Second Language	This personalized course for learners of the English language is designed to prepare students for the success in English-speaking schools. The course will help students increase proficiency in reading, writing, listening, and speaking. This course is recommended for students with below a 100 TOEFL or equivalent score.

FAITH & PHILOSOPHY/ FAITH & CULTURE *No prerequisites*	This discussion-based seminar is designed to integrate with humanities coursework by examining human life within a broad historical and cultural context. The course will develop the following skills: writing, research, hermeneutics, public speaking, debate, critical reasoning, and memorization. The course challenges students to understand the multivalent reasons why human beings believe the things they do, and thus to become more thoughtful about how they approach answering the significant questions of life (Why am I here?, Is there a purpose to life?, What does it mean to be human?, Are religious beliefs reasonable?, How do I know right and wrong?). The culminating assessment is a worldview paper in which students articulate and defend their reasoned and informed answers to these questions. The course will include study of philosophical and religious texts from Eastern and Western traditions. (3 credits)
GEOMETRY *Prerequisite: Algebra I or placement test*	Building on arithmetic and Algebra I skills, Geometry is a traditional course in plane and spatial geometry. Geometry serves to strengthen core problem-solving skills and thoroughly investigate the language and logic within geometric topics. In this course, students discover the beauty and order of mathematical relationships and acquire knowledge and skills related to reasoning, symbolic logic, parallel and perpendicular lines, triangles, congruence, formal two-column proofs, quadrilaterals, parallelograms, area, surface area, volume, ratio and proportions, transformations, coordinate geometry, right triangle trigonometry, circles, and other related topics. Algebra I skills are woven into the course as a continual form of review. Geometry is considered the second year of the required high school math sequence and is normally sequenced between Algebra I and Algebra II, although motivated students may take Geometry concurrently with Algebra II Honors with approval from the Math Department Chair. (3 credits)

HEALTH & HUMAN FLOURISHING I *No prerequisites*	Health and Human Flourishing I is designed to teach students how to flourish physically, mentally, emotionally, and socially. This cross-disciplinary course equips students to make wise decisions about their relationships, their physical growth and development, substance use, media engagement and consumption, and their mental and emotional health. Health and Human Flourishing accomplishes these curricular goals through a combination of direct instruction and Ethics Bowl debates connected to these topics. The topics taught in Health and Human Flourishing will be age-appropriate, focusing especially on social dynamics like empathy and conflict resolution, stereotyping and prejudice, nutrition and fitness, healthy self-understanding, safety, bullying, and violence, healthy study and sleep habits, reproduction and sexual ethics, digital citizenship, stress and anxiety, mental disorders, body image, self-harm, and various forms of addiction. (1 credit)
HEALTH & HUMAN FLOURISHING II *No prerequisites*	Health and Human Flourishing II is a continuation of Health and Human Flourishing I. Like the first course, this cours is designed to teach students how to flourish physically, mentally, emotionally, and socially. It equips students to make wise decisions about their relationships, their physical growth and development, substance use, media engagement and consumption, and their mental and emotional health. Health and Human Flourishing accomplishes these curricular goals through a combination of direct instruction and Ethics Bowl debates connected to these topics. The topics taught in Health and Human Flourishing will be age-appropriate, focusing especially on social dynamics like empathy and conflict resolution, stereotyping and prejudice, nutrition and fitness, healthy self-understanding, safety, bullying, and violence, healthy study and sleep habits, reproduction and sexual ethics, digital citizenship, stress and anxiety, mental disorders, body image, self-harm, and various forms of addiction. (1 credit)

HUMANITIES 9 *No prerequisites*	Through extensive study of Hebrew Scripture and other primary sources, Humanities 9 introduces students to ancient narratives that portray the social, religious, political, economic, and cultural conditions of the Ancient Near East. The ancient Israelites are compared with other ancient cultures, from the Sumerians to the Greeks. Primary and secondary sources such as films, works of art, essays, and epics are also studied for their interpretations of characters and events. The course ends with the collision of Jewish and Greek civilization during the Hellenization of Israel. (3 credits)
INTRO TO ECONOMICS *No prerequisites*	This course is designed to introduce students to the foundational principles of economics. Students will learn about the basic mechanics of a market, particularly focusing on the problem of scarcity, the role of incentives, and the interplay of supply and demand. The course considers the role of opportunity costs and trade-offs in individual, business, and government decision-making. The course ends by examining basics of macroeconomics, focusing on measures of economic growth like GDP, unemployment, and inflation. (1 credit)
PRE-CALCULUS HONORS *Pre-requisite for Honors is a B+ in Algebra II Honors*	Building on Algebra II skills and the logical thinking acquired in Geometry, Pre-Calculus serves to strengthen core problem-solving skills and thoroughly investigate the language and logic of advanced algebraic and pre-calculus thinking. In this course, students discover the beauty and order of mathematical relationships and acquire knowledge and skills related to functions, families of graphs, polynomials, rational functions, power functions, trigonometry, trigonometric graphs, analytical trigonometry, conic sections, limits, and discrete math topics such as sequences and series, matrices, and probability. Pre-Calculus Honors includes a more in-depth treatment of Pre-Calculus topics because it is designed for the highly motivated mathematics student. (3 credits)

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