



COURSE CATALOG

Dear GWC Students and Parents,

Welcome to your **Course Catalog** which has been designed to help you plan your educational program. Please review the descriptions of each course. It is important that you attend school and all of your classes every day! Your teachers will average in a percentage of your grade from class participation so it is to your benefit to attend school every day. If you are going to be absent, please contact the school (718) 525-6439. Please bring an absent note upon your return and give it to Ms. Olivo in Room 209.

I wish all of you a great school year!

Sincerely,

Magdalena Bellamy
Assistant Principal



Course Catalog

Guidance Program

The student/counselor relationship plays an important role in the student's school life. During a series of conferences, counselors help students to adjust to school and to plan the course of study that will best meet their future goals. Parents are asked to join in some of these meetings.

In order to plan a comprehensive, individualized program of guidance, the department maintains or arranges:

- 9th grade orientation
- Early College Information Night (9th – 11th grade)
- College Fair, SAT & ACT Information available during the College Fair
- Financial Aid Night
- Student Town Hall Meetings during Advisory Classes (1 X a month)
- Curriculum Night
- Senior Student/Parent Meeting



Course Catalog

ENGLISH

Students in grades 9 through 12 complete a syllabus entirely based on the New York State Common Core Learning Standards (CCLS). The in depth curricula includes adaptations of CCLS modules, close reading of a wide variety of texts, extensive writing, research and critical thinking. Each course builds on the standards addressed in the previous grade with an ongoing focus on preparing the students for college and career readiness.

English 1 & 2 Course Description:

The English course is designed to strengthen communication skills in reading, writing, speaking and listening through the study of literature, drama, poetry, short story, nonfiction, and the novel, are examined. Language study stresses an understanding of sentence and paragraph patterns with an emphasis on subordination and transition.

English 3 & 4 Course Description:

The course presents various literary genres for study. There is an extensive study of the writing process, with emphasis on revision, note taking and literary analysis. Students begin an analytical study of literature, with comparative writing as an emphasis. The course will facilitate the continued development in expository and experiential writing, speaking and listening skills. Students continue to develop their research skills.

English 5 & 6 Course Description:

English 5&6 emphasizes literary analysis, listening skills, critical reading and interpretation as demonstrated through mature written expression. All work is based on the English Standards developed by the State. English 5&6 is designed to prepare the student for the Comprehensive Regents Examination in English. A passing grade on this examination is required for College and Career Readiness.

English 7 & 8 Course Description:

In this final, required year of English, the students re-fine and polish their language arts skills and demonstrate an appreciation of literature through continued writing instruction, extensive vocabulary study, and a variety of literature-based units. A senior research paper and oral presentation are required to pass this class.



Course Catalog

College Writing

Emphasis will be on a variety of writing forms, including narration, description, and analysis. Attention will be given to matters of grammar, syntax, punctuation, and diction. The students will learn the arts and practices of effective writing and reading on a college level, especially the use of language to discover ideas. Methods of research and documentation will be taught, along with some introduction to rhetorical purposes and strategies.

AP English Language & Composition: Prerequisite: English 3 &4 and with recommendation

This college-level course engages students in becoming skilled readers and writers. As readers, students will survey a wide variety of literature to explore writer's uses of language and style. As writers, students will develop interpretive skills in diverse written forms as they become more aware of their own composing process. Students in this class must take the AP English Language & Composition Exam in May in order to receive the AP Designation on their transcript.

English as a Second Language (ESL)

The ESL Program serves students in all grades by immersing them in intensive English instruction for one to three periods a day depending on their level of ability as identified by the New York State English as a Second Language Achievement Test (NYSESLAT). ELLs (English Language Learners) are held to the same high standards and expectations as all students. Curriculum, instruction and assessment in all classrooms serving ELL students are aligned with the New York State Standards in the academic content areas. The ESL program approach is interdisciplinary with a primary focus on academic language and literacy.

ESL (Beginner)

This course is designed for beginner students who are recent arrivals to the U.S. with little or no study of English. Instruction promotes a basic command of the English language with an introductory focus on academic language and literacy. Classes meet up to three times a day.

ESL (Intermediate)

The course is designed for intermediate students who have had ESL or limited study of English. Instruction further develops oral fluency and functional command of the English language with an interdisciplinary focus on academic language and literacy. Classes meet up to twice a day.

ESL (Advanced)

This course is designed for advanced students who have had English or some extended study of English.



Course Catalog

An interdisciplinary instructional focus reinforces content area vocabulary and concepts in order to prepare the student for Regents examinations in English and other content area. The curriculum is structured around critical thinking skills and ELA tasks. Classes meet up to once a day.

Mathematics

Mathematics equips students with a uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem-solving skills, and the ability to think in abstract ways. Colleges have increased their entrance requirements in mathematics for programs that lead into such diverse fields as agriculture, business, economics, physical education, medicine, computer science and psychology. A solid foundation in mathematics will lead to better preparation for college level courses and any career a student may choose.

Algebra I Course Description

The fundamental purpose of this course is to formalize and extend the mathematics that students learned in the middle grades. Because it is built on the middle grades standards, this is a more ambitious version of Algebra I than has generally been offered. The modules deepen and extend understanding of linear and exponential relationships by contrasting them with each other and by applying linear models to data that exhibit a linear trend, and students engage in methods for analyzing, solving, and using quadratic functions. The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

Recommended Fluencies for Algebra I

- Solving characteristic problems involving the analytic geometry of lines, including, writing the equation of a line given a point and a slope
- Adding, subtracting and multiplying polynomials
- transforming expressions and chunking (seeing the parts of an
- expression as a single object) as used in factoring, completing the square, and other algebraic calculations

Geometry Course Description

The fundamental purpose of the course in Geometry is to formalize and extend students' geometric experiences from the middle grades. Students explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. Important differences exist between this Geometry course and the historical approach taken in Geometry classes. For example, transformations are emphasized early in this course. Close attention will be paid to the introductory content for the Geometry conceptual category found in the high school CCSS.

143-10 SPRINGFIELD BOULEVARD . QUEENS, NY . 11413 . 718-525-6439



Course Catalog

The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

Recommended Fluencies for Geometry

- Triangle congruence and similarity criteria
- Using coordinates to establish geometric results
- Calculating length and angle measures
- Using geometric representations as a modeling tool
- Using construction tools, physical and computational to draft models of geometric phenomenon

Algebra II/ Trigonometry Course Description

Building on their work with linear, quadratic, and exponential functions, students extend their repertoire of functions to include polynomial, rational, and radical functions. Students work closely with the expressions that define the functions, and continue to expand and hone their abilities to model situations and to solve equations, including solving quadratic equations over the set of complex numbers and solving exponential equations using the properties of logarithms.

The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

Recommended Fluencies for Algebra II

- Divide polynomials with remainder by inspection in simple cases
- See structure in expressions and use this structure to rewrite expressions (e.g., factoring, grouping)
- Translate between recursive definitions and closed forms for problems involving sequences and series

AP STATISTICS

Prerequisite: Algebra 2/Trigonometry

The focus of this course is analyzing data. Students will use investigative tools for collecting the data and drawing conclusions from data. Four broad conceptual themes will be covered: exploring data, planning a study, anticipating patterns by producing models and statistical inference. Students who complete this course will take the AP examination in Statistics. Class must take the AP Statistics Exam in May in order to receive the AP Designation on their transcript.

College Mathematics

This course is designed for students who need a solid foundation of mathematical concepts. The curriculum is designed to help the student develop a working knowledge of algebra, statistics, probability, and logic. The concepts studied in this course are essential elements to undertake introductory college level mathematics courses. It will also prepare students for college math placement exams.



Course Catalog

Science

In today's fast-paced technological society, science continues to play an integral role in daily business, career and routine home activities. To have a reasonable understanding of the modern and future world, the study of science is essential and must, therefore, be a vital part of every student's program.

Living Environment: 1 & 2

Prerequisite: currently enrolled in Integrated Algebra

This course provides students with an understanding of the fundamental principles of the Living Environment as outlined by N.Y.S. These objectives include the study of the similarities and differences of living things, investigation into the transmission of traits from generation to generation and how changes in heredity occur, and the study of the interrelationship of all living things with their environments. Students develop skills in making critical observation and conclusions while performing numerous laboratory activities. There is a minimum lab requirement for this course, which culminates with the Living Environment Regents examination.

Earth Science 1 & 2

Prerequisite: currently enrolled in Geometry

This course stresses core understandings in the study of the earth, the process of changes in the environment, the rock cycle, weather and astronomy. The laboratory experiences reinforce the concepts of the classroom and develop and appreciation of space, earth's atmosphere, surface, and interior. There is a minimum lab requirement for this course which culminates with the Earth Science Regents examination.

Chemistry 1 & 2

Prerequisite: currently enrolled in Geometry and/or Algebra 2/Trigonometry

This course of study presents a modern view of chemistry suitable for pupils with range of skills and abilities. The course focuses on unifying principles of chemistry and their related facts, which are basic of human understanding of the environment. Major units include such as areas as matter and energy, atomic structure, bonding, organic chemistry, mathematics of chemistry. There is a minimum lab requirement for this course, which culminates in a State Regent's examination.

Physics 1 & 2

Prerequisite: currently enrolled in Algebra 2 / Trigonometry

Designed for the academic student in the 11th or 12th grade who wishes to study physics in depth, this course presents a modern view of physics with an emphasis on fundamental concepts. The basic areas of study include mechanics, waves, electricity, energy and modern physics. There is a minimum lab requirement for this course, which culminates in a State Regents examination.



Course Catalog

AP Environmental Science

Prerequisite: Living Environment and Earth Science

AP Environmental Science is a rigorous science course designed to prepare students to take the challenging National Advanced Placement test in Environmental Science. The goal of the course is to provide students with the scientific principles, concepts and methodologies necessary to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human made to evaluate the relative risks associated with these problems and to examine alternative solutions for resolving and/or preventing them.

Introduction to Veterinary Science (9th Grade)

In this course, students are introduced to taxonomic classification of invertebrate organisms. Students learn to identify and group organisms into appropriate phyla based on physical characteristics and structure. Students will gain an overall view of these organisms to enhance their understanding of the diversity of animal life. Classification, reproduction, feeding methods, and unique adaptations are discussed for each phyla of invertebrates. Students will be assessed for understanding of the content throughout the course to determine if the student can follow through with the rigor of the Veterinary Science Program in the upper grades.

Vet. Science (10th Grade) – Pre-requisite Introduction to Vet. Science.

The first part of this course there is emphasis on Chordate characteristics and their associated classes as well as on small laboratory animals, incorporating methods for breeding. Topics discussed within each class include unique adaptations, classifications feeding, defense, protection, and variations within each group. Dissections and observations of preserved and live specimens are used when possible. Students research scientific uses of organisms. Animal Lab is designed to allow students to learn how to handle, care for and maintain the various lab animals housed. For the second part of this laboratory animals, proper handling and restraint, research uses, common diseases, housing and equipment.

Vet. Science (11th Grade)

The first part of this course will continue in its study of animals learned in the 10th grade and introduce students to small and large domestic animals commonly treated within a veterinary practice. Students will gain knowledge of exotic animals. Lab activities will focus on care, maintenance and feeding of the various lab animals. Instruments will be introduced and students will be required to identify each as well as their application in veterinary science. Field trips and presentations, and lecturers will be used to enhance learning. The second part of this course is a study of the basic anatomy horses, swine and ruminants. The information will be organized according to body systems. Students will spend a period per week in caring for the various animals housed in the school laboratory.

Vet. Science (12th Grade)

A continuation of Animal Anatomy and Physiology from Vet. Science (11th grade). This course examines the remainder of the anatomical systems in the mammal and discusses comparative anatomical and physiological differences. The NOCTI (National Occupational Competency Testing Institute) certification exam in Small Animal Science will be in administered.

143-10 SPRINGFIELD BOULEVARD . QUEENS, NY . 11413 . 718-525-6439



Course Catalog

Introduction to Science Research (9th Grade)

This course is designed to heighten students' interest in science research. The goal is to provide guidance, instruction and solid foundation in the principles and the statistical analysis of research. There are (2) student driven research projects, and field trips to gain exposure to scientific inquiry applications. Students will be assessed for understanding of the content throughout the course to determine if the student can follow through with the rigor of the Science Research Program in the upper grades

Science Research (10th, 11th and 12th Grade)

This course is designed to foster the necessary skills and competencies in scientific research. Students will be asked to design, implement and evaluate their own research in either a science or social science field. Actual research will commence with a literature search, continue with internet research and be finalized with actual physical experiments in their chosen field. Work will continue towards the presentation of their own original research in Intel Science Talent Search Program, and the Siemens Westinghouse Science Competition. Students must begin this course in their sophomore year to be eligible in their junior and senior years.

Zoology (10th to 12th Grade)

Topics include basic concepts of general zoology including the origin of animal life, animal reproduction, and development, classification of major phyla of animals and the major classes of vertebrates, structure, and function of animals and basic concepts of animal and ecology.

SOCIAL STUDIES

The Social Studies curriculum is designed to help students to become rational decision-makers so they can resolve personal problems and influence public policy through effective social action, and become informed participants in an increasingly interdependent world. To accomplish this task the social studies program draws upon a variety of sources, among which are history and the social disciplines: political science, economics, geography and a study of our governmental system

Grade 9: Global History and Geography I - Foundations of World History

Global History and Geography I is the first unit of study in the two-year course of study. Grade 9 begins with the development of the first civilizations, continues with an examination of classical societies, and traces the expansion of trade networks and their global impact. The course continues into the early modern era, explores the emergence of new imperial powers, and concludes with the beginnings of the industrial revolution. Each key idea expresses an essential pattern or concept that unifies the content understandings.

While the course emphasizes the importance of historical thinking, all of the social studies practices and standards are included in the study of global history.



Course Catalog

Grade 10: Global History and Geography II - Modern World History and Contemporary Global Issues

Global History and Geography II is the second unit of study in the two-year course of study. Grade 10 is divided into three major time sections. Within the first section, which ranges from 1750-1914, the course begins with the enlightenment and examines the role of Enlightenment ideals in inspiring widespread political and social change. Next, the course addresses the origins and spread of the Industrial Revolution, tracing the changes brought about by industrialization, including the rise of the Age of Imperialism. The second section, which ranges from 1914-1990, addresses global crises of the 20th century including World War I, Global Depression, World War II, and the Cold War. Within this era, colonial independence movements are also addressed. The third section of the course is dedicated to the examination of four major contemporary global issues: human rights, globalization, environmental concerns, and population challenges. Each key idea expresses an essential pattern or concept that unifies the content understandings. While the course emphasizes the importance of historical thinking, all of the social studies practices and standards are included in the study of global history.

Grade 11: United States History and Government

In this course, students examine the historical and intellectual origins of the United States beginning in the colonial era and continuing to the present day. They learn about the important political and economic factors that contributed to the outbreak of the Revolutionary War and have continued to influence the country to this day. Students also study the central ideas of the United States Constitution, the basic concepts of American democracy, and the basic framework of American government. Students learn about America's westward expansion, the establishment and evolution of the country's political parties and traditions, and economic and social changes.

Students also examine the origins, conflicts, resolution, and impact of the Civil War. Additionally, students analyze the causes and consequences of the Industrial Revolution, America's emergence as a world power, and the two world wars of the 20th century. Students explore the expansion of the federal government, evolving social beliefs and behaviors, and the Cold War and its aftermath. Finally, students study recent events and trends that have shaped modern-day America and its place in an increasingly globalized and interconnected world.

Grade 12: Participation in Government

Participation in Government introduces students to the principles of American democracy. Students will learn about their rights and responsibilities as citizens and how to exercise these rights and responsibilities in local, state, and national government. Voting, political parties, the media, and the nature of elections will also be covered. Students will also investigate constitutional protections and their application. Lastly, students will study the process and formation of public policy.

Economics (Grade 12)

Students, upon completion of this semester course, will be able to demonstrate an understanding of the operation of the economic system of the United States. The basic economic concepts and the identification of their roles in the economic system will be examined. Students will use the problem



Course Catalog

solving process to define problems, hypothesize, investigate and analyze selective data, recognize alternative solutions and make decisions as an informed citizen. Students will also participate in the WISE Financial Literacy Program. This is national program designed to provide high school students access to financial education and the opportunity to become certified financially literate. This course is mandated by the State Board of Regents.

AP Macroeconomics (11th/12th grade)

This is a college level, full year course designed to provide students with a thorough understanding of the principles of economics that apply to the functions of consumers and producers within the economic system, as well as an understanding of the economic principles which operate within the economic system as a whole. The course will integrate the role of the government in promoting greater efficiency and equity in the economy. AP Macroeconomics will emphasize the study of national income, economic performance measures, economic growth and international economics. The aim of AP Macroeconomics is to provide the student with a learning experience equivalent to that obtained in a typical college introduction level economics course. Students will learn to think like economists – to question, to evaluate marginal costs and marginal benefits, to explore the many ways that one action will cause secondary actions. Students in this class must take the AP Exam in Macroeconomics in May. It is mandatory for students to take the AP Exam associated with this course in order to have the AP designation on their transcript.

AP United States History (11th grade) and with recommendation

The AP U.S. History course is designed to provide the students with the analytic skills and the factual knowledge necessary to deal critically with the problems and materials in U.S. history. The program prepares students for intermediate and advanced college courses by making demands upon them equivalent to those made by full-year introductory college courses. Students should learn to assess historical materials- their relevance to a given interpretive problem, reliability, and importance – and to weigh the evidence and interpretations presented in historical scholarship. An AP U.S. History course should this develop the skills necessary to arrive at conclusions on the basis of an informed judgment and to present reasons and evidence clearly and persuasively in essay format. Students in this class must take the AP U.S. History Exam in May in order to receive the AP Designation on their transcript.



Course Catalog

SPANISH

The study of another language is quite practical and rewarding. There are many fields which require knowledge of a second language (e.g., governmental agencies, import-export businesses, and travel and service industries, and financial institutions).

Spanish: It is recommended that students take the LOTE (Languages other than English) at the end of Spanish 5 & 6.

Spanish 1 & 2

Students will be introduced to fundamental vocabulary and linguistic structures. Students work towards developing the following communicative skills: 1) to engage in simple conversation; 2) to understand basic messages and simple media announcements, 3) to comprehend short readings and authentic ads; and 4) to write friendly notes and short, simple compositions.

Spanish 3 & 4

Students work towards improving the following communicative skills; 1) to engage in more complex conversations using a greater variety of vocabulary and linguistic structures; 2) to understand more detailed messages and media announcements. To understand and be understood by native speaker at a near native rate of speed on topics of general interest, to write letters and short compositions.

Spanish 5 & 6

Students will understand a native speaker at a normal rate of speed and to develop longer extemporaneous conversation skills; to comprehend more detailed spoken messages and media announcements, and to extract main ideas and details of longer broadcasts, to read excerpts from adapted literary works and authentic periodicals; and to write letters, compositions and essays.

Music Program

Admission is open to all students interested in music performance. George Washington Carver HS for the Sciences introduces the Music Program to students this school year (2014). The goal of the course is to hold a concert at the end of each semester. Students will progress through a curriculum that includes music literacy, the basics of proper vocal technique, sight-singing, tone production, and a comprehensive study of a variety of musical styles and genres. The instructional program requires students to attend both daily full rehearsals and smaller lesson or rehearsal groups which will be scheduled as needed with notice. The Music Program will look to seek out a number of additional performance opportunities as student interest and performance levels increase, with a goal of a concert within the George Washington Carver High School for the Sciences community.



Course Catalog

Advisory Class

The Advisory Class is a course in which there is a genuine focus on the teacher building a lasting relationship with the students in the class. A relationship where the student feels as if they belong, where the student feels that someone is always there for them and where the student has some guidance with academic and social successes. The Advisory class will meet once a week, where lessons on Perseverance, Character Building, Citizenship and Knowledge in and out of school will be addressed; as well as lessons on specific study habits and skills to help the student succeed in school. Attendance is mandatory as it is part of the student's scheduled program. Participation is important in this class since that is what will determine if the student will receive a "P" for passing or an "F" for failing grade. These grades are reflected on the student's report card and transcript.

Physical Education/Health

The Physical Education and Health Awareness Program is to prepare students to lead healthier and more physically active adult lives. The activity based program provides opportunities to attain concepts and learn skills in depth, for fitness development. In addition, students will understand and be able to manage their personal and community resources so they can continue to be physically active beyond school.

Physical Education

The purpose of the physical education programs is to prepare students to lead healthier and more physically active adult lives. The activity based program provides opportunities to attain concepts and learn skills in depth, for fitness development, team, individual and dual lifetime sports, outdoor activities, and personal living by learning about the roles played in developing, healthful behaviors. In additions, students will understand and be able to manage their personal and community resources so they can continue to be physically active beyond school. Some of the activities offered are Basketball, Badminton, Volleyball, Track, and Basic Muscle Strengthening Exercises.

Health Education

Each level includes instruction in the areas of mental health, consumer health, family life and human sexuality, substance abuse (drugs, alcohol, and tobacco), nutrition, and disease prevention, including instruction about AIDS, HIV infection and safety and first aid. Instruction, based upon the students' maturity, focuses upon the development of the individual's self-esteem and his/her ability to develop responsible decision-making skills. It also promotes healthy behaviors.



Course Catalog

Gateway Program

The Gateway Honors Program at George Washington Carver High School for the Sciences is a program for academically gifted students. It represents our school's partnership with the Gateway Institute for Pre-College Education at the City College of the City University of New York (CCNY).

As a program of excellence, high standards and high expectations are placed on each student with the intent of preparing them for college with a focus on the healthcare professions and the sciences.

Essential features include:

- 1) A rigorous four-year high school curriculum that builds a strong foundation in science and mathematics. This includes college-level Advanced Placement (AP) courses students *will* take for college credit.
- 2) Various trips (colleges, museums, etc.) to support student learning, but also to drive the concept of partners who provide college-level courses, summer enrichment programs, mentoring, and an understanding of the academic requirements for various health careers.
- 3) Access to a strong network of Gateway partners, including Mount Sinai Medical Center, the Museum of Natural History, Cold Spring Harbor Research Center, Yale Medical School, and the City University of New York (CUNY).

Students selected for this program are expected to maintain a minimum high school average of 85%, maintain a high level of conduct and behavior at all times, take advantage of Advanced Placement and college-level courses, and participate in all of the field trips provided.

For more information you may visit the official website at www.gateway.cuny.edu



Course Catalog

Additional Programs/Clubs/Sports

National Honor Society: The National Honor Society is the nation's premier organization established to recognize outstanding high school students. More than just an honor roll NHS serves to honor those students who have demonstrated excellence in the area of Scholarship, Character, Service, and Leadership. These characteristics have been associated with membership in the organization since their beginning in 1921.

Honor Roll: Students must maintain an overall average of 85% to qualify to be on the Honor Roll.

Merit Roll: Students must maintain an overall average of 80% to qualify to be on the Merit Roll.

Carver Student Union (CSU): Students become members of CSU to work with the school community by coordinating many student run events, which takes careful planning. The students enjoy coordinating many fun activities for the school community. CSU fundraise for several charities throughout the school year. CSU has an elected Executive Board. The goal of CSU is to encourage students to become involved in leadership roles within the school community and to make a positive difference.

Senior Council: 12th grade students spearhead the year with planning homecoming events, senior trips, and senior class events such as Senior Celebrity, Senior Breakfast, Senior BBQ, Prom and Graduation. This year can be pricey; however the Senior Advisor will work with you.

The Multicultural Club: Students from different cultural backgrounds meet and network with each other. The students work together on community service events, they also meet to coordinate multicultural festivities (food festival, poetry reading, etc.)

Sports: Basketball, Baseball, Softball, Tennis, Football, Indoor and Outdoor Track, Soccer, Wrestling and Cricket. Please speak directly to the Coaches of each of these sports to find out the dates and times for try outs.