



GSSM Online Courses Course Catalog 2025-2026

About GSSM Online Courses

The SC Governor's School for Science and Mathematics (GSSM) offers virtual live courses tuition-free to students across the state of SC. Students in these classes take one or more GSSM classes from their home high school. Students have the opportunity to collaborate with their peers across the state in these classes. Classes are taught via Zoom by GSSM instructors. Course times are determined by GSSM and can be found [here](#).

Unless otherwise specified, these classes are offered during the school day at partner schools. Courses are only offered at schools that do not already teach equivalent courses.

Schools that would like to partner with GSSM to offer any of these tuition-free classes to their students should contact Dr. Nicole Kroeger (kroeger@governors.school) to start the process.

List of Courses (Course descriptions can be found on page 2)

Discipline	List of Courses	Credit	Prerequisites
Computer Science Courses Offered only if there are 10 or more students enrolled in a section	AP Computer Science Principles	1.0	Honors Algebra 1
	Honors Game Design & Development	1.0	Any computer programming class
	Honors Foundations of Data Science	0.5	Honors Algebra 2
	Honors Information Systems	1.0	None
	Honors Intro to Artificial Intelligence	1.0	Introductory computer programming class
	Honors Intro to Computer Networking	0.5	None
Engineering Courses	DE Engineering Design and Modeling	1.0	80 or higher in Honors or AP Precalculus
	Honors Fund. of Electrical Engineering	0.5	80 or higher in Honors or AP Precalculus
	Honors Introduction to Civil Engineering 1	0.5	80 or higher in Honors or AP Precalculus
English Courses	DE Writing in STEM	1.0	Junior or Senior and have an 80 or above in previous high school English classes
	DE Factual Fictions: Literature and Science	1.0	Junior or Senior and have an 80 or above in previous high school English classes
	Honors Eco-Fiction	0.5	Junior or Senior and have an 80 or above in previous high school English classes
General Science Courses	Honors Forensic Science	1.0	80 or higher in Honors Biology and Honors Chemistry
Math Courses	Yearlong Calculus 1 Honors in Fall; DE in Spring	0.5 Fall 1.0 Spring	80 or higher in Honors or AP Precalculus
	DE Calculus 1	1.0	90 or higher in Honors or AP Precalculus
	DE Calculus 2	1.0	80 or higher in DE Calc 1 or AP Calculus AB
	Honors Introduction to Cryptography	0.5	Completed or currently enrolled in AP Calculus AB, DE Calc 1 or equivalent
	Honors Linear Algebra	0.5	Completed or currently enrolled in AP Calculus AB, DE Calc 1 or equivalent
Physics Courses	DE General Physics I and Lab	1.0	80 or higher in Honors or AP Precalculus
	DE General Physics II and Lab	1.0	80 or higher in DE General Physics I & Lab

Course Descriptions

Computer Science Courses

Note: Computer Science courses will be offered if enrollment in a section is 10 or more students.

AP Computer Science Principles – AP, 1.0 unit, year-long

Prerequisite: Honors Algebra 1

Course Description: An introductory college-level computing course that introduces students to the breadth of the field of computer science. Students learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs. They incorporate abstraction into programs and use data to discover new knowledge. Students also explain how computing innovations and computing systems—including the internet—work, explore their potential impacts, and contribute to a computing culture that is collaborative and ethical.

Course Code: 477500AW AP Computer Science Principles

Game Design and Development – Honors, 1.0 unit, semester-long

Prerequisite: Any computer programming course

Course Description: Game Design and Development provides students with the opportunity to design and develop fully functional video games with product design documentation. This course emphasizes game control and logic, design tools, and the physics of games using computer programming.

Course Code: 535200HW Honors Game Design and Development

Foundations of Data Science – Honors, 0.5 unit, semester-long

Prerequisite: Honors Algebra 2

Course Description: This course combines three perspectives: inferential thinking, computational thinking, and real-world relevance. Given data arising from some real-world phenomenon, how does one analyze that data so as to understand that phenomenon? The course teaches critical concepts and skills in computer programming and statistical inference, in conjunction with hands-on analysis of real-world datasets, including economic data, document collections, geographical data, and social networks. It delves into social issues surrounding data analysis such as privacy and design.

Course Code: LBA 379901HH Honors Foundations of Data Science—0.5 unit

Information Systems – Honors, 1.0 unit, semester-long

Prerequisite: none

Course Description: Students in the Information Systems course will study the flow and structure of information within a system. They will examine common techniques for managing and manipulating data such as relational and other database management systems, electronic data interchange, automated data analysis, and machine learning. Students will also gain practical skills in managing and manipulating data using some of these techniques.

Course Code: 537700HW Honors Information Systems

Introduction to Artificial Intelligence – Honors, 1.0 unit, semester-long

Prerequisite: Introductory Computer Science Class

Course Description: Artificial Intelligence involves simulating intelligent behavior in computers, encompassing programming, data science, mathematical reasoning, creative problem-solving, ethics, and practical experiences. With the increasing demand for AI skills, traditional careers like Data Analyst or Software Developer are evolving to incorporate AI solutions. The Introduction to Artificial Intelligence course introduces students to essential AI concepts, preparing them to comprehend common applications, tackle real-world challenges, and develop solutions using advanced technologies.

Course Code: 57M000HW Honors Introduction to Artificial Intelligence

Introduction to Computer Networking – Honors, 0.5 unit, semester-long

Prerequisite: None

Course Description: This course is a survey of the underpinnings of computer networks. It will cover the basics of network architecture, topology, protocols, and telecommunications. Students will learn how a request on a web browser is packaged and transferred over the Internet to a destination address and how the results of the request are processed and delivered back again. By the end of the course students will have demonstrated a competence in IP addressing, packet tracing, OSI and TCP/IP models, and configuring routers and switches to use networking protocols. The course is a mixture of discussion and hands-on activities.

Course Code: LBA 379902HH Honors Introduction to Computer Networking

Introduction to Cybersecurity – Honors, 0.5 unit, semester-long

Prerequisite: Introduction to Computer Networking

Course Description: In the Computer and Information Systems Security/Information Assurance program, students examine the core concepts and terminology of cybersecurity and information assurance, integrating the importance of user involvement, network architecture, threats, and security; operational and system security; cryptography; contingency planning; application, data, and host security; access control and identity management; and a broad range of other topics.

Course Code: LBA 379903HH Honors Introduction to Cybersecurity

Engineering Courses

Engineering Design and Modeling (EGR115) – Dual Enrolled, 1.0 unit, semester-long

Prerequisite: Completion of Honors or AP Precalculus with an 80 or higher. Preference given to students who completed Honors or AP Precalculus with a 90 or higher.

Course Description: This course is an introduction to engineering graphics and machine design. Students use hand sketching and CAD tools to visualize, communicate, rapid prototype, and analyze engineering problems. SOLIDWORKS software is used.

Course Code: 805400EW Dual Enrollment Engineering Design and Modeling (EGR 115)
Dual Enrolled with Coker University EGR115

Fundamentals of Electrical Engineering – Honors, 0.5 unit, semester-long

Prerequisite: Completion of Honors or AP Precalculus with an 80 or higher. Preference given to students who completed Honors or AP Precalculus with a 90 or higher.

Course Description: This course is designed to provide a foundational understanding of electrical

engineering, introducing students to the study and practice of the field. Students explore the wide variety of disciplines associated with electrical engineering, with focus on topics important to electrical, electronic, and computer engineering. Through activities, laboratory modules, and design projects, students learn first-hand how engineers use mathematics and science to solve problems. Topics include circuits, electronics, microcontrollers, and signals.

Course Code: LBA 379943HH Honors Fundamentals of Electrical Engineering

Introduction to Civil Engineering 1 – Honors, 0.5 unit, semester-long

Prerequisite: Completion of Honors or AP Precalculus with an 80 or higher. Preference given to students who completed Honors or AP Precalculus with a 90 or higher.

Course Description: This course provides fundamental concepts in each of the disciplines of Civil Engineering including Architecture and City Planning, Environmental, Geotechnical, Water Resources and Harbor, Coastal and Ocean, Structural, Surveying, Remote Sensing and GIS, Transportation, and Construction Engineering. Critical thinking skills are fostered.

Course Code: LBA 379942HH Honors Introduction to Civil Engineering 1

English Courses with a STEM Focus

Writing in STEM: Political Economy of Science and Technology (ENG215D) – Dual Enrolled, 1.0 unit, semester-long

Prerequisite: Junior or Senior and have an 80 or above in previous high school English classes

Course Description: In this course, students will compose essays that address a wide range of political, social, and economic factors that shape science and technology. This course provides students the opportunity to unravel some of the ongoing debates that shape science in culture today as they develop skills in critical thinking, writing, analysis, and critique.

Course Code: 403500EW Dual Enrollment Writing in STEM: Political Economy of Science and Technology (ENG215D)

Dual Enrolled with Coker University ENG 215D

Factual Fiction: Literature and Science – Dual Enrolled, 1.0 unit, semester-long

Prerequisite: Junior or Senior and have an 80 or above in previous high school English classes

Course Description: Hypothesis, observation, and the search for knowledge - both science and technology fascinate writers. This course combines readings from fiction and non-fiction that explore the natural world and the world of the imagination. Readings might focus on works of dystopia and science fiction as well as foundational texts in the sciences or the social sciences.

Course Code: 403600EW Dual Enrollment Factual Fiction: Literature and Science (ENG240)

Dual Enrolled with Coker University ENG 240

Eco-fiction – Honors, 0.5 unit, semester-long

Prerequisite: Junior or Senior and have an 80 or above in previous high school English classes

Course Description: In this course, we will explore how artists use language to influence our feelings towards, and understandings of, the natural world. We will track down answers to questions like: What is “the environment” and how is it shaped by processes of representation? How has environmental writing changed throughout history, from the Industrial Revolution to Chernobyl to now: the Anthropocene? We will pay particularly close attention to climate change fiction, a burgeoning genre that emphasizes the increasingly precarious relationship between human beings and their environments. After surveying some of the foundational texts in

environmental studies, we will transition to more contemporary works: Octavia Butler’s Parable of the Sower, Samanta Schwebelin’s Fever Dream, and Jeff VanderMeer’s Annihilation. Students can also expect to view films like Eating Animals, Racing Extinction, and, at the end of the semester, the eco-comedy Wall-E. Students will write a close reading paper, an ethical reasoning paper, and a final research paper on an environmental humanities topic of their choosing.

Course Code: LBA 309972HH Honors Ecofiction

General Science Courses

Forensic Science – Honors, 1.0 unit, year-long

Prerequisite: 80 or higher in both Honors Biology and Honors Chemistry

Course Description: Forensic Science is an intense application of knowledge and skills acquired in Biology and Chemistry courses. Following a brief introduction to criminal law, students will use measurement, chemical analysis, and other laboratory techniques to study the types of physical evidence, as well as the crime scene as a whole. The class format includes lectures, laboratory investigations and mandatory participation in a mock crime scene.

Course Code: 324500HW Forensic Science

Math Courses

Note about calculus courses: The yearlong Calculus 1 courses is similar to an AP Calculus AB course.

It is a college-level Calculus 1 class spread out over the course of a whole year. The fall semester receives honors credit, the spring semester receives dual enrolled credit. The faster paced version of this is the single semester DE Calculus 1 class in the fall semester. **The semester of DE Calculus 1 together with the semester of DE Calculus 2 is similar to an AP Calculus BC course.** Students enrolled in the single semester DE Calculus 1 course should be highly motivated students with a strong mathematical background in order to manage pace of this course.

Yearlong Calculus 1 – Honors in Fall (0.5 unit), Dual Enrolled in Spring (1.0 unit)

Prerequisite: Completion of Honors or AP Precalculus with an 80 or higher. To continue with the spring semester of the class, students need to complete the fall semester with an 80 or higher. This course is intended for students who are ready for calculus, but need to go at a little slower pace than the single semester Calculus 1 class allows for.

Course Description: Topics include limits and continuity, the derivative, differentiation of algebraic and trigonometric functions, applications of the derivative, indeterminate forms, basic integration techniques, and the Fundamental Theorem of Calculus.

Course Codes:

Fall Semester: 314900HH Honors Mathematics Preparation Lab—0.5 unit

Spring Semester: 413600EW Calculus 1—1unit

Dual Enrolled with Coker University MAT 231

Dual Enrolled Calculus 1 (MAT 231) – Dual Enrolled, 1.0 unit, semester-long

Prerequisite: Completion of Honors or AP Precalculus with a 90 or higher.

Course Description: Topics include limits and continuity, the derivative, differentiation of algebraic and trigonometric functions, applications of the derivative, indeterminate forms, basic integration techniques, and the Fundamental Theorem of Calculus.

Course Code: 413600EW Dual Enrollment Calculus 1)
Dual Enrolled with Coker University MAT 231

Dual Enrolled Calculus 2 (MAT 232) – Dual Enrolled, 1.0 unit, semester-long

Prerequisite: Completion of AP Calculus AB or DE Calculus 1 with an 80 or higher.

Course Description: Topics include techniques of integration, applications of integrations, improper integrals, infinite series, and polar and parametric equations.

Course Code: 413700EW Dual Enrollment Calculus 2
Dual Enrolled with Coker University MAT 232

Introduction to Mathematical Cryptography – Honors, 0.5 unit, semester-long

Corequisite: Students enrolled in this class must have completed or be concurrently enrolled in AP Calculus AB, Dual Enrolled Calculus 1, or an equivalent class.

Course Description: Have you ever wondered how your smartphone protects you from hackers? Why the world's first computer was invented? What secret saved an island in WWII? We'll answer these and many other questions.

We'll learn to harness mathematics to solve difficult puzzles and also explore the history and mathematics behind code making and breaking. Through class discussions, problem solving, and group activities, students will learn a variety of encryption schemes ranging from ancient Roman codes to modern public key encryption used to secure digital communications online. Students will learn abstract algebra including sets, groups, and equivalence relations and use these techniques to discuss modern cryptosystems and identify weaknesses that allow secret messages to be read without a key.

Course Code: LBA 319973HH Honors Intro to Cryptography

Linear Algebra – Honors, 0.5 unit, semester-long

Corequisite: Students enrolled in this class must have completed or be concurrently enrolled in AP Calculus AB, Dual Enrolled Calculus 1, or an equivalent class.

Course Description: This course includes solving systems by matrix methods, matrix operations, matrix algebra, determinants, Cramer's rule, vector algebra, the dot and cross products used in projections and geometric applications, lines and planes in 3-space, vector spaces, linear independence, linear transformations, eigenvalues, and eigenvectors.

Course Code: LBA 319974HH Honors Linear Algebra

Physics Courses

General Physics I & Lab (PHY 201/201L) – Dual Enrolled, 1.0 unit, semester-long

Prerequisite: Completion of Honors or AP Precalculus with an 80 or higher. Preference given to students who completed Honors or AP Precalculus with a 90 or higher.

Course Description: An algebra-based introduction to classical mechanics and dynamics. Topics include 1D and 2D kinematics, vector notation, Newton's laws of motion, circular motion, gravity, work, energy, and linear momentum. Students will develop analytical thinking, reasoning, and scientific critical thinking skills through in-class activities, weekly experiments, and regular homework assignments. Includes a weekly lab that can be done from home. Students will be provided with a lab kit.

Course Code: 324700EW Dual Enrollment Physics 1 (PHY 201)

Dual enrolled with Coker University's PHY 201 & 201L

General Physics II & Lab (PHY 202/202L) – Dual Enrolled, 1.0 unit, semester-long

Prerequisite: Completion of the fall semester General Physics I & Lab with an 80 or higher.

Course Description: An algebra-based continuation of Newtonian mechanics and introduction to waves, electricity, and magnetism. Topics include rotational motion, statics, vibrations, mechanical waves, sound, electrostatics, DC circuits, magnetism, and optics. Students will develop analytical thinking, reasoning, and scientific critical thinking skills through in-class activities, weekly experiments, and regular homework assignments. Includes a weekly lab that can be done from home. Students will be provided with a lab kit.

Course Code: 324800EW Dual Enrollment Physics 2 (PHY 202)

Dual enrolled with Coker University's PHY 202 & 202L