



COURSE SELECTION FOR RISING 12TH GRADERS

Curriculum Night: February 10, 2026

Course Selection: February 18– 23, 2026



Please Note

Course selections made during this process are used to determine

- teacher hiring,
- the number of course sections offered, and
- the development of the master schedule.

As a result, the courses students select now will be reflected in their fall schedules. **Schedule changes will not be made due to a student changing their mind.**

It is extremely important that you help guide your student in making thoughtful, well-informed choices now.

AP Course Guidance:

- Gain an edge in college preparation
- Stand out in the college admissions process
- Demonstrate commitment to academic excellence
- Students are encouraged to select AP courses aligned with their interests and learning strengths. Each student is unique, and success is not measured by the number of AP courses taken, but by meaningful engagement and performance.



Senior Capstone Experience

Informational Session
Adam Brown

GSMST students Saman and John (here with Dean Tom Mundie) at the Georgia Gwinnett College STaRS (Science, Technology, and Research Symposium) on Monday. They did a great job presenting their work to students and faculty.



AJC.COM

Gwinnett high school students produce scientific breakthrough

GSMST Senior Laura J. was honored at a breakfast today recognizing recipients of the county's Caring Award, for her work with refugee students and families.



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What is the Senior Capstone Experience?

- Culminating experience that puts learning into practice as students look to college and career
- GSMST graduation requirement
- year-long (both semesters)
- assignments intended to enhance experiences



Traditional Capstone

- An internship or a project
- Under the supervision/guidance of a mentor
- Assignments that help you develop skills and think about college and career interests

Transportation is required for most internships. On-campus and remote internship opportunities are limited.



***Students may apply to
GSMST partner
internship opportunities
or seek out their own
internship opportunities.***

Dual Enrollment

Students will

- take two classes per semester and
- have a dedicated GSMST teacher to help them complete the GSMST SCE course.

Students must earn a B or higher in all dual enrollment classes to successfully complete their capstone.

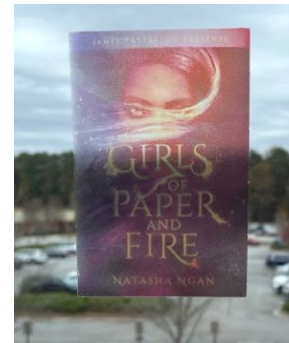
Meg Scheid
Dual Enrollment Coordinator



Entrepreneurship - Apeiron

- Entrepreneurship skills through hands-on product design, creation, and sales
- Real-world business and engineering experience using fabrication tools
- **Application process to join the Apeiron team**
 - late February/early March
 - students select an alternate SCE option during registration

**This option also includes completing courses through this program:
Intro to Business Technology; Legal Environment to Business;
Entrepreneurship.**



Advanced Science Research Internship

- Post-AP Research course, the third in the research pathway.
- Includes lab work and external mentorship
 - **Students conduct independent research under a university professor** often requiring lab travel.
- Research findings are submitted to competitions and may be published.
- Prerequisites: Completion of AP Research and a recommendation from Dr. Cox.

We have a Biosafety Level 2 lab.



SENIOR CAPSTONE EXPERIENCE



Options

Traditional Capstone

Internship / Project

Dual Enrollment

Gwinnett Technical
College

Entrepreneurship

On Campus
Fabrication Lab

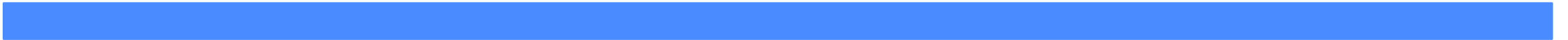
Advanced Science Research Internship

On Campus (+ possible
offsite lab experience)

***Possibly Service-Learning**

What to Consider Now

- Student's college and career interests
- Student's expectation for their senior year
- Limiting parameters (e.g., transportation, age requirements)
- Which option is GOOD for the student





For Course Registration

Students will receive a form via email from the curriculum office to indicate their SCE choice for next year.

Thank You!

adam.brown@gcpsk12.org

<https://tinyurl.com/SCEOptions>



**SCE Options
Website**

A decorative blue wavy line with a gradient, flowing from the left side of the slide towards the right, positioned above the main title.

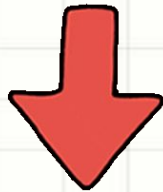
CTE OFFERINGS

3 Required Courses for Engineering Pathway



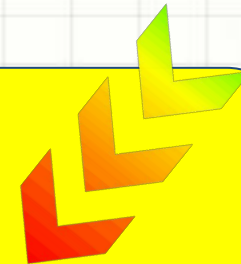
9th Grade PhysEng Course:

- Foundations of Engineering
 - ✓ Taken in Fall of Freshman Year
- Engineering Concepts
 - ✓ Taken in Spring of Freshman Year



10th Grade Course:

- Engineering Applications
 - ➡ Included in the Introduction to STEM Research course during Sophomore Year

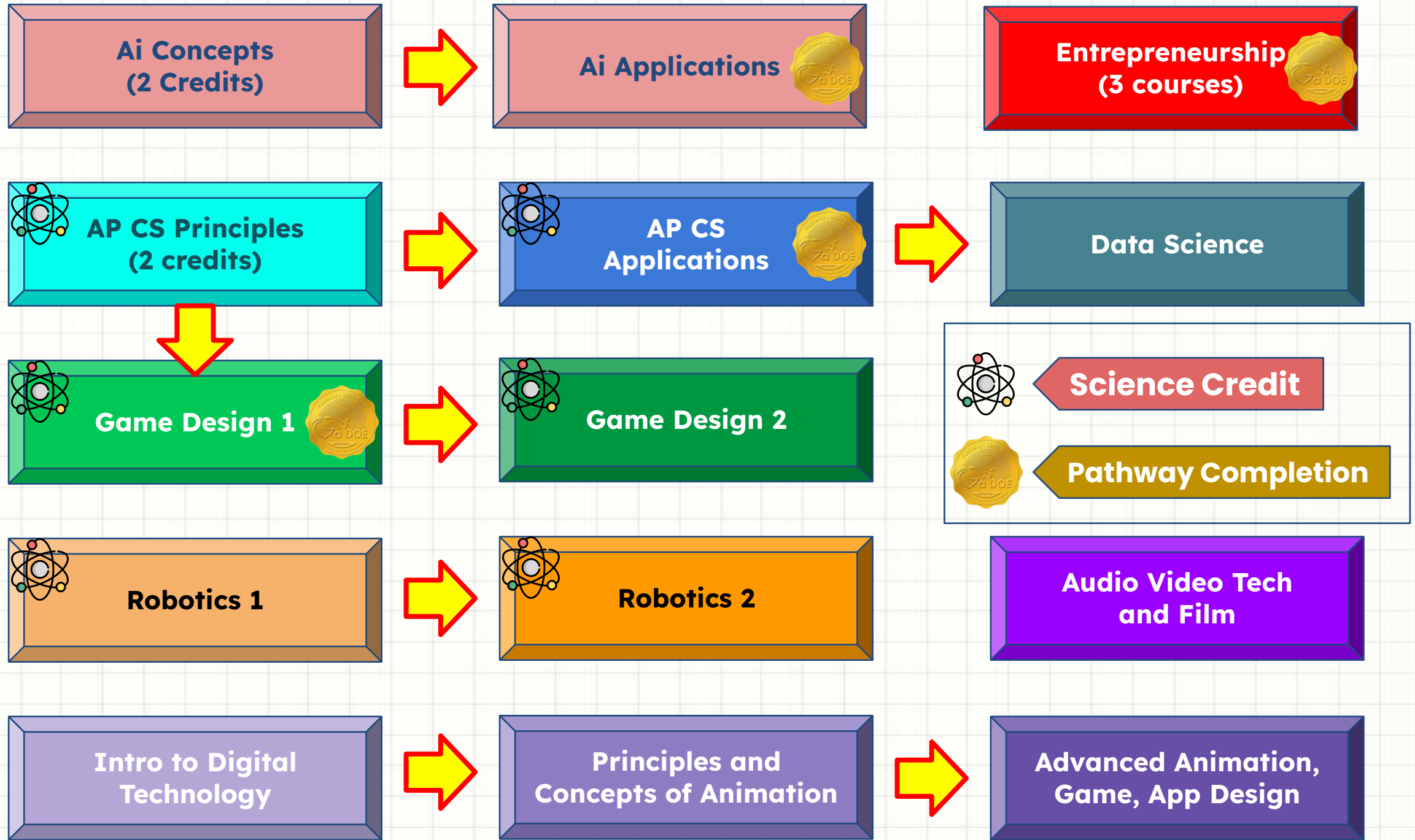


End-of-Pathway Exam

- Scheduled for Spring Semester (late March)
- National Occupational Competency Testing Institute
- Must pass in order to be a pathway completer
- Diploma Seal acquired



CTE COURSES





CTE OFFERINGS

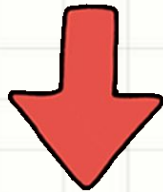
Presenter: Tommy Nguyen

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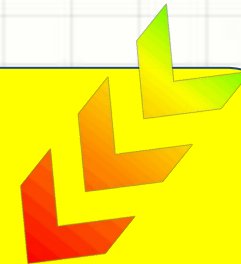
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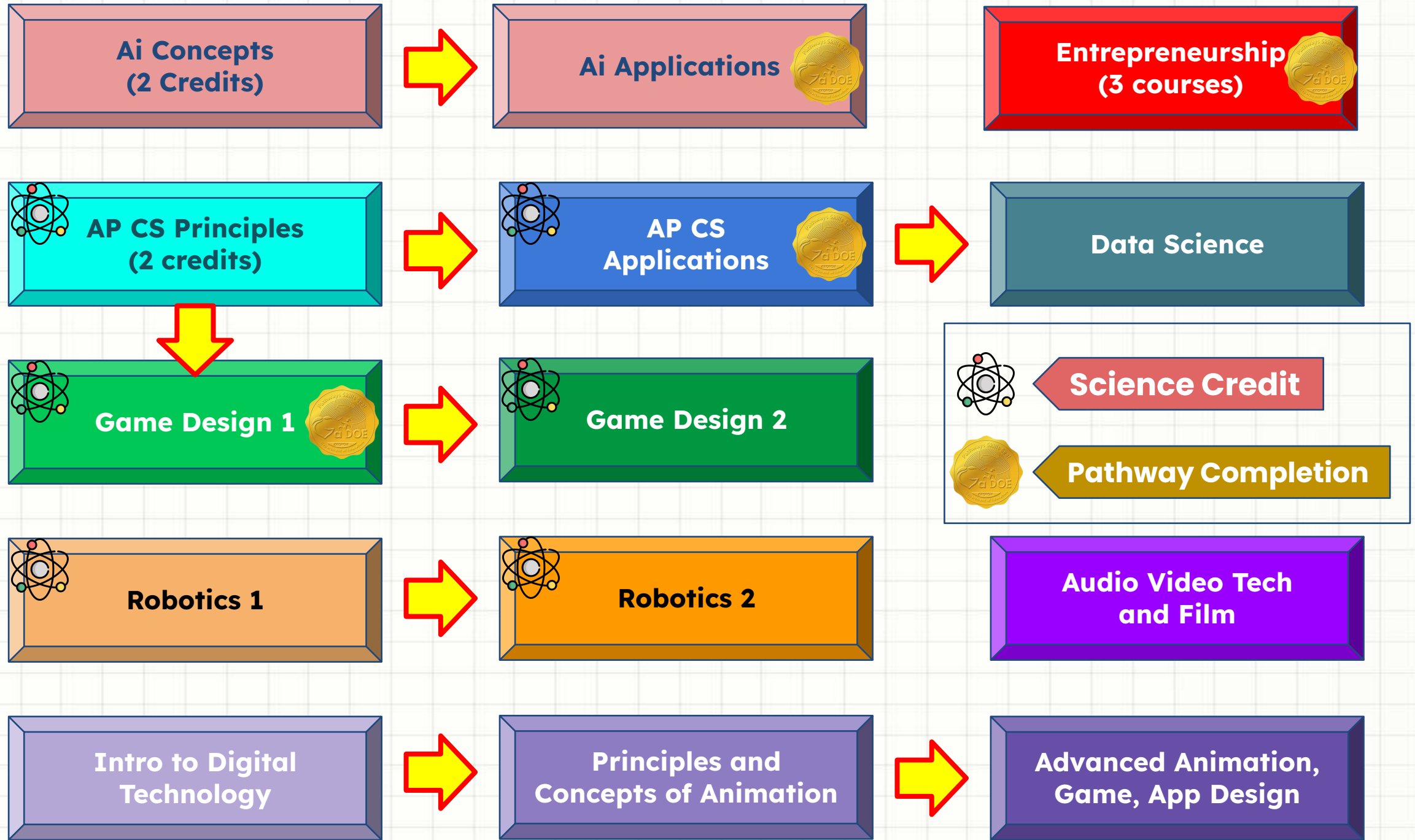


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CTE COURSES



CTE ELECTIVES



If you have room in your schedule for an elective, you are encouraged to take an engineering elective. Please speak with an engineering teacher to find out which course would best meet your needs.

- AP Computer Science Principles 🏆
- AP Computer Science A 🏆
- Game Design: Animation & Simulation 🏆
- Game Design II 🏆
- Advanced Physics and Robotics 🏆
- Advanced Robotics (2nd year Robotics) 🏆
- Artificial Intelligence Concepts
- Artificial Intelligence Applications
- Introduction to Digital Media (Animation and 3D Design)
- Principles and Concepts of Animation
- Advanced Animation, Game, App Design
- Nanotechnology & Materials Engineering 🏆
- Audio/Video Technology & Film
- Entrepreneurship
- Data Science Analytics (1 semester)

🏆 **Recognized as a 4th year science by the State Department of Education**

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Ai Concepts
(2 Credits)



Ai Applications



Entrepreneurship
(3 courses)



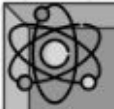
AP CS Principles
(2 credits)



AP CS
Applications



Data Science



Game Design 1



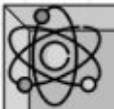
Game Design 2



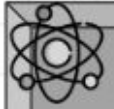
Science Credit



Pathway Completion



Robotics 1



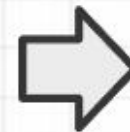
Robotics 2

Audio Video Tech
and Film

Intro to Digital
Technology

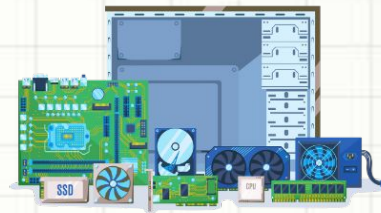
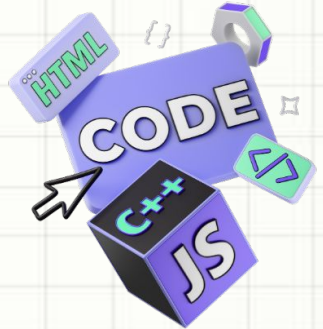


Principles and
Concepts of Animation



Advanced Animation,
Game, App Design

AP Computer Science Principles



*No Prerequisite

(Instructors: Mr. Nguyen, Mr. Holmes-Williams, Mrs. Calhoun, Dr. Shukla)

- Programming Fundamentals in **Python** and **JavaScript**
- Web Development: **HTML**, **CSS**, **JavaScript**
- **Computer Systems** and **Components**
- Digital Information: **ASCII code**, Pixel **RGB** data, File Formats, Data Compression
- **Spreadsheets** and **Data Visualization**
- **Ai Concepts** and **Prompt Engineering**
- **Computing Innovations** and **Impacts of Computing**
- The **Internet/Networks**, **Phishing**, **Malware**, **Encryption**

✓ Students also receive **course credit** for **Introduction to Software Technology** upon completion of this course.



AP Computer Science Applications



***Prerequisite:** AP Computer Science Principles (90%), AI Concepts, BC Calculus or above, or **faculty approval**.

(Instructors: Mrs. Rachkovskiy, or Mr. Holmes-Williams)

- The course aligns to the College Board's AP Computer Science A course and first semester computer science college courses (Georgia Tech CS 1331, among others). It provides college credit with a 4 or 5 on the AP Exam.
- Develop/Select appropriate algorithms and data structures to solve problems
- Code fluently in Java, an object-oriented paradigm programming language, including the following concepts:
 - Iterations/Loops
 - Input/Output
 - Collections/Lists
 - Methods/Classes
 - Conditional Logic
 - Recursion
 - Concepts of Abstract & Linear Algebra/Number Theory
 - Algorithm Performance/Complexity Analysis/Big O Notation
 - Primitive/Reference Object Data Types
 - Searching/Sorting Algorithms
 - Reading data from a text/.csv file
 - Multidimensional Arrays/ArrayLists
- Read/Program large labs consisting of several classes and interacting objects
- Study/Discuss ethical and social implications of computer use in our society and historical game changers in Information Technology.



C T E C O U R S E S

**Ai Concepts
(2 Credits)**



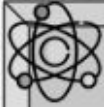
Ai Applications



**Entrepreneurship
(3 courses)**



**AP CS Principles
(2 credits)**



**AP CS
Applications**

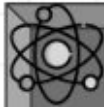


Data Science

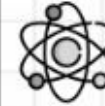
Game Design 1



Game Design 2



Science Credit



Pathway Completion



Robotics 1



Robotics 2

**Audio Video Tech
and Film**

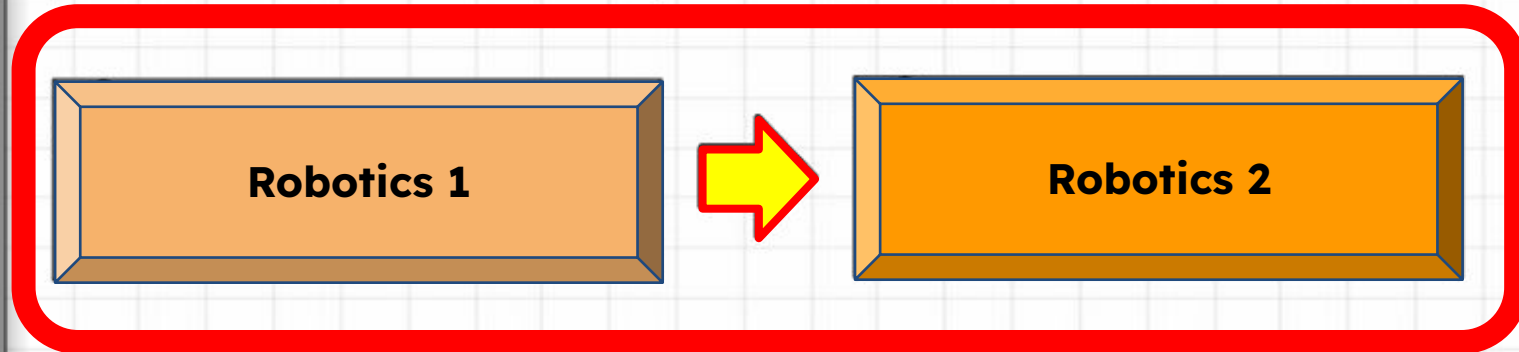
**Intro to Digital
Technology**



**Principles and
Concepts of Animation**



**Advanced Animation,
Game, App Design**



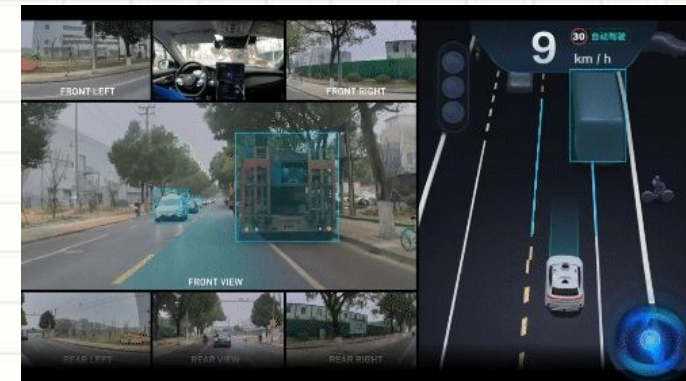
ROBOTICS + MECHATRONICS

➤ Year 1 Robotics

(Instructors: Mr. McDonald, Mr. Roberts, Mr. Nguyen)

- Intro to Aerial Vehicles (Drones).
- Learn the basics of robotic movement, sensor integration, and programming.
- Computer vision and autonomous vehicle concepts.
- Intro to AI for physical devices.
- 3D printing experience.
- Build and program robots to meet real-world objectives.

✓ Students will earn **+10 points** for **Course Grade** in each Semester.

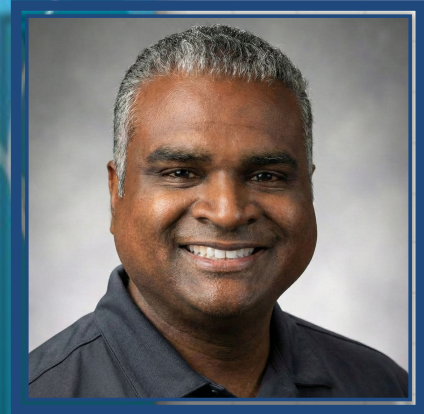


ADVANCED ROBOTICS

➤ Year 2 Robotics

(Instructors: Mr. McDonald, Mr. Roberts, Mr. Nguyen)

- Work independently and collaboratively building and programming specialized robots using various microcontroller such as Arduinos, Raspberry pi's, esp32, etc.
- Extend our understanding of robotic movement to discreet and logic circuits.
- Continue working with drones, build up a small swarm.
- Learn how to build a network of robots that work together to accomplish task and objectives using Robotics Operating
- Continue to develop design skill use a CAD software like Inventor, On shape, and fusion 360, while learning principles of additive and subtractive manufacturing.
- Earn Part 107 Drone Certification (Professional Flight)



C T E C O U R S E S

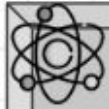
**Ai Concepts
(2 Credits)**



Ai Applications



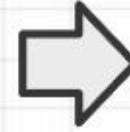
**Entrepreneurship
(3 courses)**



**AP CS Principles
(2 credits)**



**AP CS
Applications**



Data Science



Game Design 1



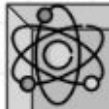
Game Design 2



Science Credit



Pathway Completion



Robotics 1



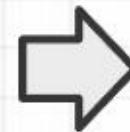
Robotics 2

**Audio Video Tech
and Film**

**Intro to Digital
Technology**



**Principles and
Concepts of Animation**



**Advanced Animation,
Game, App Design**



Game Design: Animation & Simulation

***Prerequisite:** AP CSA, AP CSP, AI Concepts, Robotics or faculty approval
(Instructor: Mr. Schepens)



- Students will learn **skills required of first year professional** software developers.
- Use **professional** level development tools - Microsoft Visual Studio and Unity Game Development Platform.
- Implement the Full Software Development Life Cycle for projects.
- Design using UML Diagrams and Object Oriented Programming in Visual C#.
- Develop software design documents and project plans.
- Develop games that will be published to full size arcade cabinets in GSMST.
- Create 1st and 3rd person perspective games, multiplayer networked games, animations, physics and rigid body interactions.
- Ideal for creative students interested in growing strong professional development skills.





Game Design II

***Prerequisite:** Game Design or Gwinnett Tech Game Design
(with **Mr. Schepens** approval)*

(Instructor: Mr. Schepens)

- Advanced C# Programming
- Advanced Data Structures
- Procedurally Generated Content
- Gaming AI Techniques
- Networked Multiplayer Games
- Professional Software Development Programming Skills
- Creation of Professional Portfolio for Job Readiness

C T E C O U R S E S

**Ai Concepts
(2 Credits)**



Ai Applications

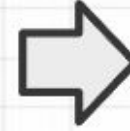
**Entrepreneurship
(3 courses)**



**AP CS Principles
(2 credits)**



**AP CS
Applications**



Data Science

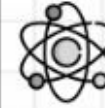
Game Design 1



Game Design 2



Science Credit



Pathway Completion



Robotics 1



Robotics 2



**Audio Video Tech
and Film**

**Intro to Digital
Technology**



**Principles and
Concepts of Animation**



**Advanced Animation,
Game, App Design**



Artificial Intelligence Concepts

(Instructors: Mr. Schepens, Ms. Rachkovskiy)

AI Concepts

- Machine Learning Algorithms
- Computer Vision Algorithms
- Natural Language Processing
- History and Ethical use of AI tools

Programming In Python

- Introduction to Python Programming skills
- Programming using Python AI Libraries (Pandas, OpenCV, Numpy, PyTorch, SKLearn)

Data Science Elements

- Collect and use data for Artificial Intelligence algorithms
- Define and understand statistical concepts in data science
- Utilize data visualization reporting and statistical tools





Artificial Intelligence Applications

(**Instructors:** Mr. Schepens, Ms. Rachkovskiy)

***Prerequisite:** AI Concepts

Covering AI Concepts in more depth

- Machine Learning, Reinforcement Learning, Computer Vision
- Generative AI algorithms
- Large Language Models - Transformers

Hands On Individual and Group Projects for Advanced AI models

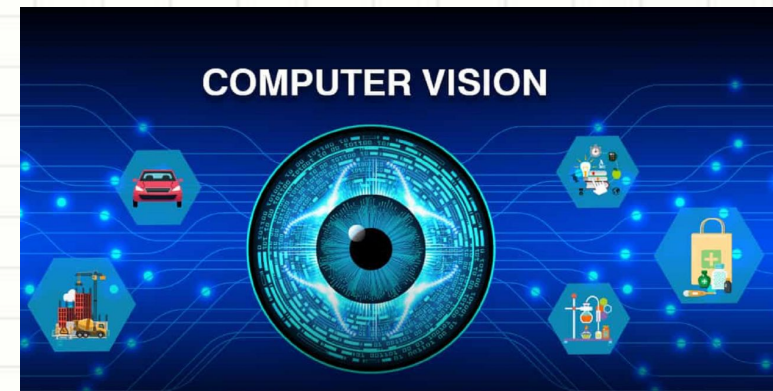
- Programming the Unitree Go2 Robot Dog for autonomous problem solving
- Utilization of pretrained AI models (Kaggle, Hugging Face)

Programming In Python

- Advanced programming using Python AI Libraries

Use of Data

- Collection of data for using in AI Algorithms
- Tuning model hyperparameters for optimum training
- Using visualization tools to show analyze data and results of AI models



C T E C O U R S E S

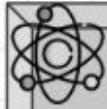
**Ai Concepts
(2 Credits)**



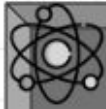
Ai Applications



**Entrepreneurship
(3 courses)**



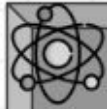
**AP CS Principles
(2 credits)**



**AP CS
Applications**



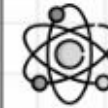
Data Science



Game Design 1



Game Design 2



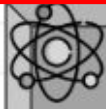
Science Credit



Pathway Completion



Robotics 1



Robotics 2

**Audio Video Tech
and Film**

**Intro to Digital
Technology**



**Principles and
Concepts of Animation**



**Advanced Animation,
Game, App Design**



Introduction to Digital Media (Animation and 3D Design)

(**Instructor:** Mr. Boyette) ➤ **Year 1 Animation**

- Introduction to Digital Media is a foundation course that serves as an introduction to the animation and 3d design industry.
- Students will learn the basics of animation and modeling in both 2d and 3d software applications that would be used in industries such as animation, motion graphics, video game design, and product visualization/simulation.
- Software used will include Adobe Animate, After Effects, Photoshop, and Autodesk 3DS Max.



Principles and Concepts of Animation

(**Instructor:** Mr. Boyette)

➤ **Year 2 Animation**

- This course will take students deeper into the animation and 3d design areas that were covered in the Intro course.
- Students will gain more experience and skills in both 2d and 3d animation and design. Students will work with other classes such as Game Design to create assets to be used in video games, as well as create animations for the school.
- A focus will be put on becoming more efficient with animation and modeling as well as the 12 principles of animation. Software used will include 3DS Max, After Effects, Animate, Photoshop, Unity and many others. Students will have the opportunity to customize much of the work to fit their particular area of interest.



Advanced Animation and Game & App Design

(Instructor: Mr. Boyette) ➤ **Year 3 Animation**

- Students will build on the concepts from the previous two courses.
- The course will focus on individual longer-term projects that allow the students to focus on specific areas of interest related to animation and 3d design.
- Topic areas will include game design, product design, animation, software physics, scene creation, software analysis, character modeling, video production, as well as many others.

Audio Video Technology and Film

(Instructor: Mr. Boyette)

- This course will give students an introduction to the film industry. Students will learn the equipment, software, and skills used to create productions from start to finish. Topics will include industry terminology, storyboarding, camera use, shot compositions, editing, and much more. An emphasis is put on creativity during the production process throughout the course, allowing students to showcase mastery of standards in a variety of different ways. Software used will include Adobe Premier, After Effects, Photoshop and others.



C T E C O U R S E S

**Ai Concepts
(2 Credits)**



Ai Applications

 **AP CS Principles
(2 credits)**

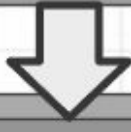


 **AP CS Applications**



Data Science

 **Game Design 1**



 **Game Design 2**

 **Robotics 1**



 **Robotics 2**

**Intro to Digital
Technology**

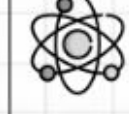


**Principles and
Concepts of Animation**



**Advanced Animation,
Game, App Design**

**Entrepreneurship
(3 courses)**



Science Credit



Pathway Completion

**Audio Video Tech
and Film**



Entrepreneurship Pathway

(Instructors: **Mrs. Calhoun**)

If you are interested in:

- Starting a business or leading a large organization
- Business, Finance, Marketing, or Law in STEM fields
- Developing leadership skills
- Operating a school based enterprise

Entrepreneurship

**HARD
WORK
HARD
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HARD
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HARD
WORK**

- **Year 1 - Introduction to Business & Technology & Legal Environment of Business**
- **Year 2 - Entrepreneurship**
- **Also available as JFE/SCE (year long)**
- Eligible for diploma seal



Data Science & Analytics

(1 Semester)

***Prerequisite** is AP Computer Science A, Game Design, AI Concepts, or faculty approval.

(Instructors: Ms. Rachkovskiy)



- 1 Semester Course
- Content Includes:
 - Advanced Spreadsheets Data Analysis
 - Python Data Science Libraries
 - Database design methodology and implementation
 - Structured Query Language (SQL)
- Fantastic skills to have for JFE/SCE or Employment Opportunities



Nanotechnology & Materials Engineering

(Instructor: Dr. Stamm)

This course is a good option for students who enjoy chemistry. We focus on the application of chemistry to create and understand nanoscale materials, including many of the technologies we interact with every day.

- Topics will include:
 - Materials Science
 - Nanofabrication
 - Surface energy and surface tension
 - Characterization
 - Nanoparticle synthesis
 - Nano- and micro-particle assembly
 - Biomimetics and Biomaterials



HUMANITIES

- Language Arts
- Social Studies

**Presenter: Jobie Johnson
Michael Burbine**

AP Language Arts

Choose One of the following two:

AP English Language and Composition

This is a college level course for high school students interested in improving themselves as critical readers, thinkers, and writers. Our emphasis is two-fold: reading strategies for the "expository, analytical, and argumentative writing that forms the basis of academic and professional communication" and writing from argumentative and analytical platforms. The course prepares students for success on the senior thesis research paper (Fall semester), the AP examination (Spring semester), and for college level reading and writing.

AP English Literature and Composition

The AP Literature course aligns to an introductory college-level literary analysis course. The course engages students in the close reading and critical analysis of imaginative literature to deepen their understanding of the ways writers use language to provide both meaning and pleasure. Writing assignments include expository, analytical, and argumentative essays that require students to analyze and interpret literary works. Students will complete +/-6 long works over the course of 2 semesters. First semester will require the completion of the Senior Thesis.

ELA Electives:

Both courses provide students an opportunity to explore the process of creating a large publication, including preplanning, designing layouts, copyrighting, proofreading, organizing visuals, and managing finances.

Journalism/Literary Magazine: 10 – 12 (one semester or yearlong)

- Students will produce a literary magazine *Infinitas*

Journalism/Yearbook: 9 – 12 (yearlong)

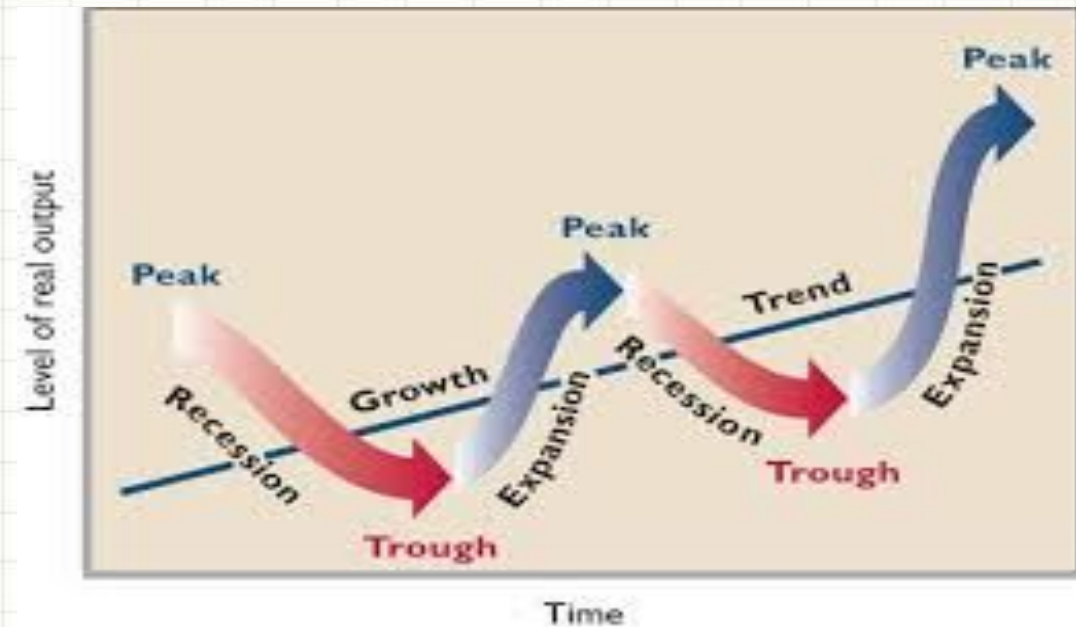
- This course involves the production and sale of the *VANGUARD*, the GSMST yearbook.

AP Economics

AP Macroeconomics

- This course places particular emphasis on the study of national income and output as well as price level determination while assessing the performance of a nation's economy.
- The course focuses on economic performance measures, economic growth, economic gaps, and the correction of gaps by market forces, as well as monetary and fiscal policy. International trade and the foreign sector are integrated in the course.

AP Macroeconomics is Required and is College Level Courses

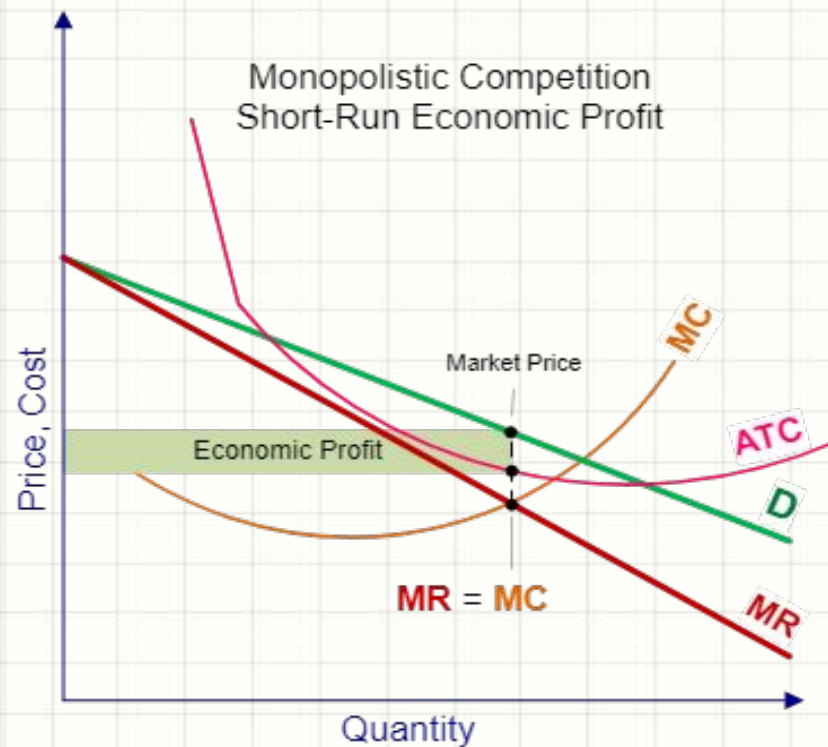


AP Economics

AP Microeconomics is one of two options a senior can choose to pair with AP Macro Econ.

AP Microeconomics

- This course gives students a thorough understanding of the principles of economics that apply to functions of individual decision-makers, both consumers & producers, within the larger economic system.
- The primary emphasis is on the nature and functions of product markets and includes the study of factor markets and the role of government in promoting greater efficiency & equity in the economy.



Finance

Personal Financial Literacy is one of two options a senior can choose to pair with AP Macro Econ.



Personal Financial Literacy

- This collection of skills and concepts focuses on analyzing various aspects of financial literacy and critical thinking.
- Students will explore budgeting, income sources, credit and financial institutions, and consumer rights.
- Students will also evaluate taxation and interest rate decisions.

Social Studies Electives:

AP Human Geography: 9 – 12 (yearlong)

- This year-long elective course introduces students to the systematic study of patterns and processes that have helped shaped human understanding, use, and alteration of Earth's surface. Students employ spatial concepts and landscape analysis to examine human social organization and its environmental consequences. Students also engage the methods and tools geographers use in their science and practice.

Social Studies Electives:

AP European History: 11-12 (yearlong)

- This advanced survey course encompasses the years 1300 to the present. The course deeply examines the political, diplomatic, intellectual, cultural, and economic evolution of European history, and Europe's interactions with the world. The pedagogical approach emphasizes critical thinking skills and historical changes over time, as well as analysis and synthesis. Intensive reading and writing assignments support the pedagogical approach employed, as does interaction with guest speakers. This course also provides space to explore the history of science and medicine in Europe.

AP Comparative Government and Politics: 11-12 (one semester)

- AP Comparative Government and Politics introduces students to the rich diversity of political life outside the United States. The course uses a comparative approach to examine the political structures; policies; and political, economic, and social challenges of six selected countries: China, Iran, Mexico, Nigeria, Russia, and the United Kingdom. Students compare the effectiveness of approaches to many global issues by examining how different governments solve similar problems. They will also engage in disciplinary practices that require them to read and interpret data, make comparisons and applications, and develop evidence-based arguments.

Social Studies Electives:

Advanced Placement Psychology: 11 – 12 (yearlong)

- The AP Psychology course is designed to introduce students to the systematic and scientific study of the behavior and mental processes of human beings and other animals. Students are exposed to the principles and phenomena associated with major subfields within psychology. Students also learn about the ethics and methods psychologists use in their science and practice. This course is particularly suited to GSMST students as the course is equal parts science and social studies.

Controversial Issues: 11 – 12 (one semester)

- This elective class is designed for mature upper level students who are able to confront issues, both local and abroad. The purpose of this class is to explore different viewpoints and develop critical thinking skills through classroom discussions, presentations, and papers. Topics include current events and issues with social relevance.

你好

¡Hola!

*Guten
Tag!*

WORLD LANGUAGES

Chinese | German | Spanish

CHINESE GERMAN SPANISH

- Chinese 1
- Chinese 2
- Chinese 3
- Chinese 4

- German 1
- German 2
- German 3
- German 4

- Spanish 1
- Spanish 2
- Spanish 3
- Spanish 4
- Spanish AP



SPANISH

Students who took 8th grade Spanish 1 credit:

- Spanish 2, 3, 4, AP

Students starting in Spanish 1 at GSMST:

- Spanish 1, 2, 3, **4** or Spanish 1, 2, 3, **AP**

**Spanish 4: culture, history, & geography of Spanish speaking countries*



COGNITIVE BENEFITS OF WORLD LANGUAGES

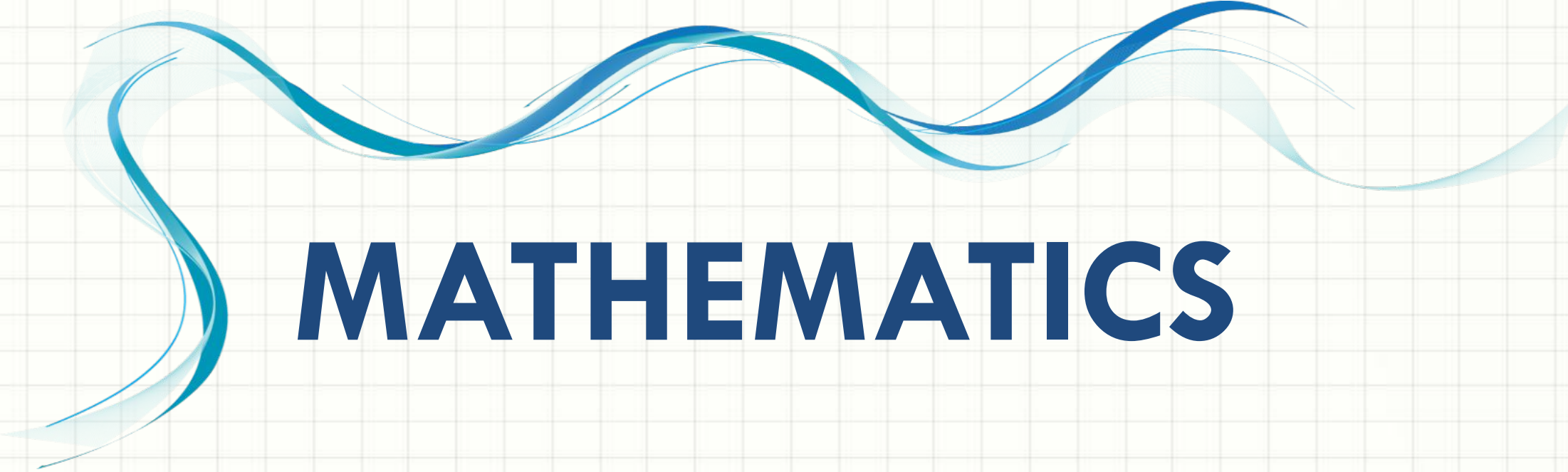
Research shows that the study of World Languages enhances higher-order thinking skills: analysis, interpretation, comparison and contrast, improvisation, synthesis



COLLEGES REQUIRING 3 OR MORE YEARS OF WORLD LANGUAGE

- Duke
- Emory
- Stanford
- Princeton
- Clemson
- Boston College
- Providence, RI
- University of Colorado
- College of Charleston
- University of Connecticut
- University of Delaware
- St. Olaf College, MN
- University of Michigan
- Brown University
- Dartmouth College
- University of Wisconsin
- Florida State University
- Middlebury College
- University of Pittsburgh
- Virginia Military
- California University System

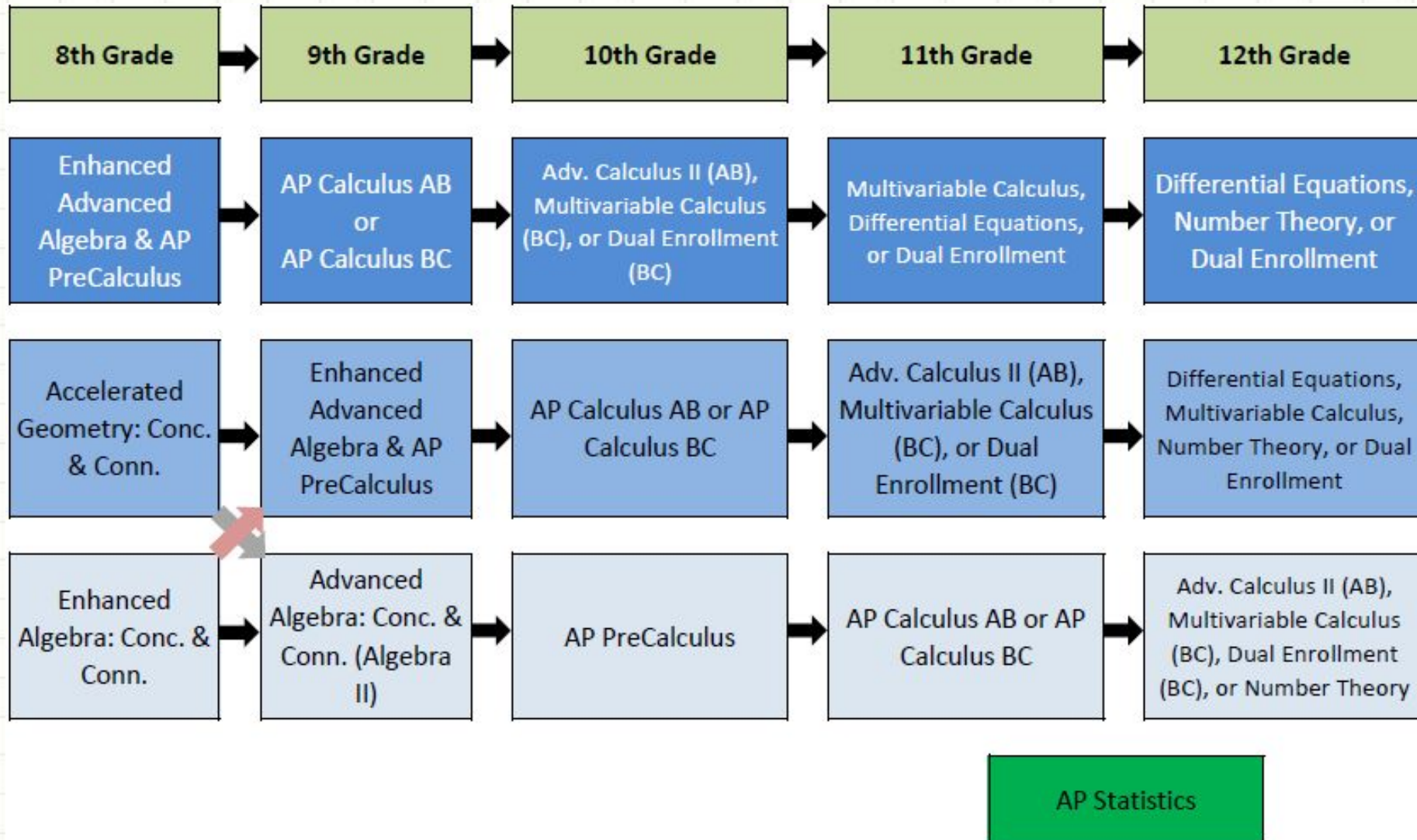




MATHEMATICS

Presenter: Dawn Thurston

Mathematics Sequence



If Your Student Is Currently Taking AP Precal

AP Calculus AB/BC (Teacher Recommendation)

The objectives follow the AP syllabus developed by the College Board for the Advanced Placement (AP) Calculus AB/BC Examination. This college level course provides an in-depth examination of limits, derivatives, and integrals of algebraic and transcendental functions; continuity; applications of derivatives to related rates; maxima and minima; curve sketching; integration formulas; applications of the definite integral; methods of integration, graphing, and integrating in polar coordinates; infinite sequences and series; power series, vectors; and differential equations.

*****Prerequisite: AP Pre-Calculus***

AP Statistics - Also Available as a Math Elective

If Your Student Is Currently Taking AP Calculus AB

Advanced Calculus II

This course is the study of integral evaluation, limits of sequences, application of function concepts, and application of polar coordinates, L'Hospital's Rule, Pappus's Theorem on surface area, differentiation & integration of power series, three-dimensional coordinate geometry, vectors, and vector calculus. ****Prerequisite: AP Calculus AB**

AP Calculus BC (With Teacher Recommendation)

AP Statistics (With Teacher/Counselor Recommendation)

If Your Student Is Currently Taking AP Calculus BC or Advanced Calculus II

Multivariable Calculus

This course is the study of three-dimensional coordinate geometry, matrices & determinants, eigenvalues & eigenvectors of matrices, limits & continuity of functions with two dependent variables, partial differentiation, multiple integration, the gradient, the divergence, the curl, Theorems of Green, Stokes and Gauss, line integrals, integrals independent of path and linear first-order differential equations. ****Prerequisite: AP Calculus BC**

Dual Enrollment with Georgia Tech (BC only)

Multivariate Calculus/Linear Algebra

AP Stat or Number Theory also available as Math Electives.

If Your Student Is Currently Taking Multivariable Calculus

Differential Equations

In this course students will develop an understanding of the basic theory, applications and connections of linear algebra and differential equations. This course provides a central foundation upon which many areas of both pure and applied mathematics are built. In addition, a basic understanding of ordinary differential equations and their solutions is particularly useful for students planning to study physics, chemistry, economics, engineering, biology and many other of the sciences. *****Prerequisites include at least two years of Calculus (including AP Calculus BC and either Georgia Tech's Calculus II/III, or Multivariable Calculus).***

Number Theory

The main goal of this course is to develop a strong foundation for rigorous mathematics. Students will be expected to learn how to understand and write rigorous mathematical proofs. This will be motivated through a study of the integers and algebra. We will use the typesetting software LaTeX to create mathematics documents, homework, etc. This course provides an overview of theoretical mathematics and would be ideal for students who wish to continue their education in mathematics.

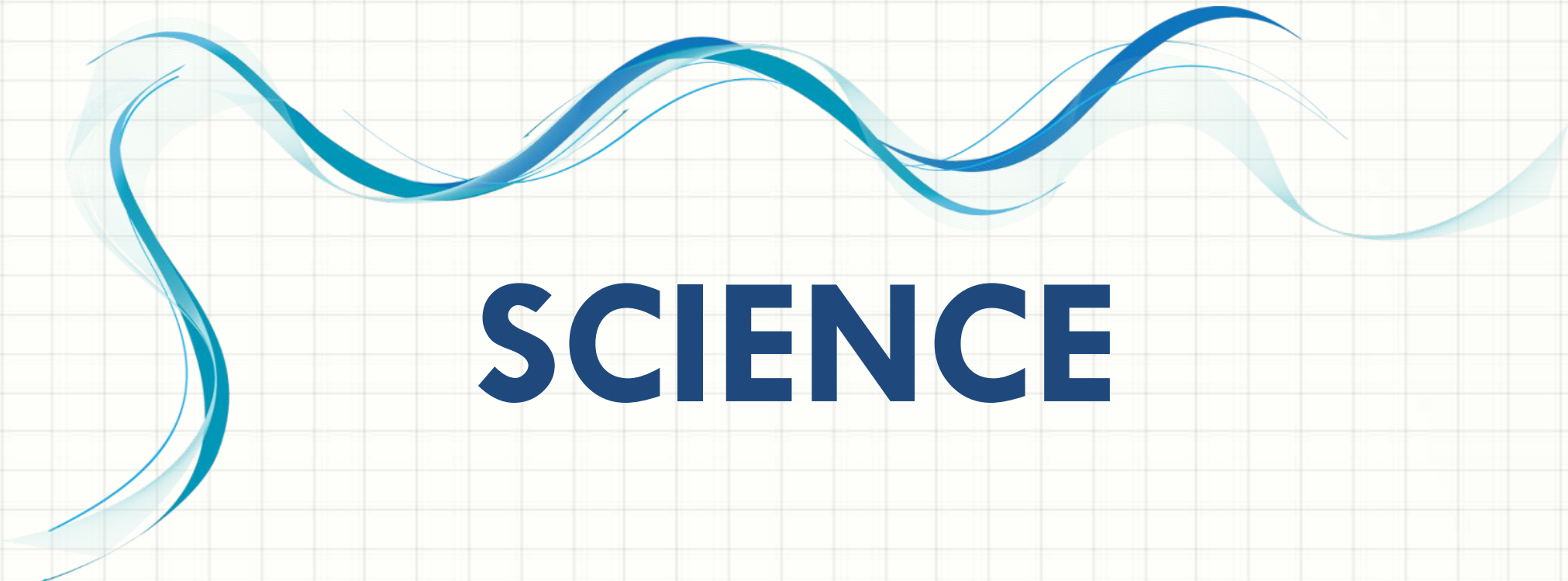
Math Electives

AP Statistics

This college level course provides an in-depth experience in statistical concepts and methods, including data collection and exploration, experimental and theoretical probability, probability distributions, and descriptive and inferential statistics. Projects involve planning a study, anticipating patterns, producing models, and confirming models. The objectives for this course follow the College Board syllabus, preparing students for the optional Advanced Placement exam. This is an elective math course for students and not in the required curriculum.

Linear Algebra with Python

This semester-long course explores applications of Java in connection to advanced mathematical topics. ****Prerequisites include AP Calculus BC and AP CSA.**



SCIENCE

Presenter: Joanne Shaw

Science Options for 2026-2027

- Analytical Forensic Investigation
- AP Chemistry
- AP Environmental Science
- Anatomy and Physiology
- AP Physics C: Mechanics only
- AP Physics C: Mechanics and Electricity & Magnetism (2 periods)
- Chemistry II: Introduction to Organic Chemistry (1 Sem)
- AP Research
- Advanced Science Research Internship
- BioTechnology

Analytical Forensic Investigations

- College-level theory and application (***Not CSI***)

Theory

Examples and Applications

Optics

Polarized light microscopical analysis of fibers, crystals, and compounds

Biology

Investigations of biological samples using microscopy and electrophoresis

Organic
Chemistry

Composition of organic compounds and their analysis using infrared and mass spectrometry techniques

AP Chemistry

Integration of Concepts and Calculation

- Prerequisite: Accelerated Precalculus

1st Semester Concepts

- Structure of matter / atomic theory / quantum mechanics
- States of matter / gas laws
- Molecular geometry
- Reactions (MAJOR FOCUS)
 - Stoichiometry
 - Solutions and net ionic equations

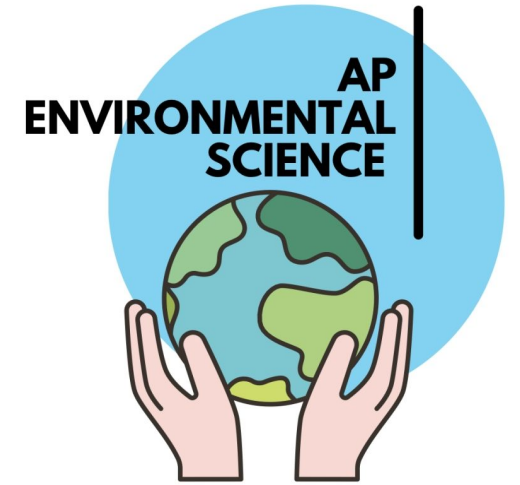
2nd Semester Concepts

- Reactions (MAJOR FOCUS)
 - Kinetics
 - Equilibrium & Solubility
 - Acids/Bases
 - Thermodynamics
 - Electrochemistry

Yearlong concepts

Critical thinking Problem solving Deriving formulas Descriptive chemistry
Explaining phenomena using theories & models Experimental design & laboratory

AP Environmental Science



- Increases student awareness of the consequences of human interaction with the environment.
- Covers material from biology, ecology, chemistry, earth sciences, current events, economics and public policy.
- Includes some outdoor field experiences.



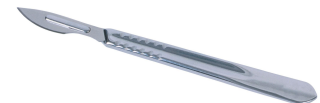
Course expectations include:

- Summer assignment (Choose one among numerous Environmental Science/Ecology/ Biology etc. books and view an amazing video!)
- Course is PBL-based and requires a lot of group work/collaboration.
- Group Presentations for each unit

Anatomy and Physiology

Prerequisite: AP Biology

- A study of the human body, requiring memorization of anatomical terminology
- Physiology instruction relies heavily on ties to describing healthy function and disease processes
- Medical information and diagnostic tools used in class to increase understanding and expand medical knowledge
- Highly recommend being comfortable with performing or watching dissections



AP Physics C - Mechanics Only

Prerequisite: AP Calculus and successful completion of first year physics

- College-level physics, for sciences and engineering majors.
- Includes calculus!
- Lots of **puzzle-solving** and thinking creatively about **mechanical systems**.
- 1st semester: kinematics, dynamics, energy
- 2nd semester: momentum, rotation, gravitation, and harmonic motion

AP Physics C - Mechanics and E&M

Prerequisites: Successful completion of AP Calculus BC and first year Physics.

Concurrent enrollment in Multivariable Calculus or Georgia Tech Calculus II/III

- College-level physics, for sciences and engineering majors.
- Includes calculus and multi-variable calculus!
- Lots of **puzzle-solving** and thinking creatively about **mechanical systems**.
- In addition to ALL of AP C: Mechanics in first semester, students study electricity and magnetism in second semester (two courses in one year)
- The course takes two class periods in the schedule and meets daily.
- 1st semester: kinematics, dynamics, energy, momentum, rotation, gravitation
- 2nd semester: electric fields & potential, capacitors, DC circuits, magnetic fields, magnetic induction

Chem II: Intro to Organic Chemistry

- One semester
- An introductory course, it can bridge the GSMST 9th grade chemistry experience to what might be involved in college, and given its content area, it can help more advanced students prepare for more formal college organic courses.
- This class introduces students to key ideas in organic chemistry – naming compounds, molecular structure and functional groups, and common reactions.
- Course work includes regular laboratory work along with content lectures and readings combined with student projects. The course emphasizes the role of organic chemicals in the modern world with a strong emphasis on biological applications of organic molecules.

AP Research

- The second course in a pathway leading to the Capstone Diploma
- Students will conduct independent college-level science research projects
- Ideal for students interested in pursuing research in college or as a career
- Students will have a university mentor and this often leads to laboratory internships
- Students will present their research at local and national competitions
- Potential to submit to publications
- Satisfies the JFE or SCE requirements

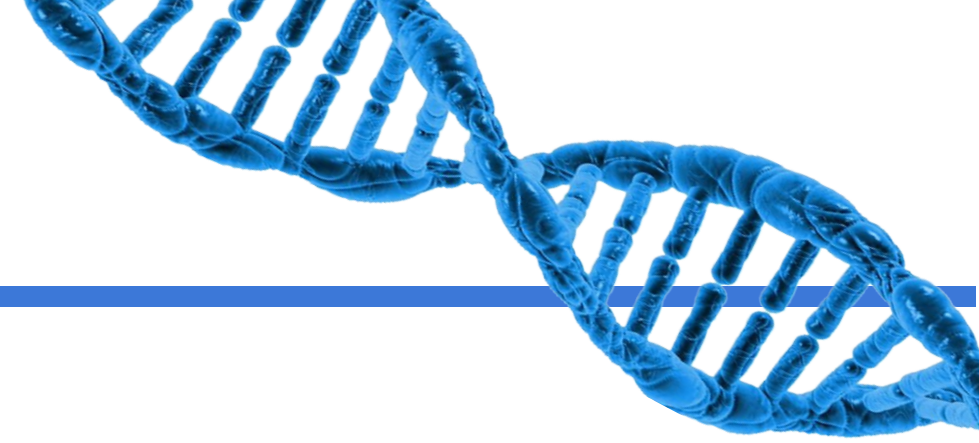


Advanced Science Research Internship

- Post AP Research/AP Capstone Diploma Course
- Students will conduct independent college-level research under the guidance of a professor/research mentor at a major university
- Ideal for students interested in pursuing research in college or as a career
- Present their research at local and national competitions
- Potential to submit to publications
- Must also be the student's SCE



Biotechnology



- **Prerequisite: AP Biology**
- The interdisciplinary study of how technology can aid in the study of life.
- This lab-based course incorporates the entire biotechnology pathway into one year for three course credits.
- In this class we will discuss and practice groundbreaking laboratory techniques that biologists are using to study life at the molecular level, including stem cells, cloning, pipetting, electrophoresis, bacterial plating, PCR, ELISA testing, and more.
- As part of the pathway, students will also learn the basics of healthcare and become BLS level CPR certified.



FINE ARTS & HEALTH/PE

Summer Health/PE @ GSMST

Cost: \$250 each

(payable on MyPaymentsPlus)

***Registration closes on May 21st (or earlier if class capacity is reached)*

Health: June 1 – June 22

Course is completed entirely online. Final exam is online on June 22nd.

Personal Fitness: June 1 – June 22

Course is completed entirely online. Final exam is online on June 22nd.

***In order to take part in Personal Fitness, you must have access to a phone with a fitness tracking app which you will carry/wear during exercise to track your pace (Fitbit app is recommended and is a free download to any smartphone).*

FINE ARTS & HEALTH/PE PROGRAMS

To learn about all the different course offerings available in Fine Arts (Music/Art) and Health/Personal Fitness, use the QR code below.



Fine Arts &
Health/PE Elective
Options



Summer Health
& PE Flyer



**THANK YOU
FOR COMING!**

