

# FCS Innovation Academy

## Course Catalog 2024-2025



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## Who are we?

In addition to the core curriculum, FCS Innovation Academy is a STEM magnet high school that provides an educational experience that will help push students to be creators and problem-solvers for a continuously changing world.

### Philosophy

Innovation Academy's philosophy emphasizes student collaboration, relevant learning, rigorous courses, and flexible scheduling to allow for deeper and more personalized learning experiences. Students will experience the curriculum through a project-based learning environment where teachers and students work together to solve practical and complex issues. Our goal is for students to receive a rich and relevant educational experience that prepares them to be empathetic leaders in our ever-changing society.

### IA Student Traits

Innovation Academy is a different school, and we are looking for students who:

- Get the itch to figure something out that they don't understand.
- Like to get their hands dirty, literally or figuratively.
- Like to take risks.
- Are problem-seekers and problem-solvers.
- Are willing to take chances, make mistakes, and learn from those mistakes.
- Are humble enough to ask questions and seek answers from others but confident enough to keep going when things aren't easy.
- Work well together and can lead a group and be led by others.
- Are nervous about trying something new but are excited by the opportunities it will give them.
- Are ok with the first draft not being the last draft and continuing to iterate.

As our students engage with our curriculum, work through their career pathways, and solve difficult and complex problems with what they have learned in class, they will gain the skills they need to be successful in the world after Innovation Academy.

The IA Graduate will:

- Be comfortable taking risks.
- Have the confidence to tackle difficult problems and the humility to seek out the answers from others when necessary.
- Have the ability to create innovative solutions to complex problems.
- Think critically and analyze information.
- See things from multiple perspectives and understand them in different contexts.
- Look at the world with curiosity and wonder.

- Work well in teams, leading when appropriate and following when necessary.
- Be kind to all others in our world.

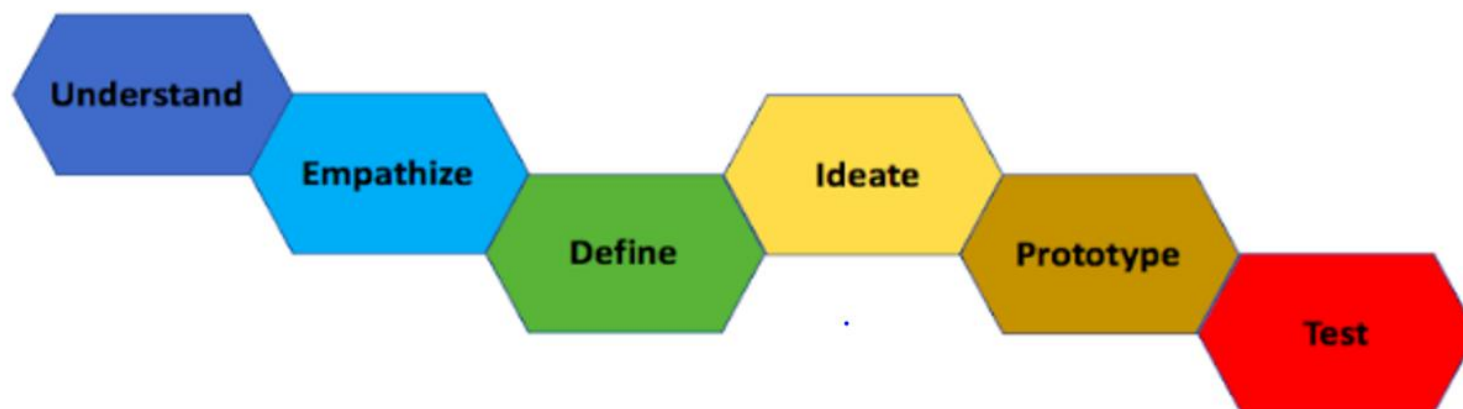
## The IA Experience

In addition to a traditional high school curriculum, students will have the opportunity to expand their knowledge and experiences through rigorous applications of their learning:

- Problem solving using Design Thinking
- Choosing a Career Pathway
- Partnering with Georgia Tech's CEISMC program
- Completing two magnet requirements through the GT Block **and** the Pinnacle Project through the junior year research class

### Design Thinking

Design Thinking is a method that uses a cyclical process to solve problems with the user in mind. Design Thinking uses a series of steps that creates specific work in each phase. The graphc below shows the various steps and how students would engage in each area. Students will use design thinking while participating in the AP Capstone project.



#### Understand:

Students are introduced to a challenge and work to research and understand the nuances of the challenge.

#### Empathize:

Students define the audience that are impacted by the challenge. Students conduct empathy interviews to understand the needs of the user and define the problem.

#### Define:

Students will frame research into an actionable problem statement to create a statement that will drive the process.

**Ideate:**

The ideate phase allows students to brainstorm ideas and cluster them into design concepts. No idea is a bad idea!

**Prototype:**

Students create low fidelity prototypes to present to their user audience as first draft of a solution to the problem.

**Test:**

Students test prototypes with the user audience. After gaining feedback about the prototype, students revert back to gain more empathy to refine and iterate on the prototype.

## Career Pathways at IA

Each student will complete a pathway in one of 3 CTAE areas, Healthcare Science, Engineering, or Information Technology. These CTAE pathways will provide relevance to student learning and provide a hands-on implementation of projects for standards from the core academic areas.

### Health Science

Health Science offers so many different opportunities and no matter which one you choose we have a state-of-the-art simulation center where we can LEARN BY DOING. Our students can gain knowledge and skills in a safe, non-threatening, experiential environment giving them an opportunity for learning through hands on training. Students will learn to work as a team, learn effective communication skills and develop decision making and problem-solving skills. Students will work in a more realistic learning environment and immerse themselves in the learning by being actively engaged. They will be able to see the result of their decisions and actions and the consequences that occur.

Using this technology, we will build on the traditional educational framework while incorporating new methods. Simulation is an alternate and unique way to enhance teaching and learning. Simulation is a way for us to replicate what might occur in real life. For example, students will not just learn about lung sounds, they can actually get to listen to them on these simulators or mannequins. It will help students understand healthcare in a technologically evolving and demanding time. What an amazing and fun way to learn about what you love!

The way the classes and labs are set up will allow us to work with students independently and in different size groups. Through simulation we will work with our business partners to develop areas that should be the highest priority for students to experience.

### Engineering

In engineering we will use CAD, code, and calculations to solve problems. We will empower students with a foundation in CAD and 3D printings, electrical and pneumatic systems, and culminate with programming in C++. The most rewarding part is using these skills to create functional

autonomous prototypes to solve the problem provided by a business partner. Students will utilize our state-of-the-art facility to ideate and prototype as they progress through the design process. As students start with raw materials, they will learn to operate the tools and machinery needed to create custom parts with the correct tolerances for their prototypes. From plastics and fabrics, to lumber or metal, “measure twice and cut once” will often be heard as students fabricate custom designs. These constraints will guide them in making tough decisions requiring them to analyze tradeoffs and make compromises that are common in real world engineering.

### **Informational Technology**

The computer science industry relies on the talents of analytical critical problem-solvers. Computer engineers and programmers need to have these skills to be successful in their careers. Most people recognize these skills as important for computer science, but the best computer engineers and programmers are also incredibly good at creative thinking and working in teams. It’s important at IA for students interested in computer science to think about these base skills, as opposed to thinking about whether they can already code. Too many students look at programming and think they can’t do it, because they don’t understand the language. Yet almost ALL students take a new World Language at some point without the same level of fear. If you are good at working in teams, think critically to solve problems, and are willing to look at things differently, you will likely to great at computer science.

### **Partnering with Georgia Tech’s CEISMC program**

The Center for Education Integrating Science, Mathematics and Computing (CEISMC) is a unit within the Office of the Provost at Georgia Tech. CEISMC serves as the primary connection point between Georgia Tech faculty and students and the preK-12 STEM education community.

CEISMC plays a key role in achieving the vision set forth in the Commission on Creating the Next (CNE) report by reducing the barriers between prek-12 and high education by offering intensive, innovative professional development to practicing teachers, creating highly engaging STEM in-school and extracurricular STEM experiences for K-12 students.

Fulton County Schools and Innovation Academy have partnered with CEISMC to create a dynamic and rigorous set of challenges and projects that are designed to incorporate core standards and relevance to learning. Students will use design thinking to solve these complex problems.

## IA Magnet Requirement I: GT Block

The GT Block course is based on a cross curricular, project-based framework designed by the CEISMC group at Georgia Tech specifically for Innovation Academy. This unique course combines the three CTAE departments within Innovation Academy: Information Technology, Engineering and Healthcare.

The GT Block covers the three introductory courses from all three departments. The block course is a two-class period block that meets each school day. Students will have a teacher from each department and will rotate through the three introductory courses within each unit. The GT Block course is unique to Innovation Academy and will allow students to experience true cross-curricular, design thinking projects while simultaneously earning course credit for all three introductory courses.

### Introduction to Software Technology

This course is the foundational courses for Web & Digital Communications, Programming, Advanced Programming, Information Support & Services, and Network Systems pathways. This course is designed for high school students to understand, communicate, and adapt to a digital world as it impacts their personal life, society, and the business world. Exposure to foundational knowledge in hardware, software, programming, web design, IT support, and networks are all taught in a computer lab with hands-on activities and project focused tasks. Students will not only understand the concepts but apply their knowledge to situations and defend their actions/decisions/choices through the knowledge and skills acquired in this course.

### Introduction to Healthcare Science

Introduction to Healthcare Science is the foundational course and the prerequisite for all Health Science pathways. Pathways will culminate with the opportunity to sit for a certification and or licensing exam in the designated allied health field. Students will participate in a block course rotation that will consume two of their class periods. We will focus on critical thinking, ethical reasoning, effective communication, and self-directed learning. During the rotations students will receive exposure to all three areas of study: Information Technology, Engineering and Healthcare Science. Within the healthcare science rotation students receive initial exposure to the many Allied Health Careers. Topics to be covered include employability skills, communication, lifespan, legal and ethical considerations, wellness and clinical competencies, which are the skills specific to the pathway. The knowledge and skills obtained in the Introduction courses will provide a basis for advancement into subsequent CTAE classes. Our focus is to provide students with the competitive edge that will make them top candidates for either entry into the healthcare global marketplace and/or the post-secondary institution of their choice to continue their education and training.

### Foundations of Engineering

Engineers solve problems to make our world a better place. Our students will experience this through the engineering design process. They will engage in problem solving in three different spheres: locally (school), regionally (community) and globally. Students will utilize our state-of-the-art



facility to ideate and prototype as they progress through the design process. Moving from low fidelity cardboard prototypes, they will then transition to wood and 3D modeling and finally to designs of metal or 3D prints depending on the application. The facilities at IA allow students to experience realistic learning environments from safely operating wood working equipment to welding metal to 3D printing. Students will tangibly see the results of their work and experience real world constraints. These constraints will guide them in making tough decisions requiring them to analyze tradeoffs and make compromises that are common in real world engineering.

## **IA Magnet Requirement II: Pinnacle Project**

Both an opportunity and a requirement, all IA students complete a pinnacle project during their junior year. Designed as an experience that will offer students the opportunity to learn a topic broadly and deeply and then to complete full-cycle design thinking or scientific research that answers a question of their own design, the IA Pinnacle Project truly sets our students apart. In order to support the background research and active project work, IA offers three year-long courses.

### **Honors IA Research**

IA Research is the premier capstone offering: high rigor of process-with added authenticity and opportunity for real impact of product. As an honors-level course, students experience research through the lenses of both the scientific method and design thinking. Over the course of the year students will frame, execute and then communicate their independent research through IA's Pinnacle Project using industry best practices. IA Research is analogous to AP Research in that research in any area - pathway, ELA, social sciences, science, math - is supported but with the added flexibility College Board does not allow of partners or small groups and the opportunity to take on real-world problems, competitions and publishing opportunities. Honors IA Research is recognized by the University System of Georgia as a science elective.

For the 24-25 School Year, four applications-based special sections of IA Research are being offered: US History-Honors Research (Double-Block Section), Science Experiments and Competitions, Humanities, and Human- Centered Design Thinking. See the Unique Course Offerings section of this catalog for more details.

### **IA Pinnacle Project (IA Research)**

The IA Pinnacle Project course is an on-level version of IA Honors Research that is designed for students who need more support in the overall process. The focus of the pinnacle project in this course will be more narrow and designed to complement the 3<sup>rd</sup> year pathway course that a student is taking concurrently. During the Fall semester, students engage in successive Project Based Learning units that include opportunities to perform and design experiments in collaboration with NASA. In the Spring semester, students may opt to continue a Fall project with more independence, to work concurrently with their pathway capstone project, or to design a passion project for their capstone. This course is appropriate for IA Juniors who are not recommended for AP or Honors and will afford students a less-independent, more structured process to complete a full cycle of design thinking. IA Pinnacle Project is recognized as a science elective by the University System of Georgia.

### **AP Research**

At IA, AP Research is offered primarily as a senior elective for students who wish to pursue further research and to complete the AP Capstone program. AP Research, the second course in the AP Capstone experience, allows students to deeply explore an academic topic, problem, issue, or idea of individual interest. Students design, plan, and implement a yearlong investigation to address a research question. Through this inquiry, they further the skills they acquired in the AP Seminar course by learning research methodology, employing ethical research practices, and accessing, analyzing, and synthesizing information. Students reflect on their skill development, document their processes, and curate the artifacts of their scholarly work through a process and reflection portfolio. The course culminates in an academic paper of 4,000–5,000 words, accompanied by a performance, exhibit, or product, and a presentation with an oral defense. The AP Capstone Diploma recognition is widely recognized by universities across Georgia and the U.S. for its rigor and is accepted by the University System of Georgia as an elective only.

### **IA Magnet Requirement III: Pathway Completion**

All students who graduate from Innovation Academy must complete at a minimum three credits (equal to three courses) in one of the pathways and complete the EOPA exam associated with that pathway. See the course progressions below for the three pathways.

### **Dual Enrollment**

Dual Enrollment is for students in grades 10-12 who qualify to participate. Students may enroll on a part-time or full-time basis as a Dual Enrollment student and take college courses at their high school or on a postsecondary campus. Students will receive high school and college credit simultaneously when attending and passing approved college classes. For more information, please visit [www.gafutures.org](http://www.gafutures.org).

## Georgia Graduation Requirements

Students must earn 23 credits in order to graduate from high school:

Area of Study	Units Required
English/Language Arts	4
Mathematics	4
Science	4
Social Studies	3
CTAE and/or World Language/Latin/Fine Arts	3
Health/Physical Education	1
Electives	4
<b>Total</b>	<b>23</b>

\*See Appendix 1 for course progressions for each content area.

\*\*See Appendix 2 for the Counseling Team Graduation Status Report that is used to track courses and credits over the four years of high school.

### How Courses Are Chosen and How Changes Are Made

There are many steps and considerations when choosing courses for a student to take for the upcoming school year. Students in partnership with their counselor should consider graduation requirements, workload management, and interests and pathway focus. We offer several opportunities during the process for teachers, students, and parents to have input on the course selection process.

**Step 1 (January):** Teachers speak with students and make recommendations on the next course for the student in their content area. Teachers use assessment mastery, work ethic, and knowledge of the next course to make these recommendations.

**Step 2 (February):** Students and parents look at the recommendations for the next year and make any changes needed based on student workload management, interest, and need. Changes include leveling up (see note about waivers below) and leveling down from the teacher recommendations. Counselors make the changes submitted.

**Step 3 (March):** Students and parents take a SECOND look at the course list for the student and make any changes needed based on student workload management, interest, and need. Changes include leveling up (see note about waivers below) and leveling down from the teacher recommendations. Final course loads are sent to students and parents in May before leaving for the spring.

**\*Note:** There are no course changes over the summer unless a FVS summer course is taken or a Dual Enrollment course is taken.

**Step 4 (First 10 days of school):** This is the final period of time that a student or parent can initiate a course change following the counseling team protocol. This does not include emailing or calling the counseling office; the submission is made electronically. Due to the double verification in the spring, there should be limited changes at this time. **NO SCHEDULE CHANGES ARE MADE FOR TEACHER PREFERENCE OR CLASS TIMING PREFERENCE.**

**Step 5 (Second 10 days of school):** Teachers may reach out to parents and students about possible needs for a student to move courses. This decision is made on a case-by-case basis using student data and is only initiated by the teacher, not the parent or student. The parent and student may agree or not agree with the change. All changes may not be possible due to open seats in classes.

**Fall to Spring Semester Course Changes:** These types of course changes are initiated by the teacher based on grades, skills, and knowledge seen over the course of the fall semester. These changes are also very limited due to space in classes. Teachers will initiate a call or email with parents if a change is warranted.

If a student chooses to move into a higher level course than what they are recommended for, a course waiver agreement will need to be signed and kept on file. Course waiver agreements lock a student into the course for the year.

If a student chooses enroll in the following combinations of classes, we consider this a highly rigorous courseload:

- 3 or more AP courses
- Combination of 4 or more Honors and AP courses,
- 3 Dual Enrollment courses
- Combination of 3 or more Honors, AP, and Dual Enrollment courses

We ask that parents and students are very careful when overloading a schedule with too many rigorous classes and make smart decision for the well-being of the student.

Due to the extensive nature of the courses here at Innovation Academy, we recommend that students do not take more than one virtual course through FVS and/or GAVS. Our data has shown that the independent nature of online courses combined with our in person offerings require a high level of investment and accountability.

Students and parents will receive multiple opportunities to explore course options and course workload amounts to make the best decision for their individual student. Other students or families should not influence course load decisions.

## IA Course Catalog

### IA Unique Dual Courses Based on Interest

Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
IA Honors Research: History and Social Sciences	Honors IA Research:  US History:	Y	11th	Accepted application through the IA Research Choices Form	<p>Come learn amazing things in this special double-block section of US History and IA Honors Research! You will design your IA Research and Pinnacle Project through a historical lens.</p> <p><b>Scope:</b> Applying experiential learning of US History and the essentials of research to a research and pinnacle project through a historical or social science lens. Experiences include local field trips, a fall break trip and an optional late May-early June EF trip. Simply put, while you learn U.S. History, you will also learn about research methods that are particularly applicable to historical and social science research.</p> <p><b>Focal Points:</b></p> <ul style="list-style-type: none"> <li>• <b>Scientific Method and Design Thinking:</b> Learn the basics of scientific-method and design-thinking based research, along with a subset of research methods that are applicable to historical, economic, or social science research.</li> <li>• <b>Project Based Learning:</b> Apply your method learning to a choice PBL for a full-cycle practice historical research.</li> <li>• <b>Research:</b> You will design your IA Research and Pinnacle Project through a historical lens! Woohoo!</li> <li>• Begin background research in a topic of your choice</li> <li>• Create a proposal for your research and pinnacle project</li> <li>• Conduct your active research</li> <li>• Communication your overall research through a juried presentation</li> <li>• <b>SPACE CAMP:</b> Visit Huntsville to deeply understand how the history of rocketry has impacted that U.S. and world.</li> <li>• <b>EDUCATIONAL TRIP:</b> Optionally travel to Hawaii and Japan to experience your US History and Honors Research learning.</li> </ul>

IA Honors Research: Science Experimentation and/or Competitions	IA Honors Research: Science	Y	11th	Accepted application through the IA Research Choices Form	<p>If you are interested in competing in the Science Fair or know that you want to focus your research and pinnacle project through a scientific experiment, this is the section of IA Honors Research for you.</p> <p><b>Scope:</b> Learn the methodologies of research with particular focus on experimental design and the scientific method, then complete full-cycle research with your own pinnacle project. Support will be provided for Science Fair and other competitions. Guest speakers, mentors and learning experiences will be specifically focused on science experimentation and research. This section is also appropriate for DNA Club and budding Environmental Scientists.</p> <p><b>Focal Points:</b></p> <ul style="list-style-type: none"> <li>) Learn the basics of scientific-method and design-thinking based research, along with a subset of research methods that are applicable to science experiments</li> <li>b) Apply your method learning to a choice PBL for a full-cycle practice research or preliminary work to support your competition</li> <li>d) Begin background research in a topic of your choice</li> <li>d) Create a proposal for your research and pinnacle project</li> <li>e) Conduct your active research</li> <li>f) Communication your overall research through a juried presentation</li> <li>g) Optionally travel to Hawaii and Japan to experience your US History and Honors Research learning</li> </ul>
IA Honors Research: The Arts	IA Honors Research: The Arts	Y	11th	Application for Honors Research Special Section	<p>Are you interested in the Dramatic Arts or Arts?</p> <p><b>Scope:</b> This special section of Honors Research will be focused on arts, with emphasis on the dramatic arts. Within the framework of Honors Research and Pinnacle Project, students will select teams, such as acting, production, accounting, marketing, graphics arts and the arts and in the context a full dramatic production.</p> <p><b>Focal Points:</b></p>

					<ul style="list-style-type: none"> <li>) Learn the basics of scientific-method and design-thinking based research, along with a subset of research methods that are applicable to science experiments</li> <li>b) Apply your method learning to a choice PBL for a full-cycle practice research</li> <li>d) Begin background research in a topic applicable to your team</li> <li>d) Create a proposal for your research and pinnacle project</li> <li>e) Conduct your active research</li> <li>f) Communication your overall research through a juried presentation</li> </ul>
Element Six: An Interdisciplinary Exploration in Medicine, Arts & Meaning	<p>Multicultural Literature: 23.0670001 23.0670002</p> <p>Patient Care Fundamentals: 25.4360001 25.4360002</p>	Y	11 <sup>th</sup> + 12 <sup>th</sup>	<p>American Literature – 90 or above</p> <p>American Literature Honors – 85 or above</p> <p>Teacher Recommendation</p> <p>Healthcare Pathway: Completion of Intro to Healthcare &amp; Essentials of Healthcare</p>	<p><b>Scope:</b> contemporary works of narrative art from patient &amp; provider perspectives coupled with unique clinical skill sets of patient care</p> <p><b>Focal points:</b></p> <ul style="list-style-type: none"> <li>a) Exploring and building the wider intersections of literature and medicine</li> <li>b) Exploring and building an understanding of range of expressions from provider and patient perspectives in art</li> <li>c) Reading and analyzing memoir, short stories, and poetry from these dual perspectives</li> <li>d) Reading and analyzing secondary-source nonfiction, fiction, poetry, drama, visual art, music, and film/television reflective of these perspectives</li> <li>e) Contribute original pieces of literature in workshop setting</li> <li>f) Conduct field interviews with medical professionals</li> <li>g) Participation in High-fidelity simulation lab training that enhances understanding of patient care, interpersonal skills, and systems-based practice</li> <li>h) Demonstration and application of a broad range of medical skills including phlebotomy, electrocardiograms, vital signs, and wound care</li> <li>g) Integrating clinical judgement and interprofessional perspectives related to common disease processes across the lifespan</li> </ul>

## CTAE: Engineering

Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
Foundations of Engineering & Technology  *Embedded in the GT Block class	21.4250001 21.4250002	Y	9-10	None	How to think like an engineer, use a decision matrix, Gantt Charts, collect and present data in excel, use computer aided design to create virtual models, 3D printing of models, DC circuits, introduction to robotics, programming in C, measuring and dimensioning techniques, tool safety, heat transfer, physical property analysis, free body diagrams, and presentation skills
Engineering Concepts	21.4710001 21.4710002	Y	10-12	Foundations of Engineering & Technology	Advanced CAD, CAD assemblies, mechanical mates and animation, complex planes, tolerances, datum dimensioning, calculations of DC circuits, waves, soldering, statistical analysis of data, advanced safety training for use of power tools to work with lumber, use of laser engravers, programming in C++, robotics, mechanical advantage, and simple machines, OSHA certification
Engineering Applications	21.4720001 21.4720002	Y	11	Foundations of Engineering & Technology AND Engineering Concepts	Creating advanced views in CAD, full GD&T, rendering, parametric modeling, pneumatic systems, robotics, computer numeric control, advanced safety training for fabrication with nonferrous metals - primarily aluminum, milling, plasma cutting, TIG welding, compound machines, programming in C++, preparation for CAD certification exam in SolidWorks, preparation for engineering pathway exam
Research, Design, and Project Management	21.4610001 21.4610002	Y	11-12	Engineering Applications	Advanced architectural CAD software Revit, advanced models and rendering, vr compatibility, beam deflection calculations, truss analysis, heat transfer, surveying, site preparation, water runoff calculations, preparation for CAD certification exam in Revit, research and application of advanced communication methods

## CTAE: Information Technology



Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
Introduction to Software Technology	11.4460001 11.4460002	Y	9	None	Introduction to Software Technology is the foundational course for Cloud Computing, Computer Science, Game Design, Internet of Things, Programming, Web and Digital Design, and Web Development pathways. This course is designed for high school students to understand, communicate, and adapt to a digital world as it impacts their personal life, society, and the business world. Exposure to foundational knowledge in programming languages, software development, app creation, and user interfacing applications are all taught in a computer lab with hands-on activities and project-focused tasks.
AP Computer Science Principles	11.0190001 11.0190002	Y	10	Intro to Software Technology in the GT Block	The AP Computer Science Principles course is designed to be equivalent to a first-semester introductory college computing course. In this course, students will develop computational thinking vital for success across all disciplines, such as using computational tools to analyze and study data and working with large data sets to analyze, visualize, and draw conclusions from trends. The course is unique in its focus on fostering student creativity. Students are encouraged to apply creative processes when developing computational artifacts and to think creatively while using computer software and other technology to explore questions that interest them. They will also develop effective communication and collaboration skills, working individually and collaboratively to solve problems, and discussing and writing about the importance of these problems and the impact to their community, society and the world.
AP Computer Science A	11.0160011 11.0160012	Y	11-12	Teacher Recommendation	AP Computer Science A is equivalent to a first-semester, college-level course in computer science. The course introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing. The course emphasizes both object-oriented and imperative problem solving and design using Java language. These techniques represent proven approaches for developing solutions that can scale up from small, simple problems to large, complex problems. The AP Computer Science A course curriculum is compatible with many CS1 courses in colleges and universities.
Introduction to Cybersecurity	11.4810001 11.4810002	Y	10-11	Intro to Software Technology in the GT Block	Introduction to Cybersecurity is designed to provide students the basic concepts and terminology of cybersecurity. The course examines how the concept of security integrates into the importance of user involvement, security training, ethics, trust, application of cybersecurity practices and devices, and best practices management. The fundamental skills cover internal and external threats to network security and design, how to enforce network level security policies, how to protect an organization's information, and a broad range of other topics.
Embedded Course:	11.4480001 11.4480002				

Introduction to Hardware Technology					Introduction to Hardware Technology is the foundational course for Information Support & Services, Networking, and Cybersecurity pathways. This course is designed for high school students to understand, communicate, and adapt to a digital world as it impacts their personal lives, society, and the business world. Exposure to foundational knowledge in hardware, IT support, networks, and cybersecurity are all taught in a computer lab with hands-on activities and project-focused tasks. Students will not only understand the concepts but apply their knowledge to situations and defend their actions/decisions/choices through the knowledge and skills acquired in this course.
Game Design: Animation and Simulation	11.4290001 11.4290002	Y	11-12	AP Computer Science Principles	Students completing this course will gain an understanding of the fundamental principles used at every stage of the game creation process. First, game genres and modes of play are explored in terms of the psychology of incentives, motivation to play, and social networking. Next, virtual characters and non-player characters are reviewed from concept drawing to 2D and 3D art, rigging, and animation. Next, level design, storytelling, and animation are added to develop a virtual world around the characters. These same techniques are at work in training simulator systems, virtual shopping experiences, augmented reality, and a number of other important career options. Schools offering this program can provide a foundation of traditional drawing, illustration, and art courses to make way for the 2D and 3D animation, storytelling, character development, audio, and game technology.
Embedding Computing	11.4270001 11.4270002	Y	11-12	AP Computer Science Principles	The demand for programming (software development) has gone well beyond desktop computers and the web, into a ubiquitous world of personal devices, smart cars, intelligent factories, and even more. These systems interact with us directly, as well as with each other. This course will focus on the interaction of programming and devices, using data from various sensors and sources in order to make decisions, take actions, and more. A common industry term to describe this work is Internet of Things. Students will show first-hand how programming and machines interact to accomplish common and essential tasks throughout our society.
Advanced Cybersecurity	11.4820001 11.4820002	Y	11-12	Introduction to Cybersecurity	Advanced Cybersecurity is designed to provide students the advanced concepts and terminology of cybersecurity. The course explores the field of cybersecurity with updated content including new innovations in technology and methodologies. It builds on existing concepts introduced in Introduction to Cybersecurity and expands into malware threats, cryptography, organizational security, and wireless technologies.
Programming, Games, Apps, and Society	11.4720001 11.4720002	Y	12	Completed a previous IT pathway, teacher	Are you ready to design and develop? The course is designed for high school students to strategize, design, and develop games and mobile and desktop applications that can be produced in the real world. Students will learn about life cycles of project development and use models to develop applications. Attention will be placed on how user interfaces

				recommendation and must be in grade 12	affect the usability and effectiveness of a game or an application. Programming constructs will be employed which will allow students' applications to interact with "real world," stimuli. The course exposes students to privacy, legality, and security considerations with regards to the software industry.
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## CTAE: Health Sciences

Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
Intro to Healthcare Science  *Embedded in the GT Block	25.5210001 25.5210002	Y	9	None	<p>Introduction to Healthcare Science is the foundational course for all Health Science pathways and is a prerequisite for all other Healthcare Science pathway courses. This course will enable students to receive initial exposure to the many Healthcare Science careers as well as employability, communication, and technology skills necessary in the healthcare industry. This course will provide students with a competitive edge to be the better candidate for either entry into the healthcare global marketplace and/or the post-secondary institution of their choice to continue their education and training. <i>This is the first out of three pathway courses.</i></p> <p><b>Major Concepts and Topics Covered:</b></p> <ul style="list-style-type: none"> <li>• Human growth and development</li> <li>• Interaction with patients and family members,</li> <li>• Health, wellness, and preventative care</li> <li>• Legal and ethical responsibilities of today's healthcare providers</li> <li>• Fundamental healthcare skills development</li> <li>• Microbiology</li> <li>• Basic life support and first aid</li> </ul> <p><b>Prerequisites:</b></p> <ul style="list-style-type: none"> <li>• None!</li> </ul> <p><b>Choices for next course after completion:</b></p> <ul style="list-style-type: none"> <li>• Essentials of Healthcare</li> <li>• Essentials of Biotechnology</li> </ul>
Essentials of Healthcare	25.4400001 25.4400002  26.0730001 26.0730002	Y	10	Introduction to Healthcare	<p>Anatomy and Physiology is a vital part of most healthcare post-secondary education programs.</p> <p><b>Major Concepts and Topics Covered:</b></p> <ul style="list-style-type: none"> <li>• Anatomy and Physiology of each body system</li> <li>• Investigation of common diseases, disorders and emerging diseases.</li> <li>• Prevention of disease</li> </ul>

Embedded Course: Human Anatomy/Physiology					<ul style="list-style-type: none"> <li>• Diagnosis and treatment</li> <li>• Medical terminology related to each system.</li> </ul> <p>This course provides an opportunity to demonstrate technical skills that enforce the goal of helping students make connections between medical procedures and the pathophysiology of diseases and disorders. <i>This is a second pathway course for students. They will take this if the plan to continue on to Surgical Technician, Patient Care fundamentals, Emergency Medical Responder, or Allied Health.</i></p> <p><b>Prerequisites:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Healthcare (completed in GT block) (Pathway course 1)</li> </ul> <p><b>Choices for next course after completion:</b></p> <ul style="list-style-type: none"> <li>• Surgical Technician I (Surgical Technician Track)</li> <li>• Patient Care Fundamentals (Patient Care Track)</li> <li>• Emergency Medical Responder (Emergency Medical Responder Track)</li> <li>• Allied Health (Allied Health Track)</li> </ul>
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<b>Therapeutic/Patient Care:</b>					
Patient Care Fundamentals	25.4360001 25.4360002	Y	11 <sup>th</sup> or 12 <sup>th</sup>	Introduction to Healthcare Science	<p>This course is designed to provide students interested in careers that involve patient care with entry level skills most associated with the career Nursing Assistant. The students are required to meet both national and intrastate professional guidelines as designated by applicable regulatory agencies such as the Occupational Health and Safety Administration (OSHA), Center for Disease Control (CDC), and the Department of Health and Human Services (HHS) with a specific focus on the Omnibus Budget Reconciliation Act of 1987 (OBRA) and the Health Insurance Portability and Accountability Act of 1996 (HIPAA). <i>This is the third pathway course for the Patient Care track.</i></p> <p><b>Major Concepts and Topics Covered:</b></p> <ul style="list-style-type: none"> <li>• Phlebotomy and EKG</li> <li>• Infection Control and PPE</li> <li>• Patient Care and Activities of Daily Living</li> <li>• Nursing Assistant Skills</li> <li>• Recognition of Common Disease Processes</li> <li>• Assembly and Application of Complex Instrumentation including tubing, ostomy care, etc.</li> <li>• Body mechanics and Kinesiology</li> <li>• Wound Care and Wound Vacs</li> </ul> <p>Upon completion of this course and its prerequisites, this course meets the Certified Patient Care Technician curriculum content as specified by the National Health career Association. Students meeting all academic, attendance, and age</p>

					<p>requirements may sit for the NHA CPCT/A Exam. Successful completion of the examination allows students to seek employment in the state of Georgia as a Certified Patient Care Technician.</p> <p><b>Prerequisites:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Healthcare (completed in GT block) (Pathway course 1)</li> <li>• Essentials of Healthcare (Pathway course 2)</li> </ul> <p><b>End of Pathway Assessment:</b></p> <ul style="list-style-type: none"> <li>• This is an end of pathway course (3<sup>rd</sup> course out of 3)</li> <li>• The exam is NHA CPCT/A Exam</li> <li>• Passing (70% or higher) results in students being a certified patient care technician through the NHA</li> </ul> <p><b>Choices for next course after completion:</b></p> <ul style="list-style-type: none"> <li>• Work-based learning for internships</li> <li>• Pharmacy Operations and Fundamentals, Surgical Technician I, Emergency Medical Responder, or Allied Health for dual pathway completion</li> </ul>
<b>Emergency Medical Technician:</b>					
Emergency Medical Responder	25.4500001 25.4500002	Y	11	Introduction to Healthcare Science	<p>The Emergency Medical Responder (EMR) course prepares the student to provide initial stabilizing care to the sick or injured prior to the arrival of Emergency Medical Services Professionals (EMS), and to assist EMS personnel in transporting patients for definitive care at an appropriate hospital/facility.</p> <p><b>Major Concepts and Topics Covered:</b></p> <ul style="list-style-type: none"> <li>• Medical Terminology</li> <li>• Anatomy &amp; Physiology</li> <li>• Responder Safety</li> <li>• Incident Command</li> <li>• Blood-borne Pathogen Training</li> <li>• Basic Physical Assessment</li> <li>• Treatment of Trauma and Medical Emergencies</li> <li>• Cardiopulmonary Resuscitation</li> <li>• Automatic External Defibrillators (AEDs).</li> <li>• Additional Topics Include: Pathophysiology; Life Span Development; Public Health; Pharmacology; Airway Management; Respiration and Artificial Ventilation; Shock and Resuscitation; EMS Operations</li> </ul> <p>The course is a blend of lectures, hands on lab/learning, and practical scenario-based learning/testing. The course will include Healthcare Provider CPR/AED Certification from a Nationally Recognized Body (American Heart Association or</p>

					<p>Red Cross, etc.). <i>This is the third pathway course for the Emergency Medical Responder pathway.</i></p> <p><b>Prerequisites:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Healthcare (completed in GT block) (Pathway course 1)</li> <li>• Essentials of Healthcare (Pathway course 2)</li> </ul> <p><b>End of Pathway Assessment:</b></p> <ul style="list-style-type: none"> <li>• This is an end of pathway course (3<sup>rd</sup> course out of 3)</li> <li>• The exam is The National Health Science Assessment</li> </ul> <p><b>Choices for next course after completion:</b></p> <ul style="list-style-type: none"> <li>• Work-based learning for internships</li> <li>• Patient Care Fundamentals, Surgical Technician I, Pharmacy Operations and Fundamentals, or Allied Health for dual pathway completion</li> </ul>
<b>Therapeutic Services/Allied Health and Medicine</b>					
Allied Health and Medicine	25.4370001 25.4370002	Y	11 <sup>th</sup> and 12 <sup>th</sup>	Intro to Healthcare And Essentials of Healthcare	<p>This course is designed to offer seniors the opportunity to become effective and efficient multi-skilled healthcare providers as they develop a working knowledge of various allied health opportunities. Students focusing on a career path in the healthcare field may apply classroom/lab knowledge and skills according to their passion and interest in the health sciences field. The curriculum allows for student growth opportunities in area(s) of interest to the student. This course will result in completion of classroom simulated experience: this component of Allied Health is designed to give students practical application of previously studied knowledge and skills. <i>This is the third pathway course in the Allied Health track.</i></p> <p><b>Major Concepts and Topics Covered:</b></p> <ul style="list-style-type: none"> <li>• Medical Terminology</li> <li>• PPE</li> <li>• Lab Values</li> <li>• Vitals</li> <li>• Drug Schedules</li> <li>• Procedures</li> <li>• Phlebotomy</li> <li>• Pharmacology</li> <li>• Microbiology</li> <li>• Diseases</li> <li>• EKG</li> </ul>

					<p>Upon completion of this course and its prerequisites, this course meets the Certified Medical Assistant curriculum content as specified by the National Health career Association. Successful completion of the examination allows students to seek employment in the state of Georgia as a Certified Medical Assistant.</p> <p><b>Prerequisites:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Healthcare (completed in GT block) (Pathway course 1)</li> <li>• Essentials of Healthcare (Pathway course 2)</li> </ul> <p><b>End of Pathway Assessment:</b></p> <ul style="list-style-type: none"> <li>• This is an end of pathway course (3<sup>rd</sup> course out of 3)</li> <li>• The exam is The NHA CCMA Exam</li> <li>• Passing the exam (70% or higher) results in students being a certified medical assistant through the NHA</li> </ul> <p><b>Choices for next course after completion:</b></p> <ul style="list-style-type: none"> <li>• Work-based learning for internships</li> <li>• Patient Care Fundamentals, Surgical Technician I, Emergency Medical Responder, or Pharmacy Operations and Fundamentals for dual pathway completion</li> </ul>
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**Therapeutic Services - Surgical Technician**

Surgical Technician I	25.4470001 25.4470002	Y	11	Intro to Healthcare And Essentials to Healthcare	<p>The goal of this course is to provide fundamental surgical technician skills including safety, infection control, pharmacology, surgical equipment, perioperative procedures, instruments, and sterilization. <i>This is the third pathway course in the Surgical Technician Pathway.</i></p> <p><b>Major Topics and Concepts Covered:</b></p> <ul style="list-style-type: none"> <li>• Orientation to Surgical Technology, Legal Concepts, Risk Management, &amp; Ethical Issues</li> <li>• The Surgical Patient, Physical Environment &amp; Safety Standards</li> <li>• Biomedical Science</li> <li>• Preventing Perioperative Disease Transmission</li> <li>• Hemostasis, Emergency Situations, &amp; All-Hazards Prep</li> <li>• Surgical Pharmacology &amp; Anesthesia</li> <li>• Instrumentation, Equipment, &amp; Supplies</li> <li>• Wound Healing, Sutures, Needles, &amp; Stapling Devices</li> <li>• Surgical Case Management</li> <li>• Diagnostic Procedures</li> <li>• Multiple Surgical Specialties</li> </ul> <p><b>Prerequisites:</b></p>
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					<ul style="list-style-type: none"> <li>• Introduction to Healthcare (completed in GT block) (Pathway course 1)</li> <li>• Essentials of Healthcare (Pathway course 2)</li> </ul> <p><b>End of Pathway Assessment:</b></p> <ul style="list-style-type: none"> <li>• This is an end of pathway course (3<sup>rd</sup> course out of 3)</li> <li>• The exam is The National Health Science Assessment</li> </ul> <p><b>Choices for next course after completion:</b></p> <ul style="list-style-type: none"> <li>• Work-based learning for internships</li> <li>• Patient Care Fundamentals, Surgical Technician I, Pharmacy Operations and Fundamentals, or Allied Health for dual pathway completion</li> </ul>
<b>Biotechnology:</b>					
Essentials of Biotechnology	25.5700001 25.5700002	Y	10	Introduction to Healthcare	<p>This is the second course in the career pathway that introduces students to the broad understanding of the fundamentals of biotechnology and the impact on society. The knowledge and skills in this course provide a basic overview of current trends and careers in biotechnology, with an emphasis on basic laboratory skills, along with the business, regulatory, and ethical aspects of biotechnology. <i>This is the 2nd pathway course in the Biotechnology track.</i></p> <p><b>Major Concepts and Topics Covered:</b></p> <ul style="list-style-type: none"> <li>• Safety, solutions, dilutions, micropipetting and spectrophotometry</li> <li>• DNA properties and protein synthesis.</li> <li>• Immune response</li> <li>• PCR, restriction enzymes, gel electrophoresis, CRISPR assay</li> <li>• Germ Theory</li> </ul> <p><b>Prerequisites:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Healthcare (completed in GT block) (Pathway course 1)</li> </ul> <p><b>Choices for next course after completion:</b></p> <ul style="list-style-type: none"> <li>• Applications of Biotechnology</li> </ul>
Applications of Biotechnology	25.5690001 25.5690002	Y	11	Introduction to Healthcare Science and Essentials of Biotechnology	<p>This course further introduces students to the fundamentals of biotechnology. Included in this course are additional applications and techniques in biotechnology that expand and increase the student's comprehension of how biotechnology utilizes living systems to create products and enhance lives. In addition, laboratory applications learned in this course form the pivotal component distinguishing science theory from application in bioscience, like that of engineering and mathematics. Bioscience and the application of laboratory technique to the manipulation of living systems is a cornerstone of pharmaceutical, medical device, forensic science, environmental science, agriculture, alternative fuel, and green chemistry. <i>This is the third pathway course in the Biotechnology track.</i></p> <p><b>Major Concepts and Topics Covered:</b></p>



					<ul style="list-style-type: none"> <li>• Protein Quantification and Enzyme Reactions</li> <li>• Tissue Culture</li> <li>• Drug Discovery</li> <li>• Immune Response Quantification</li> <li>• Synthetic Biology Gene Expression</li> </ul> <p><b>Prerequisites:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Healthcare (completed in GT block) (Pathway course 1)</li> <li>• Essentials of Biotechnology (Pathway course 2)</li> </ul> <p><b>End of Pathway Assessment:</b></p> <ul style="list-style-type: none"> <li>• This is an end of pathway course (3<sup>rd</sup> course out of 3)</li> <li>• The exam is the</li> </ul> <p><b>Choices for next course after completion:</b></p> <ul style="list-style-type: none"> <li>• Biotechnology Internship/Independent Research</li> </ul>
Biotechnology Internship/Independent Research	25.5750001 25.5750002	Y	12	<p>Introduction to Healthcare Science, Essentials of Biotechnology, Applications of Biotechnology</p> <p>Grade of 85 or higher in pathway courses and successful completion of EOPA exam</p>	<p>This course (BIR) is designed for student biotechnology related research at Innovation Academy or off-site through an internship. Mentorship by the instructor will be given to students as they design and implement their own biology related research project. They will use tools and techniques developed from and related to the prerequisite biotechnology courses. Students will be expected to perform a literature review, develop an investigative question with a testable hypothesis, develop experimental methodology, quantitatively analyze and present data, draw conclusions from their data and present their data to an audience through a poster and a research paper. Students will have the option to work towards peer reviewed publishing depending on their research. Students who have off-site internships will develop their plan of research based on the internship site. They will be expected to document their research and present it through a poster and talk to an audience. BIR will be the culmination of biotechnology learned from the previous two years and is reliant on independent student research with the instructor as the mentor.</p>
<b>Dual Enrollment On Campus, Lab Off Campus: (see Dr. Dawes with all questions)</b>					
BIOL 2113 - Anatomy and Physiology I (Lecture)	College Course Numbers	1 semester	12	<p>Corequisite: BIOL 2113L (Lab) and ENGL 1101 (AP Lang Score of 3 or higher will satisfy this requirement)</p>	<ul style="list-style-type: none"> <li>• Introduces the anatomy and physiology of the human body. Emphasis is placed on the development of a systemic perspective of anatomical structures, physiological processes, and chemical principles related to physiological processes, and chemical principles related to physiology. Topics include body organization, cell structure and functions, tissue classifications, integumentary system, skeletal system, muscular system, and nervous and sensory systems. (associate degree-level course)</li> </ul>

					<ul style="list-style-type: none"> <li>● Students will take <b>BIOL 2113 (Lecture)</b> at IA Monday-Thursday.</li> <li>● <b>BIOL 2113L</b> Lab will be completed at Gwinnett Tech on a day of students' choosing (Evening, Friday, and Weekend options are available). Lab meets once per week.</li> <li>● <b>BIOL 2113L</b> will also satisfy IA Health Science Flex Friday requirements.</li> <li>● High School credits received = 1.5</li> <li>● Gwinnett Tech credits received = 3</li> <li>● *Please allot for 2 class periods in your schedule - one for lecture and one for lab</li> </ul>
BIOL 2114 - Anatomy and Physiology II	College Course Numbers	1 semester	12	<i>Corequisite:</i> BIOL 2114L (Lab)	<ul style="list-style-type: none"> <li>● Anatomy and Physiology II builds on the fundamentals studied in Anatomy and Physiology I by exploring the more intricate systems of the body. Topics include the endocrine system, cardiovascular system, blood and lymphatic system, immune system, respiratory system, digestive system, urinary system, and reproductive system. (associate degree-level course)</li> <li>● Students will take <b>BIOL 2114 (Lecture)</b> at IA Monday-Thursday.</li> <li>● <b>BIOL 2114L Lab</b> will be completed at Gwinnett Tech on a day of students' choosing (Evening, Friday, and Weekend options are available). Lab meets once per week.</li> <li>● <b>BIOL 2114L</b> will also satisfy IA Health Science Flex Friday requirements.</li> <li>● High School credits received = 1.5</li> <li>● Gwinnett Tech credits received = 3</li> <li>● *Please allot for 2 class periods in your schedule - one for lecture and one for lab</li> </ul>

## Research

Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
AP Seminar	23.0380001 23.0380002	Y	10	9 <sup>th</sup> Honors Literature or	AP Seminar is a foundational course that engages students in cross-curricular conversations that explore the complexities of academic and real-world topics and issues by analyzing divergent perspectives. Students learn to investigate a problem or

				Teacher recommendation	issue, analyze arguments, compare different perspectives, synthesize information from multiple sources, and work alone and in a group to communicate their ideas.
AP Research	23.0370001 23.0370002	Y	11 or 12	Scored 3 or above on the AP Seminar exam An unweighted 90 in AP English and/or AP Science	AP Research, the second course in the AP Capstone experience, allows students to deeply explore an academic topic, problem, issue, or idea of individual interest. Students design, plan, and implement a yearlong investigation to address a research question. Through this inquiry, they further the skills they acquired in the AP Seminar course by learning research methodology, employing ethical research practices, and accessing, analyzing, and synthesizing information. Students reflect on their skill development, document their processes, and curate the artifacts of their scholarly work through a process and reflection portfolio. The course culminates in an academic paper of 4,000–5,000 words (accompanied by a performance, exhibit, or product where applicable) and a presentation with an oral defense.
IA Research (Scientific Research I)  Offered as on-level credit or honors	40.0921001 40.0921002  40.0921041 40.0921042	Y	11	10 <sup>th</sup> grade Literature or AP Seminar	IA Research is an honors-level course in which students experience research through the lenses of both the scientific method and design thinking. Over the course of the year students will frame, execute and communicate their independent research through IA's Pinnacle Project using industry best practices. IA Research is analogous to AP Research in that research in any area - pathway, ELA, social sciences, science, math - is supported with the added flexibility College Board does not allow of partners or small groups and the opportunity to have community and expert mentors.
<b>NOTE: The specialty research courses are listed in the first section of the course catalog IA Unique Dual Courses. There is an application to fill out to join a topic specific research class.</b>					

## English Language Arts

Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
9 <sup>th</sup> Literature and Composition	23.0610001 23.0610002	Y	9	None	Ninth Grade Literature and Composition is a study of literary genres. Students will develop vocabulary and apply effective reading strategies to a wide variety of literary and informational texts; to learn characteristics of basic literary genres, including the

					novel, short story, poetry, drama, and nonfiction; to establish effective writing and research habits; and to refine language skills as they apply to writing, listening, speaking, and viewing. This course prepares students for college.
9 <sup>th</sup> Literature and Composition Honors	23.0610041 23.0610042	Y	9	Teacher recommendation and placement criteria	The honors level course has higher expectations and more rigorous coursework than the college preparatory level, including mandatory summer reading and written responses to literature. Ninth Grade Literature and Composition --Honors is a study of literary genres. Students will develop vocabulary and apply effective reading strategies to a wide variety of literary and informational texts; to learn characteristics of basic literary genres, including the novel, short story, poetry, drama, and nonfiction; to establish effective writing and research habits; and to refine language skills as they apply to writing, listening, speaking, and viewing. This course prepares students for college.
10 <sup>th</sup> Literature and Composition	23.0620001 23.0620002	Y	10	9 <sup>th</sup> Literature	Tenth Grade Literature and Composition is organized thematically. Students will develop vocabulary and apply effective reading strategies to a wide variety of literary and informational texts. They will learn about universal themes and symbols common to literary works, including the novel, short story, poetry, drama, and nonfiction. Students will build on effective writing and research habits as they refine language arts skills which they will apply to writing, listening, speaking, and viewing. This course prepares students for college.
10 <sup>th</sup> Literature and Composition Honors		Y	10	9 <sup>th</sup> Honors or Teacher Recommendation	The course covers the same material as the on-level 10th grade literature class, and covers other topics and skills specific to preparing students for the rigors of an Advanced Placement (AP) course will be integrated throughout the course.
AP Seminar	23.0380001 23.0380002	Y	10	9 <sup>th</sup> Honors Literature or Teacher recommendation	AP Seminar is a course that engages students in cross-curricular conversations that explore the complexities of academic and real-world topics and issues by analyzing divergent perspectives. Students learn to investigate a problem or issue, analyze arguments, compare different perspectives, synthesize information from multiple sources, and work alone and in a group to communicate their ideas.

11 <sup>th</sup> American Literature and Composition	23.0510001 23.0510002	Y	11	10 <sup>th</sup> Literature	American Literature and Composition is a study of the major literary topics, themes, and movements in the history of the United States from pre-colonial times to present day. Students will focus on major literary forms of the emerging nation, analyze literary themes and trends, and both research and compose several papers, speeches, and presentations, using representative forms of discourse. This course prepares students for college.
11 <sup>th</sup> American Literature and Composition Honors	23.3510041 23.3510042	Y	11	AP Seminar or Teacher Recommendation	The course covers the same material as the on-level American literature class, and covers other topics and skills specific to preparing students for the rigors of an Advanced Placement (AP) course will be integrated throughout the course.
AP Language & Composition	23.0530001 23.0530002	Y	11	AP Seminar or Teacher Recommendation	Advanced Placement English Language and Composition is an advanced college level study of the methods of development in expository, analytical, and argumentative writing. Students will write in a variety of composition methods, analyze rhetoric and writing styles of authors, read and study American literature, and improve comprehension of rigorous texts in order to prepare for the Georgia End of Course exam in April and AP exam in May.
Multicultural Literature and Composition <i>*Offered individually as one course or as a double block course with Civil Rights in the United States. See the course listing for Civil Rights in the United States for more information on this unique dual course.</i>	23.0670001 23.0670002	Y	12	None	The course focuses on world literature and informational texts by and about people of diverse ethnic backgrounds. Students explore themes of linguistic and cultural diversity by comparing, contrasting, analyzing, and critiquing writing styles and universal themes. The students write argumentative, expository, narrative, analytical, and response essays. A research component is critical. The students observe and listen critically and respond appropriately to written and oral communication. Conventions are essential for reading, writing, and speaking. Instruction in language conventions will, therefore, occur within the context of reading, writing, and speaking rather than in isolation. The students understand and acquire new vocabulary and use it correctly in reading, writing, and speaking. This course reflects grade-level appropriate Georgia Standards of Excellence.
AP English Literature	23.0650001 23.0650002	Y		85 or above in previous English course and teacher recommendation	The AP English Literature and Composition course focuses on reading, analyzing, and writing about imaginative literature (fiction, poetry, drama) from various periods. Students engage in close reading and critical analysis of imaginative literature to deepen their understanding of the ways writers use language to provide both meaning and pleasure. As they read, students consider a work's structure, style, and themes, as well as its use of figurative language, imagery, and symbolism. Writing

					assignments include expository, analytical, and argumentative essays that require students to analyze and interpret literary works.
Dramatic Writing	52.0920001 52.0920002	Y	12	American Literature: 90 or above or American Literature Honors: 85 or above <b>AND</b> ELA teacher recommendation	Applies skills to culminate in creating and developing dramatic writing for theatrical media with special emphasis on film and television. Includes development of “writerly stance” by reading, viewing, and analyzing texts and visual media from a writer’s point of view, with focus on understanding the construction process and including the application of conventions of standard English grammar and usage. <b>This honors-level course is recommended for motivated, engaged students with an interest in writing, researching, and collaborating on academic and creative works related to film, television, and drama.</b>
Embedded Course: Advanced Composition Honors	23.0340041 23.0340042				
Advanced Composition Honors		Y	12	American Literature: 90 or above or American Literature Honors: 85 or above	This course focuses on the writing process (planning, drafting, and revising). Students will focus on different writing genres and organizational structures: expository, argument, narrative, descriptive, comparison-contrast, exemplification, process analysis, classification, cause and effect, and definition. Advanced language skills (grammar and usage) will be a major component of this class. An emphasis on research is also required.

## Mathematics

**We highly encourage students NOT to take any math class over the summer to accelerate. Those students have not been prepared for the rigor for accelerated and/or AP math coursework. At IA, we encourage all students to take their math courses during the school year, IN PERSON.**

Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
Algebra: Concepts and Connections	27.0811001 27.0811002	Y	9	Placement Criteria	This course is designed as the first course in a three-course series. Students will apply their algebraic and geometric reasoning skills to make sense of problems involving algebra, geometry, bivariate data, and statistics. This course focuses on algebraic, quantitative, geometric, graphical, and statistical reasoning. In this course, students will continue to enhance their algebraic reasoning skills when analyzing and applying a deep understanding of linear functions, sums and products of rational and irrational numbers, systems of linear inequalities, distance, midpoint, slope, area, perimeter, nonlinear equations and functions, quadratic expressions, equations and functions, exponential expressions, equations, and functions, and statistical reasoning.
Geometry: Concepts and Connections  *Honors credit given for students taking this course in the 9 <sup>th</sup> grade	27.0821001 27.0821002	Y	9 and 10	Algebra: Concepts and Connections	This course is designed as the second course in a three-course series. This course enhances students' geometric, algebraic, graphical, and probabilistic reasoning skills. Students will apply their algebraic and geometric reasoning skills to make sense of problems involving geometry, trigonometry, algebra, probability, and statistics. Students will continue to enhance their analytical geometry and reasoning skills when analyzing and applying a deep understanding of polynomial expressions, proofs, constructions, rigid motions and transformations, similarity, congruence, circles, right triangle trigonometry, geometric measurement, and conditional probability.
Advanced Algebra: Concepts and Connections  *Honors credit given if taken in the 9 <sup>th</sup> or 10 <sup>th</sup> grade	27.0831001 27.0831002	Y	10 or 11	Geometry: Concepts and Connections	Advanced Algebra: Concepts & Connections is the culminating course in a sequence of three high school courses designed to ensure career and college readiness. It is designed to prepare students for fourth course options relevant to their career pursuits. High school course content standards are listed by big ideas including Data and Statistical Reasoning, Probabilistic Reasoning, Functional and Graphical Reasoning, Patterning and Algebraic Reasoning, and Geometry Patterning and Spatial Reasoning.  This course is designed as the third course in a three-course series. This course enhances students' geometric, algebraic, graphical, and probabilistic reasoning skills. Students will apply their algebraic and geometric reasoning skills to make sense of problems involving geometry, trigonometry, algebra, probability, and statistics. Students will continue to enhance their analytical geometry and reasoning skills when analyzing and applying a deep understanding of polynomial expressions, proofs, constructions, rigid motions and transformations, similarity, congruence, circles, right triangle trigonometry, geometric measurement, and conditional probability.

Enhanced Advanced Algebra and AP PreCalculus  *Honors credit given if taken in the 9 <sup>th</sup> or 10 <sup>th</sup> grade  *Can take the AP PreCalculus exam	27.0931001 27.0931002	Y	10 and 11  By recommendation only	Geometry: Concepts and Connections	Enhanced Advanced Algebra & Precalculus is a thoughtful blend of Advanced Algebra: Concepts & Connections and Precalculus. Students will be provided the opportunity to develop a deep understanding of concepts in Algebra that are critical to the study of Calculus as well as an understanding of trigonometry and its applications. This course enhances students' geometric, algebraic, graphical, and probabilistic reasoning skills. Students will apply their algebraic and geometric reasoning skills to make sense of problems involving geometry, trigonometry, algebra, probability, and statistics. Students will continue to enhance their analytical geometry and reasoning skills when analyzing and applying a deep understanding of polynomial expressions, proofs, constructions, rigid motions and transformations, similarity, congruence, circles, right triangle trigonometry, geometric measurement, and conditional probability.
AP PreCalculus	27.0741001 27.0741002	Y	10, 11, 12	Advanced Algebra: Concepts and Connections	AP PreCalculus covers topics designed to prepare students for college-level math coursework, including polynomial, rational, exponential, logarithmic, trigonometric, polar and parametric functions as well as vectors, matrices and conic sections.  Essential skills include knowledge of functions (domain, range, excluded values), Algebraic skills (factoring, solving various types of equations), right triangle trigonometry, exponential and logarithmic functions, critical thinking skills in math.
Pre-Calculus	27.0841001 27.0841002	Y	10, 11, 12	Advanced Algebra: Concepts and Connections	Precalculus is a fourth-year math option for students who have completed Advanced Algebra (or the equivalent). The course provides students with the opportunity to develop a deeper understanding of concepts in Algebra that are critical to the study of Calculus as well as an understanding of trigonometry and its applications. Throughout the course there should be a focus on notational fluency and the use of multiple representations. The course includes the study and analysis of piecewise and rational functions; limits and continuity as related to piecewise and rational functions; sequences and series with the incorporation of convergence and divergence; conic sections as implicitly defined curves; the six trigonometric functions and their inverses; applications of trigonometry such as modeling periodic phenomena, modeling with vectors and parametric equations, solving oblique triangles in contextual situations, graphing in the Polar Plane; solutions of trigonometric equations in a variety of contexts; and the manipulation and application of trigonometric identities.



Calculus	27.0780001 27.0780002	Y	11 or 12	PreCalculus or Enhanced Advanced Algebra and PreCalculus	Calculus is a fourth-year math option for students who have completed Pre-Calculus. The course provides students with the opportunity to develop an understanding of the derivative and its applications as well as the integral and its applications. Throughout the course there should be a focus on notational fluency and the use of multiple representations. The course includes the study and analysis of limits and continuity as applied to a variety of functions; the derivative as related to limits and continuity; various derivative rules such as product, quotient, and chain; applications of the derivative including curve analysis, applied max/min situations, related rate problems, and use of Mean Value Theorem; the definite integral as a limit of Riemann sums; properties of definite integrals; the Fundamental Theorem of Calculus as it relates derivatives and integrals; techniques of integration including u-substitution; and applications of the integral including solving separable differential equations, finding a particular solution curve given an initial condition, area between curves on a coordinate plane, and average value situations. Topics should be analyzed in multiple ways, to include verbal and written, numerical, algebraic, and graphical presentations. Instruction and assessment should include the appropriate use of technology. Concepts should be introduced and investigated, where appropriate, in the context of realistic phenomena.
Linear Algebra with Computer Science	27.0853001 27.0853002	Y	11 or 12	AP Calculus AB	Linear Algebra with Computer Science Applications is designed to meet the needs of advanced students who have completed Pre-Calculus or Advanced Enhanced Algebra and PreCalculus or the equivalent and will pursue careers which require linear algebra topics often associated with modern computer science. The course will examine the use of vectors and matrices in mathematics and apply these concepts to computer science. There will be a strong focus on the presentation of mathematical ideas through both writing and programming. Mathematical concepts, such as vector spaces and Markov chains, will be presented through an abstract approach that characterizes upper-level mathematics courses. The goal is to give students the skills and techniques they will need as they study advanced mathematics or computer science at the college level. This is an alternative course for those students who do not wish to enroll in an Advanced Placement course, but who still wish to learn higher-level mathematics.
AP Calculus AB	27.0720001 27.0720002	Y	11-12	PreCalculus or Enhanced Advanced Algebra and PreCalculus	AP Calculus AB is a year-long course comparable to the first semester of calculus courses offered at colleges or universities. Students need to have a thorough knowledge of college preparatory mathematics including, trigonometry, analytic geometry, equations and graphs, and lines and conics. Students taking this course should be adequately prepared to study elementary functions; limits and

					continuity; and differential and integral calculus. Calculus AB is concerned with developing students' understanding of the concepts of calculus and providing experience with its methods and applications. The course emphasizes a multi-representational approach to calculus, with concepts, problems, and results being expressed graphically, numerically, analytically, and verbally. You'll perform experiments and investigations and solve problems by applying your knowledge and skills.
AP Calculus BC	27.0730001 27.0730002	Y	11-12	PreCalculus or Enhanced Advanced Algebra and PreCalculus	AP Calculus BC is a year-long course comparable to the first two semesters of calculus courses offered at colleges or universities. Students need to have a thorough knowledge of college preparatory mathematics including, trigonometry, analytic geometry, equations and graphs, and lines and conics. Students taking this course should be adequately prepared to study elementary functions; limits and continuity; differential and integral calculus; calculus of parametric, polar, and vector functions; and series and polynomial approximations. Calculus BC is concerned with developing students' understanding of the concepts of calculus and providing experience with its methods and applications. The course emphasizes a multi-representational approach to calculus, with concepts, problems, and results being expressed graphically, numerically, analytically, and verbally. You'll perform experiments and investigations and solve problems by applying your knowledge and skills.
AP Statistics	27.0740001 27.0740002	Y	10, 11, 12	Advanced Algebra: Concepts and Connections or Enhanced Advanced Algebra and PreCalculus	Learn about the major concepts and tools used for collecting, analyzing, and drawing conclusions from data. You'll explore statistics through discussion and activities, and you'll design surveys and experiments. Skills you will learn in this course include selecting methods for collecting or analyzing data, describing patterns, trends, associations, and relationships in data, using probability and simulation to describe probability distributions and define uncertainty in statistical inference, and using statistical reasoning to draw appropriate conclusions and justify claims.

## Science

Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
Biology	26.0120001 26.0120002	Y	9	None	Students will identify patterns, processes, and relationships of living organisms including the interdependence of organisms, the relationship of matter, energy, and organization in living systems, the behavior of organisms, and biological evolution. Students will investigate biological concepts through experiences in laboratories and field work using the process of inquiry.
Biology Honors	26.0120041 26.0120042	Y	9	Placement Criteria	Honors Biology is a lab science course designed for the advanced academic student who has the ability to critically analyze and apply biological concepts, the ability to gain information on the scientific processes through critical reading, and one who possesses strong organizational skills. This challenging course focuses on cytology, ecology, genetics, evolution, taxonomy, microbiology, botany, and zoology. Honors Biology students are required to complete an in-depth, individual literature review and research paper during the first semester. This is a lab inclusive course with 25% of the time expected to be spent in the lab.
AP Biology	26.0140001 26.0140002	Y	10-12	Biology Honors	In this Advanced Placement course, students will further develop an understanding of biology through inquiry-based investigations exploring the topics of evolution, cellular processes—energy and communication, genetics, information transfer, ecology, and interactions.
Earth Systems	40.0640001 40.0640002	Y	11-12	None	Students investigate connections among Earth's systems (atmosphere, hydrosphere, and geosphere); the Earth's landscapes, ecology, and resources; phenomena fundamental to geology and physical geography (including the early history of Earth, plate tectonics, landform evolution, the Earth's geologic record, weather and climate, and history of life on Earth).
Honors Chemistry	40.0510041 40.0510042	Y	10-12	Placement Criteria	This course is a lab science course. Skills needed for this course are the ability to apply past learning to new concepts; the demonstration of abstract and higher-level thinking; the ability to perform algebraic manipulations easily; the ability to read critically; self-motivation; and experience in writing formal lab reports. Topics covered in this yearlong course are characteristics of science, the nature and classification of matter, stoichiometry, and conservation of matter, the atom, the atomic theory, the periodic table, and reaction rates. Honors Chemistry students are required to complete an in-depth, individual literature review during the first semester. This is a lab inclusive course with 25% of the time expected to be spent in the lab.

AP Chemistry	40.0530001 40.0530002	Y	11-12	Placement criteria H Chem	In this Advanced Placement course, students will investigate the structure of matter, bonding and intermolecular forces, chemical reactions, kinetics, and thermodynamics and chemical equilibrium through the application of science practices and laboratory investigations.
Physics	40.0810001 40.0810002	Y	10-12	Placement Criteria	This lab science course provides students with the necessary knowledge and skills in physics. Physics extends the physical sciences to more abstract concepts including interactions of matter and energy, velocity, acceleration, forces, energy, momentum, thermodynamics, charge, electricity, magnetism, waves, light, optics, and subatomic physics. The subject is treated both conceptually and mathematically. Concepts are investigated through laboratory experiences and 30   P a g e fieldwork designed for students to develop appropriate knowledge and skills in science as inquiry. This is a lab inclusive course with 25% of the time expected to be spent in the lab.
AP Physics I	40.0831001 40.0831002	Y	10-12	Pre-calculus	AP Physics 1 is an Algebra-based Advanced Placement course (College Level Course) that introduces college-level physics units which explores Kinematics, Dynamics with Newtonian Mechanics (rotational dynamics and angular momentum), Conservation of Energy (including work, energy, and power) and Momentum. This college level course uses conceptual understanding and applications of physics in the real world to understand the mechanisms of physics.
AP Physics C Mechanics	40.0841001 40.0841002	.5	11-12	AP Physics 1	Mechanics is a one-semester, calculus-based, college-level physics course, especially appropriate for students planning to specialize or major in one of the physical sciences or engineering. Students cultivate their understanding of physics through classroom study and activities as well as hands-on laboratory work as they explore concepts like change, force interactions, fields, and conservation.
AP Physics C Electricity	40.0842001 40.0842002	.5		AP Physics 1	AP Physics C: Electricity and Magnetism is a one-semester, calculus-based, college-level physics course, especially appropriate for students planning to specialize or major in one of the physical sciences or engineering. Students cultivate their understanding of physics through classroom study and activities as well as hands-on laboratory work as they explore concepts like change, force interactions, fields, and conservation.
AP Environmental Science	26.0620001 26.0620002	Y	10-12	Honors Biology	In this Advanced Placement course, students investigate ecosystems, human population, major global problems, energy resources, pollution, sustaining biodiversity an ecological integrity, and the environment as it relates to society. This course integrates previous knowledge from biology and chemistry.
Forensic Science	43.4520001 43.4520002	Y	11-12	None	This course will provide students with an opportunity to explore the basic processes and principles of forensic science as it relates to criminal investigation. Students will learn the importance of the identification, collection, and processing of evidence and

					of its contribution to the criminal investigation. Students will learn of the legal responsibilities and challenges which the forensic investigator may encounter. Students will also learn of the role of the criminal investigator. Included in this course will be the importance of preserving and documenting the crime scene and enabling the investigator to analyze evidence and its relationship to the crime. The student will also study interviews and interrogations and how those statements are used as evidence in court.
Organic Chemistry Honors	40.0570041 40.0570042	Y	11 or 12	Highly recommend AP Chemistry as a pre-requisite; definitely Chemistry H	In this course, students learn to recognize and name organic functional groups. The course focuses on the properties and reactions of common classes of organic compounds; the relationship between the structures of organic compounds and their physical and chemical properties. Students learn about systems to represent organic molecules, stereochemistry, how structure affects physical properties, drawing resonance forms with proper arrow convention, organic acid-base reactions, substitution and elimination reactions and one-step syntheses. In the laboratory, students investigate how structure affects physical properties such as reactivity, boiling point, melting point, optical rotation, and solubility. Students also learn how to perform fundamental techniques such as crystallization, filtration, distillation, refractive index, extraction, thin-layer, column and gas chromatography.
Astronomy	40.0570001 40.0570002	Y	11 or 12		This course will provide the student with an introduction to the concepts of modern astronomy, the origin and history of the Universe, and the formation of the Earth and the solar system. Students will compare the Earth's properties with those of the other planets and explore how the heavens have influenced human thought and action. The course gives a description of astronomical phenomena using the laws of physics. The course treats many standard topics including planets, stars, the Milky Way and other galaxies, and black holes. Laboratory exercises include experiments in light properties, measurement of radiation from celestial sources, and observations at local observatories and/or planetariums.
Super Biology	1 credit of Honors Biology-Fall Semester, 1 credit of AP Biology-Spring Semester	Y	9	A two-tiered invitation only course based on 8th grade accelerated math and accelerated science unweighted grades, Students should also be	Full year course, 90 minute block with additional meetings on Fridays, Biology End of Course Test and Advanced placement biology exam will be given, , Invited students will have to take a readiness assessment placement test in order to move forward with placement for the course

				concurrently enrolled for pre-calculus as their 9th grade math course	
Super Chemistry	1 credit of Honors Chemistry-Fall Semester, 1 credit of AP Chemistry-Spring Semester	Y	9, 10	Teacher recommendation only	Full year course, 90 minute block with additional meetings on Fridays, Advanced placement chemistry exam in May
Super Physics	AP Physics 1-Fall Semester, AP Physics C-Mechanics-Spring Semester	Y	10, 11	Teacher recommendation only, Students should also be concurrently enrolled or completed Calculus	Full year course, 90 minute block with additional meetings on Fridays, Advanced placement chemistry exam in May

## Social Studies

Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
American Government/Civics	45.0570001	.5	9	None	An in-depth study of the American political system. This course focuses on the foundation, principles and structure of the American system of government, examines the role of political parties, social factors as they relate to the role of the citizen, and analyzes the decision-making process that are a part of the system of American political behavior. This course meets the state's Citizenship requirement for graduation.
Economics	45.0610001	.5	9	None	An introductory course into the principles of economics. The course includes topics related to Fundamental Economic Concepts, Microeconomics Concepts, Macroeconomics Concepts, International Economics, and Personal Finance Economics.

AP Human Geography	45.0520001 45.0520002	Y	9-12 elective	None	Systematic study of patterns and processes that have shaped human understanding, use, and alteration of the Earth's surface.
World History	45.0830001 45.0830002	Y	10	None	Prehistoric culture, ancient civilizations, classical civilizations, the medieval world, the Age of Exploration, Enlightenment, French Revolution, decline of colonial empires in America, Industrial Revolution, nationalism and imperialism, totalitarianism, WWI, WWII, and the modern world.
AP World History	45.0811001 45.0811002	Y	10	None	The evolution of global processes and contacts in inter- action with different types of human societies; the nature of changes in international frame- works and their causes and consequences, as well as comparisons among major societies
U.S. History	45.0810001 45.0810002	Y	11	None	Colonization, the revolutionary and colonial eras, manifest destiny, Civil War and reconstruction, urbanization and Industrialism, progressive era, imperialism, WWI & WWII, The Cold War, Vietnam, and the Decades of 1950 – 2000.
AP U.S. History	45.0811001 45.0811002	Y	11	None	Multicultural heritage, Colonial period, American Revolution, Jacksonian Democracy and sectionalism, Civil War and Reconstruction, Triumph of the American Nation, Gilded Age, Progressivism and immigration, Great Depression and New Deal, Labor movement, Civil Rights and women's movement, World Wars I and II, Cold War, and New World Order.
AP Government and Politics	45.0570001 45.0570002	Y	9 or 12	None	Political philosophies that influenced the foundations of U.S. government and why countries develop different forms of government globally; U.S. constitutional principles and the branches of government; and factors influencing the political process. Students will construct and evaluate arguments, use documents and other primary source data to analyze point of view and understand and interpret information, and write document-based and comparative analysis essays
AP Psychology	45.0160001 45.0160002	Y	11 or 12	None	Explore the ideas, theories, and methods of the scientific study of behavior and mental processes. You'll examine the concepts of psychology through reading and discussion and you'll analyze data from psychological research studies.
AP Microeconomics  *Paired with AP Macroeconomics	45.0630001	.5	12		AP Microeconomics is an introductory college-level microeconomics course. Students cultivate their understanding of the principles that apply to the functions of individual economic decision-makers by using principles and models to describe economic situations and predict and explain outcomes with graphs, charts, and data as they explore concepts like scarcity and markets; costs, benefits, and marginal analysis; production choices and behavior; and market inefficiency and public policy.

AP Macroeconomics *Paired with AP Microeconomics	45.0620001	.5	12		Explore the principles of economics that apply to an economic system as a whole. You'll use graphs, charts, and data to analyze, describe, and explain economic concepts.
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## TAG

Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
Directed Study	70.2320000	Y	9-12	Approval of TAG teacher	Directed Studies may be taken in all academic areas. Student and teacher will write a curriculum contract that lists goals, objectives, and requirements.
Gifted Internship I, II, III, IV	70.221000, 70.2220000, 70.2230000, 70.2240000	Y	11-12	Approval for course will be based upon the student's academic, attendance, and discipline records; flexibility in schedule; teacher recommendation; application; and interview.	Students are assigned to work with professionals in a field that they are considering as a career. They have the opportunity to gain experience and insight about the business world make decisions about career goals. Students will leave the school for one or two periods a day. The Internship will count as either one or two of their regular courses during the semester.

## Physical Education

Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
FVS Health	17.3110001	.5	9-12	None	This course explores the mental, physical and social aspects of life and how each contributes to total health and well-being. Emphasizes safety, nutrition, mental health,



					substance abuse prevention, disease prevention, environmental health, family life education, health careers, consumer health , and community health.
FVS Personal Fitness	36.3510001	.5	9-12	None	Introduces instruction in methods to attain a healthy level of physical fitness; implements a lifetime fitness program based on a personal fitness assessment and stresses strength, muscular endurance, flexibility, body composition, and cardiovascular endurance; includes instruction in fitness principles, nutrition, fad diets, weight control, stress management, adherence strategies, and consumer information; and promotes self-awareness and responsibility for fitness.

## Electives

Course Title	Course #	Term	Grade(s)	Prerequisite(s)	Major Topics
Beginning Music Technology	53.0221001 53.0221002	Y	9-12	None	The goal of beginning music technology is to give students the tools, framework, and context to create musical projects and recordings using modern music production practices. Areas of concentration will include work recording techniques on Digital Audio Workstations, MIDI controllers, keyboard and piano technique, composition, songwriting, music for visual media, sound design with virtual and analog instruments, synthesizer manipulation, song analysis, audio editing, mixing, transcription, musical literacy, and music theory (harmony and melody).
Intermediate Music Technology	53.0222001 53.0222002	Y	9 – 12	Beginning Music Technology	Continue to develop skills introduced in Beginning Music Technology. Topics will include standard recording techniques, synthesizer/MIDI techniques, plugins and advanced effects, music theory, artist development, and social media management. This course will largely be project-based, and will culminate in large-scale recording projects (mixtapes, EPs, albums, etc.).
AP Music Theory	53.0230001 53.0230002	Y	11-12	Contact Mr. Vu about prerequisites <a href="mailto:vum@fultonschools.org">vum@fultonschools.org</a>	AP Music Theory is an introductory college-level music theory course. Students cultivate their understanding of music theory through analyzing performed and notated music as they explore concepts like pitch, rhythm, form, and musical design. The class consists of analyzing performed music (listening), analyzing written music, writing classical-style four-part harmonies, and sight singing. Interested students should have basic musical literacy and, ideally, have taken private lessons or participated in school music ensembles. Contact Mr. Vu for more information.

Yearbook	23.0320003 23.0320004	Y	9-12	By application only	Yearbook is a full-year elective course that gives students marketable experience in print media publishing. In this course students will gain skills in graphic design, copywriting, editing, and photography while developing communication skills through reporting, writing, class discussions, presentations, and publications. Advised by the teacher, students will create the yearbook as they learn how photography and the written word combine to inform society. Students will gain useful, real-world skills in time management, marketing, teamwork, communication, and design principles.
Audio Visual Film & Technology I	10.5181001 10.5181002	Y	9-12	None	This course is designed to prepare students to become content creators. Students will learn skills related to digital story telling, composition, camera equipment, script writing, production teams, thumbnail graphic design, lighting, recording and editing video and audio. Once complete students will have the skills to create and publish videos and podcasts.
Journalism I	23.032000	Y	9 – 12	Audio Visual Film and Technology I	Students in this class are part of IATV, a weekly journalistic video produced by students for students. Students will be guided in the process of interviewing people of interest to them and how best to tell their story. Through out the year students will participate in film festivals, podcasts and digital media contests. Students will advance their skills in audio and lighting production from AVTF 1. Once complete students will be able to produce a video on a deadline and at a higher level.
Journalism II	23.0330001	Y	9 – 12	By application only	Students in this course take a leadership role within planning IAtv content and special video assignments. Students will have the opportunity to travel to Student Television Network conference and compete with over 3,000 video students in contests. Example competitions: Silent Film, News Package, Music Video, Short Film etc. Additionally, students will have the opportunity to work on a capstone content creation project related to a passion of theirs.
Work-Based Learning	Course numbers depend on area of study	Y	12	Meet WBL requirements	Work-based Learning (WBL) is designed to provide relevant experiences in all career areas that will assist students in making decisions concerning their future. Work-Based Learning placements represent the pinnacle of the Career-Related Education experience. Enrollment in a work-based learning course is an extension of the student's work in their College and Career pathway. Credit earned for enrollment in work-based learning may count toward graduation as part of the student's cluster or pathway. To qualify for a WBL placement, a student must be in grades 11 or 12 and at least 16 years old. Students must also have a defined Career Pathway in order to participate in the Work-Based component of Career-

					Related Education. This is especially important for successful completion of a student's pathway in that their job placement is directly related to the curriculum of the pathway classes they have completed or in which they are concurrently enrolled.
Peer Facilitation	35.0410001 35.0410002	Y	11 and 12	Contract signed with assigned staff member	Students provide assistance to selected teachers in their classrooms and must be able to interact with students and adults in a variety of settings.

# Appendix 1: Course Progression

## ENGLISH PATHWAY

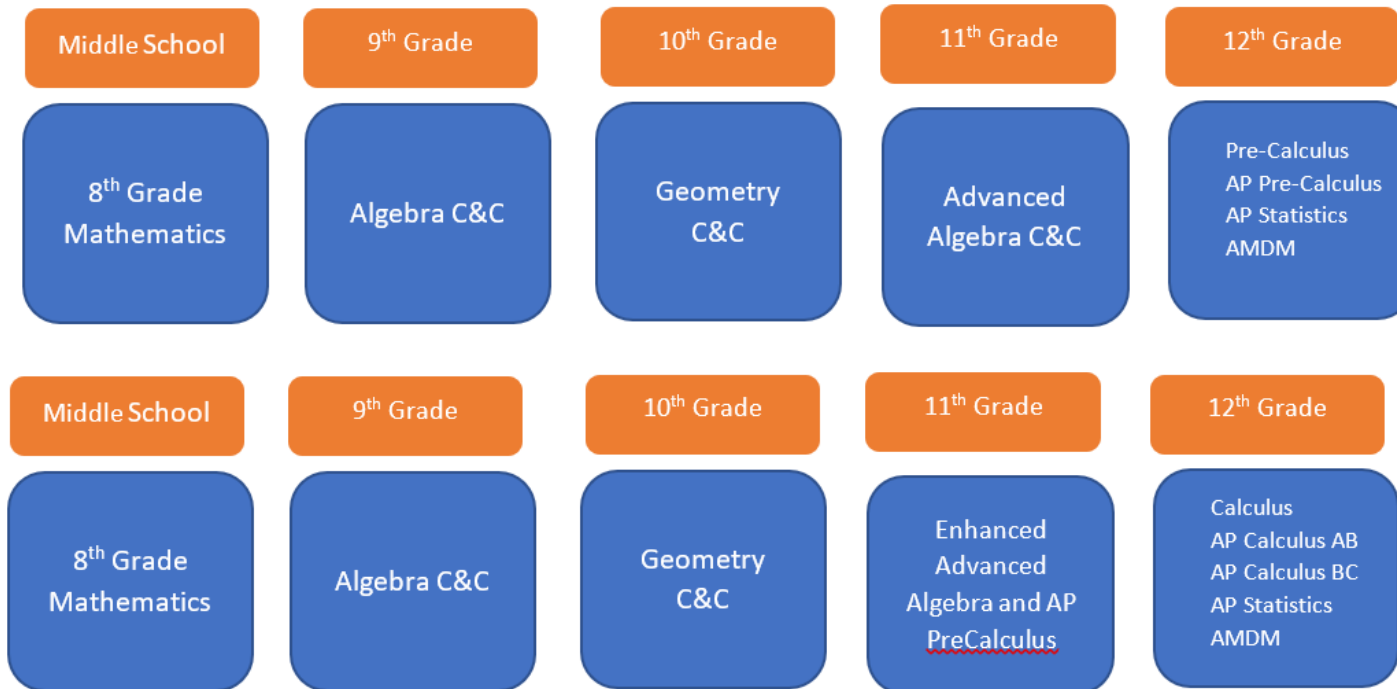


## SCIENCE PATHWAYS

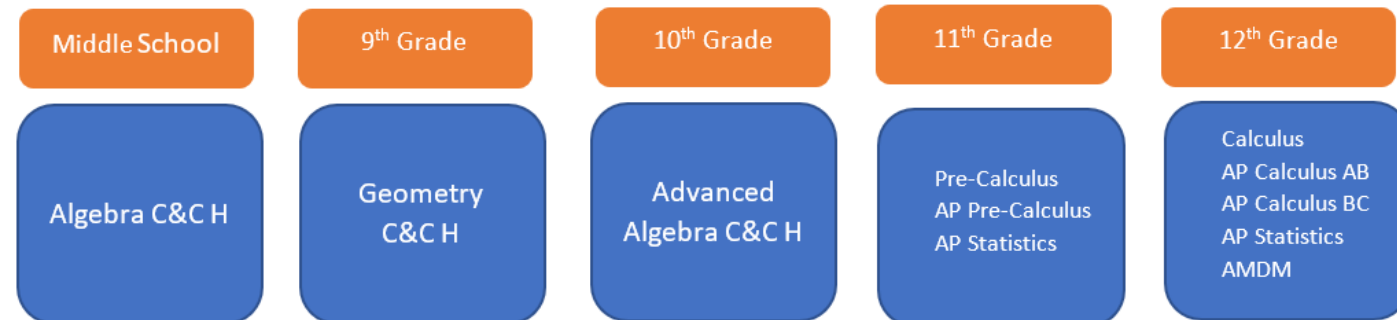


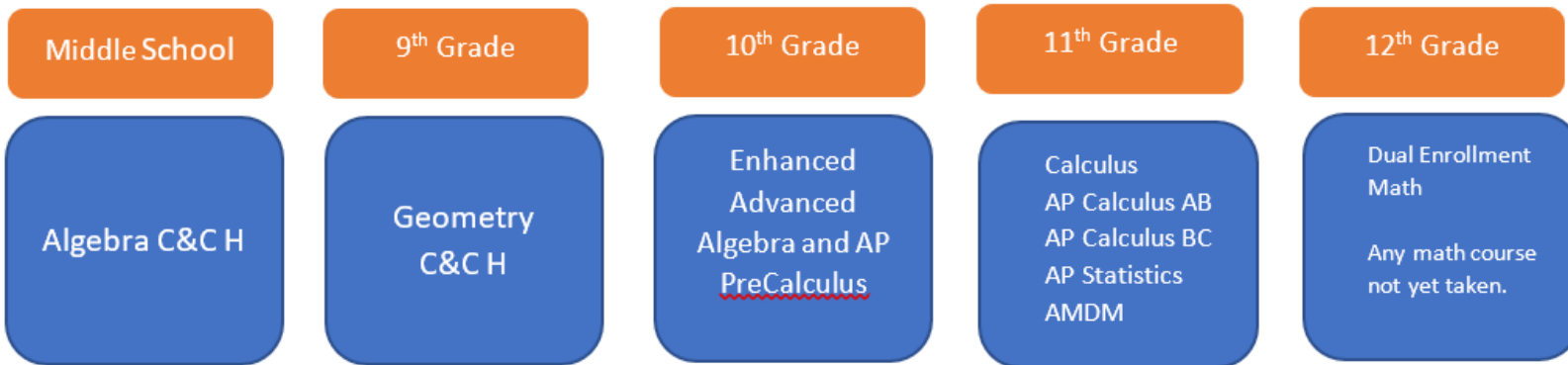
*\*Note: Even if a student has the Physical Science credit from middle school, as a STEM magnet school, we still recommend a Physics class in High School.*

## MATH PATHWAYS

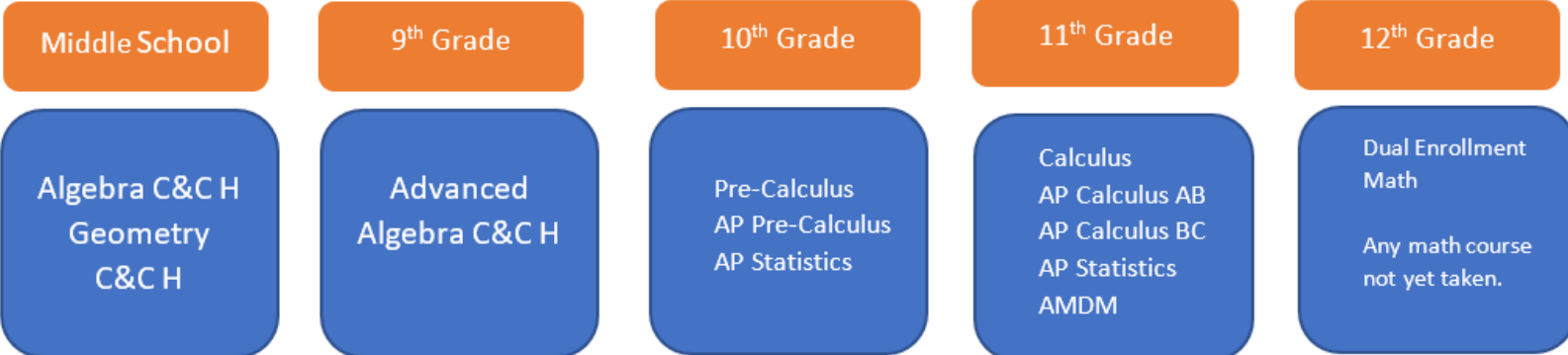


Please note this pathway is by recommendation only due to the Enhanced Advanced class





Please note this pathway is by recommendation only due to the Enhanced Advanced class

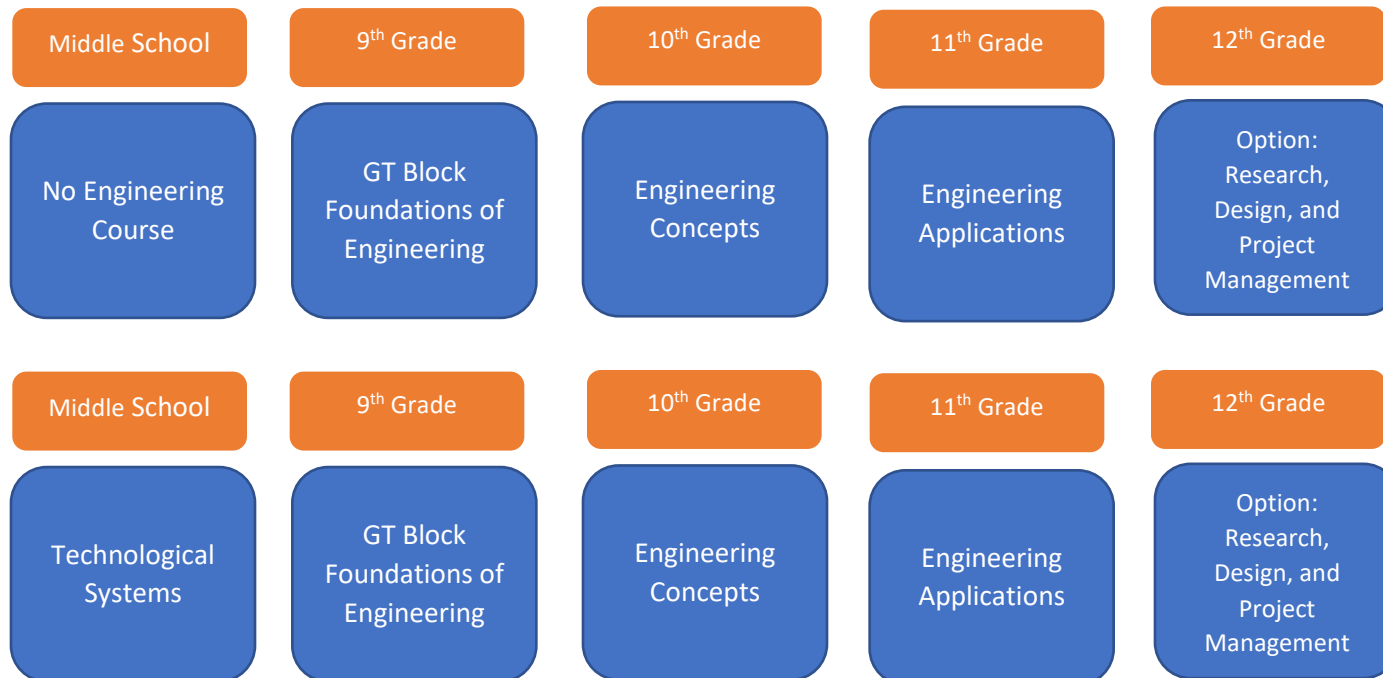


## SOCIAL STUDIES PATHWAYS

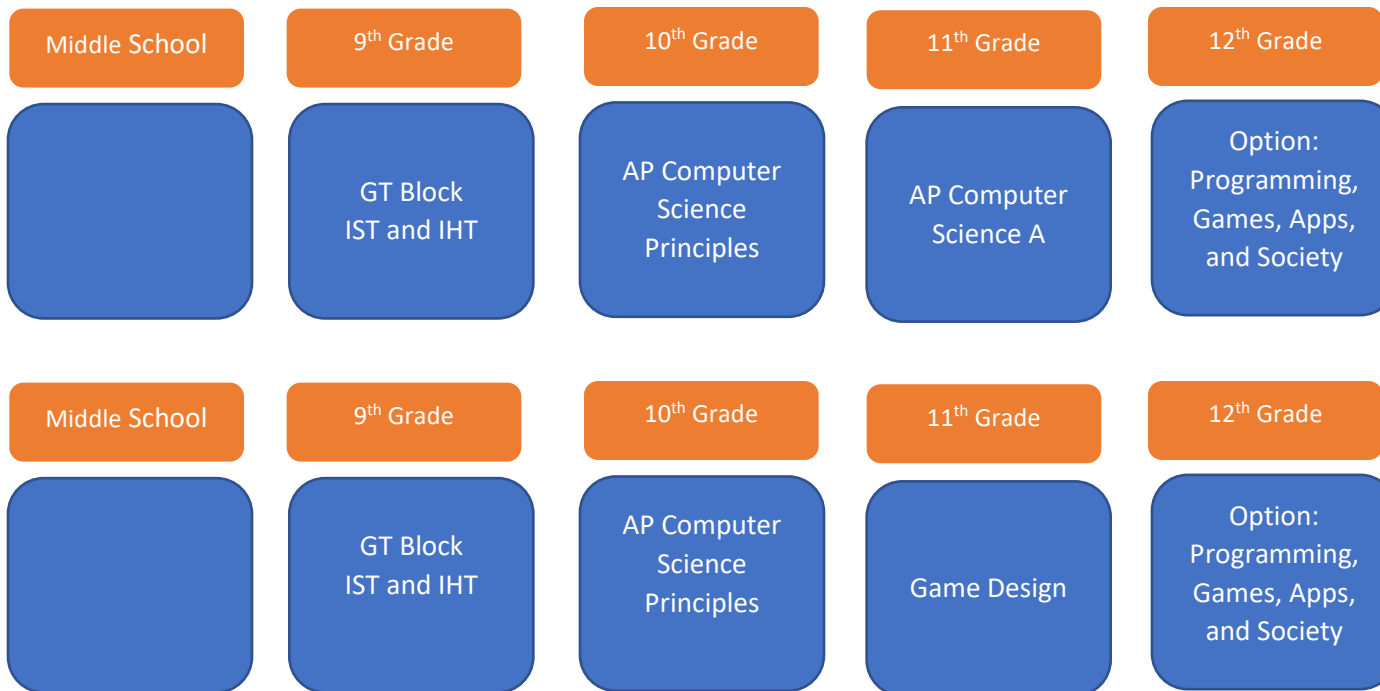


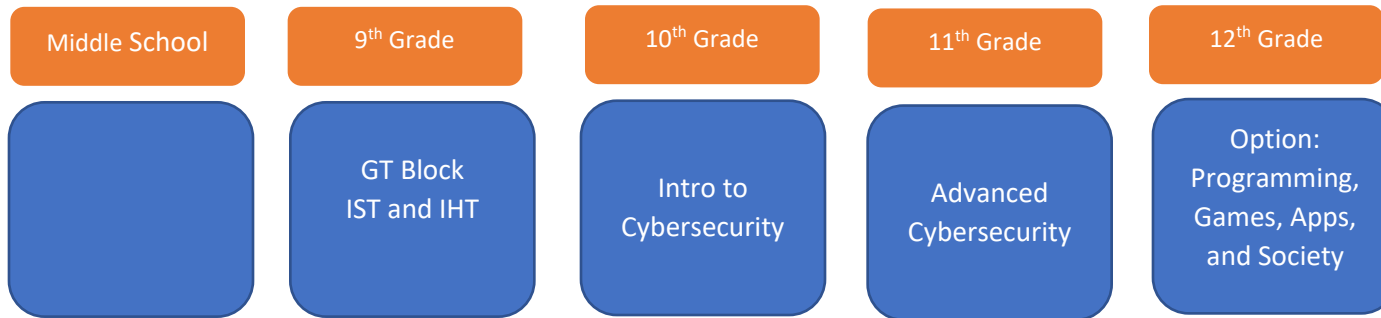
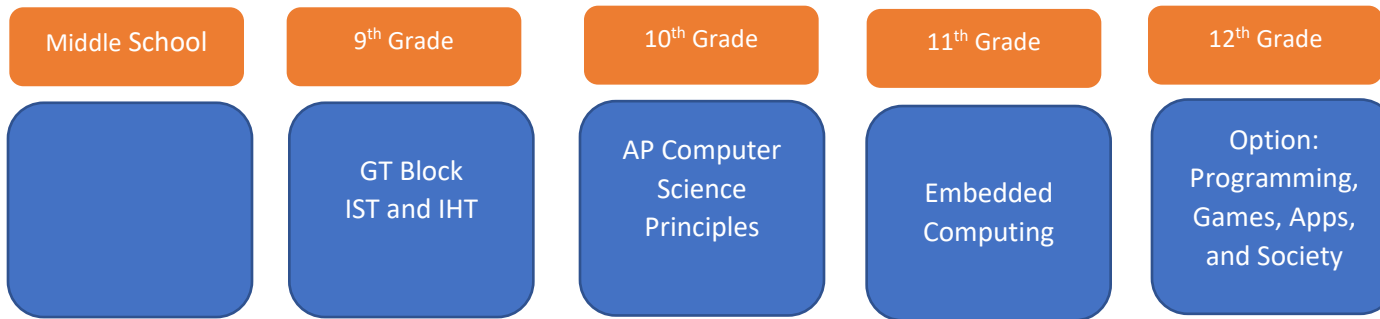


### Engineering Pathway

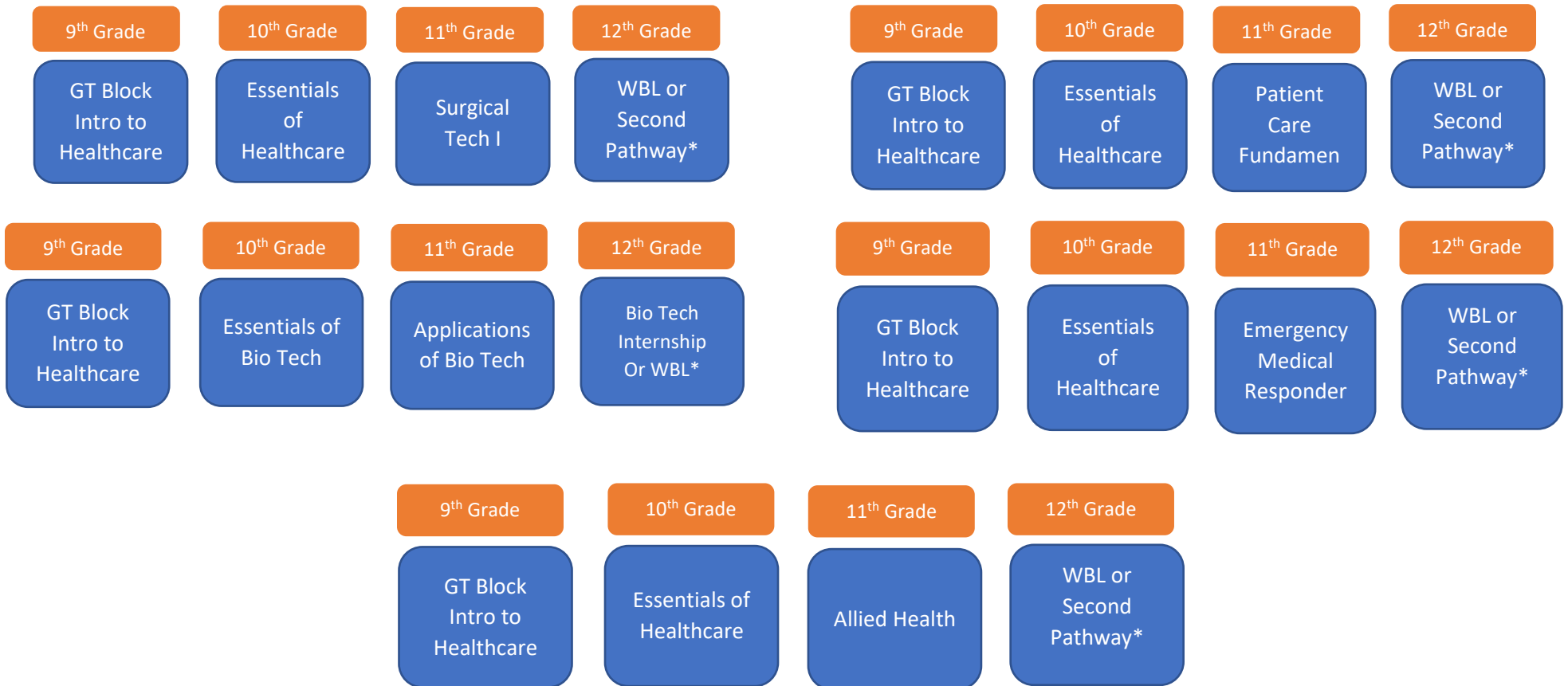


## IT Pathways





## Healthcare Pathways



**\*Students do not have to take a Healthcare course senior year. It is optional.**

## Appendix 2: Graduation Status Report

ENGLISH 4 UNITS		MATHEMATICS 4 UNITS		SCIENCE 4 UNITS		SOCIAL STUDIES 3 UNITS		HEALTH/PE 1 UNIT		ELECTIVES 4 UNITS OR MORE	
	9 <sup>th</sup> Lit A (H)		Algebra I A Acc Alg/Geo A		Biology A Biology H A		World History A		Health		
	9 <sup>th</sup> Lit B (H)		Algebra I B Acc Alg/Geo B		Biology B Biology H B		World History B		Personal Fitness		
	10 <sup>th</sup> Lit A AP Seminar A World Lit A		Geometry A Acc Geo/Alg II A Advanced Algebra A		Phy Science (H) Physics A		US History A	<b>WORLD LANG/ CTAE/FINE ARTS 3 UNITS</b>			
	10 <sup>th</sup> Lit B AP Seminar B World Lit B		Geometry B Acc Geo/Alg II B Advanced Algebra B		Phy Science (H) Physics B		US History B		World Language Credit 1 AB		
	11 <sup>th</sup> American Lit AP Lang A		Algebra II A Advanced Algebra A  Pre Cal A (AP) Enhanced Advanced Algebra/AP PreCal A		Chemistry A (H) Enviro Sci A (AP) Earth Systems A		Personal Finance and Economics		World Language Credit 2 AB		
	11 <sup>th</sup> American Lit AP Lang B		Algebra II B Advanced Algebra B  PreCal B (AP)		Chemistry B (H) Enviro Sci B (AP) Earth Systems B		American Gov AP Govt AB		World Language Credit 3 AB Any Fine Arts Any CTAE course		IA Required Research Class *Pass both semesters

		Enhanced Advanced Algebra/AP PreCal B							
Multi Lit A AP Lit A Dramatic Writing A Advanced Comp A		PreCal A (AP) Calculus A AMDM A AP Calc AB or BC		4 <sup>th</sup> Science					
Multi Lit B AP Lit B Dramatic Writing B Advanced Comp B		PreCal B (AP) Calculus B AMDM B AP Calc AB or BC		4 <sup>th</sup> Science					