



Teacher	Cmdr. Schenk	Semester and Year	Fall 2021 – Spring 2022
Course	Introduction to Digital Technology	Email	schenk@fultonschools.org
Website	http://www.hawkeyedriver.com	Room Number	302

Textbook None

Course Description:

Introduction to Digital Technology is the foundational course for Web & Digital Communications, Programming, Advanced Programming, Information Support and 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.

Course Goals

By the end of this course, students will be able to:

- Identify the basic components of networks in homes, businesses, and across the Internet
- Hand code HTML and CSS3 based web pages without automated tools or software
- Identify work-based skills necessary to work in a highly technical workplace
- Perform basic algorithmic analysis to solve problems
- Create a web-based personal portfolio of artifacts that can lead to employment
- Program visually in Scratch
- Perform basic public speaking centered on a technical topic
- Explain proper use and risks associated with the use of technology both personally and professionally
- Apply critical thinking to the design and use of technology for business.
- Understand fundamental embedded programming concepts using Raspberry Pi devices
- Understand fundamental syntax and programming operations in Python

Standards

IT-IDT-1, IT-CSP-1 Demonstrate employability skills required by business and industry.

IT-IDT-2 Explore, research, and present findings on positions and career paths in technology and the impact technology on chosen career area.

IT-CSP-2 Create digital artifacts that foster creative expression including programs, digital music, videos, images, documents, and combinations of these such as infographics, presentations, and web pages.

IT-IDT-3 Demonstrate effective professional communication skills (oral, written, and digital) and practices that enable positive customer relationships.

IT-CSP-3 Apply abstractions in digital data to explain how bits are grouped to represent higher-level abstractions such as numbers and characters.

IT-IDT-4 Identify, describe, evaluate, select and use appropriate technology.

IT-CSP-4 Design and create computer programs to process and extract information to gain insight and knowledge

IT-IDT-5 Understand, communicate, and adapt to a digital world.

IT-CSP-5 Develop, Express, implement, and analyze algorithms analytically and empirically.

IT-IDT-6 Explore and explain the basic components of computer networks.

IT-CSP-6 Create programs that translate human intention into computational artifacts including music, images, visualizations, and more while exploring the concepts, techniques and development used in writing programs.

IT-IDT-7 Use computational thinking procedures to analyze and solve problems.

IT-CSP-7 Gain insight into the operation of the Internet, study characteristics of the Internet and systems built on it, and analyze important concerns, such as cybersecurity.

IT-IDT-8 Create and organize web pages through the use of a variety of web programming design tools.

IT-CSP-8 Develop a logical argument from the many ways in which computing enables innovation and our methods for communicating, collaborating, problem solving, and doing business, and analyze the potential benefits and harmful effects of computing in the way people think, work, live, and play.

IT-IDT-9 Design, develop, test and implement programs using visual programming.

IT-IDT-10 Describe, analyze, develop and follow policies for managing ethical and legal issues in the business world and in technology-based society.

IT-IDT-11, IT-CSP-9 Explore how related student organizations are integral parts of career and technology education courses, through leadership development, school and community service projects, entrepreneurship development, and competitive events.

Expectations/Course Requirements:

Much of what we do in this class will emulate the real world. This is designed to help prepare students to be more productive, trusted and valued as employees. Participation and a positive attitude are expected of every student. Independence and on-task behavior are expected.

Professionalism is expected at all times. Teamwork and group cooperation are a necessity. All students are expected to act as young professionals in the classroom. Students will treat each other with respect and dignity. Failure to act responsibly can result in disciplinary action and expulsion from the computer science lab.

This course is the gateway to the AP Computer Science and Embedded Programming Pathways offered here at Johns Creek. Completion of this course gives priority to limited seats in those courses based on performance and intent to complete pathway. Top performing students will be recommended for advancement into AP Computer Science Principles as the second step in the pathway of Computer Science. Students with all four years in computer science can now complete TWO programming pathways in four years.

Class Units and Topics

	Topic	Class Periods
0	Course Introduction, Foundations & CTSO (FBLA)	10
1	Introductory Programming Skills	19
2	Introduction to Hardware, Networking and the OSI Model	18
3	Introduction to Web Design & Content Styling with Animation	19
4	Visual Programming and Animation	16
5	Advanced Web Design	14
6	Application of Concepts: Professional Development Simulation	19
7	Application of Concepts: Python programming & SDLC	19
8	Introduction to Embedded Programming Concepts	15
9	Master Projects, Course and Exam Review, Bridge to CS50 AP	21

Grading Scale

90-100 A 80-89 B 70-79 C 60-69 D 50-59 F

Grading Categories Weights

Majors	60%
Minors	20%
Semester Diagnostic	20%
Total	100%

Course Policies Specific to this Course

It is very important for students to arrive on time, and to maintain a continuous attendance routine. Our class content builds rapidly, and missing class makes keeping up with the pace of class significantly harder.

With specific prior permission, and only in very extenuating situations, the teacher may authorize some projects to be submitted via email. **These rare situations are the only circumstances in which email collection is accepted.**

While most submissions will be completed via Microsoft Teams, and printing of projects or assignments, if required, shall be completed *prior to the due date*. If projects are not available for collection on arrival on their due dates, they will be penalized as late.

COVID-19 Guidelines

Should COVID-19 cases require remote learning, all grading and turn-in requirements shall be in accordance with county-directed policies and will be enforced. Student attendance daily is expected, and attendance will also be enforced according to county guidelines.

Opportunities for extra help or study sessions:

Help sessions may be scheduled for before school, and when possible after school. Students must request help sessions twenty-four hours in advance.

During URL, Teams extra instruction will be by appointment or open office hours which will be announced.

Honor Code/Plagiarism Policy

Integrity is a Johns Creek High School core value. Johns Creek students are expected to demonstrate honesty and integrity in all work submitted to a teacher. The honor code ensures the validity of student work which guides instruction. All JCHS students are bound by the Johns Creek Honor Code. (See Student Handbook for more detailed explanation.)

Recovery Policy

Recovery for student work is strictly in accordance with 2021-2022 Fulton County policy.

Make Up Work Policy

Students may make up all work missed on an excused and preapproved absence. Work assigned during the absence must be returned to the teacher within the same number of days as the absence which was

excused. Unexcused absences may result in grade reduction. There will never be new instruction the day before an assessment. This time will be used for review. Students absent the day of an assessment will take the assessment on arrival back at school.

Late Work Guidelines

Late work will be governed strictly by Fulton County guidelines for 2021-2022.

Technology/Cell Phones at JCHS

Johns Creek High School supports the use of technology for academic pursuits. This includes cell phones, tablets, and laptops. The use and type of technology in a classroom is at the sole discretion of the teacher. All technology must be turned off and put away upon entering each classroom. Permission to use technology in a classroom will be explicitly stated by the teacher. Students may possess technology for personal use outside of classrooms in common areas. All devices must remain in silent mode, and students should use headphones when listening to sound. Students are responsible for the safety and security of their own devices and are not required to possess personal technology for instruction. In the case of an emergency, all technology should be turned off and put away as not to interfere with administrative emergency procedures.

Absolutely no earbuds or earphones are to be worn in class. On specific lab days, they may be authorized at the teacher's discretion. The pacing of our class requires full attention of students.

Computer Science Portal – We now have an online portal for our computer science classes, that will provide real-time blog information, all content presented in classes, assignments, and other information germane to each class. The blog is visible to anyone at <http://www.hawkeyedriver.net>.

Students are expected to routinely: Be in attendance of Teams classes, check the Team & portal for their assignments and feedback, and to be active in their educational process.

If we have any digital learning days due to inclement weather, all assignments will be given via the course pages and the blog.

Student/Date

Parent/Date