

UPPER SCHOOL COURSES

TECHNOLOGY DEPARTMENT COURSE DESCRIPTIONS

Computer Programming Honors (1.0 Credits)

This course teaches basic coding skills using the Java language. Other topics covered are computer history, binary and hexadecimal number systems, Windows OS, advanced Mac OS, DOS, and flowcharting.

Prerequisite: Completion of or current enrollment in Algebra II

Text: Java Software Solutions for AP Computer Science -Third Edition- Lewis/Loftus/Cocking. Publisher: Addison Wesley. Copyright 2010. ISBN-13: 9780131374690, ISBN-10: 0131374699

Advanced Placement (AP) Computer Science (1.0 Credits)

This programming course, a continuation of the Computer Programming Honors course, teaches both basic and advanced coding skills using the Java language. The AP exam is required.

Prerequisite: Computer Programming Honors

Text: This course uses the same text as Computer Programming Honors

Digital Media and Marketing (0.5 Credits)

This course covers the principles, tools, and best practices for Marketing, Business, Graphic Design, Video and Audio Production, Storyboarding and Storytelling, and Editing. This course is open to students in rising grades 9-12. This course **will be offered during the second semester** of the 2021-2022 school year.

Prerequisite: Open to students in rising grades 9-12

Text: No text required.

Advanced Digital Media and Marketing (0.5 Credits)

This course is offered for students that have passed Digital Media I and will be expected to plan and execute social media strategies along with video editing and design for Houston Academy projects. For those that have not taken Digital Media I, there will be a special authorization required to be considered. This course is open to students in rising grades 9-12. This course **will be offered during the second semester** of the 2021-2022 school year.

Prerequisite: Open to students that have taken Digital Media Production in the past two years. For students that are in rising grades 9-12 that have not taken Digital Media in the past, but would like to take Advanced Digital Media, there will be an application form to fill out for consideration. Please contact Mr. Jackson to receive the form.

Text: No text required.

Print Design /Yearbook (1.0 or 0.5 Credits)

This course creates an opportunity for students to record Houston Academy memories in an annual yearbook. Students develop the following skills in order to design the yearbook: layout design, theme development, copywriting, editing, and photography. Students collaborate to develop a theme for each yearbook. Students then use tools on Yearbook Avenue or other programs to create images and elements which reflect the theme in each layout design throughout the yearbook. Copywriting is a necessary skill students practice when summarizing interviews and describing events on pages throughout the yearbook. Students learn basic photography skills and learn to consider ISO, aperture, shutter speed, and lighting in various settings in order to improve the quality of the images. Every student is responsible for editing sections throughout the book in time to meet a deadline schedule. This course can be taken as a single semester during the first semester of study or preferably for the full year.

Prerequisite: Open to all students.

Text: No text required.

Maker Tech: Tier I-III (0.5 Credits)

In this semester course, students will learn about basic electronics, soldering skills, and simple circuits. From this foundation, students will then begin projects utilizing either Arduino or Raspberry Pi as a platform. Projects will include aspects of planning, design, build, coding, and application of a final product.

To encourage advancement within the course, multiple tiers can be offered, enabling a student to take the course more than once and to continue the development of their skills and knowledge. Students in Tier 2 and Tier 3 will be designated as project managers and take on the added role of coordinating and assisting those students in a lower tier toward excellence. Project ideas will also reflect the advancing knowledge of the students with more complex projects for them to choose from.

Prerequisite: Open to all students.

Text: Students may be required to purchase specialized materials for individual projects.