

TECHNOLOGY

- Course descriptions that are shaded are not being offered.
- One half credit of computer education is a requirement for all Mason High School students.
- Computer Science Discoveries, Robotics, Competitive Robotics, and AP Computer Science courses may serve as math related credit if taken during the student's senior year.

3D Printing Course #6608

1 trimester

Grade Level: 9 – 12
Pre-requisite: Algebra I

3D printing is designed to introduce students to the fundamentals of positive manufacturing through 3D printing. Students will learn the basic functions of a 3D printer, troubleshooting techniques, print optimization, and design basics. During the course an emphasis will be placed on operation of a 3D printer and design of 3D parts. Students will use basic CAD software to design models for printing then test the design, redesign and retest the model to make the best outcome possible.

AP Computer Science Principles Course #6501 #6502 #6503

3 trimesters

Grade Level: 9 – 12
Pre-requisite: Algebra I

AP Computer Science Principles 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. This course emphasizes both object-oriented and imperative problem solving and design. These techniques represent proven approaches for developing solutions that can scale up from small, simple problems to large, complex problems.

AP Computer Science A Course #6504 #6505 #6506

3 trimesters

Grade Level: 9 – 12
Pre-requisite: Algebra I

AP Computer Science A – JAVA introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), and approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing. This 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.

Competitive Robotics Course # 2613

1 trimester

Grade Level: 9-12
Prerequisites: Intro. to Robotics
Or participation in a FIRST
Robotics team competition in a
Previous year

This course is designed around the FIRST FRC robotics competition. Students will be working in teams to design, fabricate, construct, program, and operate large robots. Students will be exposed to all areas of the process but will be able to specialize in specific areas for the competitive season. This class will support and participate with the FIRST Robotics team at Mason High School.

Computer Science Discoveries - A

1 trimester

Grade Level: 9 – 10

Course #6603

Prerequisite: None

Computer Science Discoveries A is an introduction to the key concepts in the field of computer science: problem solving, web design & interactive animations. This class is taught using an inquiry-based method of instruction. The purpose of this course is to give students a computational understanding of algorithm development, problem solving, and programming within the context of problems that are relevant to students' daily lives. Students who have taken Computer Science Discoveries 1 at Mason Middle School can move directly to the second part of this class (course #6604).

Computer Science Discoveries - B

1 trimester

Grade Level: 9 – 10

Course #6604

Prerequisite: Computer Science Discoveries A

Computer Science Discoveries B is a continuation of Computer Science Discoveries A which is an introduction to the key concepts in the field of computer science: the design process, data & society, physical computing, and AI/machine learning. This class is taught using an inquiry-based method of instruction. The purpose of this course is to give students a computational understanding of algorithm development, problem solving, and programming within the context of problems that are relevant to students' daily lives.

Introduction to Robotics

1 trimester

Grade Level: 9-12

Course # 2609

Prerequisites: None

This course will focus on the basics of robotics and technology. Students will work in teams to design, construct, and program robots to complete assigned tasks. Basic design skills, construction techniques, and programming are helpful but not required.

Media Production

1-3 trimesters

Grade Level: 10 – 12

Course # 6626

Prerequisite: Intro. To Digital Tech or Video Editing or Intro to Adobe

This course is an introductory course in television production. Students will learn scripting, interviewing, editing, and post production editing. Using extensive in class production projects, students will become familiar with studio cameras, production switchers, microphones, audio mixers, and lighting instruments. Emphasis is placed on the conceptualization, planning, and execution of advanced television broadcasting. Students will be expected to act as the production team and crew to produce segments to be aired on a student designed and managed website. Students must commit to a minimum of 3 after school and/or evening activities.

Photoshop

1 trimester

Grade Level: 9 - 12

Course # 6619

Prerequisite: None

This course familiarizes students with the editing capabilities of Adobe Photoshop software. Along with an introduction to digital photography, students will engage in hands-on activities which incorporate the Adobe Photoshop interface and its expansive set of features. Lessons cover the basics of saving and sharing image files while mastering various processes used for image editing.

Video Editing and Effects

Course #6606

1 trimester

Grade Level: 9-12

Prerequisite: None

Students enrolled in this course will learn how to use Adobe software in a hands-on, interactive environment. Students will work with numerous file types and be introduced to audio mixing, video production, and photo editing techniques. Students will utilize the Adobe Creative Suite including programs such as Adobe Premiere, Adobe After Effects, Adobe Audition, and Adobe Photoshop. Students will also be introduced to “live broadcast” techniques in preparation to take a Media Production course.

Web Page Design

Course # 6622

1 trimester

Grade Level: 9 - 12

Prerequisite: None

Recommendations: Computer Science Discoveries or Photoshop is strongly recommended

Web Page Design presents the principles for planning and designing attractive and informative websites. The course explores the factors that affect Web layout and design, such as browser choice, screen resolution, navigation, connection speed, typography, graphics, and color. Students will create Web pages using HTML and Web editors that incorporate digital photography, the use of a scanner and other third party programs to edit and display graphics and information.