



STEAM Program

Hyde School's STEAM (Science, Technology, Engineering, Art, Math) curriculum emphasizes the application of important mathematical and science skills to real world problems. Six STEAM classes will be offered during the 2017/18 school year, see course descriptions below. In each of these classes, students work in a project-based, teamwork-focused environment, using a broad spectrum of creative skills in an engineering design-driven program to build real-world applications.

Course Descriptions

Introduction to Computer Science

This course will give students a broad understanding of fundamentals of computer programming and object-oriented design principles. Students will learn to write, design and execute programs, understand fundamentals such as data types, variables, and arithmetic and logic operators. The focus of the class is on principles of problem solving and basic concepts including control structures, methods and functions, data structures, encapsulation and algorithms. There are no prerequisites for this class, but a strong understanding of basic mathematics (successful completion of Algebra I and/or Geometry) is recommended. The class builds towards the design and implementation of a final project that will be built from pieces developed along the way. The class will use the java programming language, which is free, which will allow the students to work outside the classroom and continue exploring the coding world beyond the end of the class.

Introduction to Robotics

This course will give students experience with all aspects of designing, constructing, programming and running robots of their own creation. The class will use the Lego Mindstorm kits and Robolab software for basic instruction and the RoboRio/Java driven First FRC package for competition. Students will work hands-on both alone and in teams to design, build and program their robots as well as follow a disciplined documentation protocol to document their designs and progress. There are no prerequisites for this class, but a strong understanding of basic mathematics (successful completion of Algebra I and/or Geometry) is recommended. The students will design and build their robots to solve an increasingly complex series of challenges, some taken from past First Lego League competitions. The winter trimester of this course will include competing in the First FRC Robotics competition on a student designed and students constructed, full scale robot.

Introduction to Architecture

Students will be involved in an introductory design studio aiming to develop spatial thinking and the tools necessary to the design of architectural space and form. We will be discovering architecture by means of drawing, analysis, and our own personal representations of the surrounding world. Students will be introduced to different descriptive and analytical styles and techniques to help develop their own style of critical analysis. We will be learning these techniques through freehand drawing, orthographic projection, isometric and axonometric drawing, basic computer skills, model building and basic materials investigation.

Graphic Design (a college credit course)

This course is an introduction to the principles and practices of graphic design. Students are introduced through lecture, demonstration and hands-on computer work to the basic elements of graphic visual communication. Adobe Illustrator is used as a primary tool in exploring visual perception through a variety of creative exercises that familiarize the student with basic visual principles such as figure/ground manipulation, shape grouping, letterform shape creation, and grid and system creation. Formal elements of graphic design such as line, shape, color, texture, pattern, balance, symmetry, scale, rhythm, space and unity are thoroughly explored by example and hands-on computer exercises. Special topics included are designing with type, layout strategies, logo design, symbol and pictogram development and stationary systems.

Pre-requisites: Payment of \$100.00 application and credit fee to Southern New Hampshire University, Approval from instructor and Dean of Academics

AP Computer Science Principles

In fall 2016, the College Board launched its newest AP® course, AP Computer Science Principles. The course introduces students to the foundational concepts of computer science and challenges them to explore how computing and technology can impact the world. The AP Program designed AP Computer Science Principles with the goal of creating leaders in computer science fields and attracting and engaging those who are traditionally underrepresented with essential computing tools and multidisciplinary opportunities.

Innovation Lab / Maker Spaces

Innovation Lab topics will change from year to year.

Because Innovation Labs are dynamic, problem-solving projects rather than typical content-driven classes, we offer here descriptions of the issues and work undertaken by the instructors — their obsessions, really — rather than conventional course descriptions. Students and instructors will work together to define the courses and chart a path for the academic year.