

SYLLABUS

Programming in Scratch will be a course about just that - how to make computer programs using one of the friendliest programming languages ever created.

This course is listed as a Computer Science course. That's because programming is an important tool that computer scientists use in their work. However, that *doesn't* mean that computer science and programming are the same thing: computer science is the study of how computers work and what we can do with them, while programming is simply one way to write out those solutions. So, a huge focus of this course will be not just on how to use Scratch, but how to solve interesting problems and make cool things with the help of a computer.

Structure

The course has ten main lessons, each of which should take about three hours to complete. Each lesson introduces some new concepts in Scratch by way of a mix of videos, text instructions, and practice questions. After the new concepts are introduced, you'll have a homework assignment and a quiz to complete.

Here's a brief outline of what the lessons will cover:

- **Week 1** (Feb 2-8, 2015)
Part 1: Moving blocks, creating scripts, and repeating blocks
Part 2: Drawing with a computer
- **Week 2** (Feb 9-15, 2015)
Part 1: Tempo, variables, and the hat block
Part 2: Coordinates and conditionals
- **Week 3** (Feb 16-22, 2015)
Part 1: Drawing with iteration
Part 2: Broadcast and random numbers
- **Week 4** (Feb 23-March 1, 2015)
Part 1: Updating variables in repeats, iterative development, and the ask and join blocks
Part 2: Scratch tools, gravity, and mazes
- **Week 5** (March 2-8, 2015)
Part 1: Building your own blocks
Part 2: Strategies for games
- **Week 5** (March 9-15, 2015)
Final Projects

The schedule above suggests that you do two lessons per week and then take one more week to complete your final project, so that's how we've labeled the lessons. However, *you can work*

at whatever pace you want. All of the content will be available at the beginning of the course, so if you want to work through it faster, go for it! Alternately, if you want to take more time, that's fine too - while you may not be able to submit all of your assignments before the course officially ends, all of the courseware will still be available when you're done.

Grading Policy

All assignments - homework, quizzes, and projects - **will be due (and graded) at the end of the course.** Here's how your total grade will be calculated:

Homework - 50%

Quizzes - 35%

Projects - 15%

To get a certificate in this course, you need to get a cumulative grade of **60%** or higher by the time this course closes on March 30th. The course will be archived at that point; you can feel free to continue to look at the lessons, answer questions, and even explore discussion boards at that point, but no one will be moderating the course and no additional certificates will go out until the next time this course is offered.

Note: A huge piece of this course will be about the ideas that you test out by opening Scratch and creating programs there. While we won't be able to grade those assignments directly, **the most important things you'll take away from this class will come from actually programming in Scratch.** So, don't skip straight to the homework and quiz questions - not only will those assessments be harder without completing all the other work, but you'll also be missing out on the best parts of the course.

Credit Disclaimer

Completion of this course does not constitute a formal course of study or earned credit at Harvey Mudd College.