*he purpose of computing is insight, not numbers.* -- Richard Wesley Hamming

Computation is revolutionizing our lives, changing how we play, work, learn, and communicate. CS 202 gives all majors an introduction to the fundamentals of computation. This course, like the field of Computer Science in general, is more than just the study of how to use computers.

In this course, you will:

1. **Design and implement creative applications involving art, animation, music, stories, and games.** Computer science is a creative endeavor in which you can design, develop, and implement your own ideas. To obtain hands-on experience, you will be using a programming environment called [Scratch](http://scratch.mit.edu/). Scratch enables beginners to create sophisticated programs by simply dragging and dropping predefined instruction blocks. Thus, you will acquire experience decomposing problems into well-defined steps without the fear of frustrating ``syntax'' errors.
2. **Understand how computers solve difficult problems.** This course explores **algorithms** which are step-by-step methods for accomplishing a complex task. Understanding how to solve problems in a step-by-step fashion is useful for more people than just computer scientists. Algorithms specify the work that must be done for large, complex tasks like sequencing the human genome, indexing and searching for web pages, finding a path out of a maze, or solving a rubix cube. In this course, you will investigate the types of problems we know how to solve with computation and compare different algorithms that solve the same problem.
3. **Learn how computers work.** You will learn how modern computers perform computation by covering hardware and software topics. You'll understand low-level topics such as how data is stored and how instructions are executed as well as high-level topics such as how to find web pages.
4. **See a range of areas within computer science, including security, robotics, and artificial intelligence.**

CS 202 can be used to satisfy the Quantitative Reasoning A (QR-A) and Natural Sciences requirements. CS 202 can also be used as part of a [certificate](http://www.cs.wisc.edu/ugac/cert.html) in Computer Sciences. CS 202 is also part of a pilot study to create a new AP course about [Computer Science Principles](http://csprinciples.org/).

Please see the links along the left-hand side of this page for more information about the course.