

COSC-111 Introduction to Computer Science 1

Times & Location: *Lecture:* MW 10–10.50am, Science Center E108; *Lab:* F 9–9.50am (Section 1) or 10–10.50am (Section 2), Webster 102.

Website: <http://rionda.to/courses/cosc-111-s19/>, Moodle for forum

Instructor: Matteo Riondato (he/his, please call me “Matteo”)

Contact: mriondato@amherst.edu (Only for personal messages that cannot go to the forum. Please use [COSC111] in front of your subject.)

Office Hours: M 3.30–5.30pm. Reserve a 15-minutes slot at <http://bit.ly/mroh19s> *by the day before (Sunday) at 4pm.*

TA: Zhiyuan Jia

Evening Sessions: SMW, 7–9pm, Science Center A131

Prerequisites: None. If you have prior programming experience, please talk to Matteo, as you may want to take COSC-112 instead.

Welcome! We are excited to have you aboard!

Description

COSC-111 is the first course in computer science, designed for students with no prior programming experience. We will:

- get familiar with the concepts at the basis of computer science;
- learn the foundations of computer programming through the Java language;
- acquire the first notions of the creative process of developing and implementing an algorithm;

Goals & Objectives

- Develop the ability to think creatively about how to solve problems;
- Acquire the foundations of object-oriented programming;
- Learn fundamental concepts in computer science and the basics of the Java programming language.

Textbook & Materials

There is no required textbook, but the following book is a good reference that closely follows what we will cover: L. McGeoch, *Java Programming*, 2012, (available online)

We will post any *additional materials* to the course website.

Assessment & Grading

- *Weekly assignments* are introduced in lab each Friday, and usually due one week later;
- Two *in-class midterm exams*, in late February and early April;
- An *in-class final exam* during exam week;
- Three projects assigned throughout the semester. These are larger programming assignments using all the concepts we cover.

We will evaluate you on the level of detail and rigor in your answers. For the programming assignments, we care about their correctness and robustness.

The course grade is, in a first approximation, a weighted average of the scores in:

- the weekly homework assignments (20% in total)
- the midterms (15% each)
- the final (20%)
- the projects (30% in total)

Active and high-quality participation in class and on the forum may increase the course grade by at most 3% of the maximum score.

Late Submission Policy

- You may submit *one* late assignment *without penalty*, if you submit it by 11.59pm of the calendar day after it is due.
- For each subsequent late assignment or if the first late one comes later than the “extended” deadline above, the score of the assignment will be reduced by 20% of the maximum score (e.g., by 20 points if the maximum is 100 points). You may have the penalty waived in extenuating circumstances, by having your class dean email Matteo.

There are no exceptions to this policy.

Expectation of Students

Active Class Participation

Active participation in class creates a inclusive environment for learning and teaching. It requires:

attending every lecture: materials build on top of each other, and *you want to be part of the ongoing discourse*, as we will make many references to previously covered materials.

asking questions: *All questions are good:* if you have one, you are likely not alone, so please ask it. The more you asks, the more everybody learns, and the more we can *adapt the course to your needs, pace, and interests*. We may not have answers to all questions: if we did, we would be teaching theology in Paris.

answering questions: Matteo will ask questions during the lecture, to *give you the opportunity of self-reflect on your immediate understanding of the materials* being covered: if you are already understanding well, you may not need to study it later; if you don't, you may want to ask some questions. Your answers, like your questions, help us *adapt the course to your needs, pace, and interests*.

limiting the use of electronic devices: There is scientific evidence that *electronic devices usage, including typing notes, impairs in-class learning*, and the more you learn in class, the less you have to study later. In-class learning may, from time to time, benefit from using a laptop. You *can use a laptop in class*, provided that what you are doing is *strictly related to the course*. You *cannot use cell phones* in any way, and please have them *completely silent* (not on vibrate).

Matteo reserves the right to ask you to leave the lecture if you are not actively participating.

Collaboration Policy

Computer science is an collaborative discipline, but we must be able to *fairly assess each of you individually*. Thus, there are limitations to how and when you may collaborate with others:

- You may *not collaborate in any way in programming* homework assignments, the midterms, the final, and the projects.
- You may discuss *non-programming* homework assignments in groups of students all taking the course. You must *write up your solutions independently*. If you discuss the assignment with students taking the course, list their names on the front page of your solutions.
- You may *not directly copy or adapt solutions* from other students, from materials distributed in previous versions of this or other courses, or from any material available online. You may *not make your solutions available to anyone at any point in time*.

If you have doubts about whether you may collaborate and how, please ask on the forum. In all cases, you are bound to the Amherst College Honor Code.

Expectation of Instructor and TA

You can expect us to:

- do our best in explaining the materials and adapt them to your pace and interests;
- assess you fairly;
- create an inclusive and conducive learning environment;
- listen when you have questions, complaints, and even praise;
- help you succeed in the course;
- respect your student rights as stated in the Amherst College Honor Code.

Accessibility and Accommodations

If you have any condition that might require modification of any of the course procedures, you will need to contact Accessibility Services (accessibility@amherst.edu or 413-542-2337) as early as possible. *Immediately* after you have arranged your accommodations with Accessibility Services, please inform Matteo via email or in person.

Course Outline

Here is a list of topics covered in the course, with a *tentative* schedule. See the website for up-to-date information.

Week of 1/28: Computational problems, input and output, basic data types

Week of 2/4: Casting types

Week of 2/11: Boolean expressions, conditionals

Week of 2/18: Iteration

Week of 2/25: Review and midterm

Week of 3/4: Methods

Week of 3/11: Spring break

Week of 3/18: Arrays

Week of 3/25: Sorting, recursion

Week of 4/1: Multidimensional arrays

Week of 4/8: Review and midterm

Week of 4/15: Objects, Java API

Week of 4/22: Objects and Classes

Week of 4/29: TBA