

2023 SI@UCF Introduction to Competitive Programming Syllabus

Course Description: This course will teach the basics of C++, mostly from the ground up, with an emphasis on syntax necessary for competitive programming, along with the following topics that often appear in programming competitions: Vectors, Strings, use of built in custom sorting, Vector of Vectors, Sets, Maps, Number Theory, Simulation, Greedy, Brute Force and Binary Search.

Course Web Page: <http://www.cs.ucf.edu/~dmarino/ucf/bhcsi/2023/compprog>

Grading: Homework 0 – 1%
Homework 1 – 4: 6% each
Contest 1: 10% (upsolving allowed)
Homework 5 – 6: 6% each
Contest 2: 15% (upsolving allowed)
Homework 7 – 9: 6% each
Final Contest: 20% (no upsolving)

Day	Topic(s)
6/5	Arithmetic Operations, Variables, Assignment Statement
6/6	If, For, While, Break, Continue
6/7	Functions
6/8	Vectors
6/9	Strings
6/12	Contest #1, Sorting via pair and struct
6/13	Two Dimensional Vectors
6/14	Sets and Maps
6/15	Number Theory
6/16	Simulation
6/19	Contest #2, Greedy
6/20	Brute Force
6/21	Binary Search
6/22	FIEA Field Trip, Contest Strategy
6/23	Final Contest

Since this is the first year of this course, further details aren't available at this time. Also, this list of topics is somewhat flexible. While the first week of notes are completely mapped out, we'll maintain flexibility to make some changes to week 2 or week 3.

Currently, we plan on having three contests, where for the first two, upsolving (solving a question after the contest time has expired) will be counted for partial credit. The final contest will be graded like a real contest, where only submissions during the contest time will contribute to the grade.