

# Syllabus for Programming I

## 2015-16

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### Course Objectives:

By the end of this course, students will learn basic and intermediate programming methods in the C++ language, develop individual projects based on that knowledge, and understand how to think like a programmer.

### Grading:

As this class is an Independent Study Seminar, grading will be Pass/Fail. Passing requires only class participation and the production of reasonable quality projects.

### Course Format & Website:

Instruction weeks will consist of approximately an hour of learning new concepts and discussing examples, followed by an hour of programming exercises. We will periodically spend several weeks working on projects to apply and showcase skills learned.

Notes and materials will be available on the [class website](#), which will be linked to in Blackboard.

For other classroom policies, including grades, academic integrity, and classroom behavior, please see the “Syllabus Addendum for Core DA Classes” which is posted on Blackboard.

### Tentative Schedule:

#### Semester 1:

Week	Topics
1	Introduction, Data Abstraction
2	Basic IO
3	Math
4	Functions
5	Control Flow
6	Loops & Recursion
7	Roots Project
8	References & Arrays
9	File IO

9	Multidimensional Arrays & Sorting
10-11	Maze Game Project
12	Pointers
13	Dynamic Memory
14	Structures
15	Classes I
16	Classes II

## Semester 2:

Week	Topics
1	Review
2-5	Card Games Project
6	Operator Overloading
7	Linked Lists
8	Templates
9	Inheritance & Polymorphism I
10	Inheritance & Polymorphism II
11-15	Final Project
16	Project Showcase & Discussion