

# CS 185

## Course Syllabus

### Course Title

CS 185: C++ for designers

### Prerequisites

CS 176

### Course Description

This course introduces the C++ language with particular emphasis on its object-oriented features. Topics covered include differences between scripting languages and C++, data types, namespaces, classes, inheritance, polymorphism, templates, and fundamental STL components.

### Objectives and Outcomes

After successfully completing this course, the student should be able to read, write, and understand much of the introductory C++ programming language. Specifically, students will be able to:

1. Compile, link, and execute a computer program.
2. Understand the way in which a program interacts with the computer's CPU and memory.
3. Understand the concept of data abstraction and inheritance.
4. Understand the concept of interface versus implementation.
5. Understand the challenges of building large-scale programs and how object-oriented programming facilitates it.
6. Use simple data structures and understand how they are represented in the higher-level language.
7. Understand the built-in libraries and how to use them effectively in problem solving.
8. Apply the course concepts to implement data structures and programs to solve various problems.

The successful student will be able to use the C++ language in the fourth-semester game course.

### Contact Information

**Instructor:** Elie Abi Chahine  
**Office Hours:** Scheduling by appointment.  
**Email Address:** [eabichahine@digipen.edu](mailto:eabichahine@digipen.edu)  
**Contact :** +425 629 5064

### Section Day and Time Room

Section	Days and Time	Time	Room
CS185	Wednesday	10:00am – 11:20am	MICHELANGELO
CS185	Friday	09:30am – 10:50am	MICHELANGELO

**Reference (Optional)**

- C++ Primer Plus, Fifth Edition, by Stephen Prata. Published by Sams Publishing. Copyright © 2005 (ISBN: 0-672-32697-3).
- The C++ Programming Language, Third Edition, by Bjarne Stroustrup. Published by Addison-Wesley Publishing Company. Copyright © 1997 by AT&T. (ISBN: 0-201-88954-4).
- The World Wide Web. Quite possibly the greatest asset to learning since the teacher and the textbook.

**Course Materials**

All course materials and activities, such as lecture notes, assignment, test practice, forums, announcements, calendar etc... will be available through distance.digipen.edu site.

**Grading**

Grades will be derived from homework assignments and exams. The detailed weightings and letter grades are as such:

<b>Assignments</b>	<b>60%</b>
<b>Quizzes</b>	<b>20%</b>
<b>Mid-term exam</b>	<b>20%</b>

**Grading Scale**

A	93-100%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D	60-69%
F	<59%

**Late Policy**

The due day/time will be published on the class website when each project is assigned.

No late submissions are allowed, you will get a zero grade if the assignment is not submitted before the due date.

**Wildcards**

Every student will have 2 wildcards. A wildcard will cost you 10% of your assignment grade and can be used for one of the options:

- get 2 extra days in order to continue working on the assignment
- the option to not comment an assignment
- the option to resubmit the assignment in the case of bad files naming or wrong files submitted

You will get an extra 1% on your final grade for every wildcard that you do not use.

**Early Submission**

You get bonus points for submitting the assignment before the due date (+3 points for every day). You need to get 80 or more on the assignment in order for those bonus points to be added.

**Attendance is mandatory:**

There are no makeup exams or quizzes. Also, for every lecture that is missed, you will lose two points from your final grade (e.g. a 90 becomes an 88). The only exceptions are if you notify me prior to your absence with a valid reason. (Sleeping, studying for another class, working on your game, etc., are not valid reasons for an absence.) Class participation will boost your grade if you are on the border. (e. g. It is possible to get an A- with an overall average of 88.5%)

**Disabled Student Services**

Students with physical, psychological or learning disabilities that affect their ability to perform major life activities associated with this class may be eligible for reasonable accommodations under the Americans with Disabilities Act. If you have a documented disability please contact the Disability Support Services office to arrange for accommodations for this class.

**Tentative Schedule** (This is a guideline for the semester and is subject to change.)

Week	Topic
1	Intro to CS185, Visual Studio, Basics of C++, Types
2	Namespaces, Simple I/O
3	Static Arrays, Pointers
4	Pointers, Dynamic Memory Allocation
5	References & more, Strings
6	Classes 1
<b>7</b>	<b>Review and Mid-term</b>
8	Classes 2
9-10	Classes 3
11	Linked List
12 - 14	Introduction to templates, Introduction to the STL, the standard string class, vectors, lists, iterators
15	<b>Finals Week</b>

**Workload**

During the semester there will be one major exam (midterm), and several short quizzes. There will be several programming assignments to work on outside of class. These are not large and you will usually have one to two weeks to complete them (although they generally take no more than a few hours to complete). In addition to attending the lectures/labs, you should plan to spend at least 6 hours per week reading, studying, and programming for this class.

## Submitting Homework

Programming assignments will (obviously) use the C++ programming language. When submitting source files written in C++, you must adhere to the following guidelines: All files must be in a single ZIP archive (even if you are only submitting a single file). The name of the ZIP file must follow this naming convention:

`<class_name>_<login>_<assignment number>.zip`

For example, if a student with login name `foo.bar`, submits assignment #3 for course CS185, the appropriate filename would be `cs185_foo.bar_3.zip`. Do not put the course section number in the filename.

***Note: The .zip file names are case-sensitive and must be in all lowercase, exactly as described above.***

## Academic Integrity Policy

All homework assignments and exams must represent your own, individual work. It is permissible to discuss assignments (not solutions) with other students in the class, but the solutions must be recognizably your own. Cheating of any kind (copying someone else's work, allowing others to copy your work, collaborating, etc.) will not be tolerated and will be dealt with SEVERELY (penalties for cheating may include receiving a zero on an assignment, and/or a failing grade in the course, and/or even expulsion from DigiPen). Please keep in mind that discussing solutions to exams, quizzes, homework, etc. with students that haven't taken the exam or turned in the assignment is also prohibited. Ultimately, you are only wasting your time (and money) because if you can't master the fundamentals covered in this course, you have little hope of succeeding in other courses or as a programmer in the Real World.

## From The "It-shouldn't-need-to-be-said-but..." Department

During class, all electronic devices must be in **SILENT** mode. This includes cell phones, pagers, PDAs, game consoles, digital cameras, laptop computers or any other devices. If you absolutely must have a cell phone on for an emergency situation, you must first clear it with me **BEFORE** class begins. In addition to showing up for class on time, other student responsibilities include proper behavior during class, learning the material, completing assignments correctly, submitting assignments properly and on time, studying for the exams, and participating in class by asking or answering questions during the lectures. Finally, **all students are required to bring a pencil** (or other writing instrument) and paper to class to take notes, quizzes, and perform other tasks.

## Last Day to Withdraw

In order to withdraw from the course it is not sufficient simply to stop attending the class or to inform the instructor. In accordance with the policy, contact your academic advisor or the Registrar to begin the withdrawal process. The last day for withdrawal from the course is cited in DigiPen's official website.