COMP 330 - Data Structures & Algorithms

Spring 2017

Instructor: Christian Esteves **E-mail:** cesteves@bridgew.edu
Phone: ext. 2328 **Office:** DMF 347

Class Times

Section 001: Tu/Th 2:00 - 3:15 **Section 002:** Tu/Th 9:30 - 10:45
Room #: DMF 330
Office Hours: Tu/Th 10:45 - 12:30, and by appointment.

Prerequisite: You are expected to have taken COMP 151 and COMP 152, or the equivalent, and understand the basics of programming in a higher level language such a C, Java, or Python. You should be familiar with classes, objects, methods, functions, loops, conditionals, and arrays.

Literature: Data Structures and Algorithm Analysis in C++.

Course Description: In this course, static, semi static and dynamic data structures and techniques for the analysis and design of efficient algorithms which act on data structures will be addressed. Course topics will include arrays, records, stacks, queues, deques, linked lists, trees, graphs, sorting and searching algorithms, algorithms for insertion and deletion and the analysis and comparison of algorithms.

Course Objectives: After taking this course the student should be able to:

- Implement abstract data types in multiple ways recognizing the various strengths and weaknesses of those implementations.
- Contrast different implementations through objective means, such as asymptotic analysis of the primitive functions.
- Apply the concept of algorithmic efficiency to understand that different implementations may be "best", depending on the requirements of the required task.

Grading: These weights are subject to change.

- Projects……...40%
- Homeworks……....30%
- Labs……....10%
- Midterm……..10%
- Final……....10%

These are the letter grades you can expect to receive based on your calculated final score using the above weights.

A	93-100	B+	87-89	C+	77-79	D	60-69
A-	90-92	B	83-86	C	73-76	F	0-59
		B-	80-82	C-	70-72		

Assignment Submissions & Late Policy: All assignment solutions are to be uploaded to Blackboard and must be submitted by 11:59PM on the due date.
Missed exams cannot be made up.
Assignments submitted late are subject to a 10% penalty per day they are late.

Extensions will be handled on an individual basis, but are typically reserved for special cases. The earlier you come to me, the better your chances of receiving one. Do not expect to e-mail me 2 hours before the assignment is due and receive an extension.

Attendance Policy: Attendance to all lectures is required, as some of the assignments may contain materials discussed in class that are not in your textbook. If you miss a lecture, it is your responsibility to learn what you missed.

Disabilities: If you have a disability, get the required papers from Disability Resources to me by the end of the first week of class.

Academic Integrity: The university's academic integrity policy may be viewed here: http://catalog.bridgew.edu/content.php?catoid=7&navoid=486

Course Outline (subject to modifications)

Week	Subject	Assignment Release	Due
1	Course Introduction/C++ refresher	N/A	
2	Recursion	Lab 1	
3	Big-O	Lab 2, Homework 1	
4	Lists, Stacks, Queues	Lab 3, Project 1	Homework 1
5 & 6	Trees, BST, AVL, Hashing	Lab 4	
7	Midterm Review + Midterm		Project 1
8 & 9	Sorting	Lab 4, Homework 2	
10	Graphs	Lab 5	
11 & 12	Searching	Lab 6, Project 2	
13	Dynamic Programming	Lab 7	
14	Final Review		