GLENDALE COMMUNITY COLLEGE BUSINESS DIVISION
SYLLABUS FOR CS/IS 212 – Advanced Data Structures

Instructor: Sarkis Meguerijidan
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Ticket #: 3595 fully online (Asynchronous).

Course Description
CS/IS 212 is designed to provide a thorough coverage of data structures with data abstraction applied to a broad spectrum of practical applications. Students who take this course master the principles of programming as a tool for problem solving. The students solve practical problems using an Object-Oriented Programming (OOP) Language, typically Java or C++, however this course is based on C++.

Prerequisite
CS/IS 211, or equivalent.

Disabled Students
All students with disabilities requiring accommodations are responsible for making arrangements in a timely manner through the Center for Students with Disabilities.

Course Objectives
The student will strive to complete all required work as scheduled to learn about the art and practice of Data Structures.

Student Learning Outcomes
Upon successful completion of the required coursework, the student will be able to:

- Create computer programs using more complex OOP problems;
- Explain more complex abstract data types such as trees, graphs, hash tables, and heaps;
- Explain queues, deques, and priority queues;
- Write programs utilizing trees, binary trees, full binary trees, and complete binary trees.

Textbook
Data Abstraction & Problem Solving with C++, Walls & Mirrors, 7th edition, Carrano, Pearson

Attendance Online
Since this is fully online course (asynchronous) students must participate in discussions/forums online through the semester. Missing 2 or more weeks of material could seriously jeopardize a student's grade and could, without prior arrangements made with the instructor, make him/her subject to being dropped from the course.

Make-up Policy
Test / Quiz Make up: Make-up quizzes/tests may be given **for documented emergency**

situations only and only with instructor's approval. Otherwise, missed exams will receive a grade of zero or 'F.'

Examinations and Grading
Midterm : 20%,
Final: 25%,
Ch-Quizzes 15%,
Labs: 25% ---projects
Discussion Forums: 15%,
Total of the above = 100%

First Week Drop Policy
The instructor reserves the right to drop students who do not participate in Check-In assignment. Assignment and its due date are in Canvas.

Academic Honesty Policy
The instructor follows the Glendale Community College Honesty Policy as listed in the *Glendale Community College Catalog* and the *Student Handbook* (free at Information Desk near Admissions). Students are, at all times, required to do their own work. No copying of other students' work, whether on a test or on routine classwork, is allowed at any time. Activities that are considered to be CHEATING include, but are not limited to, the following: Violation of any of these rules (i.e. cheating) could result in a lowering of the exam grade or the course grade (e.g. a "Fail"), and the violator's name and student I.D. number will be sent, with a description of the violation, to the Division Chair and to the Vice President of Instruction to be kept on record for future reference. The Dean of Student Activities may also be contacted for disciplinary action, if necessary.

Schedule of Classwork
- Recursion
- Array-Based Implementation
- Linked-based Implementations
- Recursion as a Problem-solving Technique
- Stacks
- Implementations of the ADT Stack
- Lists
- List Implementations
- Algorithms Efficiency
- Sorting Algorithms and Their Efficiency
- Sorted Lists and Their Implementations
- Queues and Priority Queues
- Queue and Priority Queue Implementations
- Class Relationships
- Trees
- Graphs
- External Methods

The course in Canvas is divided into weekly activity, student can work asynchronously on the material at their pace, however, all activities have due date in canvas for doing the activities and submission of work. Each week in the beginning of the week the content will be opened and become available to the students. The following are the activities (their start and due dates are in Canvas):

1. After reading the lecture and chapter(s), the student will take chapter quiz this will be questions checking/assessing students understanding of the material for the week, and the student will have two attempts and the highest score will be recorded.
2. Multiple Labs(projects), each will have availability and due date.
3. Multiple Discussions (Forums), for students to post/reflect on the topic and respond at least to two different students' posts. Students post must include example that clarifies the content of student's post.
4. Midterm and Final will be on Friday's, will be one pass for certain amount of time, and will be available from 7:00AM till 9:00 PM and the system will cut-off and not accept any input starting 11:00PM (e.g, about 2 hours' time during the availability range)

On Canvas there is a section called "Forum for Questions about Weekly Lectures", its divided into active weeks, and if a student have a question about that week's topic can post the question, and other students are encouraged to participate and provide answer. However, eventually I will either answer or complement on the right answer(s).

I will be available asynchronously to respond to questions and check and grade the activities and moderate the discussions, and maybe sometime injecting further questions to increase deeper understanding of the topic. However, students are encouraged and expected to substantiate their post or reply with references (e.g, a book, paper, website, …).

Make sure you **do**: Check-In assignment under Week1 it is two parts one is a none graded quiz called "Check-In Assignment" and the other a discussion Forum called "Self-Introduction Assignment" you must do both during the first week to keep your seat in this class, otherwise you may be dropped from the class and another waiting student will take the vacated seat.

Also, there is a Time Management Strategies under "Extra Credit Assignment (optional)" this will be open for four (4) weeks, then will be closed. Whoever participates in it, will get extra points. The points will be determined at the end of the semester based on students' postings to the time management.

Changes to Syllabus:
Changes may be needed to this syllabus and to the course plan. All such changes will be announced on Canvas or via e-mail. Students are responsible for this information, and responsible for periodically checking their emails and Canvas postings.

ISSUES OR COMPLAINTS:
Please address any issues you may have that are relative to this course *with me, your instructors*, by e-mail as early in the semester as possible. My emails is smeguerdijian@glendale.edu. If you and I cannot resolve the issue, I will refer you to the Business Division Chair, Michael Scott**,** mscott@glendale.edu, 818 240-1000, Ext. 5746 or see Seda Melikyan in the Division Office, SR 311, Ext. 5484, for an appointment.