CIS 22C – Data Abstraction and Structures

Instructor	Manish Goel
Class Hours	TTh: 11:30 pm – 1:20 pm, AT312, Class Time
	Th: 4:00 pm – 5:15 pm ONLINE, Lab and HW Time
Office Hours	TTh: 10:00 am – 11:30 am or by appointment
Phone	(408) 799-9170 – turnaround time can be 24 hours
Email	goelmanish@fhda.edu – this is the best way to reach me

Text   *Data Abstraction and Problem Solving with C++: Walls and Mirrors*
6th edition, by Carrano and Henry   ISBN: 0-132-92372-9

Class website   Please log into Catalyst

Course Description Application of software engineering techniques to the design and development of large programs; data abstraction and structures and associated algorithms: stacks, queues, linked lists, trees, graphs, and hash tables; internal and external sorting; use of recursion; team project.

Requisites   Prerequisites: CIS 22B or equivalent. Advisory: Mathematics 212 or equivalent.

Student Learning Outcomes   Upon the completion of this course, students will be able to:

- Read, analyze and explain advanced data structures programs.
- Design solutions for advanced problems using appropriate design methodology incorporating advanced data structure programming constructs.
- Create and analyze efficiency of advanced level data structures algorithms, code, document, debug and test advanced data structure programs using multiple files.

Attendance   Any student who is a No-Show on first day of class will be dropped.

After the first class, it is *your responsibility to drop the class before the last day to drop.* Otherwise, you will receive an appropriate grade at the end of the quarter.

This hybrid course has 4 lecture / lab hours on campus in addition to online reading and assignments. Regular and punctual attendance is expected during the quarter. Lectures will be the main source of information.

Class Decorum   In class, you are expected to pay attention, participate, not conduct personal conversations, and use the computer for class work only. Disruptive behavior is not tolerated, and any student with excessive disruptive behavior will be asked to leave and administrative follow-up may result. On the other hand, worthwhile contribution and regular attendance can positively affect your grade.

Scholarly Conduct   Discussion and exchange of ideas on lab assignments are strongly encouraged. However, each person is expected to complete his/her own computer work. **Identical solutions will be given a zero grade to all parties. DO NOT SHARE EITHER SOFT OR HARD COPY OF YOUR CODE WITH ANYONE. Copying or cheating during an exam will result in a zero being assigned to the test grade for both parties and may result in a failing grade. ANY SUCH ACTIVITY WILL BE REPORTED FOR DISCIPLINARY ACTION.**

Lab Assignments There will be 4 lab assignments – each will be 15 points and may have one or more parts:
- All labs will be completed by a pair of students as a team and submitted as one.
- All labs have to be turned in as a soft copy via Catalyst by their due date.
- Both members of the team will receive the same grade for the lab.
- Partial credit will be given for incomplete labs.
- Labs turned in after the due date will receive a 20% *per weekday* penalty.
- All labs will build on the prior ones, so missing any labs could be hard to make up.

Team Project Participating in a team project is **required** for this class. Teams will be of 4 people each and will develop a functional and modular software program using ADTs and data structure algorithms. Each student will contribute one or more module to their team's project and all modules must be linked together to furnish a fully functional application. Each team will present their project to the class with each team member being responsible for presenting their own modules. Structure charts, documentation, presentation, source code and executables are to be turned in as final deliverables of the project. During team project presentation days, presence in class is mandatory and roll will be taken.

Exams There will be 2 short quizzes, 1 midterm and 1 final.
* All exams are open book, open notes with internet access.
* You must pass the final exam in order to pass the class.
* Make up for the midterm will be allowed only with proof of emergency reasons or prior approval. Make up exam will be given no later than one week after the mid-term, will be administered after a class session and will have a 25% penalty.
* Final exam must be taken only during the scheduled time – there will be no make up.

Code Lab CodeLab is an online learning tool and its use is worth at least 40 points.

Extra Credit There will be other opportunities to earn extra credit – these will be determined later. You must be present in class to earn the extra credit

Grading Grading is based on the percentage of the total points obtained:

Lab assignments:	60 points (3x20 points)
Quizzes:	40 points (2x20 points)
Codelab:	40 points
Project:	60 points
Midterm:	50 points
Final:	50 points
Total:	300 points

A+: 97-100%	B+: 87-89%	C+: 77-79%	D+: 67-69%	
A : 93-96%	B : 83-86%	C : 70-76%	D : 63-66%	
A- : 90-92%	B- : 80-82%		D- : 60-62%	F : 0-59%