COLLEGE OF THE CANYONS

26455 Rockwell Canyon Road, Santa Clarita, California 91355 • (661) 259-7800 • www.canyons.edu

Course Syllabus
CMPSCI 182L – Data Structures/Program Design Lab
Section #28929 – Fall 2017 Semester

Course Description: A review of primitive data types and their internal representation. Data structures built from primitive types such as arrays and records. Program design, Big O notation and algorithms: searching and sorting. Advanced data structures: stacks, queues, link lists, binary trees and hash tables.

When and Where: Lecture Monday & Wednesday 2:00 PM – 3:20 PM, **Lab** Monday & Wednesday 3:30 PM – 4:50 PM, HSLH-133

Please check the CMPSCI 182 Canvas website each week for:

- Important Announcements
- Project Assignments
- Project Due Dates

Instructor: Benjamin Riveira
Office Hours: Monday & Wednesday 12:45 PM – 1:45 PM, Friday 9:00 AM – 11:00 AM Seco Hall 305E (best to Email for an appointment).
Office Phone: ext. 3657
Email: benjamin.riveira@canyons.edu. *Please use your CoC Email address for all correspondence.*

Required Text: *Data Abstraction & Problem Solving with Java*, Janet J. Prichard and Frank M. Carrano, Pearson, 3rd Ed., ISBN: 9780132122306.

Student Learning Outcomes: Evaluate and compare computer data structures, and analyze each data structure's impact on algorithms, program design and program performance.

CMPSCI 182L Grading:

6 Programming projects, 30 points each, 180 points total

Needed Point Totals: **A** – 157 points, **B** – 135 points, **C** – 108 points, **D** – 90 points

Class and Lab Etiquette: Please put away your smart phones and other mobile devices before entering the classroom. **No smart phones are to be used during class lectures**. **This means absolutely no taking pictures, no texting, no calling, no social networking (including Snapchat), no playing Pokémon Go, or using apps of any sort and during class time.** If you absolutely must engage in any of these behaviors, please do so *outside* the classroom. Laptops or tablets may **ONLY** be used to work during lab class or to take notes (not pictures) during lecture class. Browsing the Internet during lecture is reserved for class-related web sites such as Canvas, *even if you are browsing on your own laptop or tablet*. Students are given *my* undivided attention during class time; I expect that you will give me *your* undivided attention in return. **Non-class related activities on lab computers are strictly prohibited**.

Academic Integrity: On programming projects, it is permissible to discuss solution approaches in a **general** sense with other students or the lab tutors. But when submitting a program for a grade, **the program must represent your own work**. **It cannot be a program written for you by someone else, it cannot be a program copied directly from the internet,** and it **cannot be a direct copy of another student's program, even if you worked in a group with that student. Penalties for academic dishonesty on a single programming project may result in a grade of "F" for the entire course. Additionally, instances of academic dishonesty may be reported to the Dean of Students for further action.** *If you have any doubts about what is considered dishonest, please ask the instructor for guidance before taking such a serious risk.* In general, full disclosure is the best policy on any submission. In other words, **if a friend helped you to complete a project, state this fact in writing at the beginning of the submission.** However, such a submission may not earn full points.

Attendance: Attendance will be taken for all class meetings at the beginning of class. Should a student be tardy, it is the student's responsibility to sign in after class to inform me of their presence. Otherwise, the student will be marked as absent for the class. **The instructor reserves the right to drop a student after 3 absences during the semester. However, *it remains the student's responsibility (not the instructor's) to officially drop the course if necessary*.** The student should **not** assume that she/he **will** be dropped after these absences, nor should she/he assume that she/he will **not** be dropped.

Programming Projects: Programming project due dates are posted well ahead of time. If you anticipate that you will not be able to meet a project deadline, submit your work in progress on the due date. **Late project submissions are subject to a 10% penalty *per calendar day* past the posted due date.** Thus, if the posted due date for a project is on a Wednesday, but a student submits that project on the following Monday, five calendar days past the due date, the student's maximum score for that project will be 50%. ***Absolutely no programming project will be accepted later than one week past its posted due date*.** **All** projects **must** be submitted through Canvas. I will not accept projects that have been e-mailed to me, even if those projects are submitted "on time". Projects submitted late because of lack of proper transport methods will not be graded.

Important Dates:

Add Deadline	9/3/17
Drop w/o "W"	9/3/17
Drop Deadline	11/12/17
Drop w/Refund	9/3/17
Project #1 Due	9/11/17
Project #2 Due	10/2/17
Project #3 Due	10/23/17
Project #4 Due	11/1/17
Project #5 Due	11/13/17
Project #6 Due	12/6/17

Please be sure to avoid scheduling conflicts with these dates.

Course Schedule (subject to change)

Week	Date	Topics covered	Reading Assignment
1	8/21/17	Review Course Syllabus	
	8/23/17	Review of programming principles, Review of recursion	Chapters 2, 3
2	8/28/17	Data abstraction, **Project 1 assigned**	Chapter 4
	8/30/17	Data abstraction	
3	9/4/17	Labor Day Holiday (No Class Session)	
	9/6/17	Data abstraction	
4	9/11/17	Linked lists, **Project 2 assigned**	Chapter 5
	9/13/17	Linked lists	
5	9/18/17	Linked lists	
	9/20/17	Linked lists	
6	9/25/17	Recursion	Chapter 6
	9/27/17	Recursion	
7	10/2/17	Stacks, **Project 3 assigned**	Chapter 7
	10/4/17	Stacks	
8	10/9/17	Stacks	
	10/11/17	**Midterm Exam** (In Lecture)	
9	10/16/17	Queues	Chapter 8
	10/18/17	Queues	
10	10/23/17	Trees, **Project 4 assigned**	Chapter 11
	10/25/17	Trees	
11	10/30/17	Trees	
	11/1/17	Tables, **Project 5 assigned**	Chapter 12
12	11/6/17	Tables	
	11/8/17	Tables	
13	11/13/17	Graphs, **Project 6 assigned**	Chapter 14
	11/15/17	Graphs	
14	11/20/17	Class Relationships	Chapter 9
	11/22/17	Class Relationships	
15	11/27/17	Class Relationships	
	11/29/17	Efficiency and Sorting	Chapter 10
16	12/4/17	Efficiency and Sorting	
	12/6/17	**Final Exam**	

Recent California Legislation guarantees admission to a California State University (CSU) campus for any community college student who completes an "associate degree for transfer". The Associate in Science for Transfer (AS-T) in ***Math****,* ***Physics****,* ***Computer Science****, and* ***Geology****, or the Associate in Arts for Transfer (AA-T) in* ***Geography****, is intended for College of the Canyons students who plan to complete a bachelor's degree in a similar major at a CSU campus. Students must earn a C or better in all courses required for the major or area of emphasis. The College also offers associate degrees in* ***Biology****,* ***Computer Science****,* ***Engineering****, and* ***Math****. For more information on the suggested sequence of classes to be taken in order to obtain these degrees in two years, as well as information on when these courses are guaranteed to be offered, please visit: http://www.canyons.edu/Offices/MathScienceDiv/Pages/Classes.aspx*