

Point Loma Nazarene University

CSC 143: Introduction to Computer Programming (3 units)

Fall 2017

Instructor:

Dr. Lori Carter, Professor of Computer Science
loricarter@pointloma.edu

(619) 849-2352
office: RS 214

Office hours:

M,W,F 8:30-9:30
10:30-12:00

TR 8:30-9:30.
1:30-2:00

Course times and location:

Lecture TR 10:00-10:55 LA 101
Lab section 1: TR 11:00-11:55 LW 220
Lab section 2: R 3:00-4:45 LW 220

Text:

Anderson and Franceschi. *Java Illuminated: An Active Learning Approach 4th Edition*. Jones and Bartlett 2016. We will cover most of chapters 1-9 in this class. The same text is used for CSC 154.

Catalog Description:

Introduces the syntax of a high level programming language with emphasis on the programming environment and the use of the constructs of the language to write simple application programs. Topics include data types, sequential, conditional, and iterative statements, arrays, applets, simple graphical animation, the use and design of objects, and I/O. Lecture two hours and laboratory two hours each week.

More specifically, this course is designed to:

- To introduce students to general computer programming concepts and environments. Specifically, we will be using the Java language, with the jGrasp integrated design environment. Students will develop programs from algorithm design to testing.
- To present the syntax of the object-oriented computer programming language Java, and to prepare the student to write simple programs in preparation for more advanced computer science courses and for the Computational Science minor. This course covers basic data types and associated operations, use and theory of objects, graphics, animations, conditional statements, arrays, and loops. Students will gain experience writing programs for many contexts including science, business, and mathematics.

Course Learning Outcomes:

Students will be able to write correct and robust software.
Students will analyze the interaction between hardware and software.
Students will be able to apply their technical knowledge to solve problems.
Students will collaborate effectively in teams. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.

Course Organization:

This course will be taught in a hybrid format. We will meet together formally during lecture time on Thursday only, and each section will meet for their labs as scheduled. Except for the first 3 weeks, Tuesday will be an optional question and answer time.

Homework: Each week, students will get an online introduction to the material, be responsible for reading a section of the text, and taking online quizzes over the introduction and the text sections. All quizzes must be completed by 1 minute before midnight on the Wednesday prior to the Thursday class meeting. Note that they will not even be available after midnight. While there is no make-up for quizzes not taken by the deadline, your 3 lowest on-line quizzes will be dropped.

Tuesday: For the first 3 Tuesdays, I will be giving formal presentations on program writing. For subsequent weeks, there will be no formal meeting on Tuesdays, but I will be in the classroom providing help with homework and labs.

Thursday meeting: Many Thursdays will begin with an in-class written quiz based on the homework just completed. There will also be a formal presentation of some of the more complex material and/or exercises to work on in class to improve understanding. Student versions of the lecture slides can be obtained from: canvas.pointloma.edu. All written exams will also take place during a Thursday session

In class exams and quizzes: During the course of the semester, you will have several in-class written quizzes, 1 programming quiz, 1 programming exam and 1 written exam in addition to written and programming final exams. The programming exam and quiz will take place during your lab session. The schedule is as follows:

Date	Type	Time	Covers	% of grade
Thursday often	In-class quizzes	10 minutes each	Homework	7
October 12	Programming quiz	25 minutes	Labs to this point	3
October 26	Written Exam	Entire period	Chapters 1-6.4	10
October 26	Programming Exam	55 minutes	Labs to this point	10

If you know that you will be missing an exam for a school event, you must make arrangements to take the exam **prior** to it being administered to the class. If you miss an exam for any unexcused reason, you can expect to receive a 0 on that exam/quiz. Keep in mind that the lowest of the in-class quizzes will be dropped. **You cannot drop the programming quiz.**

Labs: For all labs you may use books, notes, powerpoints, or help (not complete programs) with pieces of code that you find on the internet. If you are using code found on the internet you **MUST** document that in your program (provide the URL). **No late labs are accepted but partial credit is always possible.** Labs are divided into prep and main labs, and the main lab and prep lab with the lowest grade for each student will be dropped.

Prep Labs: designed to be a straightforward use of the concept just covered. These labs are due either by the end of the 55 minute lab session, or after 55 minutes of the 1 hr 45 minute lab session at which they are assigned. You must turn in the prep lab on by the time it is due to receive any credit. **Prep labs are to be done without help from peers. You are not to get assistance from another person except the professor or a lab assistant.**

Main Labs are due on Thursdays. They must be turned in during the **first 15 minutes of the lab to be accepted.** You may get your lab signed off early in the virus lab with a lab assistant or during those first 15 minutes. On the day that a lab is due, the lab assistant will check it **only once** and then make notes of what doesn't work. If you are getting it checked in the virus lab, you may fix any errors and then get it re-checked. You may work on a main lab with a partner. If you do that, please turn in only 1 lab with both names on it. Please make sure that both students understand the material as you can expect questions from the labs on exams.

To receive full credit on a lab your lab must:

- Be original work (or work with 1 partner on Main labs)
- Be well-documented (comments)
- Be well-formatted (indentation and white space)
- Use meaningful identifiers
- Work correctly for all test cases run by Dr. Carter or the Lab Assistant

For the purposes of this class, here is a clarification of what I consider to be "dishonest."

Written exams: Using anything besides your brain, writing implement, and anything else I have specifically noted prior to the start of the exam. Usually it will just be your brain and writing implement.

Programming exams: Using anything that connects to another person – from the class or otherwise – while taking the exam. To be very clear, email, social media, help websites (you asking a question), phones, any messaging, any conversation, is off limits.

Online quizzes: Accepting answers, written or verbal, from another person without reading the assigned material yourself and having significant discussion with the other person about the answer. In other words, you may work collaboratively, but you may not just get the answers and write them as your own.

Labs:

- Putting anything into a program that someone else supplied without you understanding how it works. If you use a piece of code found on the internet, you must cite that code (give URL).
- Accepting a program file from, or sending a program file to another person where that file is used as the basis for the recipient’s program.
- Regardless, the majority of the code must be original work (from your brain and hands) or the original work of your partner in the case of main labs. When working with a partner, both people must be present.

Final Exam: The final exam will be comprehensive, and contain both written and programming portions. **Programming final is Tuesday at 10:30 of finals week. The written final will be during the last lecture period.**

Grading:

Online quizzes	10%	Main Labs	20%
In class quizzes	10%	Midterm Exams	20%
Prep Labs	15%	Final Exams	25%

Final grades will be determined as follows:

100-93%	A	80-82.99%	B-	67-69.99%	D+
90-92.99%	A-	77-79.99%	C+	63-66.99%	D
87-89.99%	B+	73-76.99%	C	60-62.99%	D-
83-86.99%	B	70-72.99%	C-	0-59.99%	F

Credit Hour Information:

Distribution of Student Learning Hours

It is anticipated that you will spend a minimum of 37.5 participation hours per credit hour in your course. The estimated time expectations for this 3 credit course are shown below:

Assignments	Total Course Hours
Reading: Text and Notes	14
Written Assignments	7
Lectures	14
Labs	65
Online Quizzes	5.5
Written and Programming Exams	7.5
TOTAL	113

University Mission:

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service is an expression of faith.

Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

MICS Department Mission:

The Mathematical, Information, and Computer Sciences department at Point Loma Nazarene University is committed to maintaining a curriculum that provides its students with the tools to be productive, the passion to continue learning, and Christian perspectives to provide a basis for making sound value judgments.

Attendance:

Attendance is expected at each class session. In the event of an absence you are responsible for the material covered in class and the assignments given that day.

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. See http://catalog.pointloma.edu/content.php?catoid=24&navoid=1581#Class_Attendance in the Undergraduate Academic Catalog.

Because this course is a hybrid course, this is how attendance will be calculated:

Face to face portion of the class: You must be present on time for the full class for you to be considered present in the face to face meeting (lecture or lab). Exception is that if you complete a lab early, you may leave.

Online portion of the class: You are expected to work on material online every week. In order to get credit for being "present" in the online portion of the class each week you must complete at least one online quiz before the due date/time for that week.

If you miss 20% of the class, you can be automatically de-enrolled.

Class Enrollment:

It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

Academic Accommodations:

If you have a diagnosed disability, please contact PLNU's Disability Resource Center (DRC) within the first two weeks of class to demonstrate need and to register for accommodation by phone at 619-849-2486 or by e-mail at DRC@pointloma.edu. See [Disability Resource Center](#) for additional information. For more details see the PLNU catalog:

http://catalog.pointloma.edu/content.php?catoid=24&navoid=1581#Academic_Accommodations

Students with learning disabilities who may need accommodations should discuss options with the instructor during the first two weeks of class.

Academic Honesty:

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See http://catalog.pointloma.edu/content.php?catoid=24&navoid=1581#Academic_Honesty for definitions of kinds of academic dishonesty and for further policy information.

Final Exam: Date and Time:

The final exam date and time is set by the university at the beginning of the semester and may not be changed by the instructor. This schedule can be found on the university website and in the course calendar. No requests for early examinations will be approved. Only in the case that a student is required to take three exams during the same day of finals week, is an instructor authorized to consider changing the exam date and time for that particular student.

Copyright Protected Materials:

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

Anticipated schedule:

Week	Topic and At-home reading	Lecture	Lab
1	Chapter 1: Programming, Data Representation	Thursday: Syllabus, Intro to Programming	Syllabus quiz Intro to jGrasp tutorial Building a program lecture and tutorial
2 9/5-9/7	Chapters 1.3-2.2: Data types, arithmetic operations	Tuesday: Building simple programs Thursday: 2.3 Arithmetic operations with mixed data types	Arithmetic operations
3 9/12-9/14	Chapters 3.1-3.4 Objects Review of DNA basics	Tuesday: Building a program with Strings and String methods Thursday: Scanner and String basics, Objects vs Primitives (3.6, 3.7, 3.10)	DNA stats lab
4 9/19-9/21	Chapter 3.7-3.9: More objects (formatting, random numbers)	Tuesday: Review objects and use of API – write program using SimpleDate Thursday: Exercise on objects	DNA report lab
5 9/26-9/28	Chapter 3.11-3.13: Static classes	Tuesday: Open help Thursday: Math, JOptionPane 3.15, 3.16	Physics Equations Lab
6 10/3-10/5	Chapter 4: Graphics basics	Tuesday: Open help Thursday: Tracing, graphics, Intro to conditional statements –	Graphing lab
7 10/10-10/12	Chapter 5.1-5.5 Conditionals	Tuesday: Open help Thursday: 5.6-5.9 Nested if statements, comparing Strings	Programming quiz Quiz creation lab
8 10/17-10/19	Chapter 5.11, 6.1-6.2: Switch, While loops	Tuesday: Open help Thursday: Loops, Pause class,	Animation, Loop lab (due Nov 2)

		animation	
9 10/24-10/26	Exam week	Tuesday: Help with practice programming exam Thursday: Written exam	Programming Exam (Thursday)
10 10/31-11/2	Chapter 6.3-6.8: more loops, file reading	Tuesday: Open help Thursday: Nested loops (loop exercise for class) 6.11	Encryption lab
11 11/7-11/9	Chapter 8: Arrays 8.1-8.3.4	Tuesday: Open help Thursday: Arrays 8.3.5-8.3.7	DNA Array lab
12 11/14-11/16	Chapter 8: searching, sorting: Canvas search introduction	Tuesday: Open help Thursday: Sorting 8.6.2-8.6.3	Searching and Sorting labs (due Nov. 30)
13 11/21-11/23	Chapter 9.1-9.3.1: 2D arrays	Thanksgiving	Thanksgiving
14 11/28-11/30	Chapter 9.3-5: 2D arrays	Tuesday: Open help Thursday: 2D arrays, review for final	Voyager Lab (change menu so only happens once)
15	Exams	Written Final Exam	Practice Programming Exam
Finals week			Tuesday 10:30 Programming Exam