

CSC1054-1 SP23 - Objects And Elementary Data Structures

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CSC1054 / EGR1054

Objects and Elementary Data Structures

Spring 2023

4 units

Point Loma Nazarene University

College of Natural and Social Sciences

PLNU 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.

Instructor:

Dr. Benjamin Mood

[bmood@pointloma.edu \(mailto:bmood@pointloma.edu\)](mailto:bmood@pointloma.edu)

619 849 2269

Rohr Science 216

Meeting Times and Locations:

Lecture:

MWF - LA 01 – 1:30 to 2:25

Labs:

R – RS 395 - 10:00am to 11:45am and 3:00 to 4:45pm

Tentative Open Office Hours:

Monday: 12:15 – 1:15 @ Caf; 2:30 - 4:15 @ office

Thursday: 12:00 – 1:00pm @ Caf; 1:00pm – 2:45pm @ office.

Friday: 12:15 – 1:15 @ Caf; 2:30 – 3:30 @ office

Tentative On-Request-Only Office Hours

Monday: 9:30 – 10:45am @ office

Friday: 9:30 – 10:45am @ office

Books:

Java Illuminated 5th edition. By Julie Anderson and Herve Franceschi

Course Description:

As a continuation of CSC 1043, this course deals with more advanced computing constructs and ideas, reinforced in weekly labs. Topics include object-oriented design, inheritance, polymorphism, exception handling, and recursion, along with more intentional development and debugging strategies. Linked lists are introduced as a viable option for implementing basic ADT's. Students gain experience in the design of graphical user interfaces, event driven programming, and larger programming projects. Lecture three hours and laboratory two hours each week.

Prerequisite(s): CSC 1043 with a grade of C- or higher.

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 be able to speak about their work with precision, clarity and organization.

Students will be able to write about their work with precision, clarity and organization.

Students will collaborate effectively in teams.

Students will be able to gather relevant information, examine information and form a conclusion based on that information.

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.

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.

Additional Course Information:

Labs: Labs are used to give students a way to practice the concepts studied in lecture. They will be composed of practical and question sections. The practical part of the lab must be demonstrated to Dr. Mood or a lab assistant to show that it works successfully. A completed lab includes the signed off practical sections and answers to the theoretical questions; all code and necessary data files and question answers will be turned in on online on canvas. It should be well commented and well formatted. Code missing comments or with poor formatting will not be given full credit.

Labs, for all sections, are due Thursday at 10am the day the new lab is assigned.

My expectations are that students will use the JGRASP IDE in this class. The purpose of this class is for you to learn everything required for programming. This means it is to your benefit not to have code filled in by a fancy IDE. Code that requires edits to be run by myself or the TAs due to IDE choices will result in point deductions.

Unless you have finished the lab and it is already checked off and submitted on canvas or you have previously received permission, the general expectation is that you will be in the lab during lab time.

A-Advice: The way to excel in this class and all other computer science classes is to read the book if you don't understand something, learn the concepts at an 'A' level, learn to debug well, learn to solve your own code problems, go to office hours, and go to virus lab hours if you have questions. In the future, you will hit a 'wall' if you do not understand the concepts yourself and rely too heavily on lab assistants, classmates, or even Dr. Mood.

Helping each other: It is typical for people to help each other in this class. However, depending on how you help each other, it is entirely possible that you will end up hurting each other's grades on the exams because on the exams I expect you to solve problems on your own. If your help prevents a person from developing their own skills, this is not good. It is normal to see scores of 100% on the labs and then really bad Fs programming exams due to this reason. If your friend is dependent on you to solve the labs, that is not good and you are equally to blame for their F.

Cheating: Unless otherwise noted, talking and working with fellow students to understand concepts is OK. However, copying code from another student (or giving your code to another student) is not acceptable and can result in a staggering penalty of -100% on whatever assignment/exam it was. Although sharing code seems a "nice" to help a friend, the penalty applies to all involved. **Do not share your code with anymore. Do not let someone look at your code.** If you use online resources, you must site the direct URLs in the labs you turn in.

Missed Classes: Homework/Quizzes/Exams missed due to PLNU excused absences (i.e., sports teams, choirs, etc), can be made up. Missed Quizzes/Exams/etc. due to emergencies can be made up once the dean of students informs Dr. Mood that PLNU has approved the reason. Non-emergency missed exams will result in a zero. It is the student's responsibility to inform the professor of when they will be gone. Missed class activities, which are due to a non-dean of students approved-emergency situation, will result in a zero.

Grading:

Students must pass a written and a programming exam in order to pass this class. Students who fail both programming exams or fail both written exams will receive an 'F' in the class regardless of all other grades.

Labs	25%
Project	5%
Quizzes	15%
Written Exam I	10%
Programming Exam I	12.5%

Written Exam II	15%
Programming Exam II	17.5%

Grading scale

93 – 100%	A
90 – 92%	A-
87 – 89%	B+
83 – 86%	B
80 – 82%	B-
77 – 79%	C+
73 – 76%	C
70 – 72%	C-
67 – 69%	D+
63 – 67%	D
60 – 62%	D-
0 – 59%	F

PLNU Policies

COURSE CREDIT HOUR INFORMATION

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a 4 unit class delivered over 15 weeks. It is anticipated that students will spend a minimum of 37.5 participation hours per credit hour on their coursework. For this course, students will spend an estimated 150 total hours meeting the course learning outcomes. The time estimations are provided in the Canvas modules.

USE OF TECHNOLOGY

In order to be successful in the online or hybrid environment, you'll need to meet the minimum technology and system requirements; please refer to the [Technology and System Requirements](https://help.pointloma.edu/TDCClient/1808/Portal/KB/ArticleDet?ID=108349) (<https://help.pointloma.edu/TDCClient/1808/Portal/KB/ArticleDet?ID=108349>) information. Additionally, students are

required to have headphone speakers, microphone, or webcams compatible with their computer available to use. Please note that any course with online proctored exams require a computer with a camera (tablets are not compatible) to complete exams online.

Problems with technology do not relieve you of the responsibility of participating, turning in your assignments, or completing your class work.

STATE AUTHORIZATION

State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a student moves to another state after admission to the program and/or enrollment in an online course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map on [State Authorization \(https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures\)](https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures) to view which states allow online (distance education) outside of California.

SPIRITUAL CARE

PLNU strives to be a place where students grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith.

If you have questions, a desire to meet with the chaplain, or if you have prayer requests, you can contact the [Office of Student Life and Formation \(https://www.pointloma.edu/offices/student-life-formation\)](https://www.pointloma.edu/offices/student-life-formation).

PLNU COPYRIGHT POLICY ☼

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.

PLNU ACADEMIC HONESTY POLICY ☼

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 [Academic Policies \(https://catalog.pointloma.edu/content.php?catoid=52&navoid=2919#Academic_Honesty\)](https://catalog.pointloma.edu/content.php?catoid=52&navoid=2919#Academic_Honesty) for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMMODATIONS POLICYⓈ

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities. Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center ([EAC@pointloma.edu \(mailto:EAC@pointloma.edu\)](mailto:EAC@pointloma.edu) or 619-849-2486). Once a student's eligibility for an accommodation has been determined, the EAC will issue an academic accommodation plan ("AP") to all faculty who teach courses in which the student is enrolled each semester.

PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course and/or if they do not wish to utilize some or all of the elements of their AP in that course.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC.

SEXUAL MISCONDUCT AND DISCRIMINATION

Point Loma Nazarene University faculty are committed to helping create a safe learning environment for all students. If you (or someone you know) have experienced any form of sexual discrimination or misconduct, including sexual assault, dating or domestic violence, or stalking, know that help and support are available through the Title IX Office at [pointloma.edu/Title-IX \(http://pointloma.edu/Title-IX\)](http://pointloma.edu/Title-IX). Please be aware that under Title IX of the Education Amendments of 1972, it is required to disclose information about such misconduct to the Title IX Office.

If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact Counseling Services at [counselingservices@pointloma.edu \(mailto:counselingservices@pointloma.edu\)](mailto:counselingservices@pointloma.edu) or find a list of campus pastors at [pointloma.edu/title-ix \(http://pointloma.edu/title-ix\)](http://pointloma.edu/title-ix).

Final Exam: 5/5 at 1:30pm

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.

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.

COURSE MODALITY DEFINITIONS

1. **In-Person:** Course meetings are face-to-face with no more than 25% online delivery.
2. **Online:** Coursework is completed 100% online and asynchronously.
3. **Online Synchronous:** Coursework is completed 100% online with required weekly online class meetings.
4. **Hybrid:** Courses that meet face-to-face with required online components.

PLNU ATTENDANCE AND PARTICIPATION POLICY ⊕

Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions, the faculty member will issue a written warning of 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.

Tentative Schedule

Monday	Tuesday	Wednesday	Thu	Friday
Jan: 9	10: 9.7	11: 9.7 (including 2d arrays and 2d ArrayLists)	12: ArrayList / 2D Lab	13 Chapter 7.1-7.6
16 (no classes)	17	18 Chapter 7.7- 7.9	19 Class lab	20 Chapter 7.10 – 7.11
23	24	25	26	27

Chapter 7.10 –
7.11

Chapter 7

Class lab 2

Chapter 10.1-10.6

30
Chapter 10.1-10.6

31

1
Chapter 10.1-
10.6

2

Programming quiz

Lab: inheritance after
turn in quiz

3

Chapter 11.1-11.6

6
Chapter 11.1-11.6

7

8
Chapter 11.1-
11.6
More
structured files

9

lab: files exceptions

10

Chapter 12

13
Chapter 12

14

15
Chapter 12

16

GUI lab 1
(layouts + painting)

17

Chapter 12

20
Chapter 12

21

22
Chapter 12

23

GUI lab 2
(components)

24

Written Exam I

27
NDSS

28

1
NDSS

2

Programming Exam I

3

Chapter 12

6 (spring break)

7

8**9****10 (spring break)**

13
Chapter 12

14

15
Chapter 12

16

GUI lab 3 (mouse
and timer)

17

Chapter 12

20
Chapter 12

21

22

GIT

23

Project start (GIT)

24

Chapter 13

27	28	29	30	31
Chapter 13		Chapter 13 / 8.6 / 15	Lab Recursion	Chapter 13 / 8.6 / 15
3	4	5	6	7
Chapter 14.1		Chapter 14.2 Quiz	EASTER	EASTER
10	11	12	13	14
EASTER		Chapter 14 or 8.6 Project due at 11:59pm on GIT	Lab Linked Lists	Stacks/ Queues
17	18	19	20	21
Stacks/ Queues		Queues	Lab Queue/Stacks/Linked Lists	TBD
24	25	26	27	28
TBD		Review	Written Exam II	Review
1	2	3	4	5
				Programming Exam II

Course Summary:

Date	Details	Due
Thu Jan 19, 2023	 Lab 1	due by 10am

Date	Details	Due
	(https://canvas.pointloma.edu/courses/66416/assignments/877861)	
Thu Jan 26, 2023	 Lab 2 (https://canvas.pointloma.edu/courses/66416/assignments/877862)	due by 10am
	 Lab 3 (https://canvas.pointloma.edu/courses/66416/assignments/877863)	due by 10am
Thu Feb 2, 2023	 Programming Quiz Turn-in 10am (https://canvas.pointloma.edu/courses/66416/assignments/877846)	due by 11:50am
	 Programming Quiz Turn-in 3:00pm (https://canvas.pointloma.edu/courses/66416/assignments/877845)	due by 4:50pm
Thu Feb 9, 2023	 Lab 4 (https://canvas.pointloma.edu/courses/66416/assignments/877864)	due by 10am
Thu Feb 16, 2023	 Lab 5 (https://canvas.pointloma.edu/courses/66416/assignments/877865)	due by 10am
Thu Feb 23, 2023	 Lab 6 (https://canvas.pointloma.edu/courses/66416/assignments/877866)	due by 10am
Fri Feb 24, 2023	 Midterm Written Grade (https://canvas.pointloma.edu/courses/66416/assignments/877848)	due by 1:30pm
	 Lab 7 (https://canvas.pointloma.edu/courses/66416/assignments/877867)	due by 10am
Thu Mar 2, 2023	 Midterm Programming Turn-in 10am (https://canvas.pointloma.edu/courses/66416/assignments/877843)	due by 11:50am
	 Midterm Programming Turn-in 3:00pm (https://canvas.pointloma.edu/courses/66416/assignments/877844)	due by 4:50pm
Thu Mar 23, 2023	 Lab 8 (https://canvas.pointloma.edu/courses/66416/assignments/877868)	due by 10am
Wed Apr 12, 2023	 Project (https://canvas.pointloma.edu/courses/66416/assignments/877859)	due by 11:59pm
Thu Apr 13, 2023	 Lab 9 (https://canvas.pointloma.edu/courses/66416/assignments/877869)	due by 10am

Date	Details	Due
Thu Apr 20, 2023	 Lab 10 (https://canvas.pointloma.edu/courses/66416/assignments/877870)	due by 10am
Thu Apr 27, 2023	 Lab 11 (https://canvas.pointloma.edu/courses/66416/assignments/877871)	due by 10am
Fri Apr 28, 2023	 Written Final Grade (https://canvas.pointloma.edu/courses/66416/assignments/877838)	due by 1:30pm
Wed May 3, 2023	 Final Programming Turn-in 10am (https://canvas.pointloma.edu/courses/66416/assignments/877839)	due by 11:50am
	 Final Programming Turn-in 3:00pm (https://canvas.pointloma.edu/courses/66416/assignments/877841)	due by 4:50pm
	 honor lock sample :) (https://canvas.pointloma.edu/courses/66416/assignments/889184)	