

Point Loma Nazarene University
CSC 4091 Independent Study (3 units)
Fall 2020 Quad 2 and Spring 2021 Quad 1

Instructor:

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Office hours:

MW 1:30-2:30
Tuesday: 11-12
Thursday: 11:30-1:00, 3:30-4:30
Other times by appointment

Course times and location:

Independent work with meetings as necessary on Zoom

PLNU Mission

To Teach ~ To Shape ~ To Send

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.

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.

COURSE DESCRIPTION

Catalog copy: Study of a selected problem or topic under the direction of an instructor. The instructor and student propose the course of study. Approval by the department chair is required. May be repeated for a total of six units.

The research in this particular course involves understanding the needs for computational training in core courses in the natural sciences. Students will work with science professors to discover the needs, and to produce training materials to meet some of them.

COURSE LEARNING OUTCOMES

1. Students will discover needs for computational training to prepare science students for success in courses and basic research.
2. Students will discover best practices for creating training tools
3. Students will create training resources to meet some of the needs of science professors and students.
4. Students will produce a final paper written in a style appropriate to their major discipline

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

Text: *None*

Other resources may include video software, lab book sharing software, spreadsheet, and database software. All of these resources would be freely available and downloadable.

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 3 unit class delivered over fifteen weeks. Specific details about how the class meets the credit hour requirement can be provided upon request. (Based on 37.5 hours of student engagement per credit hour.)

Distribution of Student Learning Hours

Category	Time Expectation in Hours
Professor interviews	5
Background research on resource creation	5
Learning resource creation and testing	90
Meetings with advisor and students	5
Final paper	8
Total Hours	113

ASSESSMENT AND GRADING

Course Organization:

This course is to be graded pass/fail. A passing grade requires earning at least 80% of the points available during a given quad (40 out of 50). Possible points are accumulated as shown below, and based

on quality of product and timely completion given due dates indicated. Late penalty is 20% of task points per week. Any task can be completed early and all work assigned to a quad is due by the end of that quad.

Grading:

First quad

Point Distribution Category	Possible Points	Due date
Timeline for and description of project 1 (Excel Basics) including content and implementation– verified by appropriate science professor(s)	10	10/23
First video finished and tested with peers	10	11/6
Project 1 finished with adjustments made based on first video experience and to satisfaction of advisor (1-2 additional videos and documentation)	20	11/24
Timeline for and description of project 2 including content and implementation– verified by appropriate science professor(s)	10	12/4
Total	50	

Second quad

Point Distribution Category	Possible Points	Due date
First video for Project 2 (introductory programming in Python and R) finished and tested with peers	10	3/17
Project 2 completed to satisfaction of advisor (1-2 additional videos and documentation)	20	4/1
Draft of final paper (individual)	10	4/12
Final paper (individual)	10	4/19

Total	50	
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Computing instruction resources

These resources will be created to meet the needs of students as indicated by science professors to better prepare them for courses and basic research. The independent research students will determine along with the professors and advisor the best implementation of these training tools. They will then complete implementation (likely 2-3 videos for each of 2 topics), testing, and documentation to the satisfaction of the appropriate professors and advisor. Documentation includes brief description of resources and location links.

Final paper – to be completed individually

A final paper is required summarizing the 2 quad experience. The final paper should be written in 3rd person as is common for research papers. It should be written based on the standard format of the student's discipline. It is expected to be 4-5 pages single spaced, with sections as shown.

Outline

- Abstract
- Background
 - Description of needs of professor for all projects
 - Rationale for implementation choices
 - Overview of resources looked at in process
- Implementation for project 1
 - Description of project and implementation
 - Results of testing with students
 - Adjustments required
- Implementation for project 2
 - Description of project and implementation
 - Results of testing with students
 - Adjustments required
- Conclusions regarding process and success
- References

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](#) to view which states allow online (distance education) outside of California.

INCOMPLETES AND LATE ASSIGNMENTS

Late assignments are accepted at a 20% penalty per week per assignment. All work assigned to a quad must be completed by the end of each quad.

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](#)[Links to an external site.](#) for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMMODATIONS POLICY

While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic adjustments, modifications or auxiliary aids/services. At Point Loma Nazarene University (PLNU), these students are requested to register with the Disability Resource Center (DRC), located in the Bond Academic Center. (DRC@pointloma.edu ([Links to an external site.](#)) or 619-849-2486). The DRC's policies and procedures for assisting such students in the development of an appropriate academic adjustment plan (AP) allows PLNU to comply with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Section 504 (a) prohibits discrimination against students with special needs and guarantees all qualified students equal access to and benefits of PLNU programs and activities. After the student files the required documentation, the DRC, in conjunction with the student, will develop an AP to meet that student's specific learning needs. The DRC will thereafter email the student's AP to all faculty who teach courses in which the student is enrolled each semester. The AP must be implemented in all such courses.

If students do not wish to avail themselves of some or all of the elements of their AP in a particular course, it is the responsibility of those students to notify their professor in that course. PLNU highly recommends that DRC students speak with their professors during the first two weeks of each semester about the applicability of their AP in that particular course and/or if they do not desire to take advantage of some or all of the elements of their AP in that course.

PLNU ATTENDANCE AND PARTICIPATION POLICY

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 [Academic Policies](#) [Links to an external site.](#) for further information about class attendance.

Since this is an independent study class, attendance is only required at Zoom meetings. If it becomes impossible for a student to pass the class due to insufficient points left to attain, this would also allow the student to be dropped for insufficient participation.

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.

SPIRITUAL CARE

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith. If students have questions, a desire to meet with the chaplain or have prayer requests you can contact the [Office of Spiritual Development](#) [Links to an external site.](#)