# Course Syllabus

Jump to Today



# Point Loma Nazarene University School of STEM ISS 4014 Database Systems and Web Integration

Fall 2024 (4 Credit Hours)

Time and Place: Tuesday / Thursday 10:00 - 11:55 am

PLNU Campus - RS 395

Final Exam: Thursday, Dec 19, 10:30 am

**Instructor:** Mike Leih - Professor (619) 248-3008

mleih@pointloma.edu office: Rohr Science 240

Office Hours:	Tuesday	9 am to 10 am and 1 pm to 3 pm
	Thursday	9 am to 10 am and 1 pm to 3 pm

Students are welcome to contact me via e-mail and schedule an appointment whenever I am available. Appointments can be face-to-face in my office, on the phone, or via a video conference call. I will keep office hours as often as I can, but off-campus appointments may require me to be unavailable. It is always best to arrange a time and location with me prior to a meeting.

Changes to Course and Syllabus: The syllabus and course schedule presented here is subject to change based on the learning needs of the students as determined by the instructor. Changes will be announced in class or through e-mail. Students are responsible for checking their PLNU e-mail and reviewing due dates in Canvas on a regular basis to ensure they are aware of changes.

# **Required Text:**

Database Systems – Design, Implementation and Management 13e

Carlos Coronel and Steven Morris

ISBN: 978-1-337-62790-0

# **Needed Supplies:**

Access to a laptop computer (preferably running Windows or Mac with a Windows virtual environment) with at least 8Gb of RAM and 50Gb of free storage space, Microsoft Office software, the XAMPP server installed, and the ability to install software on your computer. You must bring your computer to class to start in-class assignments more easily. You should bring your textbook to each class session. We will use information from the textbook each week as part of in-class assignments. Students must also have MS Word, MS Excel, and MS Visio installed or available.

#### Catalog Description:

An introduction to database management systems covering data models (including relational, network, hierarchical, and object-oriented), relational databases, query languages, relational database design, transaction processing, distributed databases, and physical database design. Students will see examples from both business and science. They will become familiar with analysis tools and gain experience accessing databases using Python scripts and web-based gateways. Students will also design web interfaces for databases.

#### **Course Learning Outcomes:**

- Students will be able to explain the importance of database design.
- Students will be able to explain the main components of database systems.
- Students will be able to explain data modeling and why data models are important.
- Students will be able to explain relational model components and how tables relate within the database.
- Students will be able to create ER Diagrams and define the components within the ER Diagram.
- Students will be able to define the characteristics of good primary keys and foreign keys within a relational table.
- Students will be able to write basic and advanced SQL statements to create tables, insert table records, select database information, and delete table records and tables.
- Students will be able to create database triggers and stored procedures.
- Students will be able to create a sound database design using the SDLC.
- Students will be able to explain database locking rules and concurrency control systems.
- Students will be able to explain data warehousing and OLAP concepts.
- Students will be able to explain concepts about big data analytics and NoSQL.
- Students will be able to write simple HTML/PHP to access database tables from web/PHP servers and display the information on a web page.

# **Course Organization:**

**Reading**: The assigned reading each week should be completed before class. Lecture, class discussion, and class activities will be based on the assumption that the reading has been completed before the class where the topic is being discussed.

Chapter Quizzes: Quizzes are open book and will focus on having read and understood the reading assignment. Quizzes will be taken online using Canvas before class and will be available a week before they are due. Each quiz will have 10 questions and students will have 8 minutes to complete the quiz. Each quiz is due before we discuss the topic in class. This is to encourage students to complete the reading prior to class discussion. Missed quizzes will receive zero points, and there will be no make-up for missed quizzes. Quiz questions are randomly pulled from a large dataset, and students are able to take the quiz as many times as they would like before the quiz's due date and time. The highest quiz score will be recorded.

**Chapter Questions:** After reading a given chapter, students should submit one or more questions they have regarding the chapter before 6 am on the due date (typically before the chapter is discussed in class). Questions posted after the due date will receive zero points.

**Chapter Activities and Homework:** In each chapter, students will be assigned a series of class activities and problems to begin during class time and completed before the next class session. Activities and assignments will be based on in-class discussions and various problem-solving tasks to reinforce the learnings covered in the weekly readings.

**Case Problems (Teams):** Some chapters will have additional case problems beyond those assigned as activities and homework. These problems will be worked on and submitted as teams.

**Web Integration Project (Teams):** Teams will create a web-based project that will update and extract data from a database and display that data on a web form or other application interface.

Exams: Exams will be given in class. Exams will cover the material up to the exam. The final exam will cover all material throughout the course. The exams will be a closed book and closed note and will include multiple choice, short answer, and problem-solving questions. If you will miss an exam for a school function, you must make arrangements ahead of time to take it during an alternative time. If you ever miss an exam without giving the instructor prior notice, there is a good chance you will receive a zero unless, of course, there was clearly an emergency. Exams may require the use of Honorlock and screen recording to ensure students do not share exam solutions or communicate with others or artificial intelligence during the exam.

**Final Exam: Date and Time:** The final exam is scheduled for Friday of finals week at 10:30 am. It will be cumulative for the entire course and contain questions similar to those on both the exams and chapter reading quizzes.

Successful completion of this class requires taking the final examination on its scheduled day. The final examination schedule is posted on the Traditional Undergraduate Records: Final Exam Schedules site. If you find yourself scheduled for three (3) or more final examinations on the same day, you are authorized to contact each professor to arrange a different time for one of those exams. However, unless you have three (3) or more exams on the same day, no requests for alternative final examinations will be granted.

#### E-mail and Messages:

Students are expected to regularly use their PLNU e-mail. The instructor will periodically send you information and updates via e-mail and/or canvas. Students <u>must</u> activate their PLNU e-mail account a week prior to the first class session if they are not currently using it.

Activity Point Distribution: Note: Points may be adjusted throughout the semester to meet the learning objectives of the course.

Activity	Points	Percent
Chapter Questions and Survey	60	6%
Chapter Quizzes	120	11%
Chapter Homework	385	36%
Team Cases	60	6%
Team Integration Project	60	6%
Exams	100	9%
Final Exams	290	27%
Total	1075	100%

# **Grading Scale:**

The grading scale for the course, in percentages of the maximum points, is:

A	92.50 - 100%	С	72.50 - 77.49%
A-	90.00 - 92.49%	C-	70.00 - 72.49%
B+	87.50 - 89.99%	D+	67.50 - 69.99%
В	82.50 - 87.49%	D	62.50 - 66.49%
B-	80.00 - 82.49%	D-	60.00 - 62.49%
C+	77.50 - 79.99%	F	0 - 59.99%

**Credit Hour Information: Distribution of Student Learning Hours** 

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. Specific details about how the class meets the credit hour requirements can be provided upon request. 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 course are shown below:

Activity	Hours
Chapter Reading and Online Quizzes	39
In-Class Discussion and Activities	42
Chapter Assignments	39
Team Cases	6
Team Project	16
Exams Preparation	8
TOTAL	150

#### Late Homework/Classwork:

Online chapter quizzes, chapter questions, assignments, and labs are not accepted late. If you fail to take the chapter quiz or post a chapter question before the due date/time, you will receive zero points. Assignments and labs are not accepted late unless by official university accommodation at the instructor's discretion. No assignment will be accepted after the last day of class.

#### **University 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 becomes an

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

## **Institutional Learning Outcomes:**

- 1. Learning, Informed by our Faith in Christ Students will acquire knowledge of human cultures and the physical and natural world while developing skills and habits of the mind that foster lifelong learning.
- 2. Growing, In a Christ-Centered Faith Community Students will develop a deeper and more informed understanding of others as they negotiate complex professional, environmental and social contexts.
- 3. Serving, In a Context of Christian Faith Students will serve locally and/or globally in vocational and social settings.

# **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 the Undergraduate Academic Catalog Class Attendance.

#### 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:**

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities in accordance with the Americans with Disabilities Act (ADA). 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) or 619-849-2486). Once a student's eligibility for an accommodation has been determined, the EAC will work with the student to create an Accommodation Plan (AP) that outlines allowed accommodations. The EAC makes accommodations available to professors at the student's request.

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. Accommodations are not retroactive so clarifying with the professor at the outset is one of the best ways to promote positive academic outcomes.

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. Students cannot assume that because they had accommodations in the past, their eligibility at PLNU is automatic. All determinations at PLNU must go through the EAC process. This is to protect the privacy of students with disabilities who may not want to disclose this information and are not asking for any special accommodations.

#### **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 Academic Policies in the Graduate and Professional Studies Catalog for definitions of kinds of academic dishonesty and further policy information.

The author's solutions to questions and problems might be found on the Internet (or other sources) for free or for purchase. The clear use of the author's solution (or the solution not developed by the student) as determined by the instructor, not provided to you by the instructor or through in-class videos for a single question or problem on an assignment will, at minimum, result in a zero for the entire assignment or up to a failing grade in the course on the first offense. The student will receive a failing grade in the course on the second offense.

For all student appeals, faculty and students should follow the procedures outlined in the University Catalog. See <u>Academic Policies</u> (https://pointloma-public.courseleaf.com/tug-catalog/academic-general-policies/) for definitions of kinds of academic dishonesty and for further policy information.

# **Artificial Intelligence (AI) Policy:**

You can use Artificial Intelligence (AI) tools (e.g, ChatGPT, iA Writer, Marmot, Botowski) to generate ideas. Still, you are not allowed to use AI tools to generate content (text, video, audio, images) that will end up in any work submitted to be graded for this course unless explicitly called for in the assignment instructions. If you have any doubts about using AI, please gain permission from the instructor.

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

## **PLNU Recording Notification:**

In order to enhance the learning experience, please be advised that this course may be recorded by the professor for educational purposes, and access to these recordings will be limited to enrolled students and authorized personnel.

Note that all recordings are subject to copyright protection. Any unauthorized distribution or publication of these recordings without written approval from the University (refer to the Dean) is strictly prohibited.

#### Language and Belonging:

Point Loma Nazarene University faculty are committed to helping create a safe and hospitable learning environment for all students. As Christian scholars we are keenly aware of the power of language and believe in treating others with dignity. As such, it is important that our language be equitable, inclusive, and prejudice free. Inclusive/Bias-free language is the standard outlined by all major academic style guides, including MLA, APA, and Chicago, and it is the expected norm in university-level work. Good

writing and speaking do not use unsubstantiated or irrelevant generalizations about personal qualities such as age, disability, economic class, ethnicity, marital status, parentage, political or religious beliefs, race, gender, sex, or sexual orientation. Inclusive language also avoids using stereotypes or terminology that demeans persons or groups based on age, disability, class, ethnicity, gender, race, language, or national origin. Respectful use of language is particularly important when referring to those outside of the religious and lifestyle commitments of those in the PLNU community. By working toward precision and clarity of language, we mark ourselves as serious and respectful scholars, and we model the Christ-like quality of hospitality.

If you (or someone you know) have experienced a bias incident regarding language, you can find more information on reporting and resources at <a href="https://www.pointloma.edu/bias">www.pointloma.edu/bias</a> (<a href="https://www.pointloma.edu/bias">https://www.pointloma.edu/bias</a>).

#### **Sexual Misconduct and Discrimination:**

In support of a safe learning environment, 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 accommodations and resources are available through the Title IX Office at <a href="mailto:pointloma.edu/Title-IX">pointloma.edu/Title-IX</a> (<a href="https://pointloma.edu/Title-IX">http://pointloma.edu/Title-IX</a>). Please be aware that under Title IX of the Education Amendments of 1972, faculty and staff are 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 <a href="mailto:counselingservices@pointloma.edu">counselingservices@pointloma.edu</a> or find a list of campus pastors at <a href="mailto:counselingservices@pointloma.edu/title-ix">pointloma.edu/title-ix</a> (<a href="http://pointloma.edu/title-ix">http://pointloma.edu/title-ix</a>).

If you (or someone you know) have experienced other forms of discrimination or bias, you can find more information on reporting and resources at <a href="https://www.pointloma.edu/bias">www.pointloma.edu/bias</a> (<a href="https://www.pointloma.edu/bias">https://www.pointloma.edu/bias</a>)

# **PLNU Course Modality Definitions:**'

- 1. Online Courses: These are courses with class meetings where all instruction and interaction is fully online.
  - a. Synchronous Courses: At least one class meeting takes place at a designated time.
  - b. Asynchronous Courses: All class meetings are asynchronous.
- 2. Hybrid Courses: These are courses with class meetings that take place both in the classroom and online synchronously and/or asynchronously.
- 3. In-Person Courses: These are courses that meet in person with the instructor and students in a physical classroom setting. With approval by the area dean, this may include up to 25% of qualified class interactions through a Learning Management System (such as Canvas).

In some courses, a portion of the credit hour content will be delivered asynchronously and attendance will be determined by submitting the assignments by the posted due dates. See Academic Policies in the Undergraduate Academic Catalog.

# **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.

# Course Summary:

Date	Details	Due
	Chapter 01 Questions - Due 6 am before class (https://canvas.pointloma.edu/courses/75780/assignments/1049179	due by 6am ).
Thu Sep 5, 2024	Software Installation Verification (https://canvas.pointloma.edu/courses/75780/assignments/1049201	due by 6am
		due by 10am
	Chapter 01 Activities and  Homework  (https://canvas.pointloma.edu/courses/75780/assignments/1049183	due by 6am
Thu Sep 12, 2024	Chapter 02 Questions - Due 6 am before class (https://canvas.pointloma.edu/courses/75780/assignments/1049178)	due by 6am
	Chapter 02 Quiz (https://canvas.pointloma.edu/courses/75780/assignments/1049156	due by 10am
Thu Sep 19, 2024	Chapter 02 Activities and Homework (https://canvas.pointloma.edu/courses/75780/assignments/1049184	due by 6am ).

Date	Details	Due
	Chapter 03 Questions - Due 6 am before class due by 6 (https://canvas.pointloma.edu/courses/75780/assignments/1049177)	6am
	Chapter 03 Quiz (https://canvas.pointloma.edu/courses/75780/assignments/1049165)	0am
	Chapter 03 Activities and  Homework due by 6  (https://canvas.pointloma.edu/courses/75780/assignments/1049185)	6am
Thu Sep 26, 2024	Chapter 04 + 05 Questions -  Due 6 am before class  (https://canvas.pointloma.edu/courses/75780/assignments/1049176)	6am
	Chapter 04 + 05 Quiz (https://canvas.pointloma.edu/courses/75780/assignments/1049158)	0am
	Chapter 04 + 05 Activities and  Homework (https://canvas.pointloma.edu/courses/75780/assignments/1049186)	6am
	Chapter 04 Team Case (https://canvas.pointloma.edu/courses/75780/assignments/1049187)	6am
Thu Oct 3, 2024	Chapter 06 Activities and  Homework due by 6  (https://canvas.pointloma.edu/courses/75780/assignments/1049188)	6am
	Chapter 06 Questions - Due 6 am before class (https://canvas.pointloma.edu/courses/75780/assignments/1049175)	6am
	Chapter 06 Quiz (https://canvas.pointloma.edu/courses/75780/assignments/1049167)	0am
Thu Oct 10, 2024	Exam 1 due by 11:09 (https://canvas.pointloma.edu/courses/75780/assignments/1049159)	5am
Tue Oct 15, 2024	Chapter 07 Questions - Due 6 am before class due by 6 (https://canvas.pointloma.edu/courses/75780/assignments/1049174)	6am

Date	<b>Details</b> Due
	Chapter 07 Quiz  (https://canvas.pointloma.edu/courses/75780/assignments/1049160)
Thu Oct 17, 2024	Mid-Course Survey due by 12:15pm (https://canvas.pointloma.edu/courses/75780/assignments/1049164)
	Chapter 07 Activities and  Homework  (https://canvas.pointloma.edu/courses/75780/assignments/1049189)
Tue Oct 22, 2024	Chapter 08 Questions - Due 6 am before class due by 6am (https://canvas.pointloma.edu/courses/75780/assignments/1049173)
	Chapter 08 Quiz  (https://canvas.pointloma.edu/courses/75780/assignments/1049163)
	Chapter 08 Activities and  Homework due by 6am  (https://canvas.pointloma.edu/courses/75780/assignments/1049190)
Thu Oct 31, 2024	Chapter 08 Team Case  (https://canvas.pointloma.edu/courses/75780/assignments/1049191)  due by 6am
	EN Chapter 10 Questions - Due 6 am before class due by 6am (https://canvas.pointloma.edu/courses/75780/assignments/1049172)
	Chapter 10 Quiz  (https://canvas.pointloma.edu/courses/75780/assignments/1049157)
Thu Nov 7, 2024	Chapter 10 Activities and  Homework (https://canvas.pointloma.edu/courses/75780/assignments/1049192)
	Chapter 10 Locking Lab  (https://canvas.pointloma.edu/courses/75780/assignments/1049193)  due by 6am
	Chapter 14 Questions - Due 6 am before class due by 6am (https://canvas.pointloma.edu/courses/75780/assignments/1049171)

Date	Details Due
	Due
	Chapter 14 Quiz (https://canvas.pointloma.edu/courses/75780/assignments/1049150)
	( <u>Inteps://canvas.pointioma.edu/courses/75760/assignments/1049150)</u>
	AWS MySQL Database Lab
	(https://canvas.pointloma.edu/courses/75780/assignments/1049181)
	<b>₽ Chapter 14 Activities and</b>
	Homework due by 6am
<b>-</b>	(https://canvas.pointloma.edu/courses/75780/assignments/1049194)
Thu Nov 14, 2024	কৃ <u>Chapter 15 Questions - Due 6</u>
	am before class due by 6am
	(https://canvas.pointloma.edu/courses/75780/assignments/1049170)
	Chapter 15 Quiz
	(https://canvas.pointloma.edu/courses/75780/assignments/1049153)
	<b>₽ Chapter 15 Activities and</b>
	Homework due by 6am
	(https://canvas.pointloma.edu/courses/75780/assignments/1049195)
	Questions due by 10am
	(https://canvas.pointloma.edu/courses/75780/assignments/1049152)
Thu Nov 21, 2024	Exam 2 - Closed Book
	(https://canvas.pointloma.edu/courses/75780/assignments/1049154)
	Exam 2 - Open Book
	(https://canvas.pointloma.edu/courses/75780/assignments/1049161)
	野 Exam 2 - Curve
	due by 11:59pm (https://canvas.pointloma.edu/courses/75780/assignments/1049196)
Tue Nov 26, 2024	AWS Registration Verification
145 1404 20, 202 <del>4</del>	Image due by 6am
	(https://canvas.pointloma.edu/courses/75780/assignments/1049182)
	☐ HTML Questions - Due 6 am
	before class due by 6am
	(https://canvas.pointloma.edu/courses/75780/assignments/1049169)
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te Details	
HTML Reading Quiz (https://canvas.pointloma.edu/courses/75780/assignments/104915	due by 10am
AWS Elastic Beanstalk  Website Hosting  (https://canvas.pointloma.edu/courses/75780/assignments/104918	due by 6am (0)
HTML Fan Page (https://canvas.pointloma.edu/courses/75780/assignments/104919	due by 6am
PHP Questions - Due 6 am before class (https://canvas.pointloma.edu/courses/75780/assignments/104916	due by 6am 68)
	due by 10am 5)
PHP Fan Page (https://canvas.pointloma.edu/courses/75780/assignments/104920	due by 6am
Website Project (https://canvas.pointloma.edu/courses/75780/assignments/104920	due by 6am
Official Course Evaluation  (https://canvas.pointloma.edu/courses/75780/assignments/104919	ue by 11:59pm 9)
Final Exam Part 2 - Practice (https://canvas.pointloma.edu/courses/75780/assignments/104914	e by 10:30am
Final Exam Part 1 - Closed     Book     (https://canvas.pointloma.edu/courses/75780/assignments/104914)	due by 1pm <u>19)</u>
Final Exam Part 2 - Open Book  (https://canvas.pointloma.edu/courses/75780/assignments/104916	due by 1pm
Individual Web Project Point  Adjustment (https://canvas.pointloma.edu/courses/75780/assignments/104919	<u>18)</u>
	### HTML Reading Quiz (https://canvas.pointloma.edu/courses/75780/assignments/104915  ### AWS Elastic Beanstalk Website Hosting (https://canvas.pointloma.edu/courses/75780/assignments/104918  ### HTML Fan Page (https://canvas.pointloma.edu/courses/75780/assignments/104919  ### PHP Questions - Due 6 am before class (https://canvas.pointloma.edu/courses/75780/assignments/104916  ### PHP Reading Quiz (https://canvas.pointloma.edu/courses/75780/assignments/104916  ### PHP Fan Page (https://canvas.pointloma.edu/courses/75780/assignments/104920  #### Website Project (https://canvas.pointloma.edu/courses/75780/assignments/104919  #### Official Course Evaluation (https://canvas.pointloma.edu/courses/75780/assignments/104919  ##### Final Exam Part 2 - Practice (https://canvas.pointloma.edu/courses/75780/assignments/104919  ##################################