

## Course Information



Computer Information Technology

CIT3074: Cloud Computing

4 Units

Fall 2024 - Hybrid - Quad 1

<b>Time and Place:</b>	Thursday evenings 6:00pm – 10:00PM
	Miracosta College room OC4803A
<b>Final Exam:</b>	Oct. 24. 8:45 pm
<b>Instructor:</b>	Mike Leih, Ph.D. - Professor
<b>Email:</b>	mleih@pointloma.edu
<b>Office Hours:</b>	By Appointment

## Office Hours

By appointment at a time mutually convenient to the student and the instructor.

Students are **welcome and encouraged to contact me** via e-mail or phone to schedule an appointment. Appointments can be face-to-face (F2F) in our classroom (e.g., before class) or at another convenient location on one of the PLNU campuses, on the phone, or via a video conference call.

## Textbook

Text is included as an electronic copy in the course material.

- For a hard copy of the textbook see: Ben Piper. CompTiA Cloud+ Study Guide, 3rd Edition, Sybex, Wiley Publishing, ISBN: 978-1119810865
- For APA formatting see the [Purdue Online Writing Lab](#).

*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. All supplemental materials posted on this course site (including articles, book excerpts, or other documents) are provided for your personal academic use. These materials may be protected by copyright law and should not be duplicated or distributed without the permission of the copyright owner.*

## Needed Supplies

You must have access to a laptop -- that must be brought to each F2F class session. This laptop should be configured, preferably with Windows OS, with at least 50GB of available storage and the ability to add software, a high-speed Internet connection (i.e., WiFi), Microsoft Word, and an Image editor (Microsoft paint or Mac image viewer).

## Course Description

The CIT3074 course is designed to provide students with an in-depth introduction to cloud computing. The course introduces the concepts of cloud configuration and deployment, security, maintenance, management, and troubleshooting. Hands-on labs with cloud technologies such as Microsoft Azure and AWS will give students practical experience working with cloud technologies. This course aligns with topics covered in the CompTIA's Cloud+ certification exam..

## Philosophy and Approach

Research in learning theory shows that students who learn technology effectively must be actively involved in the process, not just passive listeners/observers. In particular, in order to really learn and understand technological ideas and concepts, one must become deeply involved in activities such as exploring, discussing, analyzing, explaining, testing, and evaluating. To do this you need good problems to solve, interaction with others on solutions, and opportunities to write your conclusions and present ideas. We will use all of these approaches in our class.

The learning experience and background of the students in CIT 3074 can vary widely. This means that different students will need to spend different amounts of time to learn the material. To help assist in this process, the class is designed as a hybrid class. Students will be completing the reading, practice quizzes, lab simulations, and optional video activities online. This will allow students to spend the amount of time needed to learn the basics before we engage in activities in class. Class time will be used for questions and answers, hands-on lab activities, highlighting more difficult concepts, student presentations, and closed book examinations.

## Objectives

The course is designed to help you:

- Acquire knowledge and develop an understanding of foundational concepts and problems solving skills for cloud computing.
- Understand and address all of the CompTIA Cloud+ exam objectives.

## 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.

## Program Learning Outcomes

The Point Loma Nazarene University Adult Degree Completion (ADC) CIT program is designed to prepare students for expanded roles within his or her organization through enhanced abilities to:

1. Identify and evaluate information technology infrastructure necessary to meet an organization's business needs.
2. Develop, plan and evaluate appropriate processes for managing information systems and information technology projects.
3. Design, develop, and evaluate software solutions to meet an organization's business needs.
4. Apply their technical knowledge to solve problems.
5. Speak about their work with precision, clarity, and organization (Oral Communication)
6. Write about their work with precision, clarity, and organization (Written Communication)
7. Collaborate effectively in teams.
8. Identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand (Information Literacy).
9. Gather relevant information, examine information, and form a conclusion based on that information (Critical Thinking).
10. Understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats (Quantitative Reasoning).
11. Understand the professional, ethical, legal, security, and social issues and responsibilities that come with the implementation and use of information technology.

## Course Learning Outcomes

The following student learning outcomes will be met in this course:

1. Explain the various cloud service models and be able to select the appropriate model given a set of requirements.
2. Explain and expand on cloud storage strategies and virtual networking concepts.
3. Compare and contrast various cloud maintenance strategies and operational requirements.
4. Create cloud-based virtual services and networks.
5. Explain and develop cloud security policies and best practices.
6. Troubleshoot common cloud computing problems by utilizing common networking and service tools.
7. Explain various strategies and operational best practices for managing cloud services.

## Grading

Your grade for the course is based on:

### Grading

Activity	Total Points	Percentage
----------	--------------	------------

Syllabus / Practice Quizzes	210	17%
Weekly Exams	360	29%
Weekly Labs	210	17%
Online Labs	93	7%
Weekly Questions & Discussion	85	7%
Classroom Presentation	30	2%
Final Exam	260	21%
<b>Total</b>	<b>1248</b>	<b>100%</b>

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

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

## 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 course are shown below:

Credit Hours

Reading	42
Videos and Chapter Highlights	21
Quizzes and Quiz Preparation	12
Online Labs	24
In-Class (F2F) Learning and Labs	35
Presentation Preparation	10
Final Exam Preparation	6
<b>TOTAL Hours</b>	<b>150</b>

## Chapter Practice Quizzes

After each chapter reading, there will be a practice quiz to help you self-assess your reading comprehension and understanding. **These practice quizzes are available online and must be completed before the start of class.** You will be allowed two attempts on each of the reading quizzes.

## Weekly Tests

Weekly exams will be given in class (taken online using HonorLock) and will be closed-book. Weekly exams are more comprehensive than chapter practice quizzes and will test the student's understanding and comprehension of the material for a given week. Students must have a laptop in class (with WiFi access) to take these exams and must use their host OS. The use of a virtual machine is not allowed during exams. The weekly test must be taking on your host Operating System. The use of a virtual machine is not allowed during the exam.

## Online Labs

Each chapter will have a series of online labs that will simulate various activities discussed in the chapter. Students should complete these labs prior to class.

## AWS Cloud Labs

Each week, a series of hands-on AWS labs will be explained and started in class. Students will need to complete a minimum level of activity on the lab during class and then complete the lab write-up after class and submit their findings and documented activities prior to the next class session.

## Presentation

Each student will select a topic and date to complete one presentation to be given in class. The date and topic of the presentation will be selected by the students (or the instructor if the students do not complete a selection by the end of week 02). The presentation length will be between 5 and 10 minutes. For each presentation, the presentation document (Powerpoint slides) and accompanying research documentation (a minimum 500 word, APA formatted paper) will be submitted **24 hours prior to the start of class** when the presentation will be given.

## Videos

Each week, a set of videos will be available to be viewed before the start of class covering topics specific to the CompTIA exam objectives. These videos supplement the reading material offered online.

## Final Examination

The final examination will be comprehensive and cover all the CompTIA exam objects covered in the course. The exam is closed book, will be timed, and will occur on the last F2F class session. **The final exam (and all exams) must be taken on your host Operating System. The use of a virtual machine is not allowed during the exam.**

## Late Work

On-line labs and AWS cloud labs may be submitted late with a 10% point deduction penalty per day. No assignment will be accepted after it is more than 4 days late. Missed chapter practice quizzes, weekly quizzes, student presentations, and the final exam cannot be completed late unless the student has prior written agreement from the instructor. Late or missing chapter practice quizzes, weekly quizzes, student presentations, and the final exam will receive zero points.

## Classroom Etiquette

Students are expected to actively engage in an adult learning environment. Behaviors that disrupt the classroom environment and interfere with the learning of others are prohibited. Examples include talking with other students during a presentation or when others are speaking, texting, gaming, internet browsing, or reading non-course-related materials. All pagers, cellphones, and other electronic communication devices will be turned off at the beginning of class. Tablets and computers are allowed in class for note-taking, quizzes, and lab purposes only unless otherwise directed by the instructor. Arriving late and leaving early is strongly discouraged and disruptive to the class.

Respect others' opinions. Be considerate while your peers are speaking and actively engage them only when they have completed their point. Discourteous comments and side conversations will not be tolerated and will be addressed openly and directly by the instructor. Should a student's behavior become disruptive to the productivity of the course he/she will be asked to leave the classroom and not receive credit for attendance.

## 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.

## 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

## **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 synchronous class sessions** is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions (virtual or face-to-face), 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. 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 Graduate and Professional Studies Catalog. If absences exceed these limits but are due to university excused health issues, an exception will be granted.

For example: In a four-unit 8-week hybrid course, a student may be de-enrolled after missing five hours of synchronous class time (counting the first week's activities as four hours if assignments are not submitted).

## **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).

## **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 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 ensure 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. For all student appeals, faculty and students should follow the procedures outlined in the University Catalog. See Adult Undergraduate Academic and General Policies for definitions of kinds of academic dishonesty and for further policy information.

During the first week of class, you will be asked to submit an Academic Honesty Verification Statement. Submitting the statement is a requirement of this course. By submitting the Academic Honesty Verification Statement, you will be verifying all assignments completed in this course were completed by you. Carefully review the Academic Honesty Statement below.

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

You are allowed to use Artificial Intelligence (AI) tools (e.g, ChatGPT, iA Writer, Marmot, Botowski) to generate ideas, but 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. If you have any doubts about using AI, please gain permission from the instructor.

## 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 other forms of discrimination or bias, you can find more information on reporting and resources at [www.pointloma.edu/bias](http://www.pointloma.edu/bias).

## 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 [pointloma.edu/Title-IX](http://pointloma.edu/Title-IX). 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 [counselingservices@pointloma.edu](mailto:counselingservices@pointloma.edu) or find a list of campus pastors at [pointloma.edu/title-ix](http://pointloma.edu/title-ix) or as shown in the PLNU Spiritual Care section of this syllabus.

If you (or someone you know) have experienced other forms of discrimination or bias, you can find more information on reporting and resources at [www.pointloma.edu/bias](http://www.pointloma.edu/bias)

## 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.

## 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.

## 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.

## Email and Messages

It is expected that students regularly use e-mail. The instructor will periodically send you information and updates via e-mail and/or via Canvas. In the first week of class you **must** activate your PLNU e-mail account if you are not currently using it. Please send questions about specific problems or course details to the instructor by posting them in Canvas so that all members of the class can see the response.

## PLNU 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. At the Mission Valley campus we have an onsite chaplain who is available during class break times across the week. If students have questions, a desire to meet with the chaplain or have prayer requests you can send an email to [gradchaplainmissionvalley@pointloma.edu](mailto:gradchaplainmissionvalley@pointloma.edu) In addition, there are resources for your Christian faith journey available at the [Graduate & Professional Student Spiritual Life web page](#).

## 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](#) information. Additionally, students are required to have headphone speakers, microphones, or webcams compatible with their computer available to use. Please note that any course with online proctored exams requires 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.*

## Some Tips About This Class

- Set aside at least 10 - 15 hours each week to complete the week's learning sessions.
- Come to class fully prepared to participate in learning by completing all assigned reading, the reading quizzes, online labs, and videos.
- If you have a question, please **ASK!**