



COURSE INFORMATION
COMP-4312 Cloud Computing
Fall 2024, Orillia

Calendar Description:

This course discusses the key cloud concepts of: (i) Infrastructure as a Service (IaaS), (ii) Platform as Service (PaaS), and (iii) Software Application as Service (SaaS), as well as new and contemporary trends in cloud computing. It also expose students to concepts and technologies related to cloud computing such as Virtualization, Cloud Computing Platforms, Public Cloud, Private Cloud, Hybrid Cloud and Community Cloud Deployment Models, Business Cost Metrics and Formulas for Comparing and Calculating Cloud and On-Premise Solution Costs and Service Level Agreements (SLAs) for Cloud-based IT Resources. Selecting a cloud environment and deploying/implementing cloud based applications will be among the student projects/assignments of this course.

Instructor Information:

Instructor: Dr. Chris Brogly

Office Location: OA, 3rd floor, #13

E-mail: cbrogly@lakeheadu.ca

Office Hours: Location and hours to be posted on myCourseInfo

TA(s): See myCourseInfo

Course Identification:

Course Delivery: Lectures, MyCourseLink/D2L

Room and Time: OA-2010 8:30AM-9:50AM TuesThurs

Final Date to Withdraw (Drop): November 8, 2024

Final Day of Classes: December 3, 2024

Fall Study Week: October 14, 2024 - October 18, 2024

Prerequisite(s):

Computer Science 2477

Evaluation

Final grades are calculated based on the following evaluation:

- Lab Assignments on Google Cloud, 15%, all equal weight
- Midterm 1, 15%
 - Format: Mixed
 - Location: In-class
 - Date: TBA
- Midterm 2, 20%
 - Format: Mixed
 - Location: In-class
 - Date: TBA
- Final Exam, 40%
 - Format: Mixed
 - Cumulative
 - Date: Will be posted on myCourseLink
- Short Presentation/Research Presentation Assignment, 10%
 - The instructor will assign research papers in cloud computing for students to summarize and potentially present (This should not exceed 10-12 minutes). This assignment may be done live in-class, or as powerpoints to be submitted, at the instructor's discretion.
 - If the instructor opts for the in-class presentation option, they will occur on part of November 19 and/or on November 21. Otherwise, powerpoints will be submitted by November 21 via myCourseLink.

Course Text and Online Resources:

- Cloud Computing: Theory and Practice 3rd Edition, by Dan C. Marinescu. This textbook is required for the course. You can purchase ebook or print copies here: <https://shop.elsevier.com/books/cloud-computing/marinescu/978-0-323-85277-7>
- Research Articles and instructor provided documents will be posted on MyCourseLink. Recommended readings per week will be posted by the instructor on MyCourseLink.

Weeks	Topics to cover
Week 1	Course syllabus, Introduction

Week 2	The Cloud Ecosystem
Week 3	Parallel Processing and Distributed Computing

Week 4	Cloud Hardware and Software
Week 5	Cloud Resource Virtualization
Week 6	Break (Fall Reading Week)
Week 7	Cloud Access and cloud interconnection networks
Week 8	Cloud Data Storage
Week 9	Cloud Security
Week 10	Cloud resource management and scheduling
Week 11	Concurrency and cloud computing
Week 12	Cloud applications, big data, emerging clouds

Assignments and Evaluations:

Students taking this course must understand and agree that:

- (1) Unless otherwise allowed by the course instructor, students must complete the assignments in this course without the assistance of anyone else.
- (2) Unless otherwise allowed by the course instructor, students must not access any sources or materials (in print, online, or in any other way) to complete any course exam.

Academic Integrity:

Students must further understand and agree that, if they violate either of these two rules, or if they provide any false or misleading information about their completion of course assignments or exams, they may be prosecuted under the Lakehead University Student Code of Conduct – Academic Integrity, which requires students to act ethically and with integrity in academic matters and to demonstrate behaviors that support the University's academic values.

Assignments: There is Zero-Tolerance for plagiarism cases. All such cases will be dealt with according to University prescribed rules. All assignments are individual. Students should understand that their assignments must go through a similarity check and if there is similarity detected then **ZERO** mark will be awarded to those students involved in copying.

Late Assignments: Late assignments will automatically receive a **ZERO** however they will be reviewed to provide formative evaluation feedback and must be submitted for course Completion.

Course Policies:

- Behavioral standards to follow: Student Code of Conduct - Academic Integrity
- Attendance and participation in class discussions is highly recommended.
- Students can communicate with the instructor through email.
- The course outline and schedule are not fixed and subject to change based on class flow.
- University's attendance policy is followed.
- There will be 4-5 assignments. There are late penalties for assignments determined by the course instructor. Extensions will be granted only by the course instructor. If you have medical or compassionate grounds for an extension, you should take supporting documentation to the office of the Dean of your faculty, who will contact the instructor.
- Assignments and time will be posted on MyCourseLink/D2L and announced via emails to all registered students.

Copyright:

Students should be aware that all instructional, reference, and administrative materials prepared for this course are protected in their entirety by copyright. Students are expected to comply with this copyright by only accessing and using the course materials for personal educational use related to the course, and that the materials cannot be shared in any way, without the written authorization of the course instructor. If this copyright is infringed in any way, students may be prosecuted under the Lakehead University Student Code of Conduct – Academic Integrity, which requires students to act ethically and with integrity in academic matters and to demonstrate behaviors that support the University's academic values.

Regulations:

It is the responsibility of each student registered at Lakehead University to be familiar with, and comply with all the terms, requirements, regulations, policies and conditions in the Lakehead University Academic Calendar. This includes, but is not limited to, Academic Program Requirements, Academic Schedule of Dates, University and Faculty/School Policies and Regulations and the Fees and Refund Policies and Schedules (Lakehead University Regulations webpage, 2023-24).

Academic Integrity:

A breach of Academic Integrity is a serious offense. The principle of Academic Integrity, particularly of doing one's own work, documenting properly (including use of quotation marks, appropriate paraphrasing and referencing/citation), collaborating appropriately, and avoiding misrepresentation, is a core principle in university study. Students should view the Student Code of Conduct - Academic Integrity for a full description of academic offenses, procedures when Academic Integrity breaches are suspected and sanctions for breaches of Academic Integrity.

Support for Students:

There are many resources available to support students. These include but are not limited to:

- [Health and Wellness](#)
- [Student Success Centre](#)
- [Student Accessibility Centre](#)
- [Library](#)
- [Lakehead International](#) ● [Indigenous Initiatives](#)

Lakehead University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities and/or medical conditions to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) and register as early as possible. For more information, please contact Student Accessibility Services (SC0003, 343-8047 or sas@lakeheadu.ca