

COMP 2477 (Object Oriented Programming)

Department of Computer Science / Faculty of Science and Environmental studies

Term (Winter 2024)

Instructor: Dr. Jinan Fiaidhi,

Professor and PEng

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**Teaching Assistant (TA) Information**: To be assigned

**Course Identification**

Course Number: Comp 2477

Course Name: Object Oriented Programming

Course Location: Zoom and D2L

Class Times: (Winter 2024, Thursday 2:30 – 5:30) (Lab, Monday 11:30 – 12:30)

Prerequisites: COMP 2412 (Data Structures)

**Course Description/Overview** - Java for software practitioners experienced in procedural languages, such as C. Concepts of object-oriented programming are shown and practiced through examples, exercises and assignments. Encapsulation, behavior, responsibilities, inheritance, polymorphism, exception and event handling, JDBC, and Java servlets will be used to incrementally build significant object oriented programs. Visual tools for building GUI objects and integrating them into programs.

**Course Learning Objectives**

Course Objectives

Object Oriented Programming software development methodology has become dominant in the software industry. The course Object Oriented Programming is taught using Java and Python on academic level and is meant for software practitioners. The aim is to teach the object oriented paradigm to students experienced in procedural languages (e.g. C), and teach them how it can be applied. Concepts of object-oriented programming are shown and practiced in an interactive way by small examples and medium-sized exercises and assignments. This course explores the principal ideas of the object oriented paradigm. Some of the important concepts in object oriented programming, namely, inheritance, encapsulation, behavior, responsibilities, polymorphism, exception handling, graphical user interface, event handling, concurrency and synchronization, JavaFX, networking, JDBC will be used to incrementally build significant object oriented programs. Students will be able to use OOP techniques to complete programming projects and applications using OOP techniques.





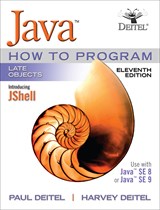
**Course Resources**

Course Website(s)

* myCourseLink

Below are group of recommended books that can be used to complement lectures and online documentation.

1- Java How to Program, Early Objects, 11/E



2 -Starting Out with Java: From Control Structures through Objects Plus MyLab Programming 7/E, Tony Gaddis

3 - Starting Out with Python, 4/E, Tony Gaddis

4 - Other readings (generally available on different websites

**Course Schedule/Outline**

|  |  |
| --- | --- |
| Date | Tentative Topic |
| week 1 (Jan 11, 2021) | Introduction to OOP |
| week 2 | Objects and Classes |
| week 3 | Graphics |
| week 4 | GUI |
| week 5 | Inheritance, |
| week 6 | Polymorphism |
| Feb 15, 2021 | Interfaces |
| week 7 | Exception Handling |
| week 8 | Event Driven Techniques using JavaFX |
| week 9 | Building OOP Applications and  Lambda Expression |
| week 10 | Concurrency and Multithreading |
| Week 11 | Linking OOP Projects into Databases |
| Week 12 | Networking, |

**Assignments and Evaluations**

|  |  |  |
| --- | --- | --- |
| Item | Date(s) | Value |
| In-class Exercises | Periodically | 8% |
| Lab Tests | Scheduled on D2L | 6% |
| Programming Assignments | 4-5 assignments | 16 % |
| Two Mid-Term Tests | Announced on D2L | 65% |
| Projects | TBA | 5% |
|  |  |  |
| Total |  | 100 |

**Short In-Class Exercises** will be given during lectures periodically throughout the semester and will not be announced in advance.

**Late Assignments:** late assignment will be downgraded 10% per day and cannot be accepted after 2 days.

**Assignments:** There will be 4-5 assignments in this term. These assignments are to be submitted to the TA. All assignment must be done individually.

**Attendance**: Although class attendance is not mandatory, you are responsible for whatever is done in class. While our recommended books cover most basic concepts, class is your only source for the specifics that will allow you to learn the material. Make sure you get the notes and assignments if you miss a class.

**Method of Instruction:**

Instruction in this course is through lecture, class discussion and online material, problems solved during lecture, and programming problems solved in the computer lab. Exam dates will be announced at least one week in advance. There are no make-up for any item mentioned in the above table (i.e In-class exercises, tests, …) and it is not possible for any item to be rescheduled. A missed item will result in a mark of zero for that that part. There is no extra work or assignment available to “make up” for a missed item. If the missed item is due to authentic reason, then the weight of the missed item will be shifted to the remaining parts of that item.

**Class participation** is important and will be part of your course grade.

**D2L Course Materials** will be posted under the course "COMP 2477"

**Course Policies**

My expectations for this course are as follows:

* Students should follow the behavioral standards (this could be a reference to the [Student Code of Conduct - Academic Integrity](https://www.lakeheadu.ca/students/student-life/student-conduct/academic-integrity/node/51239))
* It is important requirement and expected that students will arrive on time and stay for the entire class. Also, you are asked to turn off electronic devices (except computer) during class including cell phones.

**Academic Integrity Statement:**

I understand and agree that:

(1) Unless otherwise allowed by the course instructor, I must complete the assignments in this course without the assistance of anyone else.

(2) Unless otherwise allowed by the course instructor, I must not access any sources or materials (in print, online, or in any other way) to complete any course exam.

I further understand and agree that, if I violate either of these two rules, or if I provide any false or misleading information about my completion of course assignments or exams, I 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.

**Information to consider including for online (asynchronous or synchronous) course delivery to assist in preventing the unauthorized distribution of course materials.**

**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 anyway, 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 behaviours that support the University’s academic values.

**Instructors can use the following statement in your mycourselink/D2L site:**

Copyright Compliance:

I understand and agree that all instructional, reference, and administrative materials to which I am given access in this course (the "course materials"), whether they consist of text, still or kinetic images, or sound, whether they are in digital or hard copy formats, and in whatever media they are offered, are protected in their entirety by copyright, and that to comply with this copyright and the law

(1) I may access and download the course materials only for my own personal and non-commercial use for this course; and

(2) I am not permitted to download, copy, or store (in any medium) any text, image, or sound component of the course materials for any other purpose whatsoever, or to forward or share, transmit, broadcast, show, post or play in public, adapt, or change in any way any text, image, or sound component of the course materials, except as expressly authorized, and only to the extent authorized, in writing, by the course instructor."

I further understand and agree that, if I infringe the copyright of the course materials in any way, I 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 behaviours 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](http://navigator.lakeheadu.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=25&chapterid=6999&loaduseredits=False). 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, 2020-21).

**Academic Integrity**

A breach of Academic Integrity is a serious offence. 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](https://www.lakeheadu.ca/students/student-life/student-conduct/academic-integrity/node/51239) for a full description of academic offences, procedures when Academic Integrity breaches are suspected and sanctions for breaches of Academic Integrity.

**Supports for Students** – there are many resources available to support students. These include but are not limited to:

* [Health and Wellness](https://www.lakeheadu.ca/current-students/student-health-and-counselling-centre)
* [Student Success Centre](https://www.lakeheadu.ca/current-students/student-success-centre)
* [Student Accessibility Centre](https://www.lakeheadu.ca/current-students/student-services/accessibility/)
* [Library](https://library.lakeheadu.ca/)
* [Lakehead International](https://www.lakeheadu.ca/international)
* [Indigenous Initiatives](https://www.lakeheadu.ca/indigenous)

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](http://studentaccessibility.lakeheadu.ca/)  (SC0003, 343-8047 or [sas@lakeheadu.ca](mailto:sas@lakeheadu.ca))