



BIRZEIT UNIVERSITY
Object Oriented Programming (COMP2311)
Course Outline –1st Semester 2025/2026

Course information:

- a. Course Code: **COMP2311**
- b. Course Name: **Object-Oriented Programming (OOP)**
- c. Prerequisite: Comp1331 Computer and Programming
- d. Co-requisite: none

Course Description:

Theory and applications of Object Oriented programming. Designing programs and solutions using the Java language. Advanced topics in Object Oriented programming including abstract classes and interfaces, Exception handling and text file I/O, event-driven programming. Advanced GUI libraries, and MVC. Multithreading and concurrency, generics and collections, and data structures basic concepts.

Course Objectives:

- To understand the object-oriented programming concepts and apply them using Java: classes, inheritance, polymorphism, interfaces, and containers.
- To understand the concept of Event-Driven Programming.
- To create GUI using JavaFX framework.
- To learn how to deal with Exceptions.
- To learn how to work with Binary Files.
- To learn how to parametrize data types using generics.
- To learn how to write simple multithreading application.

Teaching and learning methods:

- A. Lectures (2 lectures/week)
- B. Labs (1 lab/week)
- C. Project
- D. Quizzes (4 quizzes)
- E. Exams (Midterm and Final)

Faculty:

<u>Lecture #</u>	<u>Instructor Name</u>	<u>Office</u>
1	Murad Njoum	Masri322
2	Mamoun Nawahdah*	Masri517
4	Ahmed Fahal	MasriXXX
5	Faisal Shehadeh	Masri417

*Course coordinator

References:

- **Introduction to JAVA Programming, 13th edition**, Author Y. Daniel Liang, Publisher: Prentice Hall.
- **Laboratory Work Book (COMP2311)**

Grading Criteria: (Tentative)

F2F	W	Online	W
• Lab Work • Project & discussion • Midterm exam • Final exam	20% 15% 30% 35%	• Lab Work • Project & discussion • Midterm exam (Written and Practical) • Final exam (Written and Practical)	25% 20% 25% 30%

Topics Covered in this Course:

Topics	Chapter	# of lectures
Revision of the OOP basic concepts (Objects and Classes)	9	1
Revision of OOD, Composition, Implementation hiding, UML Chapter	10	1
Inheritance & Polymorphism Chapter	11	4
Abstract Classes & Interfaces, More Polymorphism Chapter	13	3
Review Error Handling Binary I/O	12, 17	3
GUI development and JavaFX Basics	14	3
Midterm Exam		
JavaFX UI Controls.	16	2
Event-Driven Programming, Inner Classes, and Lambda Expressions	15	3
Advanced JavaFX and introduction to MVC.	31	2
Multithreading and Parallel Programming	32	2
The Collections Framework, and Generics	19	2
Data structures - Lists	20	1
Final Exam		

Lab Outline:

Lab #	Title	Quizzes
1	Revision for the basic concepts of the Object-Oriented paradigm	
2	Inheritance and Polymorphism	
3	Abstract Classes and Polymorphism	Quiz 1
4	Interfaces and More Polymorphism	
5	Exceptions and Error Handling, and Binary File Handling	
Project (Phase I)		
6	Graphical User Interface – JavaFX concepts	Quiz 2
7	Graphical User Interface - Layout Managers and Basic UI	
8	Using Inner Classes and Lambda Expression	
9	Graphical User Interface – Event Driven Programming	Quiz 3
10	Graphical User Interface – UI controllers	
11	Graphical User Interface – Advanced UI controllers and MVC	
12	Multithreading and Parallel Programming	Quiz 4
Project (Phase II)+ Discussion		

Special Regulations:

- **Late or incorrect submissions:** Assignments and projects will not be accepted after the deadline under any circumstances.
- **Quizzes:** There will be no makeup quizzes.
- **Exams:** Missing any exam without an officially approved excuse will result in a zero grade for that exam.
- **Attendance:** Attendance is mandatory, and university regulations will be strictly enforced.
- **Academic honesty:**
 - All homework assignments and projects must represent each student's own work.
 - **Use of AI tools** (e.g., ChatGPT, Copilot, etc.) is not allowed. Submissions generated by or heavily relying on AI will be considered academic misconduct.
 - Any form of cheating or academic dishonesty will lead to an official university disciplinary review.