

**Advanced Programming (COMP2310)**

Course Outline – 1st Semester 2022/2023

**Course information:**

a. Course Code: COMP2310

b. Course Name: Advanced Programming

c. Prerequisite: Comp230/Comp132/Comp1330/Comp142

d. Co-requisite: none

**Course Description:**

Object Oriented Analysis, Design, Programming, and Applications. The theory behind OOP will be examined, analyze, and design programs using one of the Object-Oriented languages. Structure of the language (classes & interface), language syntax and features, input/output, events handlers and applications, using GUI library (JavaFX), and threads.

**Course Goals:**

During this course, the student will develop better problem-solving techniques, programming and program design skills, Procedural Programming. You will learn the principles, knowledge and skills to utilize the object-oriented programming paradigm; using the Java programming language to design and write object-oriented programs to process text files and build graphical user interfaces (GUIs).

**Course Objectives:**

 Demonstrate understanding of classes, constructors, objects, and instantiation.

 Access variables and modifier keywords.

 Develop methods using parameters and return values.

 Build control structures in an object-oriented environment.

 Convert data types using API methods and objects.

 Design object-oriented programs using scope, inheritance, and other design techniques.

 Create an object-oriented application using Java packages, APIs, and interfaces, in conjunction with classes and objects.

**Course Outcomes:**

*A. Knowledge and understanding*

1. To be familiar with the essential theories, concepts, and principles related to information technology and computer applications as appropriate to the program of study.

2. To gain the knowledge and skills needed to be able to provide computer science solutions to information technology problems.

*B. Intellectual/Cognitive skills*

1 .To be able to analyze problems related to computing and to provide solutions related to the design/construction of computing systems.

*C. Subject specific and practical skills*

1 .Apply appropriate processes and methodologies to specify, design, implement, verify, and maintain computer-based systems.

**Teaching and learning methods:**

A. Lectures

B. Labs

C. Assignments and project

D. quizzes

E. Exams

**Faculty:**

|  |  |  |
| --- | --- | --- |
| **Section # (Lecture)** | **Instructor Name** | **Office** |
| **2** | *Dr. Yousef Hassouneh* | *Masri322* |
| **3** | *Mr. Nael Qaraeen \** | *Masri321* |
| **4** | *Dr. Bassem Sayrafi* | *Masri316* |
| **5** | *Dr. Asem Kitana* | *Masri521* |
| **6** | *Dr. Mohammad AlKhanafseh* | *Masri314* |

\* \*Course coordinator

**References:**

 **Introduction to JAVA Programming**, **12th edition (10th or 11th editions are ok)** , Author Y.Daniel Liang, Publisher: Prentice Hall.

 **Laboratory Work Book** (COMP2310)

**Grading Policy:**

**- Mid Term Exam 25%**

**- Assignments and Quizzes 20%**

**- Project 10%**

**- Final Practical Exam 10%**

**- Final Written Exam 35%**

**Topics Covered in this Course:**

**Topics Chapter # of lectures**

Introduction to Java 1-8 6

Objects and Classes 9 3

Strings 4.4, 10.10, 10.11 2

Object-oriented Thinking 10 2

Inheritance and Polymorphism 11 3

Abstract Classes and Interfaces 13 3

Exception Handling and Text I/O 12 3

JavaFX Basics 14 3

JavaFX UI Controls 16 2

Event-Driven Programming 15 3

**Lab Outline:**

1 Program structure in Java

2 Structure Programming - Revision

3 Methods

4 Arrays and Object Use

5 Object-Oriented Programming

6 String I

7 String II

8 Inheritance and Polymorphism

9 Abstract classes and Interfaces

10 Exception handling and text I/O

11 JavaFX basics and UI controls

12 Event-Driven Programming

**Special Regulations:**

- Late/wrong assignments or ***assignments not sent exactly as specified*** will **NOT** be accepted for any reason.

- There will be **NO** makeup quizzes.

- Missing any exam without an **acceptable** excuse will result in a zero grade for that exam.

- **Attendance** is mandatory. University regulations will be strictly enforced.

- Academic **honesty**:

o Individual HW assignments/project must be each student’s own work.

o Cheating will result in a zero grade and may also result in an official university disciplinary review.