Beni-Suef University
Faculty of Computers and Information

جامعة بنى سويف
كلية الحاسبات والمعلومات

DEPARTMENT OF COMPUTER SCIENCE

Course Title: Object Oriented Programming
Course Code: CS241
Prerequisites: CS141

1.	**3 credit hours, 15 weeks, 4 hours per week**
2.	**Prescription:** This course builds a deeper understanding of software development in an object-oriented programming language, such as Java or C++, including class hierarchies, the use of libraries, design patterns, and the development of suitable user interfaces.
3.	**Learning aims** • Intellectual growth including higher level skills of problem identification and problem solving. • A deeper understanding of the principles of object-oriented design and programming. • The ability to evaluate the usefulness of a given technique and to appreciate where it may appropriately be used. **Learning Outcomes** Upon successful completion of this course, students will • Understand (1) the basic elements of Java programming: inheritance, polymorphism, Abstract Classes, Interfaces, exception handling, (2) a number of topics related to design and programming practices, (3) the analysis, design and implementation of user interfaces by using JavaFX. • Be able to (1) apply the Java language to implement a program, (2) develop a program to solve a real-world problem within the context of object-oriented paradigm, and use Java-SDK and Netbeans to create a suitable user interface for this program.
4.	**Teaching and learning methods**: This course will be delivered through a combination of lectures and labs, with the emphasis on practical exercises. The internet resources will be used to support teaching and lab exercises.
5.	**Student workload**: Lectures = 2 hours Laboratories = 2 hours Supported learning and independent study = 6 hours Total = 10 hours per week of student effort
6.	**Assessment** • Project based divided into mile-stones

- Series of related assignments to complete the project
- Conclude with overall presentation
- Late submission penalty: (10% * available marks * # of days)

Examinations:

1. Project & Assignments: 15%
2. Mid Exam: 20%
3. Final Practical Exam: 15%
4. Final: 50%

7. **Course Time Table: Schedule of topics in order will include**

Week	Lecture	Lab
1	Lecture 1: Java Overview	Introducing NetBeans with Examples
2	Lecture 2: Objects and Classes	Simple Examples: Classes & Objects
3	Lecture 3: Object Oriented Thinking	More OOP apps
4	Lecture 4: Inheritance and Polymorphism – Part I	Inheritance
5	Lecture 5: Inheritance and Polymorphism – Part II	Polymorphism
6	Lecture 6: Exception Handling	Exception Handling Examples
7	Lecture 7: Abstract Classes & Interfaces	Ex about Interfaces and Abstract Classes
8	**Mid Exam**	
9	Lecture 8: JavaFX Basics	Design a JavaFX app
10	Lecture 9: Event-Driven Programming	Add Logics to GUIs
11	Lecture 10: JavaFX UI Controls and Multimedia	More JavaFX examples
12	Lecture 11: Binary I/O	Binary I/O examples
13	Lecture 12: Generics	Generic Examples
14	**Revision and Project Assessment**	
15	**Final Practical Exam**	

8. **Facilities required**:
Specific facilities required
- JDK 6 or above
- Eclipse or Netbeans as IDE

9. **Textbook:** *Introduction to Java Programming (10th Edition), by Y. Daniel Liang, Pearson Prentice Hall.*

10. **Course Instructor:**

Dr. Mohammed Kayed
Office Hours: Wednesday 11-12 pm