COURSE Syllabus

1.	Course title	Object Oriented Programming
2.	Course number	1902110
3.	Credit hours (theory, practical)	3
	Contact hours (theory, practical)	3
4.	Prerequisites/corequisites	Passing CS Exam or BoS
5.	Program title	Computer Information System
6.	Year of study and semester (s)	First Semester 2022-2023
7.	Final Qualification	Bachelor (Bsc)
8.	Other department (s) involved in teaching the course	None
9.	Language of Instruction	English
10.	Date of production/revision	Production18/9/2019 , Revision: 8/10/2022
11.	Required/ Elective	Required
12.	Electronic platform(s)	☒**Moodle**: elearning.ju.edu.jo

13. Course Coordinator:

Dr. Esra Alzaghoul
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Office hours: Sunday, Tuesday and Thursday: 12:30-1:30.
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14. Other instructors:

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Miss Rola Al-Khalid
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Mr. Yousef Majdalawi
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15. Course Description:

The Object-Oriented Programming (OOP) course covers the fundamental concepts of OOP, such as Encapsulation and Information-Hiding, Inheritance, Polymorphism, and Abstraction. The course uses Java Programming language starting from the basic Java syntax based on Eclipse IDE. It focuses on the understanding and practical mastery of OOP principles and java components, such as classes, objects, input/output, scanner objects (to read either from the keyboard or a file), loops, decision-making, array and multidimensional array, data abstraction, methods, method overloading, objects garbage-collector, an introduction to exception-handling, etc. Finally, it presents an Introduction to JavaFX and its Hierarchy based on Java inheritance OOP concepts, for developing rich client applications.

16. Course aims and outcomes:

A- Aims:

The main goals of this course are to equip students with knowledge and skills on how to analyze and specify problems, to design solutions, algorithms and implement the solutions using Java Programming Language.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to:

A- Knowledge and Understanding:

A1) Knowing the fundamental concepts underlying object-oriented programming and problem solving, using the Java programming language.
A2) Knowing the syntax and semantics of the Java language
A3) Understanding how to develop and implement graphics using JavaFX and application programs in Java
A4) Understanding various forms of data, controls and object structures supported by Java
A5) Understanding of Structured data, Statement sequencing, Logic control, Classes, Objects, Methods and Arrays

B- Intellectual skills: with the ability to …

B1) Analyze and specify the given problem, the boundaries of the problem and constraints on the solution.
B2) Implement the solution and carry out the steps in the algorithm
B3) Test the solution to ensure that it will yield appropriate results.
B4) Realize the importance of Java Programming Language

C- Subject Specific Skills: With ability to

C1) Deal with Java applications and JavaFX applications.
C2) Solve real world problems using Java programming language

D- Transferable Skills:

D1) Discuss and work in a group in order to solve different real-world problems
D2) Improve students' skills in using Java programming language

17. Topic Outline and Schedule:

Topic	Week	ILOs	ABET SOs	TLA (teaching, learning and Assessment)
Introduction to Java Programming Language	1 Week	A1	1	In class Questions
Introduction to Java Applications	2 Weeks	A1, A2, A3, D2	1,2	In class Questions, Lab work and practical sessions
Introduction to Classes and Objects	2 Weeks	A2, A3, B1, B2, B3, B4, C1, D1, D2	1,2	Assignment, Practical Exam, Lab work and practical sessions
Control Structures I	1 Week	A2, A3, A4, B1, B2, B3, C1, D1, D2	1,2	Assignment, Practical Exam, Lab work and practical sessions
Control Structures II	1 Week	A2, A3, A4, B1, B2, B3, C1, D1, D2	1,2	Assignment, Practical Exam, Lab work and practical sessions
Methods	2 Weeks	A2, A3, A5, B1, B2, B3, B4, C1, D2	1,2	In class Question, Assignments
Arrays	2 Weeks	A5, B1, B2, B3, B4	1,2	In class Questions, Lab work and practical sessions
Classes and Objects	1 Week	A5, B1, B2, B3, B4, C1, C2, D1, D2	1,2	In class Questions, Lab work and practical sessions
Object Oriented Programming: Inheritance	2 Weeks	A5, B1, B2, B3, B4, C1, C2, D1, D2	1	In class Questions
Object-Oriented Programming: Polymorphism	1 Week	A5, B1, B2, B3, B4, C1, C2, D1, D2	1	In class Questions
Introduction to JavaFX	1 Week	A2, A3, B4, C1, C2, D1, D2	1,2	Homework, Lab work and practical sessions, Practical Exam

18. Evaluation Methods and Course Requirements (Optional):

Teaching (T) Strategies: Class Contact is 3 Hour per week. The lecturer of the course gives 3 hours per week while students should practice in lab; however, the course is counted as 3 credit hour for students. The Course will be delivered using different means like lectures, presentations, assignment discussion and case studies.

Learning (L) Methods: Students attend classes for 3 hours per week, they ask questions and participate in discussions, do the assignments, present their homework. A student will need to practice the skills he/she is gaining and to do the assignments and projects. Students will access the e-learning platform for more instructions and supported learning materials.

Assessment (A) Methods: There will be several assessment methods of evaluation the performance of the students such as attending and class participation, grading the homework in the e-learning platform, projects and assignments; conducting the midterm, the practical and the Final Exams. Every student is expected to completely adhere to the assignments and projects strict deadlines, absolutely no exceptions will be given.

19. Course Policies:

A- Attendance policies:

Maximum allowable absence 15% of number of Lectures/Semester

B- Absences from exams and handing in assignments on time:

It is the student's responsibility to ensure that he/she is aware of all assignments, announcements, and contents of missed sessions

C- Health and safety procedures:

- All students **MUST** wear face **masks (**in case if they have any **symptoms)**, covering their mouth and nose, while present in lecture rooms or labs or any academic or administrative building at the university.

- Students must try to maintain a physical (**social**) **distance** at all times on campus, whether indoors or outdoors.

- It is the student's responsibility to shut down the computer according to the correct procedures and keep the equipment clean.

D- Honesty policy regarding cheating, plagiarism, misbehaviour:

It is the student's responsibility to ensure that he/she knows the consequences of cheating, plagiarism and misbehaviour.

E- Grading policy:

Assessment will be as follows:

Quizzes and practical assessments	15
Assignments	5
Midterm exam	30
Final exam	50

F- Available university services that support achievement in the course:

Computer Labs and E-Learning

20. Required equipment:

(1) Java SDK (JDK17):
https://www.oracle.com/java/technologies/downloads

(2) Eclipse IDE for Java Developers 2022:
https://www.eclipse.org/downloads/packages

(3) JavaFX 18.0.2 (https://gluonhq.com/products/javafx/)

21. References:

A- Required book (s), assigned reading and audio-visuals:
   1. Java How to Program, Deitel & Deitel, Pearson, 10th edition, 2015.
   2. Java How to Program, Deitel & Deitel, Pearson, 11th edition, 2018 (For JavaFX).
   3. Intro to Java Programming, Y. Daniel Liang, 10th Edition, 2015.

B- Recommended books, materials, and media:
   1. Thinking in java, Bruce Eckel, Prentice Hall, 4th edition 2006
   2. Java 2 The Complete Reference, Herbert Schildt, McGraw Hill, 7th Ed.2007
   3. Java programming: A beginners Guide to learning Java, step by step. By Troy Dimes 2015
   4. Java: A beginner's Guide. By Herbert Schildt 2014
   5. Head First Java, 2nd Edition By Katy Sierra and Bert Bates 2005
   6. Learning Java 4th edition By Patrick Niemeyer, Daniel Leuck. Publisher: O'Reilly Media, 2013
   7. Java object oriented language, M. Smith, McGraw Hill 1999.
   8. An Introduction to object programming with Java, McGraw Hill, 5th Ed.1999
   9. https://docs.oracle.com/javase/7/docs/api/
   10. http://docs.oracle.com/javase/8/
   11. https://openjfx.io/openjfx-docs/
   12. https://fxdocs.github.io/docs/html5/

22. Additional information:

1. Every student is expected to completely adhere to all assessments activities, exams dates and projects strict deadlines, absolutely no exceptions will be given.

2. Maximum allowable absence 15% of number of Lectures/Semester

- الامتناع المدبر عن حضور المحاضرات أو الدروس أو عن الأعمال الاخرى التي تقضي الأنظمة بالمواظبة عليها ، وكل تحريض على هذا الامتناع سوف يؤدي الى حرمان الطالب من المادة المعنية.

- في حالة التغيب عن امتحان ال MidTerm لن يكون هناك امتحان تعويضي إلا في حالة وجود عذر لحالة طارئة من المستشفى. على الطالب ابراز العذر لمدرس المادة في فتره لا تتجاوز الثلاثة ايام من تاريخ الامتحان، وللمدرس الحق في قبول او رفض العذر.

- Concerns or complaints should be expressed in the first instance to the module lecturer; if no resolution is forthcoming then the issue should be brought to the attention of the module coordinator (for multiple sections) who will take the concerns to the module representative meeting. Thereafter problems are dealt with by the Department Chair and if still unresolved the Dean and then ultimately the Vice President. For the final complaints, there will be a committee to review grading the final exam.

- For more details on University regulations please visit:
  http://units.ju.edu.jo/ar/LegalAffairs/Regulations.aspx

Date: ----**9/10/2022**--------
Name of Course Coordinator: ----**Dr. Esra Alzaghoul**---Signature: --------
Head of curriculum committee/Department: ------------------------ Signature: ---------------
Head of Department: ------------------------ Signature: --------------------------------
Head of curriculum committee/Faculty: ----------------------- Signature: ---------------------
Dean: -- -Signature: --------------------------------

                       Copy to:
                       Head of Department
                       Assistant Dean for Quality Assurance
                       Course File