|  |  |  |
| --- | --- | --- |
| جامعة فيلادلفيا    Philadelphia University | **اسم النموذج: خطة تدريس مادة دراسية Course Syllabus** | QFO-AP-FI-MO02 |
| **الجهة المصدرة: كلية تكنولوجيا المعلومات** | رقم الاصدار :1  Revision 1 |
| **الجهة المدققة: عمادة التطوير والجودة** | التاريخ :05/11/2017 |
| عدد صفحات النموذج: 5 |

|  |  |
| --- | --- |
| **Course code:0216200** | **Course Title: Object-Oriented Programming** |
| **Course prerequisite (s) and/or corequisite (s):**  **0750113** | **Course Level: 2 (SE BSc)** |
| **Credit hours: 3** | **Lecture Time:** |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | **E** | **C** | **DR** | **FR** | **UR** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Academic Staff Specifics** | | | | |
| **E-mail Address** | **Office Hours** | **Office Location** | **Rank** | **Name** |
| aobidat@philadelphia.edu.jo | س ن12:30-14:15  11:00 – 12:45ح ث | **331** | **Teacher** | 1. **Obidat** |

|  |  |  |  |
| --- | --- | --- | --- |
| **The Learning Style Used in Teaching the Course** | | | |
| **Blended Learning** | | | |
| **Electronic Learning** | | | |
| **Face-to-Face Learning** | | | |
| **Percentage** | **Blended** | **Electronic** | **Face-to-Face** |
|  |  | **100%** |

**Software Engineering BSc Program**

**Course module description:**

This course covers the following major topics: Introduction to Object-Oriented approach, Understanding Class Definition, Object Interaction, Grouping Objects, Using Library Classes, Information Hiding, Inheritance, Polymorphism, Overriding, Abstract Classes, Abstract Methods, Interfaces, Exception Handling, and Designing Applications.

This module will provide the student with a framework for object-oriented thinking. The main focus of this course is general object-oriented and programming concepts from a software engineering perspective.

**Course module objectives:**

This module aims to

* develop an understanding of the principles of the object-oriented paradigm.
* provide familiarity with approaches to object-oriented modelling and design.
* provide a familiarity with the syntax, class hierarchy, environment and simple application construction for an object-oriented programming language.

**Course/ module components**

This course involves the following parts:

- Abstraction

- Encapsulation and information hiding

- Classes and objects

- Object interaction

- Inheritance (generalization and specialization)

- Polymorphism

- Exception Handling

**Text book:**

Title: Interactive Object-Oriented Programming in Java: Learn and Test Your Skills. Author(s)/Editor(s): Vaskaran Sarcar.

Publisher : Apress; 2nd edition (December, 2019)

*In addition to the above, the students will be provided with handouts by the lecturer.*

**Support materials**

Slides and laboratory guide.

**Teaching methods:**

Duration: 16 weeks, 64 hours in total

Lectures: 48 hours, 3 per week

Optional Tutorials/Lectures: 10 from 48 hours

Lab : 16 hours

**Learning Outcomes:**

Upon successful completion of this course students will be able to:

A- ***Knowledge and understanding***

A1- Identify the basic concepts of object-oriented programming such as objects, classes, inheritance, encapsulation, and polymorphism

1. ***Cognitive skills (thinking and analysis).***

B1- Analyze a given problem; its boundaries and constraints on its solution, and assemble the solution using object-oriented techniques.

B2- Create an object-oriented code, given a UML class diagram

C- ***Practical skills***

C1- Construct small systems in Java programming language, using an integrated development environment (IDE) that helps writing, debugging and executing programs

***D- Transferable Skills***

D1- Discuss and work in a group in order to solve different real-world problems

**Assessment instruments**

A1 , B1, B2 are achieved through lectures and assessed by quizzes and examinations.

C1 and D1 are achieved and assessed by homework, lab sessions.

|  |  |  |
| --- | --- | --- |
| **Allocation of Marks** | | |
| **Mark** | **Date** | Assessment Instruments |
| **30 %** |  | Mid examination |
| **40 %** |  | Final examination |
| **20%** |  | Lab work |
| **10%** |  | Quizzes, Project, and Class works |
| **100%** |  | Total |

*\* Make-up exams will be offered for valid reasons only with consent of the Dean. Make-up exams may be different from regular exams in content and format.*

**Practical Submissions**

*The assignments that have work to be assessed will be given to the students in separate documents including the due date and appropriate reading material.*

**Documentation and Academic Honesty**

Submit your home work covered with a sheet containing your name, number, course title and number, and type and number of the home work (e.g. tutorial, assignment, and project).

Any completed homework must be handed in to my office (room IT 333) by the specified due date. After the deadline “zero” will be awarded. You must keep a duplicate copy of your work because it may be needed while the original is being marked.

You should hand in with your assignments:

1. A printed listing of your test programs (if any).
2. A brief report to explain your findings.
3. Your solution of questions.

**Protection by Copyright**

1. Coursework, laboratory exercises, reports, and essays submitted for assessment must be your own work, unless in the case of group projects a joint effort is expected and is indicated as such.

2. Use of quotations or data from the work of others is entirely acceptable, and is often very valuable provided that the source of the quotation or data is given. Failure to provide a source or put quotation marks around material that is taken from elsewhere gives the appearance that the comments are ostensibly your own. When quoting word-for-word from the work of another person quotation marks or indenting (setting the quotation in from the margin) must be used and the source of the quoted material must be acknowledged.

3. Sources of quotations used should be listed in full in a bibliography at the end of your piece of work.

**Avoiding Plagiarism**.

1. Unacknowledged direct copying from the work of another person, or the close paraphrasing of somebody else's work, is called plagiarism and is a serious offence, equated with cheating in examinations. This applies to copying both from other students' work and from published sources such as books, reports or journal articles.
2. Paraphrasing, when the original statement is still identifiable and has no acknowledgement, is plagiarism. A close paraphrase of another person's work must have an acknowledgement to the source. It is not acceptable for you to put together unacknowledged passages from the same or from different sources linking these together with a few words or sentences of your own and changing a few words from the original text: this is regarded as over-dependence on other sources, which is a form of plagiarism.
3. Direct quotations from an earlier piece of your own work, if not attributed, suggest that your work is original, when in fact it is not. The direct copying of one's own writings qualifies as plagiarism if the fact that the work has been or is to be presented elsewhere is not acknowledged.
4. Plagiarism is a serious offence and will always result in imposition of a penalty. In deciding upon the penalty, the Department will take into account factors such as the year of study, the extent and proportion of the work that has been plagiarized, and the apparent intent of the student. The penalties that can be imposed range from a minimum of a zero mark for the work (without allowing resubmission) through caution to disciplinary measures (such as suspension or expulsion).

**Course/module academic calendar**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week** | **Outcomes** | **Topics** | **Learning Approach** | **Assessment Approach** |
| 1 | A1, B1, B2  C1, D1 | Introduction:  Object Oriented Features  Classes, Objects. | Lecture + Lab | Exam and quiz |
| 2 | A1, B1, B2  C1, D1 | Attributes, Methods | Lecture + Lab | Exam and quiz |
| 3 | A1, B1, B2  C1, D1 | Constructors | Lecture + lab | Exam and quiz |
| 4 | A1, B1, B2  C1, D1 | Method Overloading | Lecture + Lab | Exam and quiz |
| 5 | A1, B1, B2  C1, D1 | Comprehensive Exercises | Lecture + Lab | Exam and quiz |
| 6 | A1, B1, B2  C1, D1 | Static Attributes  Static Methods | Lecture +Lab | Exam and quiz |
| 7 | A1, B1, B2  C1, D1 | Grouping Objects: Creating association  Creating Aggregation and Composition | Lecture +Lab | Exam and quiz |
| 8, 9 | A1, B1, B2  C1, D1 | Declaring and Creating Arrays, Array of Object | Lecture +Lab |  |
| 10, 11, 12 | A1, B1, B2  C1, D1 | Interface and abstract classes  Inheritance: Base Classes and Derived Classes, protected Members, Relationship between Base Classes and Derived Classes, Constructors in Derived Classes, and Class object. | Lecture + Lab  Homework | Exam and quiz  Report |
| 13, 14 | A1, B1, B2  C1, D1 | Polymorphism: Polymorphic Behavior, Abstract Classes and Methods, Using Interfaces | Lecture + Lab | Exam and quiz |
| 15 | A1, B1, B2  C1, D1 | Exception Handling | Lecture + Lab | Exam and quiz |
| 16 |  | Revision |  |  |

**Expected workload:**

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

**Attendance policy:**

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

**Module references**

Students will be expected to give the same attention to these references as given to the Module textbook(s)

1. Cay Horstmann, Core Java Volume I--Fundamentals, Pearson; 11th edition, 2018
2. Paul Deitel and Harvey Deitel, Java: how to program, New Delhi: PHI Learning Private Limited, 2012
3. Jaime Nino, Frederick A. Hosch, An introduction to programming and object-oriented design using Java, Hoboken NJ: John Wiley, 2008
4. David J. Barnes and Michael Kolling, Object First with Java, A practical introduction using Blue J, Publisher: Prentice Hall, Pearson Education, : 2nd, 2005

**Websites**

[www.deitel.com](http://www.deitel.com/)