" حيث تصبح الرؤية واقعاً"

"When Vision Becomes Reality"

" عراقة وجودة"

**Tradition and Quality**

| Detailed Course Description - Course Plan Development and Updating Procedures/ ……………………. Department | QF01/0408-3.0E |
|---|---|

| Faculty | Faculty Of Science & IT | Department | Software Engineering |
|---|---|---|---|
| **Course number** | 0114221 | Course title | Object Oriented Programming |
| Number of credit hours | 3 | Pre-requisite/co-requisite | Principles of Programming |

This course gains knowledge about basic Java language syntax and semantics to write Java programs and use concepts such as variables, conditional and iterative execution methods etc. Beside; understanding the fundamentals of object-oriented programming in Java, including defining classes, objects, invoking methods, in addition to the main principles in OOP that talks about "Encapsulation", "Inheritance", "Polymorphism" and "Interface".

| | **Course goals and learning outcomes** |
|---|---|
| **Goal 1** | Understand fundamentals of programming such as variables, conditional and iterative execution, methods, and arrays. |
| Learning outcomes | 1.1 Knowledge of the structure and model of the Java programming language. 1.2 Use the Java programming language for various programming technologies. |
| **Goal 2** | Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc. |
| Learning outcomes | 2.1 Develop software in the Java programming language, 2.2 Propose the use of certain technologies by implementing them in the Java programming language to solve the given problem |
| **Goal 3** | Have the ability to write a computer program and Java application to solve specified problems and object oriented problems |
| Learning outcomes | 3.1 Choose an engineering approach to solving problems, and be a good software developer. 3.2 Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements |
| **Textbook** | - Java Programming 8th Edition, Jan 23, 2015, by Joyce Farrell, |

جامعة الزيتونة الأردنية

**Al–Zaytoonah University of Jordan**

كلية العلوم وتكنولوجيا المعلومات

**Faculty Of Science & IT**

" حيث تصبح الرؤية واقعاً"

"When Vision Becomes Reality"

" عراقة وجودة"

**Tradition and Quality**

| Detailed Course Description - Course Plan Development and Updating Procedures/ …………………… Department | QF01/0408-3.0E |
|---|---|

| | |
|---|---|
| | ISBN-10: 1285856910 |
| **Supplementary references** | 1- Java Methods: Object-Oriented Programming and Data, February 15, 2015, by Maria Litvin and Gary Litvin.<br><br>2- Java Programming, 7th Edition 7th Edition, Jan 31, 2013 by Joyce Farrell, ISBN-10: 1285081951<br><br>3- Learning Java Through Games 1st Edition, Dec 24, 2013 by Lubomir Stanchev, ISBN-10: 1466593318. |

| Course timeline |||||
|---|---|---|---|---|
| **Week** | **Number of hours** | **Course topics** | **Pages (textbook)** | **Notes** |
| **01** | 1<br>1<br>1 | Introduction to Java and Creating Java Program<br>Writing first Java program and makes run to it<br>Using Data and arithmetic operations | **11 – 31**<br>**53 – 81**<br>**87 - 111** | |
| **02** | 1<br>1<br>1 | Scanner Class<br>Making Decisions (if statement, if else)<br>nested if statements and switch statement<br>Examples | **78 – 81**<br>**245 - 299** | |
| **03** | 1<br>1<br>1 | Looping (for statement)<br>while statement<br>Nested loop, Examples | **301 - 352** | |
| **04** | 1<br>1<br>1 | Using Methods<br>Using Methods<br>Understanding Blocks and Scope | **119 – 136**<br><br>**184** | |
| **05** | 1<br>1<br>1 | Methods Overloading, Math Class<br>First Exam<br>Answering Exam question and discussion | **192, 221** | |
| **06** | 1<br>1<br>1 | Arrays<br>Arrays<br>Arrays | **393 - 438** | |
| **07** | 1<br>1 | Using Two-Dimensional Arrays<br>Understanding Classes, Objects and Encapsulation | **452**<br>**7** | |

جامعة الزيتونة الأردنية

**Al–Zaytoonah University of Jordan**

كلية العلوم وتكنولوجيا المعلومات

**Faculty Of Science & IT**

" حيث تصبح الرؤية واقعاً"

"When Vision Becomes Reality"

" عراقة وجودة"

**Tradition and Quality**

| Detailed Course Description - Course Plan Development and Updating Procedures/ ........................ Department | | | | QF01/0408-3.0E | |
|---|---|---|---|---|---|
| | | 1 | Learning about classes and objects | 142 - 145 | |
| 08 | | 1 | Creating a Class and Organizing Classes | 145 - 150 | |
| | | 1 | Declaring Objects and using their methods | 154, 155 | |
| | | 1 | Understanding Data hiding (Encapsulation) | 156 | |
| 09 | | 1 | Introduction to Using Constructor | 159 - 163 | |
| | | 1 | Using Constant Fields | 213 -220 | |
| | | 1 | Using Static Fields and Static methods | | |
| 10 | | 1 | Understanding Composition and Nested Classes | 230 – 234 | |
| | | 1 | Understanding Composition and Nested Classes | 243 | |
| | | 1 | Case Problem | | |
| 11 | | 1 | Advanced Inheritance Concepts | | |
| | | 1 | Advanced Inheritance Concepts | 537 - 564 | |
| | | 1 | Advanced Inheritance Concepts | | |
| 12 | | 1 | Practice and more examples | | |
| | | 1 | Second Exam | | |
| | | 1 | Answering Exam question and discussion | | |
| 13 | | 1 | Creating Interfaces to Store Related Constants | 570 | |
| | | 1 | Understanding Polymorphism | 9 | |
| | | 1 | Case Problem | 590 | |
| 14 | | 1 | Character and Strings | 353 - 391 | |
| | | 1 | | | |
| | | 1 | | | |
| 15 | | 1 | Review of previous chapters and solve more examples | - | |
| | | 1 | | | |
| | | 1 | | | |
| 16 | | 1 | Final Exam | - | |
| | | 1 | | | |
| | | 1 | | | |

| **Theoretical course evaluation methods and weight** | Participation = 10% First exam 20% Second exam 20% Final exam 50% | **Practical (clinical) course evaluation methods** | Semester students' work = 50% (Reports, research, quizzes, etc.) Final exam = 50% |
|---|---|---|---|

| **Approved by head of department** | | **Date of approval** | |
|---|---|---|---|
| | | | |

Extra information (to be updated every semester by corresponding faculty member)

" حيث تصبح الرؤية واقعاً"
"When Vision Becomes Reality"

" عراقة وجودة"
**Tradition and Quality**

| Detailed Course Description - Course Plan Development and Updating Procedures/ …………………… Department | QF01/0408-3.0E |
|---|---|

| **Name of teacher** | Mustafa Rifaee | Office Number | |
|---|---|---|---|
| Phone number (extension) | | Email | m.rifaee@ zuj.edu.jo |
| Office hours | | | |