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| **ISHIK UNIVERSITY FACULTY OF SCIENCE Department of INFORMATION TECHNOLOGY,2017-2018 Spring Course Information for IT 311 OBJECT ORIENTED PROGRAMMING I** |

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| --- | --- |
| **Course Name:** | OBJECT ORIENTED PROGRAMMING I |
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| --- | --- | --- | --- | --- | --- | --- |
| **Code** | **Course type** | **Regular Semester** | **Theoretical** | **Practical** | **Credits** | **ECTS** |
| IT 311 | 2 | 5 | 2 | 2 | 3 |  |

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| **Name of Lecturer(s)-Academic Title:** | Moayad Yousif Potrus - |
| **Teaching Assistant:** | - |
| **Course Language:** | English |
| **Course Type:** | Non-area Elective |
| **Office Hours** | sunday 10:00AM-2:00PM +Thursday 11:00AM-3:00PM  |
| **Contact:** | Email:moayad.potrus@ishik.edu.iq Tel:07504628179  |
| **Teacher's academic profile:** | n/a  |
| **Course Objectives:** | This course is an in-depth look at the popular programming language Java. It is not intended for first time programmers and rquire an acceptable level of knowledge. After some preliminaries devoted to basic syntax and program structure, classes, composition, inheritance and polymorphism are examined. The Java collection classes are studied in some detail, as is the rather complex set of I/O classes. Additional topics include exception handling, building GUIs with JavaFX, and multi-threading. Throughout the second half of the course, a series of homework problems develops a non-toy application, illustrating by example how larger object-oriented programs are organized. |
| **Course Description (Course overview):** | Continuing from the foundations of programming in C++, this course starts introducing the students to the concepts of object oriented programing, OOP, in general and it is implementation. It will cover the concepts of encapsulation, inheritance and polymorphism. |
| **COURSE CONTENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topic** |
| **1** | 2 | 8-12/10/2017 | Introduction to Java |
| **2** | 2 | 15-19/10/2017 | Data Types in Java OOP |
|  |  |  |  |
| **3** | 2 | 22-26/10/2017 | Program flow |
| **4** | 2 | 29/10-2/11/2017 | Classes and Objects1 |
|  |  |  |  |
| **5** | 2 | 5-9/11/2017 | Classes and Objects2 |
| **6** | 2 | 12-16/11/2017 | Inner classes |
|  |  |  |  |
| **7** | 2 | 19-23/11/2017 | Midterm Exam |
| **8** | 2 | 26-30/11/2017 | Inheritance 1 |
|  |  |  |  |
| **9** | 2 | 3-7/12/2017 | Inheritance 2 |
| **10** | 2 | 10-14/12/2017 | Encapsulation |
|  |  |  |  |
| **11** | 2 | 17-21/12/2017 | Polymorphism (overloading) |
| **12** | 2 | 24-28/12/2017 | Polymorphism (overriding) |
|  |  |  |  |
| **13** | 2 | 31/12/2017-4/1/2018 | Exception Handling1 |
| **14** | 2 | 7-11/1/2018 | Exception Handling2 |
|  |  |  |  |
| **15** | 2 | 14-18/1/2018 | Final Exam |
| **16** | 2 | 21-25/1/2018 | Final Exam |
|  |  |  |  |

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| **COURSE/STUDENT LEARNING OUTCOMES**

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| --- | --- |
|  |  |
| **1** | To understand Object Oriented Programming concepts |
| **2** | To understand the role that methods play in an object-oriented program |
| **3** | To understand the concept of a class hierarchy. |
| **4** | To become familiar with the relationship between classes and objects in a Java program |
| **5** | To comprehend Java Data and Control Structures |

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| **COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES**(Blank : no contribution, I: Introduction, P: Profecient, A: Advanced )

|  |  |  |
| --- | --- | --- |
|  | **Program Learning Outcomes** | **Cont.** |
| **1** | An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution | p |
| **2** | An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs | I |
| **3** | An ability to function effectively on teams to accomplish a common goal | P |
| **4** | An understanding of professional, ethical, legal, security, social, and economic issues and responsibilities | P |
| **5** | An ability to analyze the local and global impact of computing on individuals, organizations, and society | I |
| **6** | An ability to use current techniques, skills, and tools necessary for computing practice | P |
| **7** | An ability to use and apply current technical concepts and practices in the core information technologies of human computer interaction, information management, programming, networking, web systems and technologies | I |
| **8** | An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems | P |
| **9** | An ability to effectively integrate IT-based solutions into the user environment | P |
| **10** | An ability apply problem solving skills, core IT concepts, best practices and standards to information technologies | P |
| **11** | An ability to identify and evaluate organizational requirements and current and emerging technologies |  |
| **12** | An ability to select, design, integrate and administer IT-based solutions into the organizational environment |  |

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| **Prerequisites (Course Reading List and References):** | Basic Programming Knowledge |
| **Student's obligation (Special Requirements):** | Submit their assignment in time Attend the classes |
| **Weekly Laboratory/Practice Plan:** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topics** |
| 1 | 2 | 8-12/10/2017 | Simple java class program |
| 2 | 2 | 15-19/10/2017 | Applying different Data types to programs |
|  |  |  |  |
| 3 | 2 | 22-26/10/2017 | Practice with abstraction |
| 4 | 2 | 29/10-2/11/2017 | Simple class building |
|  |  |  |  |
| 5 | 2 | 5-9/11/2017 | Extending the class with declaration |
| 6 | 2 | 12-16/11/2017 | outer and inner class |
|  |  |  |  |
| 7 | 2 | 19-23/11/2017 | exam |
| 8 | 2 | 26-30/11/2017 | Inheritance |
|  |  |  |  |
| 9 | 2 | 3-7/12/2017 | Inheritance extended with different classes |
| 10 | 2 | 10-14/12/2017 | Data hiding |
|  |  |  |  |
| 11 | 2 | 17-21/12/2017 | Oveloading with class |
| 12 | 2 | 24-28/12/2017 | Overriding with class |
|  |  |  |  |
| 13 | 2 | 31/12/2017-4/1/2018 | Exception Handling with programs |
| 14 | 2 | 7-11/1/2018 | Exception Handling with throw |
|  |  |  |  |
| 15 | 2 | 14-18/1/2018 | review |
| 16 | 2 | 21-25/1/2018 | exam |
|  |  |  |  |

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| **Course Book/Textbook:** | Thinking in Java. 4th Edition. Eckel. Prentice Hall. |
| **Other Course Materials/References:** | Core Java Vol 1 - Fundamentals, 9th / 10th Edition. Horstmann & Cornell. Prentice Hall. Java How To Program (late objects) by Paul Deitel, Harvey Deitel |
| **Teaching Methods (Forms of Teaching):** | Lectures, Practical Sessions, Presentation, Project, Assignments |
| **COURSE EVALUATION CRITERIA**

|  |  |  |
| --- | --- | --- |
| **Method** | **Quantity** | **Percentage (%)** |
| Participation | 1 | 5 |
| Quiz | 1 | 10 |
| Project | 1 | 15 |
| Midterm Exam(s) | 1 | 20 |
| Lab/Practical Exam(s) | 2 | 5 |
| Final Exam | 1 | 40 |
| **Total** | **100** |
| **Examinations:**Essay Questions, True-False, Fill in the Blanks, Multiple Choices, Short Answers |  |  |

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| **Extra Notes:** |
| **ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD**

|  |  |  |  |
| --- | --- | --- | --- |
| **Activities** | **Quantity** | **Duration (Hour)** | **Total Work Load** |
| Course Duration (Including the exam week: 16x Total course hours) | 4 | 60 | 240 |
| Hours for off-the-classroom study (Pre-study, practice) | 1 | 10 | 10 |
| Assignments Mid-terms | 1 | 10 | 10 |
| Final examination |  |  | 0 |
| Other |  |  | 0 |
| **Total Workload** | **260** |
| **ECTS Credit (Total workload/25)** | **10.4** |

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**Peer review**

|  |  |  |
| --- | --- | --- |
| Signature: | Signature: | Signature: |
| Name: | Name: | Name: |
| Lecturer                                                                       | Head of Department                                                         | Dean |

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