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| | Ministry of Higher Education and Scientific Research - Iraq<br>Al-Nahrain University<br>College of Science<br>Computer Science Department | |

# MODULE DESCRIPTION FORM

# نموذج وصف المادة الدراسية

| Module Information<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | Object Oriented Programming | | | **Module Delivery** | |
| **Module Type** | Core | | | ☒ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | COMP2105 | | | | |
| **ECTS Credits** | 6.0 | | | | |
| **SWL (hr/sem)** | 150 | | | | |
| **Module Level** | 3 | | **Semester of Delivery** | 1 | |
| **Administering Department** | Computer Science | | **College** | Science | |
| **Module Leader** | Abeer Khalid Al-Mashhadany | | **e-mail** | aabeeeeraa@yahoo.com | |
| **Module Leader's Acad. Title** | Assistant Prof. | | **Module Leader's Qualification** | M.Sc in Computer Science | |
| **Module Tutor** | Abeer Khalid Al-Mashhadany | | **e-mail** | aabeeeeraa@yahoo.com | |
| **Peer Reviewer Name** | Hana Muhammad | | **e-mail** | Hhhhh55mm@yahoo.com | |
| **Scientific Committee Approval Date** | 16 / 9/ 2024 | | **Version Number** | 1.0 | |

| Relation with other Modules<br>العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Aims**<br>أهداف المادة الدراسية | • **Give all principles of Object Oriented Programming**<br>• **Train to use OOP principles to solve Real problems**<br>• **Provides students high programming skills**<br>• **Enable students to make design on paper**<br>• **Enable student to trace the run operation** |
| **Module Learning Outcomes**<br><br>مخرجات التعلم للمادة الدراسية | • **Differences of object oriented programming from Structured Programming**<br>• **Why object oriented programming and its advantages**<br>• **Relate object oriented programming principles with its real life examples.**<br>• **Object oriented programming in Java programming language. It helps stud training to configure errors and imagine how to correct it.**<br>• |
| **Indicative Contents**<br>المحتويات الإرشادية | • **High programming skills**<br>• **High programming following and tracing**<br>• **Force ability of design projects based on OOP**<br>• **Face ability of suggesting relationships and drawing block diagram bef starting writing code.** |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | • **Pre Info required**<br>• **Oral Lectures**<br>• **Presentation Lectures**<br>• **Train on White Board**<br>• **Explain Lab Ass. Oral and on white board**<br>• **Train at Lab**<br>• **Home Work to a specific group**<br>• **Providing the HW solution for all** |

| Student Workload (SWL)<br>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 79 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 5.3 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 71 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4.7 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | 150 | | |

| Module Evaluation<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 1 | 10% (10) | 10 | All |
| | **Assignments** | 1 | 10% (10) | 12 | All |
| | **Projects / Lab.** | 1 | 10% (10) | Continuous | All |
| | **Report** | 1 | 10% (10) | 13 | All |
| **Summative assessment** | **Midterm Exam** | 2 hr | 10% (10) | | All |
| | **Final Exam** | 4 hr | 50% (50) | | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Syllabus)<br>المنهاج الاسبوعي النظري | |
|---|---|
| | **Material Covered** |
| **Week 1** | **Pre-Info. Programming Fundamentals**<br>• **Introduction to Object Oriented Programming**<br>• **Input & Output Statements.**<br>• **Control Statements.**<br>• **Methods & Methods Overloading**<br>• **Loops**<br>• **One Dimensional Array –Vector**<br>• **Two Dimensional Array**<br>• **Computer Organization Aided Programming** |
| **Week 2** | **Classes and Objects**<br>• **Designing a Class**<br>• **Creating Objects from Classes**<br>• **Access Modifiers: Public and Private** |
| **Week 3** | **Pointers and Packages** |
| **Week 4** | **Constructors, Using this keyword** |
| **Week 5** | **Composition** |
| **Week 6** | **Finalize, Static, and Final**<br>• **Garbage Collection**<br>• **Static Variables & Static Methods**<br>• **Static Import**<br>**Final Instance Variables** |
| **Week 7** | First Mid Exam |
| **Week 8** | **Enumerations** |
| **Week 9** | **Inheritance & Protected Access**<br>• **Introduction**<br>• **Calling Superclass Constructors**<br>• **Overriding Methods** |
| **Week 10** | **Inheritance : Overriding Methods** |
| **Week 11** | **Second Mid Exam** |
| **Week 12** | **Polymorphism : Operator instanceof and Downcasting** |
| **Week 13** | **Abstract Class** |
| **Week 14** | **Interfaces** |
| **Week 15** | **Work as teem** |

| Delivery Plan (Weekly Lab. Syllabus)<br>المنهاج الاسبوعي للمختبر | |
|---|---|
| | **Material Covered** |
| **Week 1** | **Pre-Info. Programming Fundamentals**<br>• **Introduction to Object Oriented Programming**<br>• **Input & Output Statements.**<br>• **Control Statements.**<br>• **Methods & Methods Overloading**<br>• **Loops**<br>• **One Dimensional Array –Vector**<br>• **Two Dimensional Array**<br>• **Computer Organization Aided Programming** |
| **Week 2** | **Classes and Objects**<br>• **Designing a Class**<br>• **Creating Objects from Classes**<br>**Access Modifiers: Public and Private** |
| **Week 3** | **Pointers and Packages** |
| **Week 4** | **Constructors, Using this keyword** |
| **Week 5** | **Composition** |
| **Week 6** | **Finalize, Static, and Final**<br>• **Garbage Collection**<br>• **Static Variables & Static Methods**<br>• **Static Import**<br>**Final Instance Variables** |
| **Week 7** | First Mid Exam |
| **Week 8** | **Enumerations** |
| **Week 9** | **Inheritance & Protected Access**<br>• **Introduction**<br>• **Calling Superclass Constructors**<br>**Overriding Methods** |
| **Week 10** | **Inheritance : Overriding Methods** |
| **Week 11** | **Second Mid Exam** |
| **Week 12** | **Polymorphism : Operator instanceof and Downcasting** |
| **Week 13** | **Abstract Class** |
| **Week 14** | **Interfaces** |
| **Week 15** | **Work as teem** |

| Learning and Teaching Resources<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | Providing high-quality printed paper lectures that cover the entire subject with exercises | available |
| **Recommended Texts** | Textbook: Java Concepts, Cay Horstmann, San Jose State University. | |
| **Websites** | Providing high-quality printed paper lectures that cover the entire subject with exercises | |

| Grading Scheme<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A** - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C** - Good | جيد | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F** – Fail | راسب | (0-44) | Considerable amount of work required |
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**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.