**Academic Year: 2021/2022 Semester: (Summer)**

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| **Course NO.** | **Course Title** | **Designation** | **Prerequisite** | **Credit Hours** |
| CIS 340 | Object-Oriented Analysis and Design | Compulsory | CIS 240 | 3 |

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| **Instructor Name** | **E-mail** | **Office NO.** | **Office ext.** | **Office Hours** |
| Dr. Aws Magableh | [aws.magableh@yu.edu.jo](mailto:aws.magableh@yu.edu.jo) | MAQ 301 | 3840 | All days 10 - 11 AM |

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| **Course Description** | The main objective of this course is to provide students with basic concepts, knowledge, and necessary skills in analysis and design of object oriented systems with emphasis on the models offered by the Unified Modeling Language (UML) and the system life cycle using the Rational Unified Process (RUP). It covers a range of topics including: Object-oriented design concepts, foundations and elements of the object-oriented model, classes and objects, relationships among classes, relationships among objects, approaches to identifying classes and objects, object-oriented design  and modeling methodologies using UML (class and object diagrams, interaction diagrams, state transition diagrams, component diagrams, deployment diagrams, etc.), the object-oriented software development process (analysis, design and implementation as presented in the RUP), CASE tools. This course is supplemented by a practical component covered in CIS340L. |

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| **Textbook(s)** |
| Object-Oriented Analysis and Design with Applications 3rd Edit by Grady Booch (Author), Robert Maksimchuk (Author), Michael Engle (Author), Jim Conallen (Author), Kelli Houston (Author), Ph.D. Young Bobbi. 2007 |
| Unified Modeling Language User Guide, The Grady Booch James Rumbaugh Ivar Jacobson Publisher: Addison Wesley First Edition October 20, 1998 ISBN: 0-201-57168-4, 512 pages |

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| **Course Learning Outcomes** |
| CLO1: Show the importance of software, the complexity that comes with software production, and the role of OO in solving complex problems. **(10%) [PLO A].**  CLO2: Understanding, finding and describing concepts in the problem domain using different OO Analysis techniques**. (10%) [PLO A].**  CLO3: Understanding and defining software solution/design using OO concepts that represent the analysis that would concentrate on providing the blueprint for implementation. **(30%) [PLO B].**  CLO4: Construction UML Use Case model utilizing all basic notations and a variety of analysis techniques behind it such as Robustness Analysis and Use case specification for an information system environment application. **(25%) [PLO B].**  CLO5: Construction UML Class Diagram utilizing all basic notations and a variety of Design techniques behind it such as CRC card and functional delegation for an information system environment application **(25%) [PLO B].** |

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| **Addressed Program Learning Outcomes** |
| A) Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.  B) Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the Computer Information Systems. |

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| **Topics** | **No. of Weeks** | **Contact Hours** |
| **Topic 1**: Conceptual Overview | 2 | 10 |
| **Topic 2**: Object-Oriented Analysis | 3 | 15 |
| **Topic 3**: Object-Oriented Design | 3 | 15 |
| **Topic 4**: Use Case Models in UML | 2 | 10 |
| **Topic 5**: Class Modelling in UML | 3 | 15 |
| **Topic 6**: Interaction Diagrams in UML | 2 | 10 |
| **Total** | 15 | 75 |

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| **Assessment Methods** | **Grade (%)** | **Comments (COLs)** |
| Mid-Term Exam | 30 | Cover the First (3) Topics |
| Assignments | 5 | 2 Assignments (2.5 Marks) |
| Quizzes | 10 | Two Quizzes (Each one 5 Marks) |
| Attendance | 5 | Attendance 5 Marks |
| Final Exam | 50 | Covering all topics |
| **Total** | 100 |  |