

## [A-3] COURSE SYLLABUS

Professor's Information	
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Course Information			
Course Name	SYSTEMS DEVELOPMENT PROJECT	Number of Lectures	1
Course Date	2021-09-05	Course Language	ENGLISH
Keyword	Object oriented programming, unified modelling language, system analysis and design, diagram notations and syntax, semantics.		

<b>Course Description</b>  (100 ~200 words)	<p>Regardless of the software development approach, from the classic waterfall to extreme programming (XP), all of the experts agree that quality software development requires both analysis and design.</p> <p>The Unified Modeling Language (UML) provides a common, standard notation for recording both analysis models and design artifacts. This course delves into the processes of both object-oriented analysis and object-oriented design using UML as the notation language.</p>
<b>Course Goals and Objectives</b>  (Approximately 100 words)	<p>At the end of this course, the students will know: The importance of modeling in the software development life cycle. The UML notation and symbols. The object-oriented approach to analyzing and designing systems and software solutions.</p> <p>How to Employ the UML notation to create effective and efficient system designs. A good understanding of object-oriented technologies and a basic understanding of analysis and design</p>
<b>Textbook</b>	<p>Object-Oriented Analysis and Design with Applications (3rd Edition) Grady Booch, 2012</p> <p>Unified Modeling Language User Guide, The (Addison-Wesley Object Technology Series) Grady Booch , 2017</p>
<b>References</b>	<p>Unified Modeling Language Reference Manual, The (2nd Edition) July James Rumbaugh Publisher: Pearson Higher Education 2007</p>
<b>Course Requirements and Grades</b>	<p>Background knowledge on object-oriented programming and software development basics.</p>

<b>Course Calendar</b>	
<b>Week</b>	<b>Main Content</b>
<b>Week 1</b>	Unit 1: systems Analysis and Design: Systems and Software Quality, Software Engineering, Life Cycle Properties, Analysis and Design
<b>Week 2</b>	Unit 1: systems Analysis and Design: domain models, relationship between models, identify conceptual classes and their attributes, associations between classes, examples of domain models.
<b>Week 3</b>	Unit 2: The Object-Oriented Paradigm: Object-Oriented Analysis, Object-Oriented Design, Object-Oriented programming, Concepts of object-oriented approach
<b>Week 4</b>	Unit 2: The Object-Oriented Paradigm: Software Development Process Software Development Life Cycle, Software Process Models
<b>Week 5</b>	Unit 3: Basic Unified Modeling Language: overview, Basic Concepts, Basic Notation, UML Diagrams
<b>Week 6</b>	Unit 4: Domain Modeling: The Information Model, Structural Modeling, Information Modeling in the UML
<b>Week 7</b>	Unit 4: Domain Modeling: Information Modeling in the UML( Basic Constructs, Relationships, Stereotypes

<b>Week 8</b>	Unit 5: Use Case and the Behavior Model • Use Case Model, Use Case Diagram, Use Case Description, Use Case Extensions
<b>Week 9</b>	Unit 6: The Analysis Phase: modeling process, (Architectural Views) activity diagrams (Activity Diagram Notation and Syntax)
<b>Week 10</b>	Unit 6: The Analysis Phase: Sequence Diagram, (sequence Diagram Notation and Syntax) Sequence Diagrams, State chart diagram (State chart diagram Notation and Syntax)
<b>Week 11</b>	Unit 6: The Analysis Phase: Collaboration Diagram (Communication Diagram Notation and Syntax) Unit 7: Design Phase: Moving to Code, Design for Reuse, Designing Quality into Modules, Refactoring, Design Best Practices
<b>Week 12</b>	Unit 8: Physical Design. UML Implementation Diagrams, Component Diagram Notation and Syntax, Deployment diagram, Deployment Diagram Notation and Syntax
<b>Week 13</b>	Unit 9: Software Reviews, Walkthroughs, Inspections, and Audits.

