

**Object oriented software Engineering**  
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**[CORE COURSE]**

<b>Semester: V</b>	<b>Credits: 3</b>	<b>Subject Code: BC52202</b>	<b>Lectures: 48</b>
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**Course Outcomes:**

At the end of this course, the learner will be able to:

- Recognize the fundamentals of object modeling
- Relate and Differentiate Unified process from other approaches
- Design static and dynamic UML diagrams
- Test the software against its requirement specification
- Acquire Project management skills

**Unit 1: Introduction and basics of Software Modeling and UML.**

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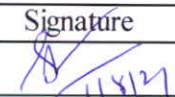
- Software Life Cycle Models (Revision of SE)
- System Concepts
- Project Organization
- Communication in Project Management
- Risk management in Project Management
- SRS Specification
- Requirement Elicitation
- Business Engineering
- Concept of UML
- Advantages of UML

**Unit 2: Object Oriented Principles and Structural Modeling**

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- What is Object Orientation? - Introduction , Object ,Classes and Instance , Polymorphism, Inheritance
- Object Oriented System Development- Introduction, Function/Data Methods (With Visibility), Object Oriented Analysis, Object Oriented Construction.
- Identifying the Elements of an Object Model.
- Identifying Classes and Objects.
- Specifying the Attributes (with visibility).
- Defining operations.
- Finalizing the Object Definition.
  - Classes
  - Relationship
  - Common mechanism
  - Class diagram (Minimum three examples should be covered)
  - Advanced classes



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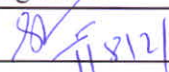
<ul style="list-style-type: none"> <li>• Advanced Relationship</li> <li>• Interface</li> <li>• Types and Roles</li> <li>• Packages</li> <li>• Object Diagram(Minimum three examples should be covered)</li> <li>• Documentation covering class and Object diagram.</li> </ul>	
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<b>Unit 3: Behavioral and Architectural Modeling</b>	16
<ul style="list-style-type: none"> <li>• Interactions</li> <li>• Use cases and Use Case Diagram with stereotypes (Minimum three examples should be covered)</li> <li>• Interaction diagram (Minimum two examples should be covered)</li> <li>• Sequence Diagram (Minimum two examples should be covered)</li> <li>• Activity Diagram (Minimum two examples should be covered)</li> <li>• State Chart Diagram (Minimum two examples should be covered)</li> <li>• Component Diagram (Minimum two examples should be covered)</li> <li>• Deployment Diagram (Minimum two examples should be covered)</li> <li>• Collaboration Diagram (Minimum two examples should be covered)</li> <li>• Documentation covering all the UML Diagrams</li> </ul>	

<b>Unit 4: Object Oriented Analysis and Design</b>	8
<ul style="list-style-type: none"> <li>• Iterative Development and the Rational Unified Process</li> <li>• Inception</li> <li>• Understanding requirements</li> <li>• Use Case Model From Inception to Elaboration</li> <li>• Elaboration</li> <li>• The Coad and Yourdon Method and Jacobson Method.</li> <li>• Generic components of OO Design model</li> <li>• System Design process <ul style="list-style-type: none"> <li>○ Partitioning the analysis model</li> <li>○ Concurrency and subsystem allocation</li> <li>○ Task Management component</li> <li>○ Data Management component</li> <li>○ Resource Management component</li> <li>○ Inter sub-system communication</li> </ul> </li> </ul>	



#12 hours for Library work, assignments, practical or field work

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**Recommended Text Books:**


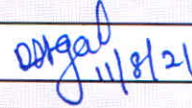

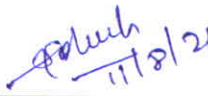

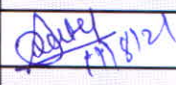

- Grady Booch, James Raumbaugh, , *The Unified Modeling Language User Guide/ Reference Guide*. Pearson Education Inc.

**Reference Books:**

- Alistair Cockbair, *Agile Software Development*, Pearson Education
- Grady Booch, James Raumbaugh, , *The Unified Modeling Language UserGuide/ Reference Guide*. Pearson Education Inc.
- Ivar Jacobson, Grady Booch, James Raumbaugh, *The Unified software development process*, Pearson Education.

**Websites:**

- [www.w3school.com](http://www.w3school.com)

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Head of the Department	Ms Smita Borkar		
Faculty*	Prof. Deepali Gupta		
Faculty*	Prof Monika Rajguru		
Subject Expert (Outside SPPU)	Prof Sachin Bohite		
Subject Expert (Outside SPPU)	Dr. Sagar Jambhorkar		
VC Nominee	Prof Anjum Patel		
Industry Expert	Ms Shrutika Wayal		
One Alumni***	Ms. VidhiThakkar		



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