

Course Title	Software Design & Architecture		
Course Code	DS-322		
Credit Hours	3 (3,0)		
Category	Domain Core		
Prerequisite	None		
Co-Requisite	CC-212 Software Engineering		
Follow Up			
Course Learning Outcomes (CLOs)	At the end of the course, the students will be able to:	BT	PLO
	CL01: Understand the role of design and its major activities within the OO software development process, with focus on the Unified process.	C1 (Remember)	1.2
	CL02: Comprehend the advantages of consistent and reliable software design.	C2 (Understand)	2
	CL03: Design OOD models and refine them to reflect implementation details	C3 (Apply)	4
	CL04: Apply and use UML to visualize and document the design of software systems.	C4 (Analyze)	4.5
	CL05: Implement the design model using an object-oriented programming language.	C5 (Create)	5
Course Description	Software Design Concepts, Design principles, Object-Oriented Design with UML, System design and software architecture, Object design, Mapping design to code, User interface design, Persistent layer design, Web applications design, State machine diagrams and modeling, Agile software engineering, Design Patterns, Exploring inheritance, Interactive systems with MVC architecture, Software reuse. Architectural design issues, Software Architecture, Architectural Structures & Styles-, Architectural Patterns, Architectural & Design Qualities, Quality Tactics, Architecture documentation, Architectural Evaluation, Model driven development.		
Text Book(s)	1. Software Engineering: A Practitioner's Approach, Roger S. Pressman, Bruce R. Maxim, 8th Ed, McGraw-Hill Education, 2015.		
Reference Material	1. Object-Oriented Analysis, Design and Implementation, Brahma Dathan, Sarnath Ramnath, 2nd Ed, Universities Press, India, 2014. 2. Software Modeling and Design: UML, Use Cases, Patterns, and Software Architectures, Hassan Gomaa, Cambridge University Press, 2011. 3. Head First Design Patterns, Eric Freeman, Elisabeth Freeman, Kathy Sierra and Bert Bates, O'Reilly Media, Inc. 2004.		