Course Code	Course Name	Teaching Scheme (Hrs/week)			Credits Assigned			
		L	T	P	L	T	P	Total
MCAE 35 E	Service Oriented Architecture	3	-	--	3	-	--	3
		Examination Scheme						
		ISE		MSE		ESE		
		10		30		100 (60% Weightage)		

Pre-requisite Course Codes			
Course Outcomes		CO1	An ability to comprehend the abilities of middleware and understand it suitability to application.
		CO2	An ability to develop Service Life cycle with real time example as well as identifying its semantics.
		CO3	An ability to analyze business architecture for Service Oriented Enterprise Application based on case study
		CO4	An ability to understand Strategic Architecture in SOA Governance

Module No.	Unit No.	Topics	Ref.	Hrs.
1		**Introduction to Middleware**	1,3	3
	1.1	Generic Middleware, Service Specific Middleware, Working of CORBA.		
	1.2	Client/Server Building, , RPC, Java RMI		
	1.3	Promises and Challenges of SOA, Service Oriented Architecture, Business driven SOA		
2		**Introduction to Service oriented architecture**	1,2	4
	2.1	Service orientation in daily life, Drivers for		
	2.2	Dimensions of SOA, Key components of SOA, Services		
	2.3	Enterprise Service Bus, Orchestration, Prospective of SOA		
	2.4	SOA Perspectives of Standard Bodies, Future Trends		
3		**Getting started with SOA**	1,2	11
	3.1	Overview of SOA Implementation Methodology, SOA Reference Architecture, ,		
	3.2	Business Architecture, Business Processes, Information Design		
	3.3	Service Identification, Service Specification, Service Expectations,		
	3.4	Interaction Model, Service Constraints, Service Location, Services Realization, Buying Services, Outsourcing Services,		
	3.5	Building Services, Summary of Service Identification and Realization Concerns, Service Life Cycle,		
	3.6	The Service Design Process, Top-Down Approaches- Enterprise System Analysis - Business Process Model,		

		Bottom-Up Approaches- Utility Services - Service Enabling,		
	3.7	Middle-Out: The Best of Both, Process Summary – Activities- Artifacts – Repositories - Governance, Process Phases - Architectural Context – Business - Design - Implementation - Test, Practical steps		
	3.8	**Starting with the Business :** Business Architecture, Enterprise Business Architecture, Project Business Architecture,		
	3.9	Value Chain, Business Context, Understanding the Business Motivation Model – Ends - Vision - Desired Results, Means - Mission - Course of Action - Directives		
	3.10	Influencers, Alignment and Traceability, Business Process Management and Modeling		
	3.11	Basic Business Process Model Components, Executable Models, Business Process Models in an SOA World		
4		**Service Oriented Enterprise Application**	1,2,3	10
	4.1	Consideration for service oriented Enterprise Applications- Service Enablement, Service Integration, Service Orchestration, Service Infrastructure		
	4.2	Patterns for SOA- Patterns for Service Enablement, Patterns for Service Integration, Patterns for Service Orchestration, Patterns for Service Infrastructure, Pattern based Architecture for Service oriented Enterprise Applications,		
	4.3	Reference Model of Service Oriented, Java EE Enterprise Application, Technical Architecture, Composite Application,		
	4.4	SOA programming models -Service Component Architecture (SCA), Windows Communication Foundation (WCF), Enterprise SOA Layer and Solution Architecture for Enterprise Application.		
5		**Service Oriented Analysis and Design**	1,2	6
	5.1	Need for models, Principles of service Design –Reuse, Integration, Agility		
	5.2	Design of Activity Services (or Business Services) - Illustration		
	5.3	Data Services, Design of Client Services, Design of Bu3.8siness Process Services, Illustration – Loan Approval Business Process, Explanation of Loan Approval Process		
6		**SOA Governance, Security and Implementation**	1,2,3	8
	6.1	SOA Governance- Strategic Architecture (Process, Technologies, People)		
	6.2	Development of services (Governance of Service Design, Governance of Service Execution, Governance of Service Modification, Technologies for SOA governance)		
	6.3	SOA security (Technologies for SOA security)		

	6.4	Approaches for Enterprise-wide SOA Implementation-Strategy (Due Diligence, AS IS Assessment), TO BE Strategy		
	6.5	SOA Development (Transition Planning, Validation, Proof of Concept, Business Process Model), Service Deployment and Monitoring		
			Total	**42**

References :

[1] Michael Rosen, "Applied SOA"

[2] Shankar Kambhampaty, "Service- Oriented Architecture for Enterprise Applications", Wiley publication

[3] G. SudhaSadasivam, "Distributed Component Architecture", Wiley India edition.