LESSON PLAN

Type	Code	SOFTWARE ENGINEERING	L-T-P	Credits	Marks
CS	CC-11		3-1-0	4	100
Topic Objective		Understand units of measure common to computer systems. Appreciate the evolution of computers. Understand the computer as a layered system. Be able to explain the von Neumann architecture and the function of basic computer components.			
Prerequisites		Knowledge of basic computer science concepts such as data structures, algorithms, and programming languages is essential. This forms the foundation upon which computer architecture is built.			
Lecture Scheme		Regular lectures (classroom /virtual class with Laptop/Desktop/Smartphone) with use of ICT, lectures are planned to be interactive with focus on problem solving activities.			

Evaluation Scheme

Internal Assessment			Written Assessment	Total
Assignment(s)	Unit Test	Mid-Term (Written)	End-Term	
0	0	30	45	100

University Syllabus

Unit No	Topics	Hours
Unit-1	Professional Software Development, Software Engineering Ethics, Software Processes, Software Process Models, Process Activities, Coping with Change, The Rational Unified Process, Agile Software Development, Agile Methods, Plan-Driven and Agile Development, Extreme Programming, Agile Project Management, Scaling Agile Methods.	10
Unit-2	Requirements Engineering, Functional and Non-Functional Requirements, The Software Requirements Document, Requirements Specification, Requirements Engineering Processes, Requirements Elicitation and Analysis, Requirements Validation, Requirements Management, System Modelling, Context Models, Interaction Models, Structural Models, Behavioural Models, Model-Driven, Engineering, Architectural Design, Architectural Design Decisions, Architectural Views, Architectural Patterns, Application Architectures.	10
Unit-3	Design and Implementation: Object-Oriented Design using the UML, Design Patterns, Implementation Issues, Open Source Development, Software Testing: Development Testing, Test-Driven Development, Release Testing, User Testing, Software Evolution: Evolution Processes, Program Evolution Dynamics, Software Maintenance, Legacy System Management, Dependability and Security.	10
Unit-4	Socio-technical Systems: Complex Systems, Systems Engineering, System Procurement, System Development, System Operation. Dependability and Security: Dependability Properties, Availability and Reliability, Safety, Security. Dependability and Security Specification: Risk-Driven Requirements, Specification, Safety Specification, Reliability Specification, Security, Specification, Formal Specification.	

Unit-5	Dependability Engineering: Redundancy and Diversity, Dependable Processes, Dependable Systems Architectures, Dependable Programming. Security Engineering: Security Risk Management, Design for Security, System Survivability. Dependability and Security Assurance: Static Analysis, Reliability Testing, Security Testing, Process Assurance, Safety and Dependability Cases.	10
	Total (Hours)	40

Text Books:

1. I. Sommerville, "Software Engineering", 9/e, Addison Wesley.
2. R.S. Pressman, "Software Engineering", A Practitioner's Approach, 7/e, McGrawHill, 2009

Type	**CC-11**	**LESSON PLAN**	**L-T-P**	**Credits**	**Marks**
Lecture No	Unit No	**COMPUTER ARCHITECTURE**	3-1-0	4	100
Lecture01	1	**Topic:** Professional Software Development, Software Engineering Ethics **Ref** :https://www.computer.org/education/code-of-ethics			
Lecture 02	1	**Topic:** Software Processes, Software Process Models, Process Activities, Coping with Change **Ref :**https://www.geeksforgeeks.org/software-processes-in-software engineering/			
Lecture 03	1	**Topic:** The Rational Unified Process, Agile Software Development, Agile Methods **Ref:** https://www.geeksforgeeks.org/rup-and-its-phases/			
Lecture04	1	**Topic:** The Rational Unified Process, Agile Software Development, Agile Methods **Ref:** https://www.geeksforgeeks.org/rup-and-its-phases/			
Lecture 05	1	**Topic:** Plan-Driven and Agile Development **Ref:**https://www.geeksforgeeks.org/overview-of-plan-driven-development-pdd/			
Lecture 06	1	**Topic:** Extreme Programming, Agile Project Management, Scaling Agile Methods. **Ref:** https://www.nimblework.com/agile/extreme-programming-xp/			
Lecture 07	1	**Topic** Extreme Programming, Agile Project Management, Scaling Agile Methods. **Ref:** https://www.nimblework.com/agile/extreme-programming-xp/			
Lecture 08	1	**Topic:** Requirements Engineering, Functional and Non-Functional Requirements **Ref:**https://www.geeksforgeeks.org/functional-vs-non-functional-requirements/			
Lecture 09	1	**Topic:** The Software Requirements Document **Ref:** https://www.geeksforgeeks.org/functional-vs-non-functional-requirements/			
Lecture 10	1	**Topic:** Requirements Engineering Processes, Requirements Elicitation and Analysis **Ref:**https://www.geeksforgeeks.org/software-engineering-requirements-engineering-process/			
Lecture 11	2	**Topic:** Requirements Engineering Processes, Requirements Elicitation and Analysis **Ref**:https://www.geeksforgeeks.org/software-engineering-requirements-engineering-process/			
Lecture 12	2	**Topic**:Requirements Validation, Requirements Management, System Modelling **Ref:** https://www.ibm.com/topics/what-is-requirements-management			
Lecture 13	2	**Topic:** Requirements Validation, Requirements Management, System Modelling **Ref:** https://www.ibm.com/topics/what-is-requirements-management			
Lecture 14	2	**Topic:** Context Models, Interaction Models **Ref:** https://embeddedartistry.com/fieldatlas/software-system-context-model/			
Lecture 15	2	**Topic:** Structural Models, Behavioural Models			

		Ref: https://www.geeksforgeeks.org/short-note-on-behavioral-model/
Lecture 16	2	**Topic:** Structural Models, Behavioural Models **Ref:** https://www.geeksforgeeks.org/short-note-on-behavioral-model/
Lecture 17	2	**Topic:** Architectural Design Decisions **Ref**:https://www.geeksforgeeks.org/software-engineering-architectural-design/
Lecture 18	2	**Topic:** Architectural Views, Architectural Patterns, Application Architectures. **Ref:** ttps://www.redhat.com/architect/14-software-architecture-patterns
Lecture 19	2	**Topic:** Architectural Views, Architectural Patterns, Application Architectures. **Ref:** ttps://www.redhat.com/architect/14-software-architecture-patterns
Lecture 20	2	**Topic:** Design and Implementation, Object-Oriented Design using the UML **Ref:** https://www.geeksforgeeks.org/unified-modeling-language-uml-introduction/
Lecture 21	3	**Topic:** Design Patterns, Implementation Issues **Ref:** https://www.geeksforgeeks.org/software-design-patterns/
Lecture 22	3	**Topic:** Open Source Development **Ref:** https://www.simplilearn.com/what-is-open-source-article
Lecture 23	3	**Topic:** Software Testing: Development Testing, Test-Driven Development **Ref**: https://www.geeksforgeeks.org/test-driven-development-tdd/
Lecture 24	3	**Topic:** Release Testing, User Testing **Ref:** https://cs.ccsu.edu/~stan/classes/CS410/Notes16/08-SoftwareTesting.html
Lecture 25	3	**Topic** Release Testing, User Testing **Ref:** https://cs.ccsu.edu/~stan/classes/CS410/Notes16/08-SoftwareTesting.html
Lecture 26	3	**Topic:** Software Evolution Evolution Processes, Program Evolution Dynamics **Ref:** https://www.geeksforgeeks.org/software-engineering-software-evolution/
Lecture 27	3	**Topic**:Software Maintenance, Legacy System Management, Dependability and Security **Ref:**https://www.geeksforgeeks.org/software-engineering-software-maintenance/
Lecture 28	3	**Topic:** Software Maintenance, Legacy System Management, Dependability and Security **Ref:**https://www.geeksforgeeks.org/software-engineering-software-maintenance/
Lecture 29	3	**Topic:** Socio-technical Systems: Complex Systems, Systems Engineering **Ref:**https://oboloo.com/blog/what-is-system-procurement-in-software-engineering/
Lecture 30	3	**Topic:** System Procurement, System Development, System Operation **Ref:** https://www.techtarget.com/searchcio/definition/e-procurement
Lecture 31	4	**Topic:** Dependability and Security: Dependability Properties, Availability and Reliability **Ref:** https://csis.pace.edu/~marchese/SE616_New/Sum_11/Sum_11.htm
Lecture 32	4	**Topic:** Safety, Security. Dependability and Security Specification Risk-Driven Requirements **Ref:**https://www.scribd.com/presentation/481252011/Dependability-and-Security-Specifications
Lecture 33	4	**Topic:** Safety Specification, Reliability Specification **Ref:** https://fses.global/service/safety-requirements-specification/

Lecture 34	4	**Topic:** Security, Specification, Formal Specification **Ref:** https://www.javatpoint.com/parallel-processing
Lecture 35	4	**Topic:** Dependability Engineering: Redundancy and Diversity, Dependable Processes, Dependable Systems Architectures **Ref:**https://www.castsoftware.com/glossary/software-performance-application-engineering-tuning-monitoring
Lecture 36	4	**Topic:** Dependability and Security Assurance **Ref:**https://www.castsoftware.com/glossary/software-performance-application-engineering-tuning-monitoring
Lecture 37	4	**Topic** Design for Security, System Survivability **Ref:**https://www.sciencedirect.com/topics/computer-science/multicore-system
Lecture 38	4	**Topic** Static Analysis, Reliability Testing, Security Testing, Process Assurance **Ref:** https://en.wikipedia.org/wiki/Multi-core_processor
Lecture 39	4	**Topic:** Process Assurance, Safety and Dependability Cases **Ref:** https://cecs.uci.edu/~papers/aspdac07/pdf/p747_7D-2.pdf
Lecture 40	4	**Topic:** Process Assurance, Safety and Dependability Cases **Ref:** https://www.redbooks.ibm.com/redbooks/pdfs/sg247832.pdf

LESSON PLAN

Type	Code	ASP.NET	L-T-P	Credits	Marks
CS	DSE-2		3-1-0	4	100
Topic Objective	To learn about basic features of ASP.NET and its controls To create an ASP.NET application using standard .NET Controls .To learn about connecting data sources using ADO.NET and managing them.				
Prerequisites	Basic knowledge of C#, HTML, Visual Studio, and Object Oriented Programming is required.				
Lecture Scheme	Regular lectures (classroom/virtual class with computer/Smartphone) with use of ICT as and when required, lectures are planned to be interactive with focus on problem solving activities.				

Evaluation Scheme

Internal Assessment			Written Assessment	Total
Assignment(s)	Unit Test	Mid-Term (Written)	End-Term	
0	0	30	70	100

University Syllabus

Unit No	Topics	Hours
Unit-1	Genesis of .Net – Features of .Net - .Net binaries – Microsoft Intermediate Language – Meta Data - .Net types and .net name spaces – Common Language Runtime – Common Type System – Common Language Specification - .Net Applications using command line compiler and visual studio .net IDE	10
Unit-2	Introducing ASP .NET – Creating and deploying ASP .NET applications – Web forms – Web controls – working with events – Rich web controls – Custom web controls – Validation controls – Debugging ASP .NET pages.	10
Unit-3	ASP .NET configuration – Business objects – HTTP Handlers – Caching in ASP .NET – ASP .NET security – Localizing ASP .NET applications – Deployment projects.	10
Unit-4	BUILDING WEB SERVICES: Introduction to web services – Web services Infrastructure – SOAP – Building a web service – Deploying and publishing web services – Finding web services – Consuming web services.	10
Unit-5	ADO .NET: Basics of ADO .NET – Changes from ADO – Data Table – Data Views – Data Set – Data Relation Type – ADO .NET Managed Providers – OleDb and SQL Manager.	10
	Total(Hours)	50

Text Books:

TB1: Mridula Parihar, et. al. – “ASP .NET Bible” – Wiley-dreamtech India Pvt. Ltd.

TB2: Andrew Troelsen – “C# and the .Net Platform” – Apress – 2001.(Unit I and II)

Reference Books:

RB1: David S. Platt – “Introducing .Net” – Microsoft Press – 2002

RB2: Alex Homer et. al. – “Professional ASP .NET 1.1” – Wiley-dreamtech India Pvt. Ltd. – 2004.

Online Resources:

OR1: https://www.geeksforgeeks.org/characteristics-of-net-framework

OR2: https://www.javatpoint.com/asp-net-server-controls

OR3: https://www.tutorialspoint.com/asp.net/asp.net_debugging.htm

Type	Code	LESSON PLAN Digital Logic	L-T-P	Credits	Marks
Lecture No	Unit No		3-1-0	4	100
Lecture 1	1	**Topic:** Genesis of .Net – Features of .Net **Ref:** RB1 (1.1); OR1			
Lecture 2	1	**Topic:** Features of .Net - .Net binaries **Ref:** RB1 (1.2, 1.3,1.4); OR1			
Lecture 3	1	**Topic:** Microsoft Intermediate Language – Meta Data **Ref:** RB1 (2.1, 2.2, 2.3); OR1			
Lecture 4	1	**Topic:** .Net types and .net name spaces. **Ref:** RB1 (2,4, 2.6,2.7); OR1			
Lecture 5	1	**Topic:** Common Language Runtime – **Ref:** RB1 (2.5,3.1); OR1			
Lecture 6	1	**Topic:** Minimization of Logic Expressions, Minimization using Karnaugh Maps **Ref:** RB1 (3.1-3.3); OR1			
Lecture 7	1	**Topic:**, Minimization of different logic functions using Karnaugh Maps. **Ref:** RB1 (3.4-3.5,3.8); OR1			
Lecture 8	1	**Topic:** – Common Type System – Common Language Specification **Ref:** RB1 (3.6); OR1			
Lecture 9	1	**Topic:** – Common Type System – Common Language Specification **Ref:** RB1 (3.6,3.7); OR1			
Lecture 10	1	**Topic:** Net Applications using command line compiler and visual studio .net IDE.. **Ref:** RB1 (3.8,3.9); OR1			
Lecture 11	2	**Topic** Introducing ASP .NET – Creating and deploying ASP .NET applications **Ref:** TB1 (1.4); OR1			
Lecture 12	2	**Topic:** Introducing ASP .NET – Creating and deploying ASP .NET applications **Ref:** TB1 (6.1); OR1			
Lecture 13	2	**Topic** Web forms – Web controls – working with events **Ref:** TB1 (6.2); OR1			
Lecture 14	2	**Topic** Web forms – Web controls – working with events **Ref:** TB1 (6.3); OR1			
Lecture 15	2	**Topic:** Rich web controls **Ref:** TB1 (6.4); OR2			
Lecture 16	2	**Topic** Rich web controls **Ref:** TB1 (6.5); OR3			
Lecture 17	3	**Topic:** Custom web controls **Ref:** TB1 (6.6); OR1			
Lecture 18	3	**Topic:** Custom web controls **Ref:** TB1 (6.6); OR1			
Lecture 19	3	**Topic:** – Validation controls – Debugging ASP .NET pages. **Ref:** TB1 (6.7); OR2			
Lecture 20	3	**Topic:** – Validation controls – Debugging ASP .NET pages. **Ref:** TB1 (6.7); OR1			
Lecture 21	3	**Topic** : ASP .NET configuration – Business objects **Ref:** TB1 (A.10); OR2			

Lecture 22	3	**Topic:** HTTP Handlers – Caching in ASP **Ref:** TB1 (A.9); OR3
Lecture 23	3	**Topic:** HTTP Handlers – Caching in ASP **Ref:** TB1 (A.11); OR3
Lecture 24	3	**Topic:** .NET security – Localizing ASP **Ref:** TB1 (A.11, A.12); OR1
Lecture 25	3	**Topic:** NET – ASP .NET security – Localizing ASP **Ref:** TB1 (A.6); OR1
Lecture 26	3	**Topic:** NET – ASP .NET security – Localizing ASP **Ref:** TB1 (A.6); OR2
Lecture 27	3	**Topic** NET applications – Deployment projects.. **Ref:** TB1 (A.6); OR1
Lecture 28	3	**Topic:** NET applications – Deployment projects. **Ref:** TB1 (A.8,A.13); OR1
Lecture 29	4	**Topic:** NET applications – Deployment projects. **Ref:** TB1 (A.7); OR1
Lecture 30	4	**Topic:** .NET security – Localizing ASP **Ref:** TB1 (A.13); OR1
Lecture 31	4	**Topic:** Introduction to web services – Web services Infrastructure **Ref:** TB1 (5.1); OR2
Lecture 32	4	**Topic** SOAP – Building a web service – Deploying **Ref:** TB1 (5.2.1); OR3
Lecture 33	4	**Topic:** publishing web services – Finding web services – Consuming web services. **Ref:** TB1 (5.2.3); OR3
Lecture 34	4	**Topic:** publishing web services – Finding web services – Consuming web services. **Ref:** TB1 (5.2.4, 5.2.5); OR1
Lecture 35	5	**Topic** : Basics of ADO .NET – Changes from ADO **Ref:** TB1 (5.2.6,5.2.7); OR2
Lecture 36	5	**Topic:** – Data Table – Data Views – Data Set **Ref:** TB1 (5.3.1-5.3.4); OR3
Lecture 37	5	**Topic:** Data Relation Type – ADO . **Ref:** TB1 (5.3.5,5.4); OR2
Lecture 38	5	**Topic:** NET Managed Providers **Ref:** TB1 (5.9,5.9.1); OR1
Lecture 39	5	**Topic** OleDb and SQL Managed Providers **Ref:** TB1 (5.9.2); OR1
Lecture 40	5	**Topic** OleDb and SQL Managed Providers **Ref:** TB1 (5.9.3); OR1