Kolhapur Institute of Technology's

College of Engineering, Kolhapur

(An Autonomous Institute)

Syllabus

For

Final Year B.Tech

Information Technology Engineering

Academic Year 2020-2021

SEM-I

Title of the Course: Project Management	**L**	**T**	**P**	**Credit**
Course Code: UITE0701	**2**	**1**	**-**	**3**

Course Pre-Requisite: Fundamentals of Economics and Management, Software Engineering, Software Testing and Quality Assurance

Course Description: This course aims at giving students fundamental knowledge about Project Management and the processes in Project Management

Course Objectives:

CLO-1: To provide students with a basic understanding of project management principles and Practices.
CLO-2: To demonstrate competency in the creation and management of a project plan
CLO-3: To understanding impact of Scope, Time and Cost management.
CLO-4: To understanding the software quality metrics and quality assurance.
CLO-5: To develop strategies to calculate risk factors involved in IT projects.

Course Learning Outcomes:

CO	**After the completion of the course the student should be able to**
CO1	Relate processes used in project management at each stages of project.
CO2	Illustrate the issues and challenges faced while doing project management
CO3	Make use of standard tools and techniques for carrying out different project activities
CO4	Design project management plan for real world problem.

CO-PO Mapping:

CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2												1	
CO2		2												
CO3		2			3						2			2
CO4			3		2								3	

Assessments :

Teacher Assessment:

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one End Semester Examination (ESE) having 20%, 30% and 50% weights respectively.

Assessment	Marks
ISE 1	10
MSE	30
ISE 2	10
ESE	50

ISE 1 and **ISE 2** are based on assignment/declared test/quiz/seminar/Group Discussions etc.
MSE: Assessment is based on 50% of course content (Normally first three modules)
ESE: Assessment is based on 100% course content with 60-70% weightage for course content (normally last three modules) covered after MSE.

Course Contents:	
Unit 1: Introduction to Project Management Project, project management(PM), role of project manager, project management profession, system view of PM, organization, stakeholders, project phases and lifecycle, context of IT projects, process groups, mapping process groups to knowledge areas.	**3 Hrs.**
Unit 2: Project Integration and Scope Management Strategic planning and project selection, preliminary scope statements, project management plans, project execution, monitoring and controlling project work, integrated change control, closing project, software assistance Scope planning and scope management plan scope definition and project scope statement, creating the work breakdown structure, scope verification and control, software assistance.	**5 Hrs.**
Unit 3: Project Time and Cost Management Importance of project schedules, activity - definition, sequencing, resource estimating, duration estimating; schedule development and control, software assistance Importance, basic principles, cost estimating, budgeting and control, software assistance	**5 Hrs.**
Unit 4: Quality Management Importance, Planning Quality Management, Performing Quality Assurance, Controlling Quality, Tools and Techniques for Quality Control, Modern Quality Management, Improving IT Project Quality	**4 Hrs.**
Unit 5: Human Resource management Importance, keys to managing people, human resource planning, acquiring, developing and managing project team, software assistance	**4 Hrs.**
Unit 6: Risk management Importance, risk management planning, sources of risk, risk identification, qualitative and quantitative risk analysis, risk response planning, risk monitoring and control	**3 Hrs.**
Textbooks: 1. Information Technology Project Management, 7E, Kathy Schwalbe, Cengage Learning (India Edition)	
References: 1. IT Project Management, 3 E, Joseph Phillips, McGraw Hill Edu. (India) Pvt. Ltd. 2. Software Project Management, Bob Huges, Mike Cotterell, Rajib Mall, 5/E, Tata McGraw Hill Edu. (India) Pvt. Ltd. 3. Project Management Core Textbook – Mantel Jr., Meredith, Shafer, Sutton, Gopalan (Wiley India Edition). 4. A Guide to the Project Management Body of Knowledge (PMBOK) (5th –Edition) – Newtown Square, PA, Project Management Institute (PMI).	
Term Work: Tutorial work to be considered for awarding of term work marks. *Guidelines for tutorials* Divide the batches into groups as per BE Project batches and ask them to complete tutorials based on your final year project using any of the open source project management tool or Microsoft Project Management 2010 or above trial version available. 8-10 tutorials from the Sample list below should be allocated to the project groups. Faculty will evaluate the performance of the students in the tutorials and assign the term work marks 1. Survey of common project management tools and techniques by knowledge area and Write a report on same. 2. Develop the project charter for project	

3. Collect requirement using different techniques and develop scope of selected project
4. Creating WBS structure of selected project using different approaches
5. Develop project schedule network diagram for project
6. Develop entire schedule of project by estimating activity resources and duration
7. Problems on network diagram and critical path methods
8. Prepare the cost estimate by using any of the cost estimate types
9. Develop the project quality document
10. List and analysis different types of tools and techniques for quality control
11. Identify risk involved in project and prepare risk document

Title of the Course: Mobile Technology Course Code: UITE0702	L	T	P	Credit
	3	-	-	3

Course Pre-Requisite: Data Communication & Networking
TCP/IP Protocol Suite

Course Description: Mobile Technology subject mainly deals with the science of mobile communication. It covers layered approach of mobile communication covering layers such as – data link, network and transport layer. It also introduces the 5G technology and covers aspects such as – cognitive radio, TV white space technology, unified broadcast-broadband and security.

Course Learning Objectives:

To expose students to:

1. Mobile Communication basics & GSM technology
2. Concepts of Network Layer & Transport Layer of Mobile communication
3. Fundamentals of the 5G Mobile Network
4. 5G Mobile Unified Broadcast-Broadband and Security

Course Outcomes:

CO	After the completion of the course the student should be able to
CO1	Explain the basic physical and technical functioning of mobile communications systems
CO2	Describe the basic principles of mobile communication system and summarize the working of network and transport layer in the context of mobility
CO3	Compare principles of the modern mobile and wireless communication systems such as 5G with 3G/4G
CO4	Interpret the issues and challenges in 5G mobile communication network with respect to Unified Broadcast-Broadband architecture and Security

CO-PO Mapping:

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2
CO 1	2												1	
CO 2	1	2											1	
CO 3	1	2											1	
CO 4	1	1											1	

Assessments :

Teacher Assessment:

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one End Semester Examination (ESE) having 20%, 30% and 50% weights respectively.

Assessment	Marks
ISE 1	10
MSE	30
ISE 2	10
ESE	50

ISE 1 and ISE 2 are based on assignment/declared test/quiz/seminar/Group Discussions etc.

MSE: Assessment is based on 50% of course content (Normally first three modules)
ESE: Assessment is based on 100% course content with 60-70% weight age for course content (normally last three modules) covered after MSE.

Course Contents:

Unit 1: Introduction Introduction to Wireless Networks, Applications, History, Simplified Reference Model, Wireless transmission, Frequencies, Signals, Antennas, Signal propagation, Multiplexing, Modulation, Spread spectrum, Cellular Systems: Frequency Management and Channel Assignment, Types of handoff and their characteristics.	**06 Hrs.**
Unit 2: Medium Access Control (MAC) & GSM Telecommunication System MAC, Motivation, SDMA, FDMA, TDMA, CDMA, Telecommunication Systems, GSM: Architecture, Location tracking and call setup, Mobility management, Handover, Security, GSM SMS, International roaming for GSM, call recording functions, subscriber and service data management.	**08 Hrs.**
Unit 3: Mobile Network Layer: IP and Mobile IP Network Layers, Packet Delivery and Handover Management, Location Management, Registration, Tunneling and Encapsulation, Route Optimization, DHCP.	**06 Hrs.**
Unit 4: Mobile Transport Layer Traditional TCP, Indirect TCP, Snooping TCP, Mobile TCP, Fast retransmit / Fast recovery, Transmission / Timeout freezing, Selective retransmission, Transaction Oriented TCP.	**06 Hrs.**
Unit 5: 5G Mobile communication Introduction: 10 Pillars of 5G, concept of small cell, Cognitive radio -overview, spectrum optimization literature, key requirements and challenges for 5G cognitive terminal. Wireless spectrum white spaces – Background, TV white space technology, white space spectrum opportunities and challenges.	**06 Hrs.**
Unit 6: 5G Mobile Unified Broadcast-Broadband and Security Towards a unified 5G Broadcast-Broadband Architecture – Introduction, Background, challenges to be addressed, candidate network architecture for a BC-BB convergent solution. Security for 5Gcommunications – Introduction, Overview of Potential 5G communications, Security issues and challenges in 5G communication systems.	**06 Hrs.**

Textbooks:

1. Jochen Schiller, \Mobile Communication", Pearson Education.
2. Theodore & S. Rappaport, \Wireless Communications, Principles, Practice", PHI.
3. William Stallings, \Wireless Communications and Networks", Pearson Education.
4.Jonathan Rodriguez, Fundamentals of 5G Mobile Networks, First Edition 2015 John Wiley & Sons, Ltd Publication

References:

1. Wireless telecommunications systems and networks / Gary J. Mullett. Cengage Publication.

Title of the Course : PE-III High Performance Computing **Course Code: UITE0721**	**L**	**T**	**P**	**Credit**
	3	-	-	3

Course Pre-Requisite:

Computer Organization 2. Computer Algorithms

Course Description: This course covers the design of advanced modern computing systems. In particular parallel computers and their architectures. It also helps users to choose different parallel programming models for different applications. In this course students are exposed parallel programming tools such as openMP, MPI and CUDA through which simple parallel programs can be written.

Course Learning Objectives:

1. To introduce the current trends in computer architecture and programming model.
2. To understand and appreciate parallel program design methodologies.
3. To solve basic parallel problems using MPI, OpenMp and GPU.

Course Outcomes:

CO	**After the completion of the course the student should be able to**
CO1	Explain different parallel architectures models and terminologies of high performance computing
CO2	Choose design methodologies and parallel algorithms for optimization of real world problems.
CO3	Write and analyze the behaviour of high performance parallel programs for distributed memory architectures using MPI, Pthreads and OpenMP and can write simple programs for the GPU.

CO-PO Mapping:

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	-	-	-	-	-	-	-	-	-	-	-
CO2	-	2	2	2	-	-	-	-	-	-	-	-
CO3	3	3	2	2	2	-	-	-	-	-	-	-

CO-PSO Mapping:

CO	PSO 1	PSO 2
CO1	-	-
CO2	2	2
CO3	-	3

Assessments :

Teacher Assessment:

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one End Semester Examination (ESE) having 20%, 30% and 50% weights respectively.

Assessment	Marks
ISE 1	10
MSE	30
ISE 2	10
ESE	50

ISE 1 and ISE 2 are based on assignment/declared test/quiz/seminar/Group Discussions etc.
MSE: Assessment is based on 50% of course content (Normally first three modules)
ESE: Assessment is based on 100% course content with60-70% weightage for course content (normally last three modules) covered after MSE.

Course Contents:

UNIT I: Introduction to Parallel hardware and software, need for high performance systems and Parallel Programming, SISD, SIMD, MISD, MIMD models, Performance issues.	06 **Hrs.**
UNIT II: Processors, PThreads, Thread Creation, Passing arguments to Thread function, Simple matrix multiplication using Pthreads, critical sections, mutexes, semaphores, barriers and conditional variables, locks, thread safety, simple programming assignments.	08 **Hrs.**
UNIT III: Open MP Programming: introduction, reduction clause, parallel for-loop scheduling, atomic directive, critical sections and locks, private directive, Programming assignments, n body solvers using openMP	06 **Hrs.**
UNIT IV: Introduction to MPI programming: MPI primitives such as MPI_Send, MPI-Recv, MPI_Init, MPI-Finalize, etc., Application of MPI to Trepizoidal rule, Collective Communication primitives in MPI, MPI derived data types, Performance evaluation of MPI programs, Parallel sorting algorithms, Tree search solved using MPI, Programming Assignments.	08 **Hrs.**
UNIT V: Introduction to GPU computing, Graphics pipelines, GPGPU, Data Parallelism and CUDA C Programming, CUDA Threads Organization, Simple Matrix multiplication using CUDA, CUDA memories.	06 **Hrs.**
UNIT VI: Bench Marking and Tools for High Performance Computing Environments, Numerical Linear Algebra Routines BLAS for Parallel Systems evaluation.	04 **Hrs.**

Textbooks:

An Introduction to Parallel Programming, Peter S Pacheco, Elsevier, 2011

1. Programming Massively Parallel Processors, Kirk & Hwu, Elsevier, 2012

References:

CUDA by example: An introduction to General Purpose GPU Programming, Jason, Sanders, Edward Kandrit, Perason, 2011

1. CUDA Programming, Shame Cook, Elsevier
2. High Performance Heterogeneous Computing, Jack Dongarra, Alexey & Lastovetsky , Wiley
3. Parallel computing theory and practice, Michel J.Quinn, TMH

Title of the Course: PE-III Software Defined Network Course Code: UITE0722	L	T	P	Credit
	3	-	-	3

Course Prerequisite: Computer Networks.

Course Description: This course gives insights of programmable network management technology.

Course Learning Objectives: Students will be exposed to:-

1. The concept of Software Defined Network (SDN) vs Traditional Network.
2. Fundamental Characteristics of SDN.
3. Specification of Open Flow.
4. Application of SDN.

Course Outcomes:

CO	After the completion of the course the student should beable to
CO1	Define Software Defined Network.
CO 2	Explain fundamental concepts of SDN.
CO3	Interpret OpenFlow Specification and its limitations.
CO4	Evaluate the network virtualization functions.

CO-PO Mapping:

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2
CO1		2												
CO2	2												2	
CO3		2			1								2	
CO4			2										2	1

Assessments :

Teacher Assessment:

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one EndSemester Examination (ESE) having 20%, 30% and 50% weights respectively.

Assessment	Marks
ISE 1	10
MSE	30
ISE 2	10
ESE	50

ISE 1 and ISE 2 are based on assignment/declared test/quiz/seminar/Group Discussions etc.
MSE: Assessment is based on 50% of course content (Normally first three modules)
ESE: Assessment is based on 100% course content with 60-70% weightage for course content (normally last three modules) covered after MSE.

Course Contents:

Unit 1:- Introduction to Networking: OSI layers; TCP/IP Protocol Suite; Distance vector and link state routing algorithms, Network protocols (ARP, BGP, OSPF, RIP, ICMP) and network topologies, limitations of traditional network.	6**Hrs.**
Unit 2:- Introduction to SDN: Overview of Traditional Networks and limitations,History and evolution of SDN, Architecture of SDN, Control plane and data plane separation, Advantages and Disadvantages.	8 **Hrs.**
Unit 3:- Working of SDN: Fundamental Characteristics of SDN, SDNOperation, SDN Devices, SDN Controller, SDN Applications, Network virtualization.	7 **Hrs.**
Unit 4:- Open Flow: Introduction, wire protocol, Replication, FAWG (Forwarding Abstraction Workgroup), configuration and Extensibility, Architecture, Open Flow Limitations.	7 **Hrs.**

Unit 5:-Network Function Virtualization: Introduction of NFV, Need of NFV, NFV Framework, NFV Architecture, NFV Management and Orchestration, NFV and SDN.	7 **Hrs.**
Unit 6:-SDN Applications: Using the Floodlight Controller, Using the OpenDaylight Controller,Use Cases of SDNs: Backbone Networks, Home Network , Traffic Engineering.	**6 Hrs.**

Textbooks:

1. Paul Goransson and Chuck Black, "Software Defined Networks: A Comprehensive Approach", Morgan Kaufmann, 2014.
2. SDN: Software Defined Networks, An Authoritative Review of NetworkProgrammability Technologies, By Thomas D. Nadeau, Ken Gray Publisher: O'Reilly Media

References:

1 SiamakAzodolmolky, "Software Defined Networking with OpenFlow", Packt Publishing, 2013
2 Kingston Smiler, "OpenFlow® Cookbook", Packt Publishing, 2015
3 Doug Marschke, Jeff Doyle, Pete Moyer, "Software Defined Networking (SDN): Anatomy of OpenFlow® Volume I". Lulu Publishing Services, 2015

Title of the Course: PE-III Digital Image Processing Course Code: UITE0723	L	T	P	Credit
	3	-	-	3

Course Prerequisite:

1. Linear Algebra
2. Calculus
3. Programming in C

Course Description: This course aims to introduce fundamental concepts of Digital Image processing. It will start with representation of images, data structures and eventually go towards standard image processing tasks such as various image enhancement, restoration, image compression, etc. It will also include some advanced topics such as Image segmentation techniques

Course Objectives:

1. To introduce the student to various image processing techniques.
2. To cover basic analytical methods which are widely used in image processing.
3. To encourage to apply image processing algorithms to real problems.

Course Learning Outcomes:

CO	After the completion of the course the student should be able to
CO1	Explain the image processing fundamentals
CO2	Summarize different image pre-processing and filtering techniques to enhance the image quality
CO3	Apply image compression and segmentation Techniques.
CO4	Make use of image processing techniques for solving problems in computer science

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2											
CO2	2	2										
CO3	2											
CO4		2	3	2								

Assessments :

Teacher Assessment:

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one EndSemester Examination (ESE) having 20%, 30% and 50% weights respectively.

Assessment	Marks
ISE 1	10
MSE	30
ISE 2	10
ESE	50

ISE 1 and ISE 2 are based on assignment/declared test/quiz/seminar/Group Discussions etc.
MSE: Assessment is based on 50% of course content (Normally first three modules)
ESE: Assessment is based on 100% course content with60-70% weightage for course content (normally last three modules) covered after MSE.

Course Contents:

Unit 1:- Introduction	7 Hrs
What is Image processing? Examples. Fundamental Steps in Digital Image	

Processing, Components of an Image Processing System, Sampling and Quantization, Representing Digital Images (Data structure), Some Basic Relationships Between Pixels- Neighbors and Connectivity of pixels in image	
Unit 2:-Image Enhancement in the Spatial Domain: Some basic Gray level Transformations, Histogram Processing, Enhancement using Arithmetic/Logic Operations, Spatial Filtering, Smoothing Spatial Filters, Sharpening Spatial Filters, Combining Spatial Enhancement methods.	**6 Hrs**
Unit 3:-Image Enhancement in the Frequency Domain: Fourier Transform and the Frequency Domain, Smoothing Frequency-Domain Filters, Sharpening Frequency Domain Filters, Homomorphism Filtering, Implementation.	**6 Hrs.**
Unit 4:-Image Restoration: Image Degradation/Restoration Process, Linear, Position-Invariant Degradations, Inverse Filtering, Minimum, Mean Square Error (Wiener) Filtering, Constrained Least Squares Filtering. Wavelets and MultiResolution Processing : MultiResolution Expansions, Wavelet Transforms in One dimension, The Fast Wavelet Transform, Wavelet Transforms in Two Dimensions.	**7 Hrs.**
Unit 5 :-Image Compression: Image Compression: Image Compression Models, Error-Free Compression, Lossy Compression, Image Compression Standards. Image Segmentation: Detection of Discontinuities, Edge Linking and Boundary Detection, Thresholding, Region-Based Segmentation.	**7 Hrs.**
Unit 6:- Image Segmentation: Introduction, Detection of isolated points, line detection, Edge detection, Edge linking, Region based segmentation- Region growing, split and merge technique, local processing, regional processing, Hough transform, Segmentation using Threshold.	**7 Hrs.**
Textbooks: 1. Rafael C.Gonzalez, Richard E. Woods; "Digital Image Processing 'Addison Wesley Pubs (Second Edition), 2007. 2. Milan Sonka, Vaclav Hlavac, Roger Boyle Image Processing. Analysis, and Machine Vision (Second Edition, 2003).	
References: 1. Fundamentals of Digital Image Processing- Anil K. Jain, 2nd Edition, Prentice Hall of India. 2. S. Sridhar, Digital Image Processing, Oxford University Press, 2nd Ed, 2016. Module 6: To extract features in the image using segmentation techniques	

Title of the Course: Ethical Hacking Course Code: UOEL0721	L	T	P	Credit
	3	-	-	3

Course Pre-Requisite:

1. Basics of Computer System 2. Hands on Internet Applications

Course Description: Ethical hacking course is designed to help learners to develop a deeper understanding of threats to information system. We hope learners will develop a lifelong passion and appreciation for ethical hacking, which we are certain will help in future endeavours. Students will benefit from this learning experience. Almost all aspects of security are covered in this course.

Course Objectives:

1. To make students familiar with basics of Information system security
2. To make students familiar with different types of security threats
3. To make students familiar with ethical hacking steps taken to assess the security
4. To make aware students about security issues wired and wireless environment

Course Learning Outcomes:

CO	After the completion of the course the student should be able to
CO1	Define the basic concepts of components of Information and systems security along and hacking.
CO2	Explain Footprinting,Reconnaissance,Network Scanning, Vulnerability Assessment, System Hacking,Mulware Threats
CO3	Describe Sniffing and Social Engineering tools and techniques
CO4	Explain Session Hijacking , Firewall and IDS ,Honeypot, Web Server and web applications security issues with SQL injection
CO5	Describe Hacking Wireless Network and Mobile Platform like Android,iOS,Balckberry

CO-PO Mapping:

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3							1				1
CO2	2				2			1				1
CO3	2				2			1				1
CO4	2				2			1				1
CO5	2				2			1				1

Assessments :

Teacher Assessment:

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one EndSemester Examination (ESE) having 20%, 30% and 50% weights respectively.

Assessment	Marks
ISE 1	10
MSE	30
ISE 2	10

ESE	50

ISE 1 and ISE 2 are based on assignment/declared test/quiz/seminar/Group Discussions etc.
MSE: Assessment is based on 50% of course content (Normally first three modules)
ESE: Assessment is based on 100% course content with60-70% weightage for course content (normally last three modules) covered after MSE.

Course Contents:

Unit 1: Introduction to Ethical Hacking Essential Terminology, Elements of Information Security, The Security, Functionality, and Usability Triangle, Top Information Security Attack Vectors, Information Security Threat Categories, Types of Attacks on a System, Information Warfare, Hacking Concept and Scope, Vulnerability Assessment, Penetration Testing	05 **Hrs.**
Unit 2: Footprinting and Reconnaissance FootprintingConcept,Footprinting Methodology, Overview of Network Scanning, Scanning Methodology, Vulnerability Assessment Concept, System Hacking, Mulware Threats	06 **Hrs.**
Unit 3: Sniffing and Social Engineering Sniffing Concepts, MAC attacks,DHCP attacks,ARP Poisoning, Spoofing Attack,DNS Poisoning,Sniffing Tools,Social Engineering Concepts and Techniques,Impersonation on Social Networking Site, Identity Theft	08 **Hrs.**
Unit 4: Sesion Hijacking and Firewall and Web Server IDS and Firewall Concepts and System,Evading IDS,Firewall, Web Server Concepts and attacks, Attack Methodology,Countermeasures,Patch Management	**07 Hrs.**
Unit 5: Web Application Hacking and SQL Injection Web App concepts and attack methodology, Countermeasures ,SQL Injection methodology , SQL Injection Techniques	07 **Hrs.**
Unit 6: Hacking Wireless Network and Mobile Platform Wireless Concept,Wireless Encryption, Wireless Threats,Hacking Methodology, Bluetooth Hacking, Wireless Security Tool, Mobile Platform Attack Vector, Hacking Android, iOS ,Blackberry, Understanding IoT Attack	07 **Hrs.**

Textbooks:

1. CEH V10: EC-Council Certified Ethical Hacker Complete Training Guide by IPSpecialist

References:

1.CEH v10 Certified Ethical Hacker Study Guide,Ric Messier, CEH, GCIH, GSEC, CISSP,SYBEX Publication

Title of the Course: Software Systems **Course Code: UOEL0722**	**L**	**T**	**P**	**Credit**
	1	**-**		**3**

Course Pre-Requisite: :

Course Description: In Software Systems students will learn necessary tools and techniques required for report writing and project management. This course will empower students with knowledge and practices that will help student in versioning project, testing authenticity of work, generating reports
and developing build for deployment of project.

Course Learning Objective To give exposure to students

1. Various research project report writing tools.
2. Checking research work for genuinely and authenticity.
3. Different project management tools which can be used to track and manage progress of project.

Course Learning Outcome:

CO	After the completion of the course the student should be able to
CO 1	Select research project report writing tools.
CO 2	Make use of plagiarism testing tools for checking research work for genuinely and authenticity.
CO3	Make use project management tools to track and manage progress of project.

CO-PO Mapping:

CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1					2							
CO2					3			2				
CO3											2	

Assessments :

Teacher Assessment:

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one End Semester Examination (ESE) having 20%, 30% and 50% weights respectively. ISE 1 and ISE 2 are based on assignment/declared test/quiz/seminar/Group Discussions etc.
MSE: Assessment is based on 50% of course content (Normally first three modules)
ESE: Assessment is based on 100% course content with 60-70% weightage for course content (normally last three modules) covered after MSE.

Assessment	Marks
ISE 1	10
MSE	30
ISE 2	10

ESE	50

Course Contents:	
Unit 1:--Effective Report Writing: LateX- using document classes. Inserting graphics, tables, references, TikZ- creating diagrams- flowcharts, workflow etc.	6 Hrs.
Unit 2:-- Language Checking Tools: Language Checking - grammar correction in document, proper use of verbs according to subject, Proper use of articles. Use of active and passive voice. use of tools like grammarly.	2 Hrs.
Unit 3:---Plagiarism Detection-what is plagiarism, how to test article for plagiarism, avoiding self plagiarism, use of tools like viper, turnitin, ithenticate etc.	3 Hrs.
Unit 4:---Project Management Tools: Maintaining project versions using branching technique. use of tools like git, svnetc to manage project progress. Project Tracking Techniques- such as Agile, SCRUM	5 Hrs.
Unit 5:--Data Visualization and Analysis Techniques: Use of R and python for data analysis, use of PyPlot, GNUPlot for data visualization and analysis technique.	4 Hrs.
Unit 6:--Build Management Systems: Study of various build management systems- such as make, make install, WAF, configure etc.	4 Hrs.
Textbooks: 1. LaTeX: A Document Preparation System (2nd Edition)by Leslie Lamport 2. Learning Agile by Andrew Stellman& Jennifer Greene 3. Learning Python: Powerful Object-Oriented Programming 4th Edition by Mark Lutz 4. R for Data Science: Import, Tidy, Transform, Visualize, and Model Data 1st Edition by Hadley Wickham, Garrett Grolemund	
References: 1. Git online documentation. https://git-scm.com/docs/git-help 2. Pyplot onlinedocumentationhttps://matplotlib.org/api/pyplot_api.html	

Title of the Course: Mobile Application Development	L	T	P	Credits
Course Code: UITE0731	2	---	2	2

Course Pre-Requisite: Object Oriented Programming, Java and Database.

Course Objectives:

1. To describe android architecture and the tools for developing android Applications.
2. To create an android application.
3. To design the user interfaces used in android applications
4. To deploy android application on app market

Course Outcomes:

COs	After the completion of the course the student will be able to
CO1	Describe android architecture and the tools for developing android Applications.
CO2	Write program and create an android application.
CO3	Design user interfaces used in android applications.
CO4	Deploy their android applications.

CO-PO Mapping:

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	3				3									
CO2		3	3	2									2	
CO3		3	2	3	3									2
CO4						3		3			2	1		

Assessments :

Teacher Assessment:

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one End Semester Examination (ESE) having 20%, 30% and 50% weights respectively.

Assessment	Marks
ISE	50
ESE (POE)	50

ISE will be based on assignment/declared test/quiz/seminar/Group Discussions etc.
ESE: Assessment is based on 100% course content with60-70% weight course content.

Course Contents:

Unit 1: Android Overview Overview of Android, History, Android Versions, Android OS stack: Linux kernel, Native Libraries/DVM, Application Framework, Applications, Activity, Activity lifecycle, Fragments, Activity Back Stack, Process and Threads.	3 **Hrs.**
Unit 2: Android Development Environment Introduction to Android SDK, Android Emulator, Creating a Project, Project Directory Structure, Logging in Android (Logcat), Managing Exception with Logcat, Android Manifest File, Android Resources and Resource Directories, Permissions.	3 **Hrs.**
Unit 3: Intents and Layouts	5 **Hrs.**

XML, Android View Hierarchies, Linear Layouts, Relative Layout, Table Layout, Frame Layout, Padding and Margins with Layouts. What Is Intent? Implicit & Explicit Intents, Android Intent Messaging via Intent Objects, Using Intents with Activities, Sending Intents (Telephony, SMS), Broadcast Receivers.	
Unit 4: Input Controls, Input Events, Dialogs Buttons, Text Fields, Checkboxes, Radio Buttons, Toggle Buttons, Custom List, Grids, Spinners, Event Listeners, AsyncTasks. Event Handlers, Touch Mode, Handling Focus, Dialogs: Alerts, Custom Dialogs, Toasts.	7 **Hrs.**
Unit 5: Menus, Notification and Action Bar Menus, Options menu, Context menu, Popup menu, Handling menu click events, Creating a Notification, Notification actions, Notification priority, Managing Notifications, Removing notifications.	5 **Hrs.**
Unit 6: Android SQLite and App Market Installing SQLite plugin, DbHelper, The Database Schema and Its Creation, Four Major Operations, Adding External Libraries to android.	5 **Hrs.**
Text Books: 1. Beginning Android application development by Wei-Mag Lee. 2. Learning Android by Marko Gargenta Publisher: O'Reilly Media **Reference Books:** 1. Professional Android 4 Application Development by Reto Meier Publisher: Wiley India. 2. Android in Action Third Edition by W.Frank Ableson,Robi Sen, Chris King, C. Enrique Ortiz. 3. The Android Developer's Cook book "Building Applications with the Android SDK" by James Steele.	
List of Experiments:	**Hours**
Experiment No.1: Installation and Configuration of Android App Development Environment.	**02 Hrs.**
Experiment No.2: Study of Android Activity lifecycle	**02 Hrs.**
Experiment No.3: Design of Android User interfaces using XML layouts	**02 Hrs.**
Experiment No.4: Android explicit Intents	**02 Hrs.**
Experiment No.5: Android implicit Intents	**02 Hrs.**
Experiment No.6: Implementation of User login and registration using button Event handling	**02 Hrs.**
Experiment No.7: Event Handling for other controls with asyn	**02 Hrs.**
Experiment No.8: Creating broadcast receiver in androids and responding to broadcast messages	**02 Hrs.**
Experiment No.9: Creating Notifications in android	**02 Hrs.**
Experiment No.10: Writing custom broadcast messages and receiving them	**02 Hrs.**
Experiment No.11: Experiment based on database handling using SQLite through android form.(Insert, Update, Delete Records)	**02 Hrs.**

Title of the Course: Web Technology-I Lab Course Code: UITE0732	L	T	P	Credit
	2		2	3

Course Pre-Requisite: Application Development Tool-II

Course Description:

This course introduces design and development of web application. .Upon completion, students should be able to design and develop web applications using HTML, CSS, JavaScript, Servlet and JSP.

Course Learning Objectives:

To expose students to:

1. To introduce students to HTML/CSS for front end design
2. To introduce students to perform client side form validation
3. To introduce students to different server side web programming languages and technologies
4. To enable students to write web applications/services using different technologies

Course Outcomes:

CO	After the completion of the course the student should be able to
CO1	Apply knowledge of different HTML/CSS elements for designing web pages.
CO2	Construct client side scripts for validating HTML form data using Javascript technology
CO3	Make use of different server side technologies
CO4	Develop web applications using HTML/CSS/JavaScript/Server side technologies

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	P
CO1			2		3								1	
CO2	1	1	3	2	1			1					2	
CO3	1	1	3	2	3			1					3	
CO4	2	2	3		3			2	3	2	3	2	3	

Assessments :

Teacher Assessment:

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one End Semester Examination (ESE) having 20%, 30% and 50% weights respectively.

Assessment	Marks
ISE	50
ESE	50

ISE 1 and ISE 2 are based on assignment/declared test/quiz/practical etc.

MSE: Assessment is based on 50% of course content (Normally first three modules)

ESE: Assessment is based on 100% course content with 60-70% weight age for course content (normally last three modules) covered after MSE.

Course Contents:

Unit 1: Introduction to HTML • Basic Structure of html code • Writing First Code, Running & Editing • Introduction of properties/attribute & its syntax. • font Formatting, Built In Headings • <img>,<marquee> tags, hyperlink, properties of body & paragraph • Ordered list & unordered list • HTML Form controls & properties • Layout management with table, div, & span • Some HTML 5 tags and attributes. • video & audio tag	**05 Hrs.**
Unit 2: CSS and Bootstrap • Introduction Of CSS • Different ways to use CSS. • Different type of selector • Transition & Animations • Responsive Website • Bootstrap: grid layout, table, form.	**04 Hrs.**
Unit 3: JavaScript • Introduction to javascript • Basic program of javascript • Function & Some data types like array, object • Event In Javascript • Validating HTML form data using javascript • Jquery Introduction • Selectors in Jquery	**05 Hrs.**
Unit 4: Servlet • The Servlet API, Page Generation, Server-Side Includes • The servlet Lifecycle : The Servlet Alternative, Servlet Reloading, Init and Destroy, Single-Thread Model, Background Processing • Session Tracking • Database connectivity	**06 Hrs.**
Unit 5: Basic of JSP • Introduction • Jsp LifeCycle • Jsp Implicit Objects & Scopes • Jsp Directives: 1.page,2.include, 3.taglib	**04 Hrs.**
Unit 6: JSP Scripting Elements and Actions • **Scripting Elements**: Declaratives, Scriptlets and Expressions • **JSP Action**: forward, include, useBean, setProperty, getProperty • **Database Connectivity with relational database**	**04 Hrs.**

Textbooks:

1. Pro HTML5 and CSS3 Design Patterns by Michael Bowers, Dionysios Synodinos and Victor Sumner, Apress edition
2. Java Servlet Programming by Jason Hunter, O'Reilly Publication, 1st Edition
3. Core-Servlet and JavaServer Pages Volume – 1, by Marty Hall, Larry Brown, Pearson Education 2nd Edition

References:

1. Head First Servlets and JSP: Passing the Sun Certified Web Component Developer Exam -2nd Edition-Bryan Basham, Kathy Sierra, Bert Bates- O'REILLY.

Experiment List:

Sr. No.	Experiment Name
1	Design web pages for Home Page, Login, Registration and about us using HTML
2	Design Web Pages for Home Page, Login, Registration and about us using CSS
3	Construct client side scripts to validate HTML form data using Javascript technology
4	Develop a convertor using JavaScript and HTML[e.g. length, area convertor]
5	Design Simple responsive website using Bootstrap technology
6	Installation and Configuration of Apache Tomacat Server
7	Deployment of simple servlet application
8	Servlet DB Connectivity- Develop servlet application to insert Student information into RDBM
9	Write a servlet to search and retrive data from relational database management system
10	Develop a simple application for session management using Servlet
11	Develop a simple web application for user Registration using JSP
12	Develop a JSP application to update information in RDBMS
13	Develop Web Application to accept student roll number from user & delete record of that roll number from database using JSP
14	Develop simple Application using JSP to demonstrate Cookies management
15	Develop a JSP application to input book information and store in the database. Application mus provide facility to search book based on title of book, and author

Title of the Course: Software Testing and Quality Assurance Lab Course Code: UITE0733	L	T	P	Credit
	1	-	2	2

Course Pre-Requisite: Software Engineering

Course Description: This course provides **basic concepts, principles and types of software Testing.**

Course Learning Objectives:

1. To provide knowledge about fundamentals of software testing and software quality.
2. To understand and evaluate metrics and models used in software testing.
3. To understand automated data generation for Software Testing.
4. To understand web application Testing.

CO	After the completion of the course the student should be able to
CO1	Explain basic concepts of Software Testing, Software Quality, Software verification models.
CO2	Select appropriate metrics for evaluation of software projects.
CO3	Construct Test cases, SRS and various technical documents.
CO4	Build test data using Automation Tools.
CO5	Make use of Automation Tools for testing various types of S/W applications.

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3		2										
CO2	1	2	3	1										
CO3		2	3										2	
CO4	1	2	3	2									3	
CO5			3		3			2				2	3	

Assessments :

Teacher Assessment:

One component of In Semester Evaluation (ISE) and one End Semester Examination (ESE-POE) 50% and 50% weights respectively.

Assessment	Marks
ISE	50
ESE(POE)	50

ISE is based on Experiments/assignment/declared test/quiz/seminar/Group Discussions etc. ESE (POE): Assessment is based on 100% course content.

Course Contents:

Unit 1. Introduction Some Software Failures, Testing Process, Some Terminologies, Limitations of Testing, The V Shaped software life cycle model.	**2 Hrs.**

Unit 2. Software Verification Verification Methods, SRS document verification, SDD document verification, Source code reviews, User documentation verification, Software project audit.	**3 Hrs.**
Unit 3. Regression Testing What is regression testing? Regression Test cases selection, Reducing the number of test cases, Risk analysis, Code coverage prioritization techniques.	**3 Hrs.**
Unit 4. Measurement - what is it and why do it? Measurement in everyday life, Measurement in software engineering, scope of software metrics	**2 Hrs.**
Unit 5. Measuring Internal Product Attribute Size Aspects of software size, Length, Reuse, Functionality, External product attributes.	**1 Hrs.**
Unit 6. Testing Web applications What is web testing? functional testing, UI testing, Usability testing, configurations and compatibility testing, security testing, performance testing, database testing, post deployment testing, web metrics.	**4 Hrs.**

Text Books:

1) Software testing: Yogesh Singh, Cambridge University Press, First Edition
2) Software Metrics – A Rigorous & Practical approach: Norman Fenton, Shari Lawrence Pfleeger, 2nd Edition (Thomson Press) (for unit 4 Measurement-what is it and why do it? and unit 5)
3) Software Quality Engineering , Jeff Tian , Wiley India Ltd.

Reference Books:

1) Foundations of Software testing: Aditya P. Mathur, Pearson, Second Edition
2) Software Testing: Ron Patton, Pearson (SAMS), Second Edition
3) Software Quality, Mordechai Ben Menachem, Garry S. Marliss, BS Publications

Experiment List Students have to perform experiments based on following concepts

Experiment No. 1:

To study V Shaped SDLC, Testing Process and Types of Testing.

Experiment No. 2:

Creating test cases from SRS and Use cases.

Experiment No. 3:

Generating validity checks, strategies for data validity, Database testing.

Experiment No. 4:

Object oriented testing: Path testing, State based testing, Class testing.

Experiment No. 5: Metrics and Models in Software testing: Software Metrics, Categories of Metrics. Object oriented Metrics used in testing.
Experiment No. 6: Software Quality attributes & prediction models, Measuring External product attributes.
Experiment No. 7: Web testing: functional testing, UI testing, Usability testing, configurations and compatibility testing.
Experiment No. 8: Security testing, performance testing, database testing and post deployment testing.
Experiment No. 9: Automated Test Data generation, Approaches to test data generation.
Experiment No. 10: Test Data generation Tools.

SEM-II

Title of the Course: Web Technology II Course Code: UITE0801	L	T	P	Credit
	2	-	-	2

Course Prerequisite: Application Development Tool-II
Web Technology - I

Course Description: This course is design to develop web applications in ASP.NET and PHP. Upon completion, students should be able to design and develop web applications using ASP.NET and PHP technology.

Course Learning Objectives:

To expose students to:

1. ASP.NET Web Form Structure
2. ASP.NET Web Server Controls and Validation Controls.
3. Database connectivity using ADO.NET
4. PHP with MYSQL

Course Outcomes:

CO	After the completion of the course the student should be able to	Bloom's Cognitive	
		Level	Descriptor
CO1	Explain ASP.NET Framework, Web Server Controls	2	Understanding
CO2	Illustrate session management and database connectivity using ADO.NET	2	Understanding
CO3	Explain PHP for web development	1,2	Understanding
CO4	Distinguish between ASP.NET and PHP	4	Analyzing

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2			3								2	
CO2		2			3								2	
CO3		2	2		3							2	2	
CO4		2			3							2	2	
Avg.		2	2		3							2	2	

Assessments :

Teacher Assessment:

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one End Semester Examination (ESE) having 20%, 30% and 50% weights respectively.

Assessment	Marks
ISE 1	10
MSE	30
ISE 2	10
ESE	50

ISE 1 and ISE 2 are based on assignment/declared test/quiz/practical etc.

MSE: Assessment is based on 50% of course content (Normally first three modules)

ESE: Assessment is based on 100% course content with 60-70% weight age for course content (normally last three modules) covered after MSE.

Course Contents:

Unit 1: Introduction to ASP.NET Difference between ASP & ASP.NET,ASP.NET IDE, Creation of web forms, ASP.NET web server controls-label, textbox, button, dropdown list, checkbox, radio buttons, list box, calendar, file upload, Image, Table, Hyperlink, Placeholder, bulleted list, ASP.NET	**06 Hrs.**

Validation Controls.	
Unit 2: Cookies, Application, Session and server objects What are cookies, advantage of cookies, creation of cookies, persistent and non-persistent cookies, removing cookies, session objects-using session variable, application object- using application variable, initializing session and application variable, creating global.asax file, server object- Methods-CreateObject, Execute, HTML Encode, MapPath, Transfer, web.config introduction.	**06 Hrs.**
Unit 3: Data Management with ADO.NET Basic ADO.NET Features, Common ADO.NET Tasks, Using the Connection Object, Using the Command Object, Using the Data Reader object, Understanding DataSet and Data table, Binding data with data grid, accessing and manipulating data using command object, Data Bind Controls.	**06 Hrs.**
Unit 4: Introducing PHP Introduction to PHP for Web Development & Web Applications, Installation of tools for working in PHP like XAMPP, WAMP, LAMP, Basic Syntax, User Defined Variables and Built in Variables, Super Global Variables, Control Statement and loop, Embedding PHP in HTML, Introduction of arrays, Types of arrays in PHP	**06 Hrs.**
Unit 5: Object-Oriented PHP Benefits of OOP, Key OOP Concepts, Defining user function, passing parameter and return values, Include and Require, Formatting string, Joining and splitting string, comparing strings, other string functions, Working with HTML Forms, Validating forms, Uploading Files With PHP.	**06 Hrs.**
Unit 6: Using PHP with MYSQL Using the mysqli extension, Interacting with Database, Executing Database Transaction- Implementing insert, update, delete and select query, Working with Sessions, Practical Session-Handling Examples	**06 Hrs.**
Textbooks: 1. Professional ASP.NET 4.5 in C# and VB- published by John Wiley & Sons, Inc.(WROX) 2. Beginning PHP and MYSQL: From Novice to Professional, Fourth Edition- W.Jason Gilmore	
References: 1. ASP.NET 4.5 COVERS C# 2012 and VB 2012 CODES-black book- Kogent Learning Solutions Inc. Dreamtech press 2. Teach Yourself PHP, MYSQL, APACHE-Julie C Meloni[SAMS Publication] 3. PHP5 and MySQL Bible Tim Converse, Joyce Park, Clark Morgan	

Title of the Course: Data Analytics	L	T	P	Credit
Course Code: UITE0802	3	--	--	3

Course Pre-Requisite: Basics of data warehousing and data mining

Course Description:

Course Learning Objectives:

1. Understand Business Intelligence, decision support systems in Data warehouse
2. Study the statistical Data analysis techniques for data preparation and exploration
3. Use data mining tasks for performing data analysis

Course Outcomes:

CO	After the completion of the course the student should be able to
CO1	Demonstrate the knowledge of statistical data analysis used in data analytics
CO2	Identify appropriate data analysis technique for the analysis tasks**.**
CO3	Analyze supervised and unsupervised learning techniques for data analysis

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		2												
CO2	1		1		2							1		
CO3		2			3								2	

Assessments :

Teacher Assessment:

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one EndSemester Examination (ESE) having 20%, 30% and 50% weights respectively.

Assessment	Marks
ISE 1	10
MSE	30
ISE 2	10
ESE	50

ISE 1 and ISE 2 are based on assignment/declared test/quiz/seminar/Group Discussions etc.
MSE: Assessment is based on 50% of course content (Normally first three modules)
ESE: Assessment is based on 100% course content with60-70% weightage for course content (normally last three modules) covered after MSE.

Course Contents:

UNIT-I : Introduction: Business intelligence, Decision Support System and Data mining	**04 Hrs.**
UNIT-II: Pre-processing of Data : Mathematical models , data mining, data prepar data exploration	**08 Hrs.**
UNIT-III: Inferential Statistics : Inferential Statistics through hypothesis tests, Permutation & Randomization Test **Regression & ANOVA :** Regression, ANOVA(Analysis of Variance)	**06 Hrs.**
UNIT-IV: Machine Learning: Differentiating algorithmic and model based frameworks, Regression : Ordinary Least Squares, Ridge Regression, Lasso Regression, K Nearest Neighbors, Regression & Classification	**06 Hrs.**
UNIT-V: Supervised Learning techniques : Model Validation Approaches, Logistic Regression, Linear Discriminant Analysis, Quadratic Discriminant Analysis, Regression andClassification Trees, Support Vector Machines, Ensemble Methods: Random Forest, Neural Networks, Deep learning	**08 Hrs.**
UNIT-VI: Unsupervised Learning techniques: Clustering, Associative Rule Mining, Reinforcement Learning	**06 Hrs.**

Textbooks:

1. Business Intelligence- Data Mining and optimization for Decision Making- Carlo Vercellis- Wiley Publications.
2. Data mining Introductory and Advanced topics- Margaret H. Dunham- Pearson
3. James, G., D. Witten, T. Hastie, and R. Tibshirani, An Introduction to Statistical learning with Application to R, Springer, New York. 2013

References:

1. Data Mining: Concepts and Techniques Second Edition- Jiawei Han and Micheline Kamber- Morgan KaufMan Publisher.
2. DATA MINING AND ANALYSIS Fundamental Concepts and Algorithms- MOHAMMED J. ZAKI and WAGNER MEIRA JR.- Cambridge University Press

Unit wise Measurable students Learning Outcomes:

1. Students will be able to understand the role of data analytics in BIS and DSS
2. Students will be able to Understand and apply different techniques for data preparation and data exploration
3. Students will be able to perform inferential analysis
4. Students will be able to apply machine learning techniques for data analysis
5. Students will be able to analyze different supervised learning techniques
6. Students will be able to analyze different unsupervised learning techniques

Title of the Course: Web Technology-II Lab Course Code: UITE0831	L	T	P	Credit
	-	-	2	1

Course Pre-Requisite: Application Development Tool-II
Web Technology - I

Course Description: Web Technology subject mainly deals with emerging web technology concepts and tools. It covers PHP and ASP.NET Technology.

Course Learning Objectives:

To expose students to:

1. ASP.NET Web Form Structure
2. ASP.NET Web Server Controls and Validation Controls.
3. Database connectivity using ADO.NET
4. PHP with MYSQL

Course Outcomes:

CO	After the completion of the course the student should be able to
CO1	Apply knowledge of client side scripting
CO2	Experiment with server side technologies
CO3	Design web application using client side technologies
CO4	Develop web application using server side/client side technologies

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	1	2		3			1					2	
CO2		2	2	2	3			1					2	
CO3		2	3		3			1					2	2
CO4		2	3		3			1				2	2	3
Avg.	2	1.75	2.5	2	3			1				2	2	2.5

Assessments :

Teacher Assessment:

One component of In Semester Evaluation (ISE) and one End Semester Examination (ESE) having 50% and 50% weights respectively.

Assessment	Marks
ISE	50
ESE	50

ISE based on assignment/practical performance/quiz etc.

ESE: Assessment is based Practical Oriented Exam and Oral.

Course Contents:	
Experiment No.1: Accepting and Validating user entered data using ASP.NET	**02 Hrs.**
Experiment No.2: Write a program to demonstrate session management in ASP.NET	**02 Hrs.**
Experiment No.3: Display Database contents from SQL Server using SQL Command class from ASP.NET	**02 Hrs.**
Experiment No.4: Display Parameterized data using SQLDataAdapter, DataList and GridView in ASP.NET	**02 Hrs.**
Experiment No.5: Use file Upload control then store and display image files from database.	**02 Hrs.**
Experiment No.6: Write a program to insert, update, delete and read record from database using ADO.NET	**02 Hrs.**
Experiment No.7: Installation of XAMPP on windows/LinuX OS.Program based on PHP Variables, Expressions, control structure	**02 Hrs.**
Experiment No.8: Design web form using HTML and CSS. Perform form validation using PHP using regular expressions.	**02 Hrs.**
Experiment No.9: Experiment based on upload various types file.	**02 Hrs.**
Experiment No.10: Create Login Application and perform session management in PHP	**02 Hrs.**
Experiment No.11: Experiment based on database handling using PHP through HTML form.(Insert, Update, Delete Records)	**02 Hrs.**

Textbooks:

1. Professional ASP.NET 4.5 in C# and VB- published by John Wiley & Sons, Inc.(WROX)
2. Beginning PHP and MYSQL: From Novice to Professional, Fourth Edition- W.Jason Gilmore

References:

1. ASP.NET 4.5 COVERS C# 2012 and VB 2012 CODES-black book- Kogent Learning Solutions Inc. Dreamtech press
2. Teach Yourself PHP, MYSQL, APACHE-Julie C Meloni[SAMS Publication]
3. PHP5 and MySQL Bible Tim Converse, Joyce Park, Clark Morgan

Guidelines for Internship, Project –I & Project –II

As per the approved academic structure, students will be allowed to take internships during the 8th semester of B. Tech program. Below are the guidelines/rules and regulations for the students willing to opt for the internship -

1. During 7th semester students have the option of forming project groups. The number of members working in one project can vary from 1 member to a maximum of 4 members. Students working independently have an option to work on the project assigned to him/her by the organization which has accepted him/her as an intern. However, students working on a project in a group must complete a separate in house project, despite the internship.
2. The students, who do not have any internship opportunity at the beginning of the 7th semester, have to complete the in house project compulsory. Even though you may get an internship/sponsored project by the end of the 7th semester or during the 8th semester.
3. The internship duration can be between 16 weeks to 20 weeks. Students who get the internship will be exempted from attendance of lectures and practicals of courses during 8th semester. These students must have to complete all the ISE activities of 8th Semester using LMS (Learning Management System- KIT Moodle). It will be mandatory to all students (including internship students) to appear for the Mid Semester Exam (MSE) and End Semester Exams (ESE). Failing to do so, you will not be considered for the award of B. Tech degree. There will not be any extension/exemption from MSE and ESE exams. The rest of the rules and regulations related to academics and exam are all applied as it is.
4. Students who are not getting any internship have to compulsorily attend all the lectures and practicals of the 8th Semester. They will be governed by the regular academic policies which include - mandatory attendance criteria, failing to meet the attendance criteria students will be detained.
5. The department holds the final authority to accept or reject the internship offered to students. Department will check the credibility of the organization offering the internship to students. If the department finds the internship is unworthy, then students will not be allowed to join the organization. Such students are bound to complete the regular academics (including 8th-semester lectures and practical’s).