INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad -500 043

COMPUTER SCIENCE AND ENGINEERING

COURSE DESCRIPTOR

Course Title	WEB TECHNOLOGIES				
Course Code	ACS006				
Programme	B.Tech				
Semester	IV	CSE	IT		
Course Type	Core				
Regulation	IARE - R16				
Course Structure	**Theory**			**Practical**	
	Lectures	**Tutorials**	**Credits**	**Laboratory**	**Credits**
	3	1	4	3	2
Chief Coordinator	Ms. B Ramya Sree, Assistant Professor				
Course Faculty	Ms. G Geeta Reddy, Assistant Professor Ms. Ch Srividya, Assistant Professor Mr. Santosh Patil, Assistant Professor				

I.   COURSE OVERVIEW:

The World Wide Web continues to provide a foundation for the development of a broad range of increasingly influential and strategic technologies, supporting a large variety of applications and services, both in the private and public sectors. There is a growing need for management and decision makers to gain a clearer understanding of the application development process, from planning through to deployment and maintenance. This module will give you an insight into architectures, protocols, standards, languages, tools and techniques; an understanding of approaches to more dynamic and mobile content; and demonstrate how you can analyze requirements, plan, design, implement and test arrange of web applications.

II.   COURSE PRE-REQUISITES:

Level	Course Code	Semester	Prerequisites	Credits
UG	ACS001	I	Computer Programming	4
UG	ACS003	III	Object Oriented Programming Through Java	4

III. MARKS DISTRIBUTION

Subject	SEE Examination	CIA Examination	Total Marks
Web Technologies	70 Marks	30 Marks	100

IV. DELIVERY / INSTRUCTIONAL METHODOLOGIES:

✔	Chalk & Talk	✔	Quiz	✔	Assignments	✔	MOOCs
✔	LCD / PPT	✔	Seminars	✔	Mini Project	✔	Videos
✘	Open Ended Experiments						

V. EVALUATION METHODOLOGY:

The course will be evaluated for a total of 100 marks, with 30 marks for Continuous Internal Assessment (CIA) and 70 marks for Semester End Examination (SEE). Out of 30 marks allotted for CIA during the semester, marks are awarded by taking average of two CIA examinations or the marks scored in the make-up examination.

Semester End Examination (SEE): The SEE is conducted for 70 marks of 3 hours duration. The syllabus for the theory courses is divided into five units and each unit carries equal weightage in terms of marks distribution. The question paper pattern is as follows. Two full questions with "either" or "choice" will be drawn from each module. Each question carries 14 marks. There could be a maximum of two sub divisions in a question.

The emphasis on the questions is broadly based on the following criteria:

50 %	To test the objectiveness of the concept.
50 %	To test the analytical skill of the concept OR to test the application skill of the concept.

Continuous Internal Assessment (CIA):
CIA is conducted for a total of 30 marks (Table 1), with 20 marks for Continuous Internal Examination (CIE), 05 marks for Quiz and 05 marks for Alternative Assessment Tool (AAT).

Table 1: Assessment pattern for CIA

Component	Theory		Total Marks
Type of Assessment	CIE Exam	Quiz/AAT	
CIA Marks	25	05	30

Continuous Internal Examination (CIE):
Two CIE exams shall be conducted at the end of the 8th and 16th week of the semester respectively. The CIE exam is conducted for 25 marks of 2 hours duration consisting of two parts. Part–A shall have five compulsory questions of one mark each. In part–B, four out of five questions have to be answered where, each question carries 5 marks. Marks are awarded by taking average of marks scored in two CIE exams.

Quiz / Alternative Assessment Tool (AAT):
Two Quiz exams shall be online examination consisting of 25 multiple choice questions and are be answered by choosing the correct answer from a given set of choices (commonly four). Marks shall be awarded considering the average of two quizzes for every course. The AAT may include seminars, assignments, term paper, open ended experiments, five minutes video and MOOCs.

VI. HOW PROGRAM OUTCOMES ARE ASSESSED:

	Program Outcomes (POs)	Strength	Proficiency assessed by
PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	2	Presentation on real-world problems
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences	2	Seminars
PO 3	**Design / development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	2	Mini Projects
PO 5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	3	Mini Projects
PO 12	**Life-long learning**: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	2	Assignments

3 = High; 2 = Medium; 1 = Low

VII. HOW PROGRAM SPECIFIC OUTCOMES ARE ASSESSED:

	Program Specific Outcomes (PSOs)	Strength	Proficiency assessed by
PSO 1	**Professional Skills:** The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking for efficient analysis and design of computer - based systems of varying complexity.	3	Assignments
PSO 2	**Problem-Solving Skills:** The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for business success.	2	Mini Projects
PSO 3	**Successful Career and Entrepreneurship:** The ability to employ modern computer languages, environments, and platforms in creating innovative career paths to be an entrepreneur, and a zest for higher studies.	-	-

3 = High; 2 = Medium; 1 = Low

VIII. COURSE OBJECTIVES (COs):

	The course should enable the students to:
I	Design static and dynamic web pages using HTML, CSS and Java Script.
II	Understand a well-formed XML schemes for developing web applications.
III	Design and implement web services from the server and client side.
IV	Understand how server-side programming works on the web using PHP
V	Apply tools to retrieve the information from the database using PHP.

IX. COURSE LEARNING OUTCOMES (CLOs):

CLO Code	CLO's	At the end of the course, the student will have the ability to:	PO's Mapped	Strength of Mapping
ACS006.01	CLO 1	Understand the basic HTML tags.	PO1;PO3	3
ACS006.02	CLO 2	Understand and apply the design principles of HTML and Java Script to create static and dynamic web pages.	PO2;PO5	3
ACS006.03	CLO 3	Understand the difference between HTML and XML scripting languages.	PO3	2
ACS006.04	CLO 4	Identify the engineering structural design of XML and parse construction tree model.	PO1	2
ACS006.05	CLO 5	Analyze the client side validation procedure in web applications.	PO3	2
ACS006.06	CLO 6	Proficient in creating reusable web component using java bean.	PO1;PO5	3
ACS006.07	CLO 7	Identify the difference between the JSP and Servlet.	PO1;PO3	3
ACS006.08	CLO 8	Able to use web server and data base servers using specific vendor related software's.	PO5	3
ACS006.09	CLO 9	Create applications by using the concepts like JSP and Servlet.	PO2	2
ACS006.10	CLO 10	Identify and perform requesting and response generation process in web servers.	PO3	3
ACS006.11	CLO 11	Understand the PHP downloading, installation and configuring PHP process.	PO1;PO5	3
ACS006.12	CLO 12	Understand branching statements, loop statements and use them in problem solving.	PO1	2
ACS006.13	CLO 13	Identify the methods to read data from web pages using PHP.	PO3	2
ACS006.14	CLO 14	Understand how MYSQL server is connected with PHP	PO1;PO2	2
ACS006.15	CLO 15	Able to perform crude operations in data base servers, operations in PHP	PO1	3
ACS006.16	CLO 16	Understand the file handling methods using PHP.	PO 3	2
ACS006.17	CLO 17	Familiar with basic HTML, XML, JSP and PHP techniques: Creation of web pages, that Includes verification and validation of web pages.	PO2	2
ACS006.18	CLO 18	Possess the knowledge and skills for employability and to succeed in national and international level competitive examinations.	PO1;PO12	3

3 = High;2 = Medium; 1 = Low

X. MAPPING COURSE LEARNING OUTCOMES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES:

Course Learning Outcomes (CLOs)	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CLO 1	3		2												
CLO 2		2			3								3		
CLO 3			2												
CLO 4	2												2		
CLO 5			2										3		
CLO 6	2				3										
CLO 7	2		3												
CLO 8					3								3		
CLO 9		2													
CLO 10			3										3		
CLO 11	2				3										
CLO 12	2													2	
CLO 13			2										2		
CLO 14	2	2											3		
CLO 15	3														
CLO 16			2										3		
CLO 17		2													
CLO 18	2											2			

3 = High; 2 = Medium; 1 = Low

XI. ASSESSMENT METHODOLOGIES – DIRECT

CIE Exams	PO 1, PO 2, PO 3, PO 5	SEE Exams	PO 1, PO 2, PO 3, PO 5	Assignments	PO 12	Seminars	PO 2
Laboratory Practices	PO 1	Student Viva	-	Mini Project	PO 3, PO5	Certification	-
Term Paper	-						

XII. ASSESSMENT METHODOLOGIES - INDIRECT

✔	Early Semester Feedback	✔	End Semester OBE Feedback
✘	Assessment of Mini Projects by Experts		

XIII. SYLLABUS

UNIT-I	**INRODUCTION TO HTML AND JAVA SCRIPT**

Introduction to html:fundamentals of HTML elements, Document body, text, hyperlink, lists, tables, color and images, frames; Cascading Style Sheets: Introduction, defining your own styles, properties and values in styles, style sheets, formatting blocks, and layers.
JavaScript:JavaScript basics, variables, string manipulation, mathematical functions, statements, operators, arrays and functions.

UNIT-II	**OBJECTS IN JAVASCRIPT AND XML**

Objects in JavaScript: Data and objects in JavaScript, regular expressions, exception handling, built-in objects, events; Dynamic HTML with JavaScript: Data validation, opening a new window, Rollover buttons, moving images, multiple pages in a single download, floating logos.
XML: Basics XML, document type definition, xml schemas, Document Object Model, presenting XML.

UNIT-III	**SERVLETS AND JSP**

Servlet: Lifecycle of a Servlet, a simple Servlet, the Servlet API, the Javax. Servlet package, reading Servlet parameters, the javax.Servlet.HTTP package, Handling HTTP requests and responses, using cookies and sessions.
JSP: The anatomy of a JSP page, JSP processing, declarations, directives, expressions, code snippets, implicit objects, using beans in JSP pages, connecting to database in JSP.

UNIT-IV	**INTRODUCTION TO PHP**

Basics of PHP: downloading, installing, configuring PHP, programming in a web environment and the anatomy of a PHP page; Overview of PHP data types and concepts: Variables and data types, operators, expressions and statements, strings, arrays and functions.

UNIT-V	**PHP AND DATABASE ACCESS**

PHP and database access: Basic database concepts, connecting to a My SQL database, retrieving and displaying results, modifying, updating and deleting data; MVC architecture: PHP and AJAX other web technologies: PHP and XML.

Text Books:

1. Chris Bates, "Web Programming: Building Internet Applications", Wiley Dream Tech, 2nd Edition,2002
2. Jeffrey C K Jackson, "Web Technologies", Pearson Education, 1st Edition,2006
3. Steven Holzner,"the Complete reference PHP",TataMcGraw-Hill,1st Edition,2007

Reference Books:

1. W Hans Bergsten, "Java Server Pages", O"Reilly, 3rd Edition, 2003.
2. D. Flanagan, "Java Script", O"Reilly, 6th Edition, 2011.
3. Jon Duckett, "Beginning Web Programming", WROX, 2nd Edition, 2008.
4. Herbert Schildt, "Java the Complete Reference", Hill - Osborne, 8th Edition, 2011.

XIV. COURSE PLAN:

The course plan is meant as a guideline. Probably there may be changes.

Lecture No	Topic/s to be covered	Course Learning Outcomes (CLOs)	Reference
1-4	Introduction to html, fundamentals of HTML elements, Document body, text, hyperlink	CLO 1	T1:1.1 T1:2.1-2.4
5-8	Lists, tables, color and images, frames ,Introduction to Cascading Style Sheets, defining your own styles	CLO 1	T1:2.6-2.9 T1:4.1-4.3
9-11	Properties and values in styles, Style sheets, formatting blocks, and layers	CLO 1	T1:4.4-4.7
12	JavaScript basics, variables, string manipulation	CLO 2	T1:5.1-5.5
13-14	Mathematical functions, statements, operators, arrays and functions.	CLO 2	T1:5.6-5.10
15-17	Data and objects in JavaScript, regular expressions, exception handling, built-in objects, events	CLO 2	T1:6.1-6.5
18-20	HTML with JavaScript: Data validation, opening a new window, Rollover buttons.	CLO 5	T1:7.1-7.3 T1:7.6
21-22	Moving images, multiple pages in a single download, floating logos	CLO 3	T1:7.7-7.10
23-25	Basics XML, document type definition, xml schemas, Document Object Model, presenting XML.	CLO 4	T1:14.1-14.5
26-28	Lifecycle of a Servlet, a simple Servlet, the servlet API, the Javax.servlet package, reading Servlet parameters, the javax.servlet.	CLO 7	T2:11.3
29	HTTP package, Handling HTTP requests and responses, using cookies and sessions.	CLO 8	T2:11.3
30	The anatomy of a JSP page, JSP processing, declarations, directives, expressions, code snippets	CLO 9	T2:11.4
31-33	Implicit objects, using beans in JSP pages, connecting to database in JSP.	CLO 9	T2:11.4
34-35	Basics of PHP, downloading, installing, configuring PHP	CLO 10	T3:1
36	Programming in a web environment and the anatomy of a PHP page	CLO 11	T3:1
37-38	Overview of PHP data types and concepts: Variables and datatypes, operators, expressions and statements	CLO 11	T3:1, 2
39	Complex structures, structures and functions, passing structures through pointers, self-referential structures.	CLO 12	T3:2
40	Strings, arrays, Functions.	CLO 13	T3:3, 4
41	PHP and database access: Basic database concepts, connecting to a My SQL	CLO 14	T3:10
42	Retrieving and displaying results, modifying, updating and deleting data	CLO 14	T3:10
43	MVC Architecture	CLO 15	T3:18
44	PHP and other web technologies: PHP and XML	CLO 17	T3:12
45	PHP and AJAX.	CLO 17	T3:13

XV. GAPS IN THE SYLLABUS - TO MEET INDUSTRY / PROFESSION REQUIREMENTS:

S no	Description	Proposed actions	Relevance with POS	Relevance with PSOS
1	Updating latest version and new features of the PHP Language.	Seminars /NPTEL	PO 1,PO2,PO5	PSO 1
2	Familiarizing the role of Java script Objects in developing system level programs.	Assignments / NPTEL	PO 2,PO5	PSO 3
3	Familiarizing different applications of java beans, Deployment of BDK..	Seminars / Guest Lectures / NPTEL	PO 5	PSO 2
4	Implementation of XML DTD and DOM with ALTOVA XML Spy Enterprise Edition	Guest Lecturers	PO2	PSO3

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