Fr. Conceicao Rodrigues College Of Engineering

Department of Artificial Intelligence and Data Science Engineering

T.E. (AI DS) (semester VI) (2022-2023)
Course Outcomes & Assessment Plan

Subject: Web Computing (WC-CSC502) **Credits-3**

Course Objectives:

1. To orient students to Web Programming fundamental.
2. To expose students to JavaScript to develop interactive web page development
3. To orient students to Basics of REACT along with installation
4. To expose students to node.js applications using express framework
5. To orient students to Fundamentals of node.js
6. To expose students to Advanced concepts in REACT

Teaching Scheme

Course Code	Course Name	Teaching Scheme			Credits Assigned			
		Theory	Practical	Tutorial	Theory	Practical/Oral	Tut	Credits
CSC502	Web Computing	03	--	--	03	--	---	03
CSL502	Web Computing and Networking Lab	--	02	--	--	1	--	01

Examination Scheme

Course Code	Course Name	Theory Marks				Term Work	Practical & Oral	Total
		Internal Assessment			End Sem Exam			
		Test1	Test2	Avg				
CSC502	Web Computing	20	20	20	80 (3hr)	--	---	100
CSL502	Web Computing and Networking Lab					25	25	50

Syllabus: **Prerequisite**: HTML Basics

1. **Web Programming Fundamentals (08)**
   1.1. Working of web browser, HTTP protocol, HTTPS, DNS, TLS, XML introduction, Json introduction, DOM, URL, URI, REST API .

2. **JavaScript (08)**
   Introduction to JavaScript: JavaScript language constructs, Objects in JavaScript- Built in, Browser objects and DOM objects, event handling, form validation and cookies.
   Introduction to ES5,ES6, Difference between ES5 and ES6. Variables, Condition, Loops, Functions, Events, Arrow functions, Setting CSS Styles using JavaScript, DOM manipulation, Classes and Inheritance. Iterators and Generators, Promise, Client-server communication, Fetch

3. **React Fundamentals (10)**
   Installation, Installing libraries, Folder and file structure, Components, Component lifecycle, State and Props, React Router and Single page applications, UI design, Forms, Events, Animations, Best practices

4. **Node.js (04)**
   Environment setup, First app, Asynchronous programming, Callback concept, Event loops, REPL, Event emitter, Networking module, Buffers, Streams, File system, Web module.

5. **Express models (04)**
   Introduction, Express router, REST API, Generator, Authentication, sessions, Integrating with React

6. **Advance React (04)**
   Functional components- Refs, Use effects, Hooks, Flow architecture, Model-ViewController framework, Flux, Bundling the application. Web pack.

Internal Assessment:

Assessment consists of two class tests of 20 marks each. The first-class test is to be conducted when approx. 40% syllabus is completed and second class test when additional40% syllabus is completed. Duration of each test shall be one hour.

End Semester Theory Examination:

1. Question paper will consist of 6 questions, each carrying 20 marks.
2. The students need to solve a total of 4 questions.
3. Question No.1 will be compulsory and based on the entire syllabus.
4. Remaining question (Q.2 to Q.6) will be selected from all the modules.

Lecture Plan : SEM VII-ML-CSC604

Modes of Content Delivery:

i	Class Room Teaching	v	Self-Learning Online Resources	ix	Industry Visit
ii	Tutorial	vi	Slides	x	Group Discussion
iii	Remedial Coaching	vii	Simulations/Demonstrations	xi	Seminar
iv	Lab Experiment	viii	Expert Lecture	xii	Case Study

Term : 18th July – 30 Oct 2022 (UT1 : 05 Sept - 07 Sept) (UT2 : 17Oct -19 Oct)

No.	Portion to be covered	Planned date	Actual date	Content Delivery - Reference /Assessment Method
1	Web programming Fundamentals: Introduction Terms- Client-Server, Web Page, URL, URI, WWW, Internet, Browser, Server, Protocols. DNS, TLS Syllabus and CO-PO discussion. Mini Project topics	20/07/2022	20/07/2022	PPT/BlackBoard
2	Web Application Architecture & technologies	22/07/2022	22/07/2022	PPT
3	HTTP-HTTPS Protocol, DNS, TLS, URL, URI	25/07/2022	25/07/2022	PPT/BlackBoard
4	JSON-XML introduction, REST API	27/07/2022	27/07/2022	PPT/BlackBoard
5	HTML5 – Elements, Attributes, Head, Body, Hyperlink, Formatting, Images, Lists, Multimedia	29/07/2022	29/07/2022	PPT/Lab Demo
6	Tables, Frames, Forms	1/8/2022	3/8/2022	PPT/Lab Demo
7	CSS3 - Syntax, Inclusion, Color, Background, Fonts, Tables, Lists	3/8/2022	5/8/2022	Lab Demo
8	CSS3 Selectors, Pseudo Classes, Pseudo Elements	5/8/2022	8/8/2022	Lab Demo
9	Bootstrap: BootstrapGrid System, Forms, Button	8/8/2022	9/8/2022	Lab Demo
10	Navbar, Breadcrumb, Jumbotron	10/8/2022	9/8/2022	Lab Demo
11	JavaScript: Introduction, variables, operators, Conditions, loops, Functions	12/8/2022	10/8/2022	PPT
12	Events, Classes and Objects in JavaScript, Built-in, Browser objects and DOM objects	17/08/2022	12/8/22	PPT
13	Event handling, form validation and cookies.	17/08/2022	12/8/22	PPT/Demo
14	Introduction to ES5,ES6, Difference between ES5 and ES6, Var, Conditions, Loops, Functions, Events, Arrow Functions.	22/08/2022	17/08/2022	PPT
15	Setting CSS styles for using Javascript, DOM Manipulations	24/08/2022	22/08/2022	PPT/Blackboard
16	Classes and Inheritance, Iterators and Generators, Promise	26/08/2022	24/08/2022 29/08/2022	PPT
17	Client-server communication, Fetch	29/08/2022	29/08/2022 09/09/2022	PPT

No.	Portion to be covered	Planned date	Actual date	Content Delivery - Reference /Assessment Method
18	React Fundamentals: Installation, Installing Libraries, Folder and File structure	09/09/2022	12/09/2022 13/09/2022	PPT Demo
19	Components, Component lifecycle	12/09/2022	14/09/2022	PPT /Demo
20	State and Props	14/09/2022	16/09/2022	PPT /Demo
21	React Router and Single page applications	16/09/2022	19/09/2022	PPT /Demo
22	UI design	19/09/2022	19/09/2022	PPT/Blackboard
23	Forms, Events	21/09/2022	21/09/2022	PPT /Demo
24	Animations, Best Practices	21/09/2022	21/09/2022	PPT
25	Node.js: Environment setup, First app,	23/09/2022	23/09/2022	PPT /Demo
26	Asynchronous programming, Callback concept, Loops	26/09/2022	23/09/2022	PPT /Demo
27	REPL, Event emitter	28/09/2022	26/09/2022	
28	Networking Module, Web Module	30/09/2022	28/09/2022	
29	Buffers, Streams, File system	03/10/2022	28/09/2022	
30	Express : Introduction, Express Router	07/10/2022	30/09/2022	
31	REST API, Generator	08/10/2022	3/10/2022	
32	Authentication, Session	10/10/2022	07/10/2022	
33	Integrating with React	12/10/2022	10/10/2022	
34	Case Study	14/10/2022	12/10/2022	
35	Advanced React: Functional Components-Refs,	20/10/2022	14/10/2022	PPT/blackboard
36	Use Effects, Hooks	21/10/2022	21/10/2022	
37	Flow Architectures	27/10/2022	27/10/2022	
38	Model-View Controller Framework	28/10/2022	28/10/2022	
39	FLUX	26/08/2022	26/08/2022	
40	Bundling the application. Web Pack.	28/10/2022	27/10/2022	PPT/Demo

Total Lectures : 40

Text Books:

1. Rediscovering JavaScript, Master ES6, ES7, and ES8, By Venkat Subramaniam · 2018
2. Learning React Functional Web Development with React and Redux, Alex Banks and Eve Porcello, O'Reilly
3. Learning Redux, Daniel Bugl, Packt Publication
4. Learning Node.js Development, Andrew Mead, Packt Publishing
5. RESTful Web API Design with Node.js 10, Valentin Bojinov, Packt Publication

References books:

1. Web Development with Node and Express, Ethan Brown, O'Reilly
2. HTML5 Cookbook, By Christopher Schmitt, Kyle Simpson, O'Reilly Media
3. Core Python Applications Programming by Wesley J Chun Third edition Pearson Publication

Reference Web Resources:

1. https://www.coursera.org/learn/html-css-javascript-for-web-developers?action=enroll
2. https://onlinecourses.swayam2.ac.in/ugc19_lb05/preview
3. https://reactjs.org/tutorial/tutorial.html
4. https://react-redux.js.org/introduction/quick-start 4. https://webpack.js.org/

Course Outcomes: [Target 2.5]

After successful completion of the course students will be able to:

CSC502.1 : Select protocols or technologies required for various web applications
CSC502.2: Apply JavaScript to add functionality to web pages. .
CSC502.3: Design front end application using basic React. .
CSC502.4: Construct web based Node.js applications using Express
CSC502.5: Design front end applications using functional components of React.
CSC502.6: Design back-end applications using Node.js.

Mapping of CO and PO/PSO

Relationship of course outcomes with program outcomes: Indicate 1 (low importance), 2 (Moderate Importance) or 3 (High Importance) in respective mapping cell.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1
CSC502.1	**3**	**2**												**2**
CSC502.2	**3**	**3**	**3**						**3**					**2**
CSC502.3	**3**	**3**	**3**		**3**				**3**					**2**
CSC502.4	**3**	**3**	**3**		**3**				**3**					**2**
CSC502.5	**3**	**3**	**3**		**3**				**3**					**2**
CSC502.6	**3**	**3**	**3**	**2**	**3**			**2**	**3**	**3**	**2**	**3**		**3**
TOTAL	**18**	**17**	**15**	**2**	**12**	**0**	**0**	**2**	**15**	**3**	**2**	**3**		**13**
CO-PO MATRIX	**3**	**2.83**	**2.5**	**0.33**	**2**	**0**	**0**	**0.33**	**2.5**	**0.5**	**0.33**	**0.5**		**2.16**

CO ASSESSMENT TOOLS

	Direct Methods (80%)					**Indirect Methods (20%)**
CSC604.1	Test 1 (40%)	Lab 7 (20%)	UE –TH (20%)	UE-O (20%)		(100%)
CSC604.2	Test1 (30%)	Lab 4 (30%)	UE –TH (20%)	UE-O (10%)	Assign 1 (10%)	(100%)
CSC604.3	Test2 (30%)	Lab 5 (30%)	UE –TH (20%)	UE-O (10%)	Assign 3 (10%)	(100%)
CSC604.4	Test2 (30%)	Lab 6 (20%)	UE –TH (20%)	UE-O (20%)	Assign 3 (10%)	(100%)
CSC604.5	Test2 (30%)	MP (20%)	UE –TH (20%)	UE-O (20%)	Assign 3 (10%)	(100%)
CSC604.6	Test2 (30%)	Lab 6 (20%)	UE –TH (20%)	UE-O (20%)	Assign 2_3 (10%)	(100%)

Gurriculum Gap/Content Beyond Syllabus:

Sr.No	Gap/Content Beyond Syllabus	Activity	Topic
1	HTML	Extra Lecture	HTML and HTML5.0
2	Sample Demo Practical Implementation	Hands-on	MEAN Stack with MongoDB connectivity
3	Security in Web Technology, Search Engine Optimization, Web based repository hosting, Project Management tools	Seminar	Seminar on Web based repository hosting -GIT , GitHub and Project Management tool - Jira
4	Django, Backend Node and Express connectivity with MongoDB	Workshop	Portfolio and API development (Backend with node-express-MongoDb and Django)

Rubrics for Assignments

Class : T.*E. AI & DS* **Semester : V**

Assignment No:	
Title:	
Date of Performance:	
Roll No:	
Name of the Student:	

Evaluation:

Indicator	**Very Poor**	**Poor**	**Average**	**Good**	**Excellent**
Timeline (2)	More than three sessions late (0)	More than two sessions late (0.5)	Two sessions late (1)	One session late (1.5)	Early or on time (2)
Organization (3)	N/A	Very poor readability and not structured (0.5)	Poor readability and somewhat structured (1)	Readable with one or two mistakes and structured (2)	Very well written and structured without any mistakes (3)
Level of content (3)	N/A	Major points are omitted or addressed minimally (0.5)	All major topics are covered, the information is accurate.(1)	Most major and some minor criteria are included. Information is Accurate (2)	All major and minor criteria are covered and are accurate. (3)
Depth of Knowledge(2)	N/A	One answer correct(0.5)	Two answers correct(1)	Three answers correct(1.5)	Four answers correct(2)

Signature

Department of AI & DS Engineering

Rubrics for Mini Project

Class : T.E. AI and DS **Subject Name :ML**
Semester : VI **Subject Code :CSC604**

Practical No:	
Title:	
Date of Performance:	
Roll No:	
Name of the Student:	

Rubric for Mini Project

Indicator	Very Poor	Poor	Average	Good	Excellent
Timeline: Maintains project deadline (2)	Project not done (0)	More than two session late (0.5)	Two sessions late (1)	One session late (1.5)	Early or on time (2)
Completeness: Complete all parts of project (2)	N/A	< 40% complete (0.5)	~ 60% complete (1)	~ 80% complete(1.5)	100% complete(2)
Application Design:(4)	Design aspects are not used (0)	Poorly designed (1)	Project with limited functionalities (2)	Working project with good design (3)	Working project with efficient design (4)
Features used (10)	html, CSS, JavaScript basic tags used (05)	Basic features of ReactJs (3) NodeJs (3)	Basic features of ReactJs (3) NodeJs (3) Database (1)	Advanced features of ReactJs (3-4) NodeJs (3-4) Database (2)	Advanced features of ReactJs (4) NodeJs (4) Database (2) with creativity

Signature