M.Sc.-II

Computer Science



Savitribai Phule Pune University

(Formerly University of Pune)

Two year M.Sc. Degree Program in Computer Science (Faculty of Science & Technology)

M.Sc.- II (Computer Science)

Choice Based Credit System Syllabus To be implemented from Academic Year 2020-2021

CSUT233- Web Frameworks

Total Credits - 4

Pre-requisites

- Basic knowledge of Java Script.
- Basics of web application development.
- Knowledge of what is Clint and Server side programming.

Course Objectives:

- To introduce students for modern web technologies.
- To learn and use server side programming using Node.js
- To understand asynchronous programming.
- To learn and understand web application in Django a Python Web Framework.

Course Outcomes:

- Students will be ready with the technology which is used widely in Industry as a part of full stack developer.
- Students will know the powerful way to develop the web application in Python.
- Students will understand what really the asynchronous programming.
- Build and deploy robust Django Web App.
- Integrate with Restful web services.

Chapter No.		Topics	# Lectures	
1.	Java	Script Basics 4		
	1.1	Java Script data types		
	1.2	Variables, Functions, Events, Regular Expressions		
	1.3	Array and Objects in Java Script		
	1.4	Java Script HTML DOM		
	1.5	Promises and Callbacks		
2.	Intro	duction to Node JS	3	
	2.1	Introduction		
	2.2	What is Node JS and its advantages		

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	2.3	Traditional Web Server Model	
	2.4	Node JS Process model	
	2.5	Installation of Node IS	
	26	Node IS event loop	
3.	Node	IS Modules	5
	2 1	Functions	-
	3.1	Ruffer	
	3.3	Module and Module Types	
	3.4	Core Module. Local Module	
	3.5	Directories as module	
	3.5	Module.exports	
4.	Node Package Manager		4
	4.1	What is NPM?	
	4.2	Installing package locally	
	4.3	Adding dependencies in package.json	
	4.4	Installing packages globally	
	4.5	Updating packages	
	4.6	Managing Dependencies	
5.	Web Server		3
	5.1	Creating Web Server	
	5.2	Handling HTTP requests	
	5.3	Sending Requests	
	5.4	HTTP Streaming	
6.	File S	System	4
	6.1	FS Model	
	6.2	Files and Directories	
	6.6	Streams	
_	6.4	Reading and Writing Files	
	6.5	Reading and Writing Directories	
	6.6	Other File Operations	
7.	Events		6
	7.1	Asynchronous JS	
	7.2	Asynchronous control flow with calibacks	
	7.3	Promises	
	/.4 7 5	Eventemiller Class	
	7.5 7.6	Advill/Awall Returning Event Emitter	
	7.0 7.7	Inheriting Events	
	/./	mineritung Events	

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8.	Work	ing with Databases	6
	8.1	Connection String	
	8.2	Configuring	
	8.3	Working with Select command	
	8.4	Various database operations	
	8.5	MongoDB	
	8.6	Mongoose ODM	
	8.7	Mongoose Schema	
	8.8	Mongoose Model	
	8.9	Querying with Mongoose	
9.	Expre	ss JS	7
	9.1	REST	
	9.2	Introduction to Express JS	
	9.3	Routing, Responding	
	9.4	Configuration	
	9.5	Views	
	9.6	Receiving Data	
	9.7	Error Handling	
10.	Intro	luction to DJango	4
	10.1	What is DJango	
	10.2	DJango and Python	
	10.3	DJango MVT	
	10.4	How to get and install DJango	
11.	Gettin	ng Started with DJango	5
	11.1	About 3 core files : model.py, urls.py, views.py	
	11.2	Setting up database connections (MySQL/SQLServer)	
	11.3	Managing Users & DJango admin tools	
	11.4	Installing and using 'Out of the Box' Django features	
12.	DJang	o URL Patterns and Views	4
	12.1	Designing a good URL Schema	
	12.2	Generic Views	
13.	DJango Forms		5
	13.1	Form Classes	
	13.2	Validations	
	13.3	Authentication	
	13.4	Advanced Form Processing Techniques	
	14.1	DJango REST Framework	
	14.2	DJango Piston	

References:

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- 2. Mastering Nod.js By Sandro Pasquali , packt Publishing
- 3. Smashing Node.js, Java Script Everywhere , Guillermo Rauch, John wiley & Sons
- 4. Django for Beginners : Build websites with Python and Django Kindle Edition by William S Vincent
- 5. Two Scoops of Django 1.11 : Best Practices for the Django web Framework Book by Danial Roy Greenfeld and Audrey Roy Greenfeld
- **6.** Web Development with Django CookBook by Aidas Bendoraits Second Edition PACKT Publishing