



Department of Information Technology		LP: CS16016
B.E/B.Tech : CS & IT	Regulation: 2016	Rev. No: 00
Sub. Code / Sub. Name: CS16016, User Interface Technologies		Date: 17/12/2018
Unit : I		

Unit Syllabus: INTRODUCTION TO NOSQL DATABASE - MONGODB

What is NoSQL Database - Why to Use MongoDB - Difference between MongoDB & RDBMS - Download & Installation - Common Terms in MongoDB – Implementation of Basic CRUD Operations using MongoDB

Objective:

- To understand and practice NoSQL Database
- To understand and practice MongoDB Database

Session No *	Topics to be covered	Ref	Teaching Aids
1	What is NoSQL Database	Internet	LCD
2	Why to Use MongoDB	R4-Ch.1:Pg. No.3-4	LCD
3	Difference between MongoDB & RDBMS	Internet	LCD
4	Download & Installation	R4-A:Pg. No. 385-389	LCD
5	Common Terms in MongoDB	https://www.w3adda.com/mongodb-tutorial/mongodb-terminology	LCD
6	Implementation of Basic CRUD Operations using MongoDB Create, read operations.	R4-Ch.2:Pg. No.14-16, Ch.3:Pg. No.29-52	LCD
7	Implementation of Basic CRUD Operations using MongoDB Update and Delete operations	R4-Ch.2:Pg. No.14-16, Ch.3:Pg. No.29-52	LCD
Content beyond syllabus covered (if any):			

* Session duration: 50 minutes



Sub. Code / Sub. Name: CS16016, User Interface Technologies

Unit : II

Unit Syllabus: INTRODUCTION TO SERVER-SIDE JS FRAMEWORK – NODE.JS

Introduction - What is Node JS – Architecture – Feature of Node JS - Installation and setup - Creating web servers with HTTP (Request & Response) – Event Handling - GET & POST implementation - Connect to NoSQL Database using Node JS – Implementation CRUD operations.

Objective:

- To understand and practice Server-side JS Framework

Session No *	Topics to be covered	Ref	Teaching Aids
8	Introduction	R3-Ch.1:Pg. No.7-9	LCD
9	What is Node JS	R3-Ch.1:Pg. No.9-10	LCD
10	Architecture	T2-Ch.1:Pg. No.1-3	LCD
11	Feature of Node JS	R3-Ch.1:Pg. No.10-23	LCD
12	Installation and setup	T2-Ch.1:Pg. No.3-10	LCD
13	Creating web servers with HTTP (Request & Response)	T2-Ch.1:Pg. No.10-14	LCD
14	Event Handling	https://www.w3schools.com/nodejs/nodejs_events.asp	LCD
15	GET & POST implementation	R3-Ch.3:Pg. No.67-72	LCD
16	Connect to NoSQL Database using Node JS	T2-Ch.9:Pg. No.69-72	LCD
17	Implementation CRUD operations.	R4-Ch.2:Pg. No.14-16, Ch.3:Pg. No.29-52	LCD
Content beyond syllabus covered (if any):			

* Session duration: 50 mins

**Sub. Code / Sub. Name: CS16016, User Interface Technologies****Unit : III****Unit Syllabus: INTRODUCTION TO TYPESCRIPT**

TypeScript : Introduction to TypeScript – Features of TypeScript – Installation setup – Variables – Datatypes – Enum – Array – Tuples – Functions – OOP concepts – Interfaces – Generics – Modules – Namespaces – Decorators – Compiler options – Project Configuration

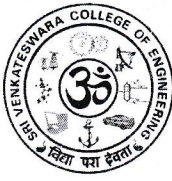
Objective:

- To understand the concepts and need of TypeScript

Session No *	Topics to be covered	Ref	Teaching Aids
18	Introduction to TypeScript	R1-Ch.1:Pg. No.1-4	LCD
19	Features of TypeScript	R1-Ch.1:Pg. No. 5-11	LCD
20	Installation setup	R1-Ch.1:Pg. No. 12-34	LCD
21	Variables, Datatypes, Enum – Array – Tuples	R1-Ch.2:Pg. No. 35-46	LCD
22	Functions	R1-Ch.2:Pg. No. 47-62	LCD
23	OOP concepts	R1-Ch.8:Pg. No. 235-269	LCD
24	Interfaces	R1-Ch.3:Pg. No. 63-86	LCD
25	Generics	R1-Ch.3:Pg. No. 87-105	LCD
26	Modules	R1-Ch.4:Pg. No. 107-122	LCD
27	Namespaces	R1-Ch.3:Pg. No. 123-130	LCD
28	Decorators	https://www.typescriptlang.org/docs/handbook/decorators.html	LCD
29	Compiler options – Project Configuration	https://www.typescriptlang.org/docs/handbook/compiler-options.html	LCD

Content beyond syllabus covered (if any):

* Session duration: 50 mins



Sub. Code / Sub. Name: CS16016, User Interface Technologies

Unit : IV

Unit Syllabus: INTRODUCTION TO CLIENT-SIDE JS FRAMEWORK – BASICS OF ANGULAR 4.0

Introduction to Angular 4.0 - Needs & Evolution – Features – Setup and Configuration – Components and Modules – Templates – Change Detection – Directives – Data Binding - Pipes – Nested Components

Objective:

- To understand and practice Client-side JS Framework, Basics of ANGULAR 4.0

Session No *	Topics to be covered	Ref	Teaching Aids
30	Introduction to Angular 4.0	https://angular.io/guide/architecture	LCD
31	Needs & Evolution, Features	https://angular.io/features , https://codeburst.io/angular-evolution-7ae670ca7932	LCD
32	Setup and Configuration	https://w3lessons.info/2017/08/08/angular-4-0-installation-and-setup-in-local-environment/	LCD
33	Components and Modules	https://angular.io/guide/architecture-components	LCD
34	Templates	https://angular.io/guide/template-syntax	LCD
35	Change Detection	https://angular.io/api/core/ChangeDetectorRef	LCD
36	Directives	https://angular.io/guide/attribute-directives , https://www.tutorialspoint.com/angular4/angular4_directives.htm	LCD
37	Data Binding	https://www.tutorialspoint.com/angular4/angular4_data_binding.htm , https://alligator.io/angular/data-binding-angular/	LCD
38	Pipes, Nested Components	https://codecraft.tv/courses/angular/quickstart/nesting-components-and-inputs/	LCD
Content beyond syllabus covered (if any):			

* Session duration: 50 mins



Sub. Code / Sub. Name: CS16016, User Interface Technologies

Unit : V

Unit Syllabus: INTRODUCTION TO CLIENT-SIDE JS FRAMEWORK – FORMS AND ROUTING IN ANGULAR 4.0

Template Driven Forms - Model Driven Forms or Reactive Forms - Custom Validators - Dependency Injection - Services - RxJS Observables - HTTP - Routing

Objective:

- To understand and practice Client-side JS Framework, Basics of ANGULAR 4.0

Session No *	Topics to be covered	Ref	Teaching Aids
39	Template Driven Forms	https://angular.io/guide/forms , https://codecraft.tv/courses/angular/forms/template-driven/	LCD
40	Model Driven Forms or Reactive Forms	https://codecraft.tv/courses/angular/forms/model-driven/ , https://angular.io/guide/reactive-forms	LCD
41	Custom Validators	https://alligator.io/angular/reactive-forms-custom-validator/ , https://angular.io/guide/form-validation	LCD
42	Dependency Injection	https://angular.io/guide/dependency-injection , https://codecraft.tv/courses/angular/dependency-injection-and-providers/overview/	LCD
43	Services	https://angular.io/tutorial/toh-pt4 , https://www.tutorialspoint.com/angular4/angular4_services.htm	LCD
44	RxJS Observables	https://angular.io/guide/rx-library , https://codecraft.tv/courses/angular/http/http-with-observables/	LCD
45	HTTP, Routing	https://angular.io/guide/router , https://codecraft.tv/courses/angular/routing/route-configuration/	LCD
Content beyond syllabus covered (if any):			

* Session duration: 50 mins



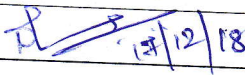
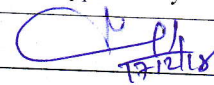
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TEXT BOOKS:

1. Nate Murray, Felipe Coury, Ari Lerner and Carlos Taborda, "ng-book, The Complete Book on Angular 4", First Edition, CREATSPACE Publishers, 2017.
2. Krasimir Tsonev, "Node.js by Example", Packt Publishing, 2015

REFERENCES :

1. Nathan Rozentals, "Mastering TypeScript", Second Edition, Packt Publishing, 2017.
2. Amol Nayak, "MongoDB Cookbook", Second Edition, Packt Publishing, 2016
3. Sandro Pasquali, "Mastering Node.js", First Edition, Packt Publishing, 2013.
4. Kristina Chodorow, "MongoDB : The Definitive Guide", Second Edition, O' Reilly Publications, 2013.
5. Matt Frisbie, "Angular 2 Cookbook", First Edition, Packt Publishing, 2017.

	Prepared by	Approved by
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Designation	Assistant Professor	Professor and Head
Date	17/12/2018	17/12/2018
Remarks *:		
Remarks *:		

* If the same lesson plan is followed in the subsequent semester/year it should be mentioned and signed by the Faculty and the HOD