Course Code	UCA20D02J	Course Name	WEB DEVELOPMENT USING REACT JS AND MONGO	Course Category	D	Discipline Specific Elective Course	L	T	P	C
							4	0	4	6

Pre-requisite Courses	Nil	Co-requisite Courses	Nil	Progressive Courses	Nil
Course Offering Department	Computer Applications	Data Book / Codes/Standards	Nil[[		

Course Learning Rationale (CLR):	The purpose of learning this course is to:	Learning

		1	2	3
CLR-1 :	Learn about MVC architecture			
CLR-2 :	Getting Introduced to React			
CLR-3 :	Develop a proper understanding of Web Development Architecture			
CLR-4 :	Create application using React components			
CLR-5 :	Master NoSQL database			
CLR-6 :	Handing Document Oriented Database			

Course Learning Outcomes (CLO):	At the end of this course, learners will be able to:	Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)
CLO-1 :	Build effective React Applications	2	80	70
CLO-2 :	Install and Configure React	3	85	75
CLO-3 :	Understand NPM modules	3	75	70
CLO-4 :	Event Handling	3	85	80
CLO-5 :	Understand life cycle components	3	85	75
CLO-6 :	JSX and its usecase	3	80	70

Program Learning Outcomes (PLO)

	1 Fundamental Knowledge	2 Application of Concepts	3 Link with Related Disciplines	4 Procedural Knowledge	5 Skills in Specialization	6 Ability to Utilize Knowledge	7 Skills in Modeling	8 Analyze, Interpret Data	9 Investigative Skills	10 Problem Solving Skills	11 Communication Skills	12 Analytical Skills	13 ICT Skills	14 Professional Behavior	15 Life Long Learning
CLO-1 :	H	H	H	H	H	M	L	M	H	M	-	H	H	H	M
CLO-2 :	H	H	H	H	H	M	L	M	H	M	-	H	H	H	M
CLO-3 :	H	H	H	H	H	M	L	M	H	M	-	H	H	H	M
CLO-4 :	H	H	H	H	H	M	L	M	H	M	-	H	H	H	M
CLO-5 :	H	H	H	H	H	M	L	M	H	M	-	H	H	H	M
CLO-6 :	H	H	H	H	H	M	L	M	H	M	-	H	H	H	M

Duration (hour)		24	24	24	24	24
S-1	SLO-1	Need of Scripting Language	Array Methods :indexOf, join, lasIndexOf, toString	Arrow Functions return value by Default	Adding Events	Document with different types of values i)*Document with Scalar Values*
	SLO-2	Difference between client and server side scripting	Array Methods : reduce, reverse, slice, some, sort	Arrow Functions with Parameters	Event Handler	ii)*Document with Documents as values*
S-2	SLO-1	Script tag in HTML	Function Definition	Arrow Function without Parentheses	React Event Object	iii)*Document with Array as values*
	SLO-2	Java Script declaration	Function Parameters	React Render HTML	Adding Forms in REACT	CRUD operation :Insert Operation i)*insertOne() and ii)insertMany()* with examples
S-3	SLO-1	Output printing – document. Write, innerHTML	Calling a Function	Render Function	Handling Forms	Perform Query Operation for the following situations *i)Query on nested documents ii)Query an array*

	SLO-2	window .alert, console.log	Return Statements	HTML and root node	Conditional Rendering	*ii)Query an array of nested documents* *iv)Geospatial Queries* *Query Operation Examples*
S-4	SLO-1	Java script statements	Nested Functions	REACT JSX	Submitting Forms	Update Operation: *updateOne(), updateMany()*
	SLO-2	Comments and Variables	Example Programs	Coding and expressions in JSX	Multiple Input Fields	*replaceOne(), findAndModify()* Update operation :Examples
S 5-8	SLO-1 SLO-2	Lab 1 – Java Script Input and Output	Lab 4 – Functions	Lab 7 – Working with JSX	Lab 10 – Handling Events	*Lab :Working with CURD operations* Insert and Query
S-9	SLO-1	Java script Operators -Logical, Bitwise	Web stacks introduction	Inserting a Large Block of HTML	Validating Form Input	Delete Operation: deleteMany(), deleteOne()
	SLO-2	Arithmetic and Assignment operators	LAMP and LEMP	Example Programs	Running Validation form	iii)findOneAndDelete() Delete operation Examples
S-10	SLO-1	Java Script Datatypes - numeric	Difference between php and java script	REACT Components	Adding Error messages	Operation on Mongodb Data:projection
	SLO-2	Java Script Datatypes – non numeric	MEAN, MERN	Creating a Class Component	Textarea, select	Limiting RecordsSorting Records
S-11	SLO-1	Conditional statements	REACT Environment set up - windows	Creating a Function Component	REACT CSS	Indexes in Mongodb, default _id index
	SLO-2	If else statements	Creating a Sample REACT Program	Component Constructor	Inline Styling	Creating and Index createIndex method
S-12	SLO-1	Switch statements	Creating a REACT APP	Components in Components	CSS Style sheet	Single Field, Compound, Multikey
	SLO-2	Iteration statements	Running the REACT Application	Components in Files	CSS Modules	Geospatial,text Index, Hashed Index
S 13-16	SLO-1 SLO-2	Lab 2 – Java Script Operators and Conditions	Lab 5 –Simple React Application	Lab 8 – Working with React Components	Lab 11 – Style react with css	*Lab :Working with CURD operations* Update and Delete
S-17	SLO-1	Loop Controls – for loop	REACT Directly in HTML	REACT Props	Mongodb Datatypes: i)Integer ii)Boolean iii)Double iv)String v)Arrays vi)Object vii)Null viii)Regular expression ix)Timestamp x)Date xi)Object ID	Properties of Index i)Unique Indexes ii)Partial Indexes
	SLO-2	While loop	Running and Modifying REACT Application	Pass Data , Props Constructor	Installing Mongo DB in Windows, Linux and Mac Operating Systems	iii)Sparse Indexes iv)TTL Indexes
S-18	SLO-1	Do while Loop	ECMA Script 6 – ES6	REACT state object	Installing and Working with MongoDB interfaces: i)Mongo Shell, ii)Mongo Compass	Aggregation in Mongodb: i)aggregate() method Aggregate expressions: i) $sum ii) $avg iii) $min iv) $max
	SLO-2	For each loop	Versions of ECMA	Using the state object	Introduction to entities of MongoDB: i)Databases i)Collections and iii)Documents	v) $push vi) $addToSet vii) $first viii) $last
S-19	SLO-1	Arrays Introduction and declaring	Classes	Changing the state object	Database: i)*createDatabase()*method with	*Mongodb Backup: Export/Import data backup using shell*

					example	i)mongodump ii)mongorestore
	SLO-2	Accessing arrays	Methods in Class	Life cycle components – Mounting	ii)*dropDatabase()* method with example	*Mongodb Backup:* *Export/Import data backup using Mongo Compass*
S-20	SLO-1	Array Properties : index, input length, prototype	Class Inheritance	Life cycle components – Updating	Collections: i)*createCollection()* method with example	Monitoring Deployment using Mongodb: i)*mongostat, mongotop*
	SLO-2	Array Methods :concat, every, forEach	Arrow Functions	Life cycle components – UnMounting	ii)*dropCollection()* method with example	iii)serverStatus, dbStats, collStats
S 21-24	SLO-1 SLO-2	Lab 3 - Looping Statements	Lab 6 – Using concept of Class Inheritance	Lab 9 – Pass information to Components using Props	Lab 12 – Working with Collections	Lab: i)Creating different types of indexes ii)Aggregate data using different Aggregate expressions iii)Perform Mongodb data *Export* and *Import* using shell as well as mongo compass. iv)Working with mongo deployment commands

Learning Resources	Official Online Documentation: 1. React JS: https://reactjs.org/docs/getting-started.html 2. MongoDB: https://docs.mongodb.com/manual/tutorial/getting-started/

Learning Assessment

Level	Bloom's Level of Thinking	Continuous Learning Assessment (50% weightage)								Final Examination (50% weightage)	
		CLA – 1 (10%)		CLA – 2 (10%)		CLA – 3 (20%)		CLA – 4 (10%)#			
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice
Level 1	Remember	20%	20%	15%	15%	15%	15%	15%	15%	15%	15%
	Understand										
Level 2	Apply	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	Analyze										
Level 3	Evaluate	10%	10%	15%	15%	15%	15%	15%	15%	15%	15%
	Create										
	Total	100 %		100 %		100 %		100 %		100 %	

CLA – 4 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, Conf. Paper etc.,

Course Designers

Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
Mr.G.Muruganandam, Group Project Manager, HCL Technologies, Chennai	*Dr.S.Gopinathan, Professor, University of Madras, Chennai*	*Mrs. Ramla, SRM IST*