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Course Code	*UCA20D03J*	Course Name	WEB DEVELOPMENT USING ANGULAR 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:
CLR-1 :	Master NoSQL database
CLR-2 :	Handing Document Oriented Database
CLR-3 :	Ability to derive the document based data model
CLR-4 :	Getting Startled with Angular js
CLR-5 :	Developing SPA
CLR-6 :	Familiarizing with CSS , Bootstrap along with SPA

Course Learning Outcomes (CLO):	At the end of this course, learners will be able to:	Learning Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)	PLO 1 Fundamental Knowledge	PLO 2 Application of Concepts	PLO 3 Link with Related Disciplines	PLO 4 Procedural Knowledge	PLO 5 Skills in Specialization	PLO 6 Ability to Utilize Knowledge	PLO 7 Skills in Modeling	PLO 8 Analyze, Interpret Data	PLO 9 Investigative Skills	PLO 10 Problem Solving Skills	PLO 11 Communication Skills	PLO 12 Analytical Skills	PLO 13 ICT Skills	PLO 14 Professional Behavior	PLO 15 Life Long Learning
CLO-1 :	Understand Single Page Applications	2	80	70	H	H	H	H	H	M	L	M	H	M	-	H	H	H	M
CLO-2 :	MVC Layers of Application	3	85	75	H	H	H	H	H	M	L	M	H	M	-	H	H	H	M
CLO-3 :	Master expressions, filters and scopes	3	75	70	H	H	H	H	H	M	L	M	H	M	-	H	H	H	M
CLO-4 :	Write Angular JS Directives	3	85	80	H	H	H	H	H	M	L	M	H	M	-	H	H	H	M
CLO-5 :	Create attractive UI using Bootstrap	3	85	75	H	H	H	H	H	M	L	M	H	M	-	H	H	H	M
CLO-6 :	Validate and create model-driven forms	3	80	70	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	Angular JS Arays	Angular JS Scope	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	Angular JS Expressions vs Java Script Expressions	Understanding the scope	ii)*Document with Documents as values*
S-2	SLO-1	Script tag in HTML	Function Definition	Angular JS Modules	Angular JS Filters	iii)*Document with Array as values*
	SLO-2	Java Script declaration	Function Parameters	Creating a Module	Adding Filters to Directives	CRUD operation :Insert Operation *i)insertOne() and ii)insertMany()* with examples
S-3	SLO-1	Output printing – document. Write, innerHTML	Calling a Function	Adding a Controller	The filter Filter	Perform Query Operation for the following situations *i)Query on nested documents*

						ii)Query an array
	SLO-2	window .alert, console.log	Return Statements	Adding a Directive	Filter an Array Based on User Input	*ii)Query an array of nested documents* *iv)Geospatial Queries* *Query Operation Examples*
S-4	SLO-1	Java script statements	Nested Functions	Modules in Files	Sorting an Array based on Userinput	Update Operation: *updateOne(), updateMany()*
	SLO-2	Comments and Variables	Example Programs	Controllers in Files	Custom Filters	*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 Angular js modules	Lab 10 – Apply Filters	*Lab :Working with CRUD operations* Insert and Query
S-9	SLO-1	Java script Operators -Logical, Bitwise	Web stacks introduction	Angular JS Directives	Angular Service $http Service, $timeout Service, $interval service	Delete Operation: deleteMany(), deleteOne()
	SLO-2	Arithmetic and Assignment operators	LAMP and LEMP	Data Binding	Creating own services	iii)findOneAndDelete() Delete operation Examples
S-10	SLO-1	Java Script Datatypes - numeric	Difference between php and java script	Repeating HTML Elements	Angular JS $http and methods	Operation on Mongodb Data: projection
	SLO-2	Java Script Datatypes – non numeric	MEAN, MERN	ng-app directive	Angular JS $http and Properties	Limiting Records Sorting Records
S-11	SLO-1	Conditional statements	Angular Environment set up - windows	ng-init directive	Displaying Data in a Table	Indexes in Mongodb, default _id index
	SLO-2	If else statements	Angular JS Framework	Ng-model directive	Displaying with CSS Style	Creating and Index createIndex method
S-12	SLO-1	Switch statements	Angular JS with HTML	Create new directives	Angular JS Select Box	Single Field, Compound, Multikey
	SLO-2	Iteration statements	Angular ng directives	Restrictions	Data Source as Object	Geospatial,text Index, Hashed Index
S 13-16	SLO-1 SLO-2	Lab 2 – Java Script Operators and Conditions	Lab 5 – Working with Angular js and HTML	Lab 8 –Work with Directives	Lab 11 – Using http methods and properties	*Lab :Working with CRUD operations* Update and Delete
S-17	SLO-1	Loop Controls – for loop	Angular directives	Angular JS ng-model directive	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	Angular JS Expressions	Ng-model directive	Installing Mongo DB in Windows, Linux and Mac Operating Systems	iii)Sparse Indexes iv)TTL Indexes
S-18	SLO-1	Do while Loop	Angular JS Applications	Two-way binding	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	Angular JS Module	Validating use input	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	Angular JS Controller	Angularjs Data Binding – Data Model	Database: i)*createDatabase()*method with example	*Mongodb Backup: Export/Import data backup using shell* i)mongodump ii)mongorestore
	SLO-2	Accessing arrays	Angular JS Numbers	Angularjs Data Binding – ng Model	ii)*dropDatabase()* method with example	*Mongodb Backup: Export/Import data backup using Mongo Compass*
S-20	SLO-1	Array Properties : index, input length, prototype	Angular JS Strings	AngularJS Controller	Collections: i)*createCollection()* method with example	Monitoring Deployment using Mongodb: i)*mongostat, mongotop*
	SLO-2	Array Methods :concat, every, forEach	Angular JS Objects	Controller Methods	ii)*dropCollection()* method with example	iii)serverStatus, dbStats, collStats
S 21-24	SLO-1 SLO-2	Lab 3 - Looping Statements	Lab 6 – Work with numbers, strings and objects	Lab 9 – Validating User input for a GUI	Lab 12 – Create and manipulate database	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. AngularJS: https://angular.io/docs 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 Understand	20%	20%	15%	15%	15%	15%	15%	15%	15%	15%
Level 2	Apply Analyze	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Level 3	Evaluate Create	10%	10%	15%	15%	15%	15%	15%	15%	15%	15%
	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**
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