Course Code	PCS21S03J	Course Name	WEB DEVELOPMENT USING ANGULARJS AND MONGO	Course Category	S	Skill Enhancement Course	L	T	P	C
							3	0	2	4

Pre-requisite Courses	HTML BASICS	Co-requisite Courses	Nil	Progressive Courses	Nil
Course Offering Department	Computer Science	Data Book / Codes/Standards	Nil		

Course Learning Rationale (CLR):	The purpose of learning this course is to:
CLR-1 :	*Create single page applications and understand the functional behavior of dynamic web pages*
CLR-2 :	*Understand presentation components that look like HTML elements*
CLR-3 :	*Build corner to corner interactive components in dynamic web pages*
CLR-4 :	*Understand MVC framework/architecture of web programming/client-server architecture*
CLR-5 :	*Build synchronized objects across view and model components*
CLR-6 :	*Learn the Fundamentals of MongoDB*

Course Learning Outcomes (CLO):	At the end of this course, learners will be able to:	Learning			Program Learning Outcomes (PLO)														
		1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)	Engineering Knowledge	Problem Analysis	Design & Development	Analysis, Design, Research	Modern Tool Usage	Society & Culture	Environment & Sustainability	Ethics	Individual & Team Work	Communication	Project Mgt. & Finance	Life Long Learning	PSO - 1	PSO - 2	PSO – 3
CLO-1 :	*Make use of expressions, do data binding with external components*	3	90	90		H	L	M	M	H	-	-	-	-	-	-	-		
CLO-2 :	*Distinguish the role of MVC in creating dynamic web applications*	3	90	90		H	M	M	M	H	-	-	-	-	-	-	-		
CLO-3 :	*Understand the role of reusability and data encapsulation in the form of objects*	3	85	85		H	M	M	M	H	-	-	-	-	-	-	-		
CLO-4 :	*Distinguish RDBMS and schema design of MongoDB*	4	90	90		H	M	M	M	H	-	-	-	-	-	-	-		
CLO-5 :	*Perform query operations using MongoDB*	3	90	90		H	M	M	M	H	-	-	-	-	-	-	-		
CLO-6 :	*Understand and build logical relationships between documents using MongoDB*	4	85	85		H	H	H	H	H	-	-	-	-	-	-	-		

Duration (Hour)		15	15	15	15	15
S-1	SLO-1	*Introduction of Scripting Language*	*Arrays Introduction and Declaring and Accessing arrays*	*Angular Js Expressions,*	*Angular JS Scope*	*Document with different types of values i)Document with Scalar Values*
	SLO-2	*Difference between client and server side scripting.*	*Array Properties : index, input, length, prototype*	*Angular JS Numbers , Angular JS Strings*	*Understanding the scope*	*ii)Document with Documents as values iii)Document with Array as values*
S-2	SLO-1	*Script tag in HTML*	*Array Methods :concat, every, forEach, educe, reverse*	*Angular JS Object , Angular JS Arrays*	*Angular JS Filters*	*CRUD operation :Insert Operation i)insertOne() and ii)insertMany() with examples.*
	SLO-2	*Java script declaration*	*Array Methods :indexOf, join, lastIndexOf, toString, slice, some, sort*	*Angular JS Expressions vs Java Script Expressions*	*Adding Filters to Directives*	*Perform Query Operation for the following situations i)Query on nested documents ii)Query an array ii)Query an array of nested documents iv)Geospatial Queries Query Operation Examples*
S-3	SLO-1	*Output Printing and Input methods*	*Function Definition and Parameters*	*Angular JS Application*	*Filter an Array Based on User Input and Sorting an Array based on User input*	*Update Operation: updateOne(), updateMany()*
	SLO-2	*Java script statements,*	*Calling a Function*	*Angular JS Modules*	*Custom Filters*	*replaceOne(), findAndModify() Update operation :Examples*
S 4-5	SLO-1	*Laboratory 1: Java Script Input and Output*	*Laboratory 4 : Functions*	*Laboratory 7: Angular Js program Using Controllers*	*Laboratory 10: Angular Js program using filters*	*Laboratory 13: Working with CURD operations Insert and Query*
	SLO-2					

Duration (Hour)		15	15	15	15	15
S-6	SLO-1	Java Script Comments and Variables	Function Return Statement	Angular JS Controller	Angular Service $http Service, $timeout Service, $interval service	replaceOne(), findAndModify() Update operation :Examples
	SLO-2	Java script Operators-Arithmetic and Relational	Nested Function	Controller Methods	Creating own services	findOneAndDelete() Delete operation Examples
S-7	SLO-1	Logical, Bitwise	Introduction Web Stack	Two – way Data binding :	Angular JS $http and methods, Angular JS $http and Properties	Operation on Mongodb Data: Projection, Limiting Records Sorting Records
	SLO-2	Assignment and Special operators	LAMP, LEMP,MEAN	i)Creating Angular Application using ng-app	Displaying Data in a Table, Displaying with CSS Style	Indexes in Mongodb, default _id index, Creating and Index createIndex method
S-8	SLO-1	Java Script Datatypes- Numeric	Angular Environment set up – windows	ii)Adding a ng-model	Angular JS Select Box	Single Field, Compound, Multikey,
	SLO-2	Java Script Datatypes- Non Numeric	Angular JS Framework, Angular JS with HTML	iii)Adding a ng-bind or Angular Js expression	Data Source as Object	Geospatial,text Index, Hashed Index
S 9-10	SLO-1	Laboratory 2 : Java Script Operators and Conditions	Laboratory 5:Angular Js directives	Laboratory 8: data binding	Laboratory 11 : location service and timeout service	Laboratory 14: Working with CURD operations Update and Delete
	SLO-2					
S-11	SLO-1	Conditional Statements	Angular directives	Creating Angular JS Application	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 iii)Sparse Indexes iv)TTL Indexes
	SLO-2	If,If..else Statements, If...else if... statement	Builtin directives- ng-app, ng-init	Creating a module	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
S-12	SLO-1	JavaScript Switch Statement	ng-model, ng-bind, ng-controller	Adding a controller	Introduction to entities of MongoDB: i)Databases i)Collections and iii)Documents	v) $push vi) $addToSet vii) $first viii) $last
	SLO-2	Iteration Statement	ng-repeat, ng-readonly, ng-disabled, ng-if	Adding a Directive	Database: i)createDatabase()method with example	MongoDB Backup: Export/Import data backup using shell i)mongodump ii)mongorestore
S-13	SLO-1	For Loop	Create new directives	Modules in Files	ii)dropDatabase() method with example	MongoDB Backup: Export/Import data backup using Mongo Compass
	SLO-2	Do..While Loop, While Loop	Restrictions	Controllers in Files	Collections: i)createCollection() method with Example ii)dropCollection() method with example	Monitoring Deployment using Mongodb: mongostat, mongotop, serverStatus, dbStats, collStats
S 14-15	SLO-1	Laboratory 3 : Looping Statements	Laboratory 6: Manipulating strings and numbers	Laboratory 9: Data binding: controllers and external files	Laboratory 12: creating a database in MongoDB	Laboratory 15: 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
	SLO-2					

Learning Resources	1. Ken Williamson (2015), "Learning AngularJS: A Guide to AngularJS Development", O'REILLY	1. URL: https://docs.AngularJS.org/api 2. URL: https://docs.mongodb.com/manual/tutorial/

Learning Assessment									
	Bloom's Level of Thinking	Continuous Learning Assessment (100% weightage)							
		CLA – 1 (20%)		CLA – 2 (20%)		CLA – 3 (30%)		CLA – 4# (30%)	
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice
Level 1	Remember Understand	10%	10%	10%	10%	10%	10%	10%	10%
Level 2	Apply Analyze	20%	20%	20%	20%	20%	20%	20%	20%
Level 3	Evaluate Create	20%	20%	20%	20%	20%	20%	20%	20%
	Total	100%		100%		100%		100 %	

CLA – 4 can be from any combination of these: Assignments, Seminars, Short 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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