# SCHEMEOF COURSEWORK

DepartmentofComputer Science&Engineering

CourseDetails:

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|---|---|
| CourseTitle | Software Engineering |
| CourseCode | : 15CT1114 |
| Program: | : B.TECH |
| Specialization: | Information Technology |
| Semester | V |
| Prerequisites | NIL |
| Coursesto whichi | .tisa prerequisite: SoftwareProjectManagement, SoftwareTesting Methodologies. |

CourseOutcomes(COs):

| CO No. | Courseoutcomes |
|---|---|
| CO1 | Explain Softwareprocessmodels |
| CO2 | Differentiatefunctional and non functional requirements |
| CO3 | Discusssystemmodels |
| CO4 | Explain testingstrategies |
| CO5 | Discuss risk managementand qualitymanagementtechniques |

CourseOutcomeversusProgramOutcomes:

| COs | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO-1 | | 2 | 2 | | | | | | | | | | 2 | | |
| CO-2 | 2 | | 2 | | | | | | | | | | 2 | | |
| CO-3 | | 2 | 3 | | | | | | | | | | 2 | | |
| CO-4 | 2 | | 2 | | 3 | | | | | | | | 2 | | |
| CO-5 | 2 | 2 | 2 | | | | | | | | | | 2 | | |

AssessmentMethods:Assignment /Quiz / Seminar/CaseStudy / Mid-Test/

## Teaching-Learningand Evaluation

| Week | TOPIC / CONTENTS | CourseOutcomes | Samplequestions | TEACHING-LEARNING STRATEGY | Assessment Method&Schedule |
|---|---|---|---|---|---|
| 1 | INTRODUCTIONTO SOFTWARE ENGINEERING:Software, TheNature ofSoftware,SoftwareEngineering,TheSoftwareProcess,SoftwareEngineeringpractice,SoftwareMyths, A GenericProcessModel,ProcessAssessment andImprovement,ProductandProces | CO-1 | 1. Definesoftware<br>2. engineering Definesoftware | Lecture/ Discussion | Assignment (Week7-8) Mid-Test1 (Week9) Quiz-1 |
| 2 | PROCESSMODELS:PrescriptiveProcessModels-TheWaterfallModel,IncrementalProcessModels,EvolutionaryProcessModels, ConcurrentModels. | CO-1 | 1. Differentiate PSP<br>2. &TSP Listthestages ofCMMI | Lecture/ Discussion | Mid-Test1(Week9) Quiz-1 |
| 3 | SpecializedProcessModels.TheUnifiedProcess,Personal and TeamProcessModels. | CO-1 | 1.Whatareteamprocessmodels | | Mid-Test1Quiz-1(Week9) |

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| 4 | SOFTWAREREQUIREMENTS: FunctionalandNonfunctionalRequirements,UserRequirements,InterfaceSpecification,theSoftwarerequirementsdocument. | CO-2 | 1. Differentiatefunctionaland nonfunctionalrequirements Whatisunifiedprocess? | Lecture/ Discussio n | Mid-Test1 (Week9)<br><br>Quiz-1 |
| 5 | SOFTWAREREQUIREMENTS: FunctionalandNonfunctionalRequirements,UserRequirements,InterfaceSpecification,theSoftwarerequirementsdocument. | CO-2 | 1. Listsome nonfunctional requirements<br>2. WhatisSRS?<br>3. Whatare incrementalprocess models? | Lecture/ Discussio n | Assignment (Week7-8)<br>Mid-Test1 (Week9)<br>Quiz-1 |
| 6 | DESIGN ENGINEERING:The DesignProcess,DesignConcepts,theDe signModel. | CO-3 | 1. Whatistechnicalfeasibility Definerequirementselicitation | Lecture/ Discussio n | Assignment (Week7-8)<br>Mid-Test1 (Week9)<br>Quiz-1 |
| 7 | ARCHITECTURALDESIGN: SoftwareArchitecture,Architectural Genres,ArchitecturalStyles, | CO-3 | 1. Differentiateverificationandvalidation<br>2. Listsomebehavioralmodels | Lecture/ Discussio n | Mid-Test1 (Week9)<br>Quiz-1 |
| 8 | Architectural Design,Architectural | CO-3 | 1. Whatarestructured | Lecture/ | Assignment |
| | MappingusingDataFlow. | | methods? | Discussion | (Week7-8)<br>Mid-Test1 (Week9)<br>Quiz-1 |
| 9 | Mid-Test1 | | | | |
| 10 | SYSTEMMODELS:ContextModels,BehavioralModels,DataModels,ObjectM odels,StructuredMethods.. | CO-3 | 1. Whatisdatamodel | Lecture/ Discussion | Mid-Test2 (Week18)<br>Quiz-2 |
| 11 | OBJECTORIENTED DESIGN: ObjectsandObjectClasses,an ObjectOrientedDesignProcess,Design Evolution | CO-3 | 1. What is an objectand a class? | Lecture/ Discussion | Mid-Test2 (Week18)<br>Quiz-2 |
| 12 | USER-INTERFACEDESIGN:The GoldenRules,UserInterfaceAnalysisand Design,InterfaceAnalysis,InterfaceDes ignSteps,DesignEvaluation | CO-4 | 1. What is an interface | Lecture/ Discussion | Mid-Test2 (Week18)<br>Quiz-2 |

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| 13 | SOFTWARETESTING STRATEGIES:A StrategicApproachto SoftwareTesting,TestStrategiesforConv entionalSoftwareandObjectOrientedSof tware,ValidationTesting,WhiteBoxTesting,BasisPathTesting,Black-BoxTesting,SystemTesting.) | CO-4 | 1. Definetesting<br>2. Definesystemt esting | Lecture/ Discussio n | Assignment( Week15-17) Mid-Test2 (Week18) Quiz-2 |
| 14 | PRODUCTMETRICS: AFrameworkfor ProductMetrics,MetricsforRequiremen tsModel,MetricsforDesignModel,Metr icsforSourceCode,MetricsforTesting, MetricsforMaintenance. | CO-4 | 1.What is a<br>2.metric? definevalidationt esting | Lecture/ Discussio n | Mid-Test2 (Week18) Quiz-2 |
| 15 | PROCESSAND PROJECT METRICS:SoftwareMeasurement, Metricsfor SoftwareQuality. | CO-4 | 1. List out projectmetrics | Lecture/ Discussio n | Mid-Test2 (Week18) Quiz-2 |
| 16 | RISKMANAGEMENT:Reactiveve rsusProactive RiskStrategies,SoftwareRisks, RiskIdentification,RiskProjection | CO-5 | 1. what is a risk | Lecture/ Discussio n | Assignment( Week15-17) Mid-Test2 (Week18) Quiz-2 |
| 17 | RiskRefinement,RMMM,RMMMPl an. QUALITY | CO-5 | 1. defineRMMM | Lecture/ Discussio n | Assignment( Week15-17) Mid-Test2 (Week18) Quiz-2 |
| 18 | Mid-Test2 | | | | |
| 19/20 | END EXAM | | | | |