# SCHEMEOFCOURSEWORK

CourseDetails:

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| COURSETITLE | MobileCommunications | | |
| COURSECODE | 15CT1130 | L T P C | 3 0 0 3 |
| PROGRAM | B.TECH | | |
| SPECIALIZATION | Information Technology | | |
| SEMESTER | VII | | |
| PRE REQUISITES | COMPUTERNETWORKS | | |
| COURSESTOWHICHIT IS A PREREQUISITE | N/A | | |

CourseOutcomes(COs):

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| CO-1 | ExplainsystemarchitectureofGSM. |
| CO-2 | ExplainconceptsofmobileIP |
| CO-3 | Explainconceptsoftransportlayer |
| CO-4 | DifferentiateroutingalgorithmsusedinMANET's. |
| CO-5 | Discusswirelessapplicationprotocolarchitecture. |

ProgramOutcomes(POs):

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| PO-1 | Graduateswillbeabletoapplytheknowledgeofmathematics,science,engineeringfundamentalsandprinciplesofComputerScience&Engineeringtosolvecomplexproblemsindifferentdomains |
| PO-2 | Graduatescanidentify,formulate,studycontemporarydomainliteratureandanalyzereallifeproblemsandmakeeffectiveconclusionsusingthebasicprinciplesofscienceandengineering |
| PO-3 | GraduateswillbeinapositiontodesignsolutionsforEngineeringproblemsrequiringindepthknowledgeofComputerScienceanddesignsystemcomponentsandprocessesasperstandardswithemphasisonprivacy, security,publichealthandsafety. |
| PO-4 | Graduateswillbeabletoconductexperiments,performanalysisandinterpretdataasperttheprevailingresearchmethodsandtoprovidevalidconclusions. |
| PO-5 | Graduateswillbeabletoselectandapplyappropriatetechniquesandusemodernsoftwaredesignanddevelopmenttools.Theywillbeabletopredictandmodelcomplexengineeringactivitieswiththeawarenessofthepracticallimitations. |
| PO-6 | GraduateswillbeabletocarryouttheirprofessionalpracticeinComputerScience&Engineeringbyappropriatelyconsideringandweighingtheissuesrelatedtosocietyandcultureandtheconsequentresponsibilities. |
| PO-7 | Graduateswouldunderstandtheimpactoftheprofessionalengineeringsolutionsonenvironm entalsafetyandlegal |

# SCHEMEOFCOURSEWORK

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| PO-8 | Graduateswilltransformintoresponsiblecitizensbyadheringtoprofessionalethics. |
| PO-9 | Graduateswillbeabletofunctioneffectivelyinalargeteamofmultidisciplinarystreamsconsistingofpersonsofdiversecultureswithoutforgettingthesignificanceofeachindividual'scontribution. |
| PO-10 | Graduateswillbeabletocommunicateeffectivelyaboutcomplexengineeringactivitieswiththeengineering communityaswellasthegeneralsociety,andwillbeabletopreparereports. |
| PO-11 | Graduateswillbeabletodemonstrateknowledgeandunderstandingoftheengineeringandmanagementprinciplesandapplythesamewhilemanagingprojectsinmultidisciplinaryenvironments. |
| PO-12 | GraduateswillengagethemselvesinselfandlifelonglearninginthecontextofrapidtechnologicalchangeshappeninginComputerScienceandoth |

CourseOutcomeversusProgramOutcomes:

| COs | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | | | 3 | | 3 | | | | | | | | | 2 | |
| CO2 | 2 | | | 3 | | | | | | | | | | 2 | |
| CO3 | | | 3 | | 2 | | | | | | | | | 2 | |
| CO4 | | | | | 3 | 3 | | | | | | | | 2 | |
| CO5 | | | 2 | 3 | | | | | | | | | 2 | | |

S-Stronglycorrelated,M-Moderatelycorrelated,BlankNoCorrelation

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| AssessmentMethods | Assignment/Quiz/Mid-Test |

Teaching-LearningandEvaluation

SCHEMEOFCOURSEWORK

| Week | Topic/Contents | CourseOutcome | SampleQuestions | TeachingLearningStrategy | Assessment Method&Schedule |
|---|---|---|---|---|---|
| | INTRODUCTIONTO MOBILECOMMUNICATIONSAND COMPUTING: | | 1. Whatismobilecomputing?Differencesbetweenmobilecomputingandcommunication? | | |
| 1 | Novelapplications, Limitations,andArchitecture. MediumAccessControl:MotivationforaspecializedMAC(Hiddenandexposedterminals,Nearandfarterminals), SDMA,FDMA,TDMA,CDMA. | CO-1 | 2. Explainnearandfartherminal inMAC. 3. Whatarethemultipleaccessschemesandexplainwithneatdiagrams? | Lecture USING BOARD | Assignment1, Test1Quiz-1 |
| 2 | WirelessLAN(IEEE802.11): Systemarchitecture,Protocolarchitecture,BasicDFWMAC-DCFusingCSMA/CA,DFWMACwith RTS/CTSextensions,DFWMACPCFwithpolling. | CO-1 | 1. DescribethemainspecificationsofPhysicalLayerintheIEEE802.11a,11band11g,respectively. 2. Explaintheprinciplesof FDMA,TDMAandCDMA,respectively. | Lecture USING BOARD | Assignment1, Test1Quiz-1 |
| 3 | GSM : Mobileservices,Systemarchitecture,Radiointerface,Protocols,Localizationandcalling, Handoversecurity | CO-1 | 1. DefineGSM Architecture. 2. NamethemainelementsofGSMsystem architectureanddescribetheirfunctions. | Lecture USING BOARD | Assignment1, Test1Quiz-1 |
| 4 | MOBILENETWORK LAYER:MobileIP(Goals,assumptions,EntitiesandTerminology,IPpacketdelivery. | CO-2 | 1. WhatismobileIP?Explainvariousentitiesandterminologies usedinMobile Systems. 2. Explaintunnelingandencapsulationinamobilesystem. | Lecture USING BOARD | Assignment1, Test1Quiz-1 |
| 5 | AgentadvertisementandDiscovery, Registration,TunnelingandEncapsulation,Optimizations). DynamicHostConfiguration Protocol(DHCP). | CO-2 | 1. Explaintunnelingandencapsulationinamobilesystem. 2. ExplaininbriefaboutDHCP. | Lecture USING BOARD | Assignment1, Test1Quiz-1 |

# SCHEMEOFCOURSEWORK

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| 6 | MOBILE TRANSPORT LAYER:TraditionalTCP,IndirectTCPSnoopingTCP,MobileTCP. | CO-3 | 1. Differencebetween indirectTCPandSnooopingTCP.<br>2. Listoutthedisadvantagesofsnooping TCP. | Lecture USING BOARD | Assignment1, Test1Quiz-1 |
| 7 | Fastretransmit/fastrecovery, Transmission/timeoutfreezing,Selectiveretrans mission, TransactionorientedTCP. | CO-3 | 1. ExplainFastretransmitandFastrecoveryinmobileTCP.<br>2. Explaintransactionoriented TCP withexample.<br>3. Explainaboutthes electiveRetransm ission. | Lecture USING BOARD | Assignment2, Test2Quiz-2 |
| 8 | MOBILEAD HOCNETWORKS(MANETS): Overview,Propertiesof aMANET,SpectrumofM | CO-4 | 1. ExplainWiredandwirelessNetworks.<br>2. ExplainCellular MobileAdHocNetworks. | Lecture USING BOARD | Assignment2, Test2Quiz-2 |
| 9 | Routingand various routingalgorithms(DSR,DV/DSDV,AODV,LSR/OLSR, FSR,CGSR,ZRP),Securityis suesin MANETs. | C0-4 | 1.Discussanddetailthedifferencesintopologyreorganizationin DSDVand DSRroutingprotocols. | Lecture USING BOARD | Assignment2Test-2 Quiz- 2 |

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| 10 | WAP:Introduction,Protocol Architecture,Treatmentof protocolsofalllayers. | CO-5 | featuresofWAP.<br>2.Whatarethemajordifference betweenWAP 2.0andWAP1.x?Whatinfluencedthe WAP2.0development<br>3.Mentiontheroleoftransactionlayerin WAP | Lecture USING BOARD | Assignment-2, Test-2 Quiz-2 |
| 11 | Bluetooth:Userscenarios,Physicallayer,MAClayer,Networking, Security,LinkManagement. | CO-5 | 1. Describearchitectureof BLUETOOTH<br>2. Explainthesecuritywhichisimplementedin Bluet ooth. | Lecture USING BOARD | Assignment2Test-2 Quiz- 2 |
| 12 | J2ME:Configurations,Profiles,Packages,Midletlifecycle,DisplayandDisplayableClasses,CommandListenerandItemStateListener interfaces. | CO-5 | 1. Implementingvarious propertiesofWAPusingCommandlistenerandItem Statelistenerinterfaces.<br>2. Withaneatsketchexplainthearchitectureof J2ME. | Lecture USING BOARD | Assignment2Test-2 Quiz- 2 |