Master of Technology
In
Software Engineering

SCHEME & SYLLABUS
I to IV semesters
2017-2018
# Scheme of Teaching and Examination

**MTech in Software Engineering**  
First Semester MTech (SE) 2017-2018

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Subject Code</th>
<th>Course Title</th>
<th>Teaching Department</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Marks</th>
<th>Exam Duration (Hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SSE110</td>
<td>Software Project Planning and Management</td>
<td>IS&amp;E</td>
<td>4</td>
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<tr>
<td>2.</td>
<td>SSE120</td>
<td>Formal Methods in Software Engineering</td>
<td>IS&amp;E</td>
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<td>3.</td>
<td>SSE130</td>
<td>Machine Learning</td>
<td>IS&amp;E</td>
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<td>Distributed Computing</td>
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<td>Multimedia Computing</td>
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<td>4c.</td>
<td>SSE143</td>
<td>Advanced Algorithms</td>
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<td>Web Services</td>
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<td>Cyber Security</td>
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<td>SSE160</td>
<td>Minor Project – I</td>
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<td>SSE170</td>
<td>Seminar – I</td>
<td>IS&amp;E</td>
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**Total Credits:** 20  
**Total Contact Hours:** 3.5  
**Total Marks:** 4.5  
**Total Exam Duration (Hrs):** 28
### Scheme of Teaching and Examination

#### MTech in Software Engineering

Second Semester MTech (SE) 2017-2018

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Subject Code</th>
<th>Course Title</th>
<th>Teaching Department</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Marks</th>
<th>Exam Duration (Hrs)</th>
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<td>IS&amp;E</td>
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<td>Computational Linguistics</td>
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<td>Advanced Data Mining Techniques</td>
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Total Credits: 20
Total Contact Hours: 3.5
Total Marks: 4.5
Total Exam Duration (Hrs): 28

Total Contact Hours: 36
Total Marks: 350
Total Exam Duration (Hrs): 250

Total Contact Hours: 600
Total Exam Duration (Hrs): -
## Scheme of Teaching and Examination

**MTech in Software Engineering**  
Third Semester MTech (SE) 2017-2018

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<td>SSE31T</td>
<td>Practical Training in Industry/Exploration in Research</td>
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<td>Total Marks 200</td>
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**Total Credits:** 18  
**Total Marks:** 200
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<th>Subject Code</th>
<th>Course title</th>
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<th>Marks</th>
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Total Credits: 26
Total Marks: 300
SSE110 SOFTWARE PROJECT PLANNING AND MANAGEMENT

Total Teaching Hours: 50

No. of Credits: 05

Syllabus

Rapid Software Development 10 Hours

Agile methods; Extreme programming; Rapid application development. Software Reuse: Reuse landscape; Design patterns; Generator-based reuse; Application frameworks; Application system reuse. Component-Based Software Engineering: Components and component models; Component-Based Software Engineering Process. Software configuration management: Introduction, Some Basic Definitions and terminology, the processes and activities of software configuration management, configuration status accounting, configuration audit, software configuration management in geographically distributed teams, Metrics in software configuration management, software configuration management tools and automation.

Risk Management 10 Hours


Software Requirements gathering 10 Hours

Inputs and start criteria for requirements gathering, Dimensions of requirements gathering, Steps to be followed during requirements gathering, outputs and quality records from the requirements phase, skill sets required during requirements phase, differences for a shrink-wrapped software, challenges during the requirements management phase, Metrics for requirements phase. Estimation: What is Estimation? when and why is Estimation done?, the three phases of Estimation, Estimation methodology, formal models for size Estimation, Translating size Estimate into effort Estimate, Translating effort Estimates into schedule Estimate, common challenges during Estimation , Metrics for the Estimation processes. Design and Development Phases: Some differences in our chosen approach, salient features of design, evolving an architecture/ blueprint, design for reusability, technology choices/ constraints, design to standards, design for portability, user interface issues, design for testability, design for diagnose ability, design for maintainability, design for install ability, inter-operability design, challenges during design
and development phases, skill sets for design and development, metrics for design and development phases.

**Project management in the testing phase**

Introduction, What is testing?, what are the activities that makeup testing?, test scheduling and types of tests, people issues in testing, management structures for testing in global teams, metrics for testing phase. Project management in the Maintenance Phase: Introduction, Activities during Maintenance Phase, management issues during Maintenance Phase, Configuration management during Maintenance Phase, skill sets for people in the maintenance phase, estimating size, effort, and people resources for the maintenance phase, advantages of using geographically distributed teams for the maintenance phase, metrics for the maintenance phase.

**Globalization issues in project management**

Evolution of globalization, challenges in building global teams, Models for the execution of global projects, some effective management techniques for managing global teams. Impact of the internet on project management: Introduction, the effect of internet on project management, managing projects for the internet, Effect on the project management activities. People focused process models: Growing emphasis on people centric models, people capability maturity model(P-CMM), other people focused models in the literature, how does an organization choose the models to use?

**Text Book:**


**Reference Books:**

SSE120 FORMAL METHODS IN SOFTWARE ENGINEERING

Total Teaching Hours: 50  No. of Credits : 05

Syllabus

Introduction 10 Hours


How to Prove a Program Correct: Programs Without Loops: Program Correctness, The Weakest Precondition wp(S, Q), Finding the wp(S, Q), The Assignment Axiom, A Sequence of Assignments: The Composition Rule, SPARK Experiments.

Program Correctness 10 Hours

How to Prove a Program Correct: Iterative Programs?: When not possible to Verify All Paths: Programs with Loops, From the Particular to the General: Mathematical Induction, Loop Invariants, Where do Invariants Come From: Goal Invariant, Supporting the Proof: Using the Proof Checker, Does the Loop Terminate? Variants.

Prepare Test for Any Implementation: Black-Box Testing:

Program Representation 10 Hours

Intermediate Program Representation: Introduction, Program Parse and Syntax Trees, Program Control Flowgraph, Labeled Flowgraphs, Deriving the Flowgraph, Paths in Flowgraphs.

Program Dependencies: Dominators and Attractors, Control Dependency: Structured Control, Control Dependency: Arbitrary Control, Computing Control Dependency, Data and General Dependency.

Program Analysis 10 Hours


Program Debugging 10 Hours


Text Book


Reference Book:

SSE130  MACHINE LEARNING

Total Teaching Hours:  50  No. of Credits  :  05

Syllabus

Introduction & Bayesian Decision Theory  10 Hours


Dimensionality Reduction  10 Hours

Introduction, Feature Generation, Feature Selection, Principal Component Analysis, Factor Analysis, Multidimensional Scaling, Linear Discriminant Analysis, Locality Preserving Projections (LPP) and it’s variants, Locality Preserving Indexing and its variants.

Supervised Learning  12 Hours

Learning a Class from Examples, Probably Approximately Correct (PAC) Learning, Noise, Learning Multiple Classes, Regression, Model Selection and Generalization, Dimensions of a Supervised Machine Learning Algorithms, Decision Tree Induction, Nearest Neighbors, Bayesian Classifier, Artificial Neural Networks, Model Over fitting, Performance Evaluation of classifiers.

Clustering  10 Hours


Machine Learning Applications in Software Engineering  8 Hours

The challenges, Related Issues, Learning Approaches, SE tasks for ML Applications, State of the Practice in ML & SE, Present Status, Applying ML algorithms to SE Tasks.

Text Books:

Reference Books:
2. Machine Learning Applications in Software Engineering, Du Zhang and Jeffrey J. P. Tsai, World
4. Related Research Articles
SSE141 DISTRIBUTED COMPUTING

Total Teaching Hours: 50 No. of Credits : 05

Syllabus:

Concepts in Distributed Systems 10 Hours


Remote Communication 10 Hours

Introduction, RPC basics, RPC implementation, RPC Communication and Other issues, Sun RPC, RMI basics, RMI Implementation, Java RMI.

Synchronization 10 Hours

Clock synchronization, Logical clocks, Global state, Mutual exclusion, Election algorithms: Bully algorithm, Ring algorithm, Leader election in rings, anonymous rings, Asynchronous rings, synchronous rings, election in wireless networks, Deadlocks in Distributed systems, Deadlocks in Message communication

Distributed System Management 10 Hours

Resource management, Task management approach, Load balancing approach, Load sharing approach, Process Management, Process migration, threads, fault tolerance

Distributed Shared Memory 10 Hours

Concepts, Hardware DSM, Design issues in DSM systems, Implementation issues, Heterogeneous and other DSM systems. Naming: Overview, Features, Basic concepts, System oriented names, Object locating mechanisms, Issues in designing human oriented names, Name caches, Naming and security, DNS

Text book:

Reference Books:

1. Distributed Computing, Fundamentals, Simulations and Advanced topics, Hagit Attiya and Jennifer Welch, Wiley India.
SSE142     MULTIMEDIA COMPUTING

Total Teaching Hours:  50               No. of Credits :  05

Syllabus

Introduction 10 Hours

Introduction - Multimedia applications – architecture and issues for distributed multimedia systems – multimedia skills – digital audio representations and processing – video technology.

Information and Entropy 10 Hours

Characteristics of entropy , Noiseless and Memory less coding, Shannon fano and Huffman coding , Multimedia data compression II: Lossy compression algorithm: Quantization, Transform Coding, Wavelet-Based Coding, Embedded Zerotree of Wavelet Coefficients Set Partitioning in Hierarchical Trees (SPIHT).

Audio, Digital Video and Image Compression 10 Hours


Multimedia Standards 10 Hours

Multimedia Standards, Mpeg 1, Mpeg -2 Mpeg 4 Mpeg 7 ITU –T, Multimedia Communications over ATM Networks & IP Network, Mobile Networks & Broad Casting

Multimedia Information System 10 Hours

Operating system support for continuous media applications – middleware system service architecture – multimedia device, presentation services and user interface – multimedia file systems and information model.

Text Books:

1. Adam Drozdek Elements of Data Compression Thomson Learning

Reference Book:

SSE143    ADVANCED ALGORITHMS

Total Teaching Hours:  50     No. of Credits :  05

Syllabus

Analysis Techniques  10 Hours

Growth of functions – Asymptotic notations, Standard notations and common functions; Recurrences and solution of recurrence equations – Substitution method, Recurrence-tree method, Master method; Amortized analysis – Aggregate, Accounting, Potential methods.

Graph Algorithms/Internet Algorithms  10 Hours

Search engines, Ranking web pages, Hashing, Cashing, content delivery and consistent hashing.

Number Theoretic Algorithms  10 Hours

Elementary notations, GCD, Modular arithmetic, Solving modular equations, Chinese remainder theorem, Powers of an element, RSA cryptosystem, Primality testing, Integer factorization.

String Matching Algorithms  10 Hours


Probabilistic and Randomized Algorithms  10 Hours

Probabilistic algorithms, Randomizing and deterministic algorithms, Monte-Carlo and Las-Vegas algorithms, Probabilistic numeric algorithms.

Text Book:


Reference Book:

SSE151  NUMERICAL LINEAR ALGEBRA

Total Teaching Hours: 50
No. of Credits: 05

Syllabus

Introduction

QR Factorization & Least Squares: Projectors, QR Factorization, Gram – Schmidt Orthogonalization, MATLAB, Householder Triangularization, Least Squares Problems.

Conditioning & Stability


Systems of Equations

Gaussian Elimination, Pivoting, Stability of Gaussian Elimination, Cholesky Factorization.

Eigenvalues

Eigenvalue Problems, Overview of Eigenvale Algorithms, Reduction to Hessenberg or Tridiagonal form, Rayleigh Quotient, Inverse Iteration, QR Algorithm without Shifts, QR Algorithm with Shifts, Other Eigenvalue Algorithms, Computing SVD.

Iterative Methods


Text Book:

1. Numerical Linear Algebra, Llyod N Trefethen & Davis Bau III, SIAM.

Reference Book:


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SSE152 WEB SERVICES

Total Teaching Hours: 50          No. of Credits : 05

Syllabus

Overview 10 Hours

Distributed Information system-Design of information system, Architecture of information system, Communication in a information system. Understanding middleware, RPC and related middleware, TP monitors, object brokers, Message-oriented middleware.

Introduction to Web services 10 Hours

The basics of Web Services; An example; Next generation of the Web; Interacting with Web Services; The technology of Web Services; XML for business collaboration: bXML; Web Services versus other technologies; Additional technologies.

XML 10 Hours

An example; Instance and schema; Processing XML documents; Namespaces; Transformation; XML specifications and information.

WSDL 10 Hours

Basics; WSDL elements; The extensible WSDL framework: Importing WSDL elements; WSDL-Related Namespaces; Extensions for binding to SOAP. SOAP: Example; The SOAP specifications; SOAP message processing; SOAP use of Namespaces; SOAP Multipart MIME; Attachments; SOAP in the context of existing systems;

UDDI Registry 10 Hours

The UDDI organization; The concepts underlying UDDI; How UDDI works? UDDI SOAP APIs; Usage scenarios; Using WSDL with UDDI; UDDI for private use; UDDI Support for SOAP, Complex business relationships, and UNICODE. EBXML: Overview of web XML; ebXML specifications.

Text Book:

1. Web services: concept, architecture and applications, springer-Verlag, Gustavo Alonso, Fabio Casati, Harumi Kuno, vijay Machiraju
Reference Books:

3. Relevant web Sites.
## SSE153  CYBER SECURITY

**Total Teaching Hours:** 50  
**No. of Credits:** 05

### Syllabus

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<td>Systems Vulnerability Scanning</td>
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<tr>
<td>Network Defense tools</td>
<td>10</td>
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<td>Firewalls and Packet Filters: Firewall Basics, Packet Filter Vs Firewall, How a Firewall Protects a Network, Packet Characteristic to Filter, Stateless Vs Stateful Firewalls, Network Address Translation (NAT) and Port Forwarding, the basic of Virtual Private Networks, Linux Firewall, Windows Firewall, Snort: Introduction Detection System</td>
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<tr>
<td>Web Application Tools</td>
<td>10</td>
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<tr>
<td>Introduction to Cyber Crime and law</td>
<td>10</td>
</tr>
<tr>
<td>Introduction to Cyber Crime Investigation</td>
<td>10</td>
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<tr>
<td>Firewalls and Packet Filters, password Cracking, Keyloggers and Spyware, Virus and Warms, Trojan and backdoors, Steganography, DOS and DDOS attack, SQL injection, Buffer Overflow, Attack on wireless Networks</td>
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### Text Books:

2. Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives by Nina Godbole and Sunit Belpure, Publication Wiley
Total Teaching Hours: 50  No. of Credits: 05

Syllabus:

Software Quality 10 Hours


Software Tools 10 Hours

Applying The Seven Basic Quality Tools In Software Development : Ishikawa’s Seven Basic Tools, Checklist, Pareo Diagram, Histogram, Run Charts , Scatter Diagram, Control Chart, Cause And Effect Diagram. The Rayleigh Model: Reliability Models, The Rayleigh Model Basic Assumptions, Implementation, Reliability And Predictive Validity.

Software Testing 10 Hours

Basic definitions, Test cases, Insights from a Venn diagram, Identifying test cases, Error and fault taxonomies, Levels of testing. Examples: Generalized pseudocode, The triangle problem, The NextDate function, The commission problem, The SATM (Simple Automatic Teller Machine) problem

Software Testing Methodologies 10 Hours

Decision Table-Based Testing: Decision tables, Test cases for the triangle problem, Test cases for the NextDate function, Test cases for the commission problem, Guidelines and observations. Data Flow Testing: Definition-Use testing, Slice-based testing, Guidelines and observations. Levels of Testing: Traditional view of testing levels, Alternative life-cycle models, The SATM system, Separating integration and system testing. Integration Testing: A closer look at the SATM system, Decomposition-based, call graph-based, Path-based integrations, Case study.

System Testing 10 Hours

inheritance, and polymorphism, Levels of object-oriented testing, GUI testing, Dataflow testing for object-oriented software, Examples. Class Testing: Methods as units, Classes as units.

Books:

### SSE220  BIG DATA ANALYTICS

<table>
<thead>
<tr>
<th>Syllabus</th>
<th>Hours</th>
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</tr>
<tr>
<td><strong>No. of Credits:</strong> 05</td>
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#### Introduction & Perspective of Big Data  
10 Hours

Overview of Big Data, History, Structuring Big Data, Types of Data, Elements of Big Data, Data analytics project life cycle, Problems & challenges in understanding Data Analytics, Web page categorization (In detail), Case studies on: Stock Market changes. Application of Data Analytics in Digital market, Big Data benefit areas, Various Analytical approaches, Cross Channel Life cycle marketing, Use of Big Data in Social Networking, Use of Big Data in Business Intelligence, Use of Big Data in preventing Fraudulent activities, Use of Big Data in Retail Industry, Use of RFID Data in Retail, Big Data in Health Care, Predictive and Disruptive Analytics, Content delivery and market optimization.

#### Big Data Technology  
10 Hours

Exploring Big Data Stack, Virtualization, Virtualization Approaches, Distributed and parallel computing for Big Data, Introducing Hadoop, Hadoop Ecosystem, Hadoop Distributed File Systems(HDFS), Features of HDFS : Hadoop YARN, MAP Reduce, Features of Map Reduce, Working of Map Reduce, Techniques to Optimize Map Reduce Jobs, Uses of Map Reduce, HBase, Features of HBase, Role of HBase in Big Data processing, Other tools of Hadoop (Hive, Pig and Pig Latin, Sqoop, ZooKeeper, Flume, OOZie), The cloud and Big Data, Cloud Deployment Models, Cloud Delivery Models, Cloud providers in Big Data Market.

#### Mining Data Streams  
12 Hours


#### Advanced Analytical Theory and Methods  
08 Hours

Analytics on Text, Image, Video, Web, Social Network (A Case Studies on all the different types of Data), Time Series Analysis, NoSQL, Recommendation System: A Model, Content Based Recommendations, Collaborative Filtering, Dimensionality Reduction Problem, The NetFlix Problem.

#### Large Scale Machine Learning  
10 Hours

Networks, Learning from Nearest Neighbors, Decision Trees, Support Vector Machines, Neural Networks, Unsupervised Machine Learning Algorithms (Problems on Clustering): Hierarchical Clustering Techniques, Partitional Clustering techniques, Distance measures.

Text Books:


Reference Books:

2. Selected Research Articles from Internet.
SSE230  INTERNET OF THINGS

Total Teaching Hours:  50         No. of Credits :  05

Syllabus

M2M to IoT  10 Hours

The Vision—Introduction, From M2M to IoT, M2M towards IoT—the global context, A use case example, Differing Characteristics. M2M to IoT – A Market Perspective—Introduction, Some Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies.

M2M to IoT-An Architectural Overview  10 Hours

Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations M2M and IoT Technology Fundamentals- Devices and gateways, Local and wide area networking, Data management, Business processes in IoT, Everything as a Service(XaaS), M2M and IoT Analytics, Knowledge Management.

IoT Architecture-State of the Art  10 Hours


IoT Reference Architecture  10 Hours


Industrial Automation  10 Hours


Textbook:

Reference Books:

SSE241  COMPUTATIONAL INTELLIGENCE

Total Teaching Hours:  50  
No. of Credits :  05

Syllabus:

Introduction to Computational Intelligence  8 Hours

Representation and Reasoning, Ontology and Conceptualization, Intelligent Machines, Computational Intelligence Paradigms, Short History, Some Applications of Intelligence.

Fuzzy Theory – I  10 Hours


Fuzzy Theory – II  10 Hours


Artificial Neural Networks  12 Hours

Introduction – Fundamental concept – Evolution of Neural Networks, Basic Models of Artificial Neural Networks Multilayer feed-forward networks, Recurrent Neural Networks, ART Neural Networks, RBF Networks, Probabilistic Neural Networks, Deep Learning Networks.

Evolutionary Algorithms  12 Hours


Text Book:

Reference Books:

### SSE242  COMPUTATIONAL LINGUISTICS

**Total Teaching Hours:** 50  
**No. of Credits:** 05

#### Syllabus

<table>
<thead>
<tr>
<th>Module</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>10</td>
</tr>
<tr>
<td>What is computational linguistics? Ambiguity and uncertainty in language, regular languages, and their limitations, finite-state automata, morphology.</td>
<td></td>
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<tr>
<td><strong>Context Free Grammars</strong></td>
<td>10</td>
</tr>
<tr>
<td>Constituency, CFG definition, use and limitations. Chomsky Normal Form. Top-down parsing, bottom-up parsing, and the problems with each. The desirability of combining evidence from both directions</td>
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</tr>
<tr>
<td><strong>Programming in Python</strong></td>
<td>10</td>
</tr>
<tr>
<td>An introduction to programming from square one. Why Python? Variables, numbers, strings, arrays, dictionaries, conditionals, iteration. The NLTK (Natural Language Toolkit).</td>
<td></td>
</tr>
<tr>
<td><strong>Word Sense Disambiguation and Clustering</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Machine Translation</strong></td>
<td>10</td>
</tr>
<tr>
<td>Probabilistic models for machine translation system, alignment, translation, language generation. machine translation evaluation.</td>
<td></td>
</tr>
</tbody>
</table>

#### Text Book

Reference Books:

SSE243     BIOINFORMATICS

Total Teaching Hours:  50                     No. of Credits :  05

Syllabus

Introduction, Scope and Importance     8 Hours

Important contributions, Aims and Tasks of Bioinformatics, Applications of Bioinformatics, Challenges and Opportunities, Introduction to NCBI data model, Various file formats for biological sequences, The Data: Storage and Retrieval, Basic Principles, The Data, Data Quality, Data Representation.

Bioinformatics Database     10 Hours

Importance of Databases, Characteristics and Categories of Bioinformatics Database, Navigating Databases, Biological Databases, Primary Sequence Databases, Composite Sequence Databases, Secondary Databases, Nucleic Acid Sequence Databases, Structure Databases: File Formats, Protein Structure, PDB, MMDB, CATH, Other Database Enzyme, MEROPS, BRENDA, Pathway databases, Bibliographic Databases, Specialized Genomic Resources, Analysis Packages.

Sequence Align Methods     12 Hours

Sequence Analysis of Biological Data, Significance of Sequence Alignment, Pairwise Sequence Alignment Methods, Use of Scoring Matrices and Gap Penalties in Sequence Alignments, Multiple Sequence Alignment Methods - Tools and Application of multiple sequence alignment, Gene Predictions Strategies, Protein Prediction Strategies, Phylogenetic Trees and Multiple Alignments.

Bioinformatics Algorithms     12 Hours


Biostatistics & Tools     10 Hours

Handling Univariate and Bivariate Data, Measures of Central Tendency, Measures of Dispersion, Skewness & Kurtosis, Correlation and Regression.
Local Alignment Search Tool (BLAST), Purpose of BLAST, BLAST Analysis, Purpose of BLAST II, Scoring Metrics, PAM, BLOSUM, Working of BLAST, Introduction to HMMER.
Text Books:


Reference Books:

3. Internet Resources
SSE251  ADVANCED DATA MINING TECHNIQUES

Total Teaching Hours:  50           No. of Credits:  05

Syllabus

Introduction


Mining Data Stream

10 Hours

Mining Time-Series Data, Mining Sequence Patterns in Transactional Databases, Mining Sequence Patterns in Biological Data, Graph Mining, Social Network Analysis, Multi-relation Data Mining, Multidimensional Analysis and Descriptive Mining of Complex Data Objects, Spatial Data Mining, Multimedia Data Mining, Text Mining, Mining the World Wide Web.

Advanced Concepts in Association Analysis

8 Hours

Frequent Itemset Generation, Compact Representation of Frequent Itemsets, FP- Growth Algorithms, Handling Categorical and Continuous Attributes, Handling a Concept Hierarchy, Sequential Patterns, Subgraph Patterns, Infrequent Patterns, Counting Frequent Items in a Stream.

Data Mining Methods as Tools

12 Hours

Memory-Based Reasoning Methods, Fuzzy Sets in Data Mining, Rough Sets, Support Vector Machines, Genetic Algorithm Support to Data Mining, Performance Evaluation for Predictive Modeling.

Applications and Research Trends in Data Mining

10 Hours

Data Mining Applications (Financial Data Analysis, Retail Industry, Telecommunication Industry, Biological Data Analysis, Other Scientific Applications, Intrusion Detection), Data Mining System Products and Research Prototypes, Statistical Data Mining, Visual and Audio Data Mining, Data Mining and Collaborative Filtering, Data Mining, Privacy, and Data Security, Trends in Data Mining, Present Research Avenues.

Text Books:

1. Data Mining: Concepts and Techniques, Jiawei Han, Micheline Kamber, Jian Pei Professor, Third Edition, Morgan Kauffmann Publishers, 2011.
2. Advanced Data Mining Techniques, David L. Olson, Dursun Delen, Springer Publisher, 2008
Reference Books:

SSE252    MOBILE ADHOC NETWORKS

Total Teaching Hours:  50    No. of Credits:  05

Syllabus

Introduction    10 Hours

Introduction to adhoc networks – definition, characteristics features, applications. Characteristics of Wireless channel, Adhoc Mobility Models:- Indoor and out door models.

Medium Access Protocols Mac Protocols    10 Hours

Design issues, goals and classification. Contention based protocols- with reservation, scheduling algorithms, protocols using directional antennas. IEEE standards: 802.11a, 802.11b, 802.11g, 802.15. HIPERLAN.

Network Protocols Routing Protocols    10 Hours


End-End Delivery And Security Transport Layer    10 Hours


Cross Layer Design And Integration Of Adhoc For 4g Cross Layer Design    10 Hours

Need for cross layer design, cross layer optimization, parameter optimization techniques, Cross layer cautionary prespective. Intergration of adhoc with Mobile IP networks.

Text Book:


Reference Books:

SSE253 AGILE TECHNOLOGIES

Total Teaching Hours: 50  No. of Credits : 05

Syllabus

Why Agile? 10 Hours
Understanding Success, Beyond Deadlines, The Importance of Organizational Success, Enter Agility, How to Be Agile?: Agile Methods, Don’t Make Your Own Method, The Road to Mastery, Find a Mentor.

Understanding XP 10 Hours

Practicing XP 10 Hours

Mastering Agility 10 Hours

Deliver Value 10 Hours

Text Book:

Reference Books: