ASSAM SCIENCE AND TECHNOLOGY UNIVERSITY

Guwahati

Course Structure and Syllabus
For
M.TECH

COMPUTER SCIENCE AND ENGINEERING (CSE)

Semester II / CSE / M.TECH

Sl. No.	Course Code	Subject	Teaching Scheme (Hrs/week)			Examination Scheme			Credits
			L	T	P	ESE	MS/ ST	CE	C
Theory									
1	CSE132201	Distributed Systems	4	0	0	100	50	20	4
2	CSE132202	Cryptography and Network Security	4	0	0	100	50	20	4
3	CSE132203	Software Engineering Methodologies	4	0	0	100	50	20	4
4	-	Elective - III	4	0	0	100	50	20	4
5	-	Elective - IV	4	0	0	100	50	20	4
Practical									
6	CSE132211	Laboratory – II	0	0	6	60	20	20	3
7	CSE132221	Seminar - II	0	0	4	100	-	-	2
Total			20	0	10	660	270	120	**25**
Total Contact Hours : 30									
Total Credit : 25									

Elective - III and Elective - IV Subjects		
Sl. No.	**Subject Code**	**Subject**
1	CSE1322011	Advanced Operating System
2	CSE1322012	Mobile Computing
3	CSE1322013	Object Oriented Analysis and Design
4	CSE1322014	Image Processing
5	CSE1322015	Advanced Database
6	CSE1322016	Protocol Engineering
7	CSE1322017	Soft Computing
8	CSE1322018	Any other subject offered from time to time with the approval of the university

Course Title : DISTRIBUTED SYSTEMS
Course Code: CSE132201
L-T-P-C: 4-0-0-4

Class Hours/week	4
Expected weeks	12
Total hrs. of classes	48

MODULE	TOPIC	COURSE CONTENT	HOURS
1	**DISTRIBUTED SYSTEMS**	Design issues and user requirements. Inter Process communication.	8
2	**FILE SERVICES**	Design issues, Implementations and case studies, Name services and the Domain Name System.	10
3	**TIME AND CO-ORDINATION**	Physical & Logical Clocks - verifying clock algorithms, Mutual Exclusion, Mutual exclusion using timestamps, tokens ad Quorums. Leader elections, Global state, Termination Detection.	10
4	**DISTRIBUTED TRANSACTIONS**	Flat and nested distributed transactions, Concurrency control, Distributed deadlocks, Transaction recovery and Fault-tolerant services.	10
5	**SECURITY**	Design issues and case studies.	10
		TOTAL	**48**

REFERENCE BOOKS:

1. Coulouris, Dollimore and Kindberg, Distributed Systems-Concepts and Design, Pearson Education Asia.
2. P K Sinha, Distibuted Operating System, PHI, IEEE Press.
3. Singhal and Shivaratri, Advanced Concepts in Operating Systems, TMH.
4. Tanenbaum, Distributed Systems: Principles and Paradigms, Pearson Education.

Course Title : CRYPTOGRAPHY AND NETWORK SECURITY
Course Code: CSE132202
L-T-P-C: 4-0-0-4

Class Hours/week	4
Expected weeks	12
Total hrs. of classes	48

MODULE	TOPIC	COURSE CONTENT	HOURS
1	**ATTACKS**	Services - Mechanisms - Conventional Encryption - Classical and Modern Techniques – Encryption.	10
2	**ALGORITHMS**	Confidentiality.	6
3	**RSA**	Elliptic Curve Cryptography - Number Theory Concepts.	8
4	**HASH FUNCTIONS**	Digest Functions - Digital Signatures - Authentication protocols.	8
5	**AUTHENTICATION, APPLICATIONS**	Electronic Mail Security - IP Security - Web Security.	8
6	**FIRE WALLS**	Current Standards**.**	8
		TOTAL	48

REFERENCE BOOKS:

1. Stallings, Cyptography & Network Security - Principles & Practice, Prentice Hall.
2. Bruce, Schneier, Applied Cryptography, 2nd Edition, Toha Wiley & Sons.
3. Douglas R. Stinson, Cryptography - Theory and Practice, CRC Press.

Course Title : SOFTWARE ENGINEERING METHODOLOGIES
Course Code: CSE132203
L-T-P-C: 4-0-0-4

Class Hours/week	4
Expected weeks	12
Total hrs. of classes	48

MODULE	TOPIC	COURSE CONTENT	HOURS
1	**SOFTWARE PROCESS MODELS**	Software Process Framework, Process Patterns, Personal and Team Process Models, Process Models: Waterfall Model, Incremental Models, Evolutionary Models, Iterative Development, The Unified Process, Agile process, Process Assessment, CMMI, Impact of Processes and Outcomes, Process Selection and applicability.	5
2	**REQUIREMENTS ENGINEERING**	Requirements Engineering Tasks, Requirement Elicitation Techniques, Software Requirements: Functional, Non-Functional, Domain, Requirements Characteristics and Characterization, Requirement qualities, Requirement Specification, Requirement Traceability, System Analysis Model Generation, Requirement Prioritization.	6
3	**UML 2.0 CONCEPTS**	Programming In Small Versus Programming In Large, UML 2.0 History/ New Features MDA/ MOF/ XMI/ CORBA, Introduction to UML Metamodel, Extensibility Mechanisms and its usage, Introduction to OCL, Specification techniques of diagrams in UML.	4
4	**BEHAVIORAL MODEL**	Use Cases, Use Case Diagram Components, Use Case Diagram, Actor Generalization, Include and Extend, Template for Use Case Narrative, Using Use Cases Data Dictionary: Finding the Objects, Responsibilities, Collaborators and Attributes, CRC Cards.	5
5	**DYNAMIC BEHAVIOR**	Sequence diagrams, object lifelines and message types, Refining sequence diagrams, Implementing memory in objects using state machines, States, events and actions, Nested machines and concurrency, Modeling methods with activity diagrams,	5

		Activity Diagrams: Decisions and Merges, Synchronization, Drilling Down, Iteration, Partitions, Parameters and Pins, Expansion Regions, Swimlanes, concurrency and synchronization, Communication Diagram, Timing Diagrams.	
6	**DESIGN ENGINEERING**	Design quality, Design Concepts, The Design Model, Introduction to Pattern-Based Software Design, Architecture styles: Main program with sub program style, Abstract data type style, Repository, Layered. Architectural Design: Software Architecture, Data Design and Architectural Design, User Interface Design: Rules, User Interface Analysis and Steps in Interface Design, Design Evaluation.	7
7	**OBJECT ORIENTED DESIGN**	Design of Objects, Design and Factoring , Design of Software Objects ,Features and Methods, Cohesion of Objects , Coupling between Objects , Coupling and Visibility, Inheritance, Establishing The Object Model, Refining classes and associations, Analysis model vs. design model classes, **Categorizing classes:** entity, boundary and control, Modeling associations and collections, Achieving reusability, Reuse through delegation , Identifying and using service packages.	4
8	**PRINCIPLES OF TESTING**	**Testing Concepts:** Purpose of Software Testing, **Testing aspects:** Requirements, Test Scenarios, Test cases, Test scripts/procedures, Strategies for Software Testing, Testing Activities, Mistakes, Faults & Failures, Testing, Debugging & Root Cause Analysis, Software Items, Component & Units, Verification & Validation, Test Bed, Traceability and Testability, Attributes of Testable Requirements, Test Matrix, Benefits of Formal Test Documentation **White-Box Testing:** Test Adequacy Criteria, Static Testing, Structural Testing, Code	8

		Complexity Testing, Mutation Testing **Black-Box Testing:** Test Case Design Criteria, Requirement Based Testing, Positive and Negative Testing, Boundary Value Analysis, Equivalence Partitioning, State Based Testing, Compatibility Testing, User Documentation Testing, Domain Testing.	
9	**PROJECT PLANNING AND ESTIMATION**	Project Activities, Structures and Frameworks, Developing Realistic Estimates Integrating the Schedule and Critical Path, Introduction to Complex Projects, Assessing Project Viability, Managing Stakeholders, Introduction to Function Points, Empirical Estimation, COCOMO II model, Software Measurement Framework, Ishikawa's Seven tools, Process Assessment and patterns, CMMI –IPPD, Product and Process attributes.	4
		TOTAL	**48**

REFERENCE BOOKS:

1. Ian Sommerville, Software Engineering, 7th Edition, Addison-Wesley.
2. Grady Booch, James Rambaugh, Ivar Jacobson, "Unified Modeling Language Users Guide", 2ndEdition, Addison- Wesley.
3. Jim Arlow, Ila Neustadt, "UML 2 and Unified Process: Practical Object Oriented Analysis and Design. ", 2nd Edition, Addison- Wesley.
4. Tom Pender, "UML Bible", John Wiley & sons.
5. Desikan, Ramesh, 'Software Testing: principles and Practices", Pearson Education.
6. Burnstein, "Practical Software Testing", Springer International Edition.
7. William E. Perry, "Effective Methods for Software Testing", John Wiley and Sons.
8. Stephen H. Kan, "Metrics and Models in Software Quality Engineering", Pearson Education.

Course Title : ELECTIVE
Course Code: CSE1322011
L-T-P-C: 4-0-0-4

Class Hours/week	4
Expected weeks	12
Total hrs. of classes	48

ADVANCED OPERATING SYSTEM

MODULE	TOPIC	COURSE CONTENT	HOURS
1	**INTRODUCTION TO OPERATING SYSTEMS INTERNALS**	Study and comparison of different operating system architectures: Windows, Linux, Solaris.	6
2	**PROCESS MANAGEMENT**	**Windows:** System Mechanisms, Management Mechanisms, Startup and Shutdown, Process, Threads and Jobs. **Linux:** Process Descriptor and Task Structure, Process Creation, Implementation of threads, Process Termination, Process Scheduling.	10
3	**MEMORY MANAGEMENT**	**Windows:** Memory manager & its services, System memory pools, Virtual address space layout, address translation, page fault handling. **Linux:** Pages, Zones, kmalloc, vmalloc, slab layer, slab layer allocator, statically allocating on the stack, High memory mapping.	8
4	**FILE MANAGEMENT**	**Windows:** Windows file system formats, FS driver architecture, troubleshooting FS problems; NTFS design goal and features, NTFS drivers, NTFS on disk structure. **Linux:** Common File system Interface, File Abstraction Layer, Unix File System, VFS, Dentry Object, Super block Object, Inode Object, File Object, Data structure associated with File systems.	8
5	**I/O MANAGEMENT**	**Windows:** I/O system components, Device drivers, IO processing, PnP manager. **Linux:** Anatomy of block device, Buffer & Buffer Heads, the bio structure, Request queue, I/O scheduler.	8
6	**DEVICE DRIVER FOR PRINTER AND NETWORK CARD FOR LINUX AND WINDOWS**	Study effect of different parameters of setting of TCP/IP for Linux and Windows OS. Creating device driver for linux and windows.	8
		TOTAL	**48**

REFERENCE BOOKS:

1. Jim Mauro, Richard McDougall: "Solaris Internals: Core Kernel Architecture", 2nd Edition, Pearson Education.
2. Robert Love: "Linux Kernel Development", 2nd edition, Pearson Education.
3. Daniel Bovet: "Understanding the Linux kernel", 3rd edition, O'Reilly Publications.
4. Mark Russinovich, David Solomon: "Windows Internals", 4th edition, Microsoft Press.

Course Title : ELECTIVE
Course Code: CSE1322012
L-T-P-C: 4-0-0-4

Class Hours/week	4
Expected weeks	12
Total hrs. of classes	48

MOBILE COMPUTING

MODULE	TOPIC	COURSE CONTENT	HOURS
1	**MEDIUM ACCESS CONTROL**	Telecommunication systems - Satellite systems - Broadcast systems.	9
2	**WIRELESS LAN**	IEEE 802.11 - HIPERLAN - Bluetooth.	9
3	**CHARACTERISTICS**	Performance issues - Routing in mobile hosts.	6
4	**MOBILE IP**	DHCP - Mobile transport layer - Indirect TCP - Snooping TCP - Mobile TCP - Transmission / time-out freezing - Selective retransmission - Transaction oriented TCP.	12
5	**WIRELESS APPLICATION PROTOCOL**	Dynamic DNS - File systems - Synchronization protocol - Context-aware applications - Security - Analysis of existing wireless network.	12
		TOTAL	48

REFERENCE BOOKS:

1. J. Schiller, Mobile Communications, Addison Wesley.

2. http://www.bluetooth.com

3. William C.Y.Lee, Mobile Communication Design Fundamentals, John Wiley.

Course Title : ELECTIVE
Course Code: CSE1322013
L-T-P-C: 4-0-0-4

Class Hours/week	4
Expected weeks	12
Total hrs. of classes	48

OBJECT ORIENTED ANALYSIS AND DESIGN

MODULE	TOPIC	COURSE CONTENT	HOURS
1	**INTRODUCTION, MODELING CONCEPTS**	What is Object Orientation? What is OO development? OO themes; Evidence for usefulness of OO development; OO modeling history. Modeling as Design Technique: Modeling; abstraction; The three models.	4
2	**CLASS MODELING**	**Class Modeling:** Object and class concepts; Link and associations concepts; Generalization and inheritance; A sample class model; Navigation of class models. Advanced object and class concepts; Association ends; N-ary associations; Aggregation; Abstract classes; Multiple inheritance; Metadata; Reification; Constraints; Derived data; Packages.	6
3	**STATE MODELING**	**State Modeling:** Events, States, Transitions and Conditions; State diagrams; State diagram behavior; Practical tips. Advanced State Modeling: Nested state diagrams; Nested states; Signal generalization; Concurrency; A sample state model; Relation of class and state models; Practical tips.	6
4	**INTERACTION MODELING**	**Interaction Modeling:** Use case models; Sequence models; Activity models; Use case relationships; Procedural sequence models; Special constructs for activity models.	4
5	**PROCESS OVERVIEW, SYSTEM CONCEPTION**	**Process Overview:** Development stages; Development life cycle. **System Conception:** Devising a system concept; Elaborating a concept; Preparing a problem statement.	6
6	**DOMAIN ANALYSIS, APPLICATION ANALYSIS**	**Domain Analysis:** Overview of analysis; Domain class model; Domain state model; Domain interaction model; Iterating the analysis. Application Analysis: Application interaction model; Application class model; Application state model; Adding operations.	8

7	**SYSTEM DESIGN**	Overview of system design; Estimating performance; Making a reuse plan; Breaking a system in to sub-systems; Identifying concurrency; Allocation of sub-systems; Management of data storage; Handling global resources; Choosing a software control strategy; Handling boundary conditions; Setting the trade-off priorities; Common architectural styles; Architecture of the ATM system as the example.	6
8	**CLASS DESIGN**	**Implementation Modeling:** Class Design: Overview of class design; Bridging the gap; Realizing usecases; Designing algorithms; Recursing downwards, Refactoring; Design optimization; Reification of behavior; Adjustment of inheritance; Organizing a class design; ATM example. Implementation Modeling: Overview of implementation; Fine-tuning classes; Fine-tuning generalizations; Realizing associations.	8
		TOTAL	48

REFERENCE BOOKS:

1. Michael Blaha, James Rumbaugh: Object-Oriented Modelingand Design with UML, 2nd Edition, Pearson.
2. Frank Buschmann, Regine Meunier, Hans Rohnert, Peter Sommerlad, Michael Stal: Pattern-Oriented Software Architecture, A System of Patterns, Volume 1, John Wiley and Sons.
3. Grady Booch et al: Object-Oriented Analysis and Design with Applications, 3rd Edition, Pearson.
4. Mark Priestley: Practical Object-Oriented Design with UML, 2nd Edition, Tata McGraw-Hill.
5. Simon Bennett, Steve McRobb and Ray Farmer: Object-Oriented Systems Analysis and Design Using UML, 2nd Edition, Tata McGraw Hill.

Course Title : ELECTIVE
Course Code: CSE1322014
L-T-P-C: 4-0-0-4

Class Hours/week	4
Expected weeks	12
Total hrs. of classes	48

IMAGE PROCESSING

MODULE	TOPIC	COURSE CONTENT	HOURS
1	**DIGITAL IMAGE PROCESSING SYSTEMS**	Image acquisition, storage, processing, communication, display.	4
2	**VISUAL PERCEPTION**	Structure of the human eye, image formation in the human eye, brightness, adaptation and discrimination.	4
3	**IMAGE MODEL**	Uniform and non-uniform sampling, quantization.	3
4	**IMAGE TRANSFORMS**	Introduction to Fourier transform, DFT and two dimensional DFT, some properties of DFT, separability, translation, periodicity, conjugate symmetry, rotation, scaling, average value, convolution theorem, correlation, FFT algorithms, inverse FFT, filter implementation through FFT. Other transforms: Other separable image transforms and their algorithms.	6
5	**IMAGE ENHANCEMENT**	Image enhancement in spatial domain and frequency domain, Histogram processing. Spatial Filtering, Frequency Domain Filtering.	5
6	**IMAGE RESTORATION**	Restoration/Degradation Model, Inverse Filtering, Wiener Filtering.	5
7	**EDGE DETECTION AND SEGMENTATION**	Edge detection, Line detection, Segmentation, Texture Analysis and Classification.	6
8	**BINARY IMAGE PROCESSING**	Binarisation, Morphological Image Processing, Distance Transform.	5
9	**COLOR IMAGE PROCESSING**	Color model, Color Image Quantisation, Histogram of a colour image.	4
10	**IMAGE COMPRESSION**	Lossy Compression, Loss-less compression, Run-length and Huffman Coding, Transform Coding, Image Compression Standards.	6
		TOTAL	48

REFERENCE BOOKS:

1. R. C. Gonzalez & R. E. Woods - Digital Image Processing, Addison Wesley.
2. A. K. Jain - Fundamentals of Digital Image Processing, PHI.
3. K. R. Castleman - Digital Image Processing, PHI.
4. W. K. Pratt - Digital Image Processing, John Wiley Interscience.

Course Title : ELECTIVE
Course Code: CSE1322015
L-T-P-C: 4-0-0-4

Class Hours/week	4
Expected weeks	12
Total hrs. of classes	48

ADVANCED DATABASE

MODULE	TOPIC	COURSE CONTENT	HOURS
1	**DATA BASE SYSTEM CONCEPT**	**File systems:** Database systems - Database systems architecture - Data models - Relational model – Hierarchial model - Network model - Entity-Relationship model - Data Dictionary - Database Administration and control.	10
2	**CODD'S RULES**	Base tables - Views - Domains and key concept - Integrity rules - Relational Algebra – Relational calculus - Commercial query languages - Embedded SQL - Normalization and database design.	9
3	**FILE AND STORAGE STRUCTURES**	Indexing and Hashing - Query processing - Database recovery - Concurrency control - Transaction processing - Security and Integrity - Triggers.	9
4	**CENTRALIZED VERSUS DISTRIBUTED DATABASES**	Fragmentation - Distributed database architecture - Client / Server databases - Distributed transactions - Locking and Commit protocols - Distributed concurrency control - Securtiy and reliability - Parallel databases.	10
5	**THE WORLD WIDE WEB**	HTML - Architecture -XML, XML/QL - Database Connectivity.	10
		TOTAL	48

REFERENCE BOOKS:

1. Ramez Elmasri, Shamkant B. Navathe, Fundamentals of Database Systems, 3rd Edition, Addison Wesley.
2. Abraham Silberschatz, Henry. F. Korth, S.Sudharsan, Database System Concepts, 3rd Edition, Tata McGraw Hill.
3. Stefano Ceri & Giuesppe Pelagatti, Distributed Databases - Principles and Systems, McGraw Hill Book Company.
4. M.Tamer Ozsu and Patric Valduriez, Principles of Distributed Database Systems, Prentice Hall International Inc.

Course Title : ELECTIVE
Course Code: CSE1322016
L-T-P-C: 4-0-0-4

Class Hours/week	4
Expected weeks	12
Total hrs. of classes	48

PROTOCOL ENGINEERING

MODULE	TOPIC	COURSE CONTENT	HOURS
1	**INTRODUCTION**	Communication model, Communication Software, Communication Subsystems, Communication Protocol Definition / Representation, Formal and Informal Protocol Development Methods, Protocol Engineering Phases.	4
2	**ERROR CONTROL, FLOW CONTROL**	Type of Transmission Errors, Linear Block Code, Cyclic Redundancy Checks, Introduction to Flow Control, Window Protocols, Sequence Numbers, Negative Acknowledgments, Congestion Avoidance.	4
3	**NETWORK REFERENCE MODEL**	Layered Architecture, Network Services and Interfaces, **Protocol Functions:** Encapsulation, Segmentation, Reassembly, Multiplexing, Addressing, OSI Model Layer Functions, TCP/IP Protocol Suite, Application Protocols.	5
4	**PROTOCOL SPECIFICATION**	Components of specification, Service specification, Communication Service Specification Protocol entity specification: Sender, Receiver and Channel specification, Interface specifications, Interactions, Multimedia specifications, Alternating Bit Protocol Specification, RSVP specification.	6
5	**PROTOCOL SPECIFICATION LANGUAGE (SDL)**	Salient Features. Communication System Description using SDL, Structure of SDL. Data types and communication paths, Examples of SDL based Protocol Specifications: Question and answer protocol, X-on-X-off protocol, Alternating bit protocol, Sliding window protocol specification, TCP protocol specification, SDL based platform for network, OSPF, BGP Multi Protocol Label Switching SDL components.	8
6	**PROTOCOL VERIFICATION / VALIDATION**	Protocol Verification using FSM, ABP Verification, Protocol Design Errors, Deadlocks, Unspecified Reception, Non-executable Interactions, State Ambiguities, Protocol Validation Approaches: Perturbation Technique, Reachability Analysis, Fair Reachability Graphs, Process Algebra based Validation, SDL Based Protocol Verification: ABP Verification, Liveness	8

		Properties, SDL Based Protocol Validation: ABP Validation.	
7	**PROTOCOL CONFORMANCE AND PERFORMANCE TESTING**	Conformance Testing Methodology and Framework, Local and Distributed Conformance Test Architectures, Test Sequence Generation Methods: T, U, D and W methods, Distributed Architecture by Local Methods, Synchronizable Test Sequence, Conformance testing with Tree and Tabular Combined Notation (TTCN), Conformance Testing of RIP, Testing Multimedia Systems, quality of service test architecture(QOS), Performance Test methods, SDL Based Performance Testing of TCP, OSPF, Interoperability testing, Scalability testing protocol synthesis problem.	8
8	**PROTOCOL SYNTHESIS AND IMPLEMENTATION**	Synthesis methods, Interactive Synthesis Algorithm, Automatic Synthesis Algorithm, Automatic Synthesis of SDL from MSC, Protocol Re-synthesis, Requirements of Protocol Implementation, Objects Based Approach To Protocol Implementation, Protocol Compilers, Code generation from Estelle, LOTOS, SDL and CVOPS.	5
		TOTAL	48

REFERENCE BOOKS:

1. Pallapa Venkataram and Sunilkumar S. Manvi: Communication Protocol Engineering, PHI.

2. Mohammed G. Gouda: Elements of Protocol Design, Wiley Student Edition.

Course Title : ELECTIVE
Course Code: CSE1322017
L-T-P-C: 4-0-0-4

Class Hours/week	4
Expected weeks	12
Total hrs. of classes	48

SOFT COMPUTING

MODULE	TOPIC	COURSE CONTENT	HOURS
1	**BASIC CONCEPTS**	Single layer perception - Multilayer Perception - Supervised and Unsupervised learning – Back propagation networks - Kohnen's self organizing networks - Hopfield network.	12
2	**FUZZY SETS AND FUZZY REASONING**	Fuzzy matrices - Fuzzy functions - Decomposition - Fuzzy automata and languages - Fuzzy control methods - Fuzzy decision making.	6
3	**ADAPTIVE NETWORKS BASED FUZZY INTERFACE SYSTEMS**	Classification and Regression Trees - Data clustering algorithms - Rule based structure identification - Neuro-Fuzzy controls - Simulated annealing – Evolutionary computation.	12
4	**SURVIVAL OF THE FITTEST**	Fitness Computations Cross over - Mutation - Reproduction - Rank method - Rank space method.	6
5	**AI SEARCH ALGORITHM**	Predicate calculus - Rules of interference - Semantic networks - Frames - Objects - Hybrid models - Applications.	12
		TOTAL	48

REFERENCE BOOKS:

1. Jang J.S.R., Sun C.T. and Mizutani E, "Neuro-Fuzzy and Soft computing", Prentice Hall.
2. Timothy J.Ross, "Fuzzy Logic with Engineering Applications", McGraw Hill.
3. Laurene Fausett, "Fundamentals of Neural Networks", Prentice Hall.
4. George J. Klir and Bo Yuan, "Fuzzy sets and Fuzzy Logic", Prentice Hall, USA.
5. Nih J.Nelsson, "Artificial Intelligence - A New Synthesis", Harcourt Asia Ltd.
6. D.E. Goldberg, "Genetic Algorithms: Search, Optimization and Machine Learning", Addison Wesley.

PRACTICALS

Course Title : LABORATORY- II
Course Code: CSE132211
L-T-P-C: 0-0-6-3
Expected No. of weeks : 12 (approx)

EXPERIMENT NO.	AIM OF THE EXPERIMENT	HOURS
1	**Software Engineering Methodologies-** (i) Use of UML 2.00 (Unified Modeling Language) to develop and design - (a) Use case diagram (b) Class Diagram (c) Activity Diagram (d) Sequence Diagram (e) Collaboration Diagram (ii) Use Software Architect tools. (iii) Any one application is to be implemented.	15
2	**Cryptography and Network Security –** (i) Implementation of classical encryption techniques. (ii) Brute force attack. (iii) Program to implement Number Theory Concepts. (iv) Program to implement Algorithms on confidentiality. (v) Public Key Cryptography techniques.	5
	TOTAL	**20**

CSE132221	**SEMINAR - II**	L = 0 T = 0 P = 4 C = 2
GUIDELINES WILL BE UPLOADED BY THE UNIVERSITY FROM TIME TO TIME		

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