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SEMESTER-I

COURSE CODE	CATEGORY	COURSE NAME	EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM UNIVERSITY EXAM	TWO TERM EXAM	TEACHERS ASSESSMENT*	END SEM UNIVERSITY EXAM	TEACHERS ASSESSMENTS*				
MTMA 101		**ADVANCED MATHEMATICS**	60	20	20	-	-	3	1	-	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C Credit; Q/A – Quiz/ Assignment/ Attendance, MST Mid Semester Test.
***Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:-
The course is designed to enable students to:

1. Develop further their ability to think in a critical manner
2. Formulate and develop mathematical arguments in a logical manner
3. Improve their skills in acquiring new understanding and experience
4. Acquire an understanding of advanced mathematical analysis.

Course Outcomes:
At the end of this half course and having completed the essential reading and activities students should:

1. Have a good knowledge of the mathematical concepts in real analysis
2. Be able to use formal notation correctly and in connection with precise statements in English
3. Be able to demonstrate the ability to solve unseen mathematical problems in real analysis.
4. Be able to prove statements and to formulate precise mathematical arguments.

Syllabus:

UNIT I
Uncertainty, Information and Entropy Information Measures Characteristics on information measure, Shannon's concept of information, Shannon's measure of information, Model for source coding theorem communication system: Source coding ad line / channel coding, channel mutual information capacity (Bandwidth).

UNIT II
Channel coding, Theorem for discrete memory less channel, Information Capacity theorem: Error detecting & error correcting codes, types of codes: Block codes, Tree codes, Hamming and Lee

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Metrics, Description of linear block codes by matrices, Description of linear tree codes by matrices, Parity check codes, and Parity check polynomials.

UNIT III

Introduction to Fuzzy Sets – Basic Definition and Terminology – Set-theoretic operations Member Function Formulation and parameterization – Fuzzy Rules and Fuzzy Reasoning Extension principle and Fuzzy Relations – Fuzzy If-Then Rules – Fuzzy Reasoning.

UNIT IV

Discrete Fourier transform, Fast Fourier transform, Wavelet Transform, Numerical Solutions of Boundary Value Problems.

UNIT V

Finite probability - Probability distributions - Conditional Probability – Independence - Bayes' theorem - Mathematical expectation.

Reference Books:

1. Judith L.Gersting, Mathematical Structures for Computer Science, Freeman Co.
2. J.P. Tremblay and R. Manohar, "Discrete Mathematical Structures with Applications to Computer Science", TMH
3. Kenneth H. Rosen, "Discrete Mathematics and its Applications", Fifth Edition, TMH
4. R.P. Grimaldi, "Discrete and Combinatorial Mathematics", Pearson Edition, New Delhi
5. M.K Venkataraman, Sridharan, Chandrasekaran, Discrete Mathematics, National Pub
6. Scheinerman, Mathematics: A discrete Intoduction, Cengaga Learn (Thomson)

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			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM UNIVERSITY EXAM	TWO TERM EXAM	TEACHERS ASSESSMENT*	END SEM UNIVERSITY EXAM	TEACHERS ASSESSMENTS*				
MTIS 102		**FOUNDATION OF CRYPTOGRAPHY**	60	20	20	30	20	3	1	6	7

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; Q/A – Quiz/Assignment/Attendance, MST Mid Sem Test.
* **Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:-

1. The objective of this course is to familiarize the students with cryptography and its applications. Topics will include historical cryptography, encryption, authentication, public key cryptography, number theory. There will be a focus will teach and build upon theoretical computer science techniques.

Course Outcomes:-

At the end of the course the student will be able to:

1. Number Theory and Algebra for design of cryptographic algorithms Construct finite fields.
2. Analyse and compare symmetric-key encryption public-key encryption schemes based on different security models.
3. Apply Interactive proofs, Commitment protocols, Zero-knowledge proofs, Non-interactive proofs, Design and analyze digital cash system and electronic voting system.

Syllabus:

UNIT I

Number Theory – Divisibility, Congruences, Quadratic residues and residuacity, Abstract Algebra Groups, rings, fields, construction of finite fields.

UNIT II

Cryptography, Stream Ciphers – One-time Pad (OTP), Perfect secrecy, Pesudo-random generators (PRG), Attacks on stream ciphers and OTP, Real world stream ciphers, Semantic security.

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UNIT III

Block ciphers- DES, attacks, AES, Block ciphers from PRG, Modes of operation – one-time key and many-time keys, CBC, CTR modes, Message Integrity – MAC, MAC based on PRF, NMAC, pmAC.

UNIT IV

Collision resistance – Birthday attack, Merkele-Damgard construction, HMC, Case study: SHA-256, Authenticated encryption

UNIT V

Key exchange algorithms, Public key cryptosystems – RSA, ElGamal, Rabin, Elliptic curve cryptosystems – PKC, key exchange, IBE, Lattice based cryptosystem.

Reference Books:

1. N. Koblitz, Number Theory and Cryptography, Springer, 2001
2. J. Katz and Y. Lindell, Introduction to Modern Cryptography, CRC press, 2008.
3. Menezes, et.al, Handbook of Applied Cryptography, CRC Press, 2004.
4. Golreich O, Foundations of Cryptography, Vol.1.2, Cambridge University Press, 2004

List of Practical's:

1. Caesar Cipher implementation in java/ C/ C++.
2. Additive & Multiplicative cipher in Java/C/C++.
3. Affine Cipher implementation in java / C/ C++.
4. Monoalphabetic ciphers implementation in java / C/ C++.
5. Feistel Cipher implementation in java/ C/ C++.
6. DES implementation in java / C/ C++.
7. Converting a 56-bit value to a DES key.
8. Converting a 56-bit value to 48- bit using key transformation method in DES key.
9. Using expansion permutation in DES.
10. Using S-box Substitution in DES.
11. Using P-box permutation in DES.
12. Using XOR & Swapping In DES

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			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM UNIVERSITY EXAM	TWO TERM EXAM	TEACHERS ASSESSMENT*	END SEM UNIVERSITY EXAM	TEACHERS ASSESSMENTS*				
MTIS 103		**NETWORK SECURITY**	60	20	20	30	20	3	1	6	7

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; Q/A – Quiz/ Assignment/ Attendance, MST Mid Semester Test.
* **Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:-

1. Upon completion of this course, students will be able to define network & Information security.
2. Recount the history of computer security and how it evolved into information security.
3. Define key terms and critical concepts of network security.
4. Enumerate the phases of the security systems development life cycle.
5. Describe the network security roles of professionals within an organization.

Course Outcomes:-

At the successful conclusion of this course, you should be able to: Implement Client Server Model:

1. Analyze security vulnerabilities on different network layers.
2. Acquire knowledge about network security tools and authentication applications.
3. Design Firewalls.
4. Implementation of routing algorithms.

Syllabus:

UNIT I

Introduction to ISO's OSI Network Architecture, Internet Model, IP Design and Implementation, Internetworking and routing protocols, Transport layer services and variants, Peer to Peer Networks, Application Layer protocols.

UNIT II

Introduction to network Security and associated techniques, Firewall Design principles, VPNs, Worms, Viruses, Vaccine Programs, Security of Network Layer, Security of Application layer protocols.

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UNIT III

BSD sockets, Elementary and Advanced system calls, Raw sockets: Raw Socket Creation, Raw socket output, raw socket input, packet sniffing and routing algorithms: Router IOS- Static and Default Routing-Interior Gateway Routing Protocols: RIP V1&V2, OSPF, EIGRP- Exterior Gateway Routing Protocol: BGP.

UNIT IV

Introduction to socket programming- Concurrent Processing in Client-Server Software-Byte ordering and address conversion functions – Socket Interface - System calls used with sockets - Iterative server and concurrent server- Multi protocol and Multi service server- TCP/UDP Client server programs – Thread Creation and Termination – TCP Echo Server using threads- Remote Procedure Call.

UNIT V

Symmetric ciphers: Classical Encryption Techniques: Substitution Techniques, Transposition Techniques, Steganography. Block Ciphers and the Data Encryption Standard, Block Cipher Principles, The Data Encryption Standard. Basic Concepts in Number Theory and Finite Fields: Divisibility and the Division Algorithm, The Euclidean Algorithm. Advanced Encryption Standard, Pseudorandom Number Generation and Stream Ciphers.

Reference Books:

1. Richards Stevens, Unix network programming,Vol I &Vol II, 4th edition, Prentice Hall, 2007.
2. Stallings, Cryptography and Network Security, Pearson Education, 2007.

List of Practical's:

1. Learn to install Wine/ Virtual Box or any other equivalent.
2. Software on the Host OS.
3. Perform an experiment for scanning with NMAP, SUPERSCAN or ANY OTHER SOFTWARE.
4. Perform an experiment to grab a banner with Telnet and perform the task using NETCAT Utility.
5. USING NMAP
    a. Find Open Ports on a System
    b. Find the Machines which are Active
    c. Find the Version of Remote OS on Other System
    d. Find the version of S?W Installed on the system
6. Perform an Experiment on active and passive finger.
7. Printing Using XPROBE2 AND NMAP.

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			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM UNIVERSITY EXAM	TWO TERM EXAM	TEACHERS ASSESSMENT*	END SEM UNIVERSITY EXAM	TEACHERS ASSESSMENTS*				
MTIS 111		**ADVANCED COMPUTER NETWORK**	60	20	20	-	-	3	1	-	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; Q/A – Quiz/ Assignment/Attendance, MST Mid Sem Test.

* **Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:-

1. To refine advance skills of analysis of computer and communications networks.
2. To learn how to analyze and evaluate published results.

Course Outcomes:-

1. Students will gain a thorough understanding of the design of modern computer networks
2. Students will understand protocols, including the Internet.
3. They will understand the workings of at least one actual TCP/IP protocol stack.
4. They will be able to apply this understanding in modifying it or implementing additional protocols.

Syllabus:

UNIT I

Review of Networking Concepts. MAC layer issues, Ethernet 802.3, ARP, IP addressing and Subnetting, NAT and PAT, Variable Length Subnet Masking, CIDR

UNIT II

End to End protocols TCP connection establishment and termination, Sliding window concepts, other issues: wraparound, silly window syndrome, Nagle's algorithm, adaptive retransmission, TCP extensions. Congestion and flow control,Queuing theory, TCP flavors: Tahoe, Reno, New Reno, TCP-SACK, TCP-RED and TCP-Vegas.Transport protocol for real time (RTP), Quality of service: Integrated Services, Differentiated services.

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UNIT III

Routing and Multicast. Structure of internet: Autonomous systems, Intra-domain routing: OSPF and RIP, Inter-domain routing: BGP.

Multicasting: Group Management (IGMP), Internet scale multicasting: Reverse path broadcast, MOSPF, DVMPRP, PIM.

UNIT IV

Peer to peer and overlay networks. Concept of overlays, Unstructured Overlays: Gnutella, Concepts of Distributed Hash Table, Structured Overlays: Chord, CAN, Pastry.

UNIT V

Introduction, Uniform Resource Locator/uniform resource identify, HTTP, Cookies, Web security problem, Penetration Testing, Firewalls:- functionality, Polices and Access Control, Packet filters, Application level gateway, Encrypted tunnel, Security architecture, Introduction to intrusion detectionsystem.

Reference Books:

1. Computer Networks: A Systems Approach, by Peterson and Davie, 5 th Ed. Morgan Kauffman, 2011.
2. Computer networking: Top Down Approach, by Kurose and Ross, 6 th Ed. Pearson, 2011.

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COURSE CODE	CATEGORY	COURSE NAME	EVALUATION SCHEME								
			THEORY			PRACTICAL					
			END SEM UNIVERSITY EXAM	TWO TERM EXAM	TEACHERS ASSESSMENT*	END SEM UNIVERSITY EXAM	TEACHERS ASSESSMENTS*	Th	T	P	CREDITS
MTIS 112		**DISTRIBUTED SYSTEM**	60	20	20	-	-	3	1	-	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C- Credit; Q/A – Quiz/ Assignment/Attendance, MST Mid Semester Test.
* **Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:-

1. This course provides an introduction to the fundamentals of distributed computer systems, assuming the availability of facilities for data transmission.
2. The structure of distributed systems using multiple levels of software is emphasized. Specific topics include: distributed algorithms, distributed file systems, distributed databases, security and protection.

Course Outcomes:-

1. Implement a simple distributed application using a message based protocol.
2. Specify the four main goals of a Distributed System and the use of middleware in achieving those goals.
3. Model connection-oriented and connectionless communication in a 2 tier Client Server architecture.
4. Distinguish the five main failure types in a Distributed System and specify algorithms for achieving fault tolerance and error recovery within such a system.
5. Implement a remote object based system to demonstrate parameter passing and code migration in a Distributed System.
6. Discuss the issues involved in achieving synchronization among a group of processes in a distributed system.
7. Specify algorithms for determining global state, electing coordinators for a group of communicating processes and implementing mutual exclusion in a Distributed System.

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Syllabus:

UNIT I
Distributed Objects and Remote Invocation: Introduction, Communication between distributed objects, Remote Procedure Call, Events and notifications, Java RMI case study. Security : Introduction, Overview of security techniques.

UNIT II
Cryptographic algorithms, Digital signatures, Cryptography pragmatics, Case studies : Needham-Schroeder, Kerberos, SSL & Millicent.

UNIT III
Distributed File Systems : File service architecture, Sun Network File System, The Andrew File System, Recent Advances - Coda file system Name Services : Name services and the domain name system, Directory and discovery services,. Global Name Service, X.500 Directory service. Time and Global states : Clocks, events, process states, Synchronizing physical clocks, Logical time, logical clocks, global states.

UNIT IV
Distributed debugging. Coordination and agreement: Distributed mutual exclusion, elections, multicast communication, Consensus and related problems. Replication: Introduction, System model and group communication, fault-tolerant services, highly available services, Transactions with replicated data. Distributed shared memory: Introduction, design and implementation issues, sequential consistency and Ivy, Release consistency and Munin, Other consistency models.

UNIT V
CORBA Case Study: Introduction, CORBA RMI, CORBA Services; MACH Case Study: Introduction, Ports, naming and protection, tasks and threads, communication model, communication implementation, memory management

Reference Books:

1. George Coulouris, Jean Dollimore, and Tim Kindberg, Distributed Systems: Concepts and Design, Addison Wesley, 2011
2. Kenneth P Birman, Reliable Distributed Systems, Springer, 200.

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COURSE CODE	CATEGORY	COURSE NAME	EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM UNIVERSITY EXAM	TWO TERM EXAM	TEACHERS ASSESSMENT*	END SEM UNIVERSITY EXAM	TEACHERS ASSESSMENTS*				
MTIS 113		**INFORMATION RETRIVAL**	60	20	20	-	-	3	1	-	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; Q/A – Quiz/ Assignment/Attendance, MST Mid Semester Test.
* **Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

1. To appreciate the capabilities and limitations of information retrieval systems
2. To understand the design and implementation of retrieval systems for text and other media
3. To evaluate the performance of an information retrieval system
4. To identify current research problems in information retrieval

Learning Outcomes:

1. Be familiar with the fundamentals of hypermedia systems, and hypermedia design and usability methodologies.
2. Understand the difficulty of representing and retrieving documents.
3. Understand the latest technologies for linking, describing and searching the Web.
4. Understand the relationship between IR, hypermedia, and semantic models.

Syllabus:

UNIT I
Introduction
Basic Concepts – Retrieval Process – Modeling – Classic Information Retrieval – Set Theoretic, Algebraic and Probabilistic Models – Structured Text Retrieval Models –Retrieval Evaluation – Word Sense Disambiguation

UNIT II
Querying
Languages – Key Word based Querying – Pattern Match ing – Structural Queries –Query Operations User Relevance Feedback – Local and Global Analysis – Text and Multimedia languages

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UNIT III

Text Operations and User Interface

Document Preprocessing – Clustering – Text Compress ion - Indexing and Searching –Inverted files – Boolean Queries – Sequential searching – Pattern matching – User Interface and Visualization – Human Computer Interaction – Access Process – Starting Points –Query Specification - Context – User relevance Judgment – Interface for Search

UNIT IV

Multimedia Information Retrieval

Data Models – Query Languages – Spatial Access Mode ls – Generic Approach – One Dimensional Time Series – Two Dimensional Color Images – Feature Extraction

UNIT V

Applications

Searching the Web – Challenges – Characterizing the Web – Search Engines – Browsing – Meta-searchers – Online IR systems – Online Public Access Catalogs –Digital Libraries – Architectural Issues – Document Models, Representations and Access– Prototypes and Standards

Reference Books:

1. Ricardo Baeza-Yate, BerthierRibeiro-Neto, "Mode rn Information Retrieval",Pearson Education Asia, 2005.
2. G.G. Chowdhury, "Introduction to Modern Information Retrieval", Neal-Schuman Publishers; 2nd edition, 2003.
3. Daniel Jurafsky and James H. Martin, "Speech and Language Processing", Pearson Education, 2000
4. David A. Grossman, OphirFrieder, " Information Retrieval: Algorithms, and Heuristics", Academic Press, 2000
5. Charles T. Meadow, Bert R. Boyce, Donald H. Kraf t, "Text Information Retrieval Systems", Academic Press, 2000.

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COURSE CODE	CATEGORY	COURSE NAME	EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM UNIVERSITY EXAM	TWO TERM EXAM	TEACHERS ASSESSMENT*	END SEM UNIVERSITY EXAM	TEACHERS ASSESSMENTS*				
MTIS 121		**BIOMETRIC SECURITY**	60	20	20	-	-	3	1	-	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; Q/A – Quiz/ Assignment/Attendance, MST Mid Semester Test.
* **Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:-
To provide students with understanding of biometrics, biometric equipment and standards applied to security.

Course Outcomes:-
At the end of the course the student will be able to:

1. Demonstrate knowledge of the basic physical and biological science and engineering principles underlying biometric systems.
2. Understand and analyze biometric systems at the component level and be able to analyze and design basic biometric system applications.
3. Be able to work effectively in teams and express their work and ideas orally and in writing.
4. Identify the sociological and acceptance issues associated with the design and implementation of biometric systems.
5. Understand various Biometric security issues.

Syllabus:

UNIT I
Biometrics- Introduction- benefits of biometrics over traditional authentication systems –benefits of biometrics in identification systems-selecting a biometric for a system –Applications – Key biometric terms and processes - biometric matching methods -Accuracy in biometric systems.

UNIT II
Physiological Biometric Technologies: Fingerprints - Technical description –characteristics Competing technologies - strengths – weaknesses – deployment - Facial scan – Technical description - characteristics -weaknesses-deployment - Iris scan - Technical description –

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characteristics - strengths – weaknesses – deployment - Retina vascular pattern – Technical description – characteristics - strengths – weaknesses –deployment - Hand scan – Technical description-characteristics - strengths – weaknesses deployment – DNA biometrics.

UNIT III

Behavioural Biometric Technologies: Handprint Biometrics - DNA Biometrics - signature and handwriting technology - Technical description – classification - keyboard / keystroke dynamics - Voice – data acquisition - feature extraction - characteristics - strengths – weaknesses deployment.

UNIT IV

Multi biometrics: Multi biometrics and multi factor biometrics - two-factor authentication with passwords - tickets and tokens – executive decision - implementation plan.

UNIT V

Case studies on Physiological, Behavioral and multifactor biometrics in identification systems.

Reference Books:

1. Samir Nanavathi, Michel Thieme, and Raj Nanavathi, ―Biometrics -Identity verificationin a network‖, Wiley Eastern, 2002.
2. John Chirillo and Scott Blaul,‖ Implementing Biometric Security, Wiley Eastern Publications, 2005.
3. John Berger, Biometrics for Network Security‖, Prentice Hall, 2004.

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COURSE CODE	CATEGORY	COURSE NAME	EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM UNIVERSITY EXAM	TWO TERM EXAM	TEACHERS ASSESSMENT*	END SEM UNIVERSITY EXAM	TEACHERS ASSESSMENTS*				
MTIS122		**DATA HIDING**	60	20	20	-	-	3	1	-	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; Q/A – Quiz/ Assignment/Attendance, MST Mid Semester Test.
* **Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:-

1. Understand basic concepts of data hiding.
2. Understand basic concepts of digital water marking.
3. Understand basic concepts of stenography.

Course Outcomes:-

1. Understand difference between data hiding and cryptography.
2. Design and develop digital water marking system.
3. Design and develop stenography system.

Syllabus:

UNIT I

Introduction: data hiding models, security and privacy aspects, techniques for hiding data-Digital audio, video, images and text.

UNIT II

Stenography: Introduction, how it is different from cryptography, Classification of stenography Algorithms: Transform-based, spatial domain, statistical, other, Applications of stenography: Covert channels, audio data, military, e-commerce

UNIT III

Watermarking: Introduction, how it is different from stenography and cryptography, watermarking algorithms, watermarking applications, limitations in watermarking

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UNIT IV

Digital rights management issues: e-commerce, copyright protection, intellectual property Issues, digital signatures, authentication, case studies, business models.

UNIT V

Multimedia security and information assurance, visual cryptography, key management; Attacks and benchmarks for data hiding systems; Applications of data hiding technology in medicine, law enforcement, remote sensing, and e-commerce, Software for digital data hiding.

Reference Books:

1. Ingemar Cox, Matthew Miller, Jeffrey Bloom, Jessica Fridrich, Ton Kalker, Digital
2. Watermarking and Stenography, 2nd Edition, Morgan Kaufmann, 2007.
3. Michael T. Raggo and Chet Hosmer, Data Hiding: Exposing Concealed Data in Multimedia, Operating Systems, Mobile Devices and Network Protocols, 1st Edition, Syngress, 2012.

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COURSE CODE	CATEGORY	COURSE NAME	EVALUATION SCHEME								
			THEORY			PRACTICAL		Th	T	P	CREDITS
			END SEM UNIVERSITY EXAM	TWO TERM EXAM	TEACHERS ASSESSMENT*	END SEM UNIVERSITY EXAM	TEACHERS ASSESSMENTS*				
MTIS 123		**CYBER LAW & INTELLECTUAL PROPERTY RIGHT**	60	20	20	-	-	3	1	-	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; Q/A – Quiz/ Assignment/Attendance, MST Mid Semester Test.
* **Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:-

1. To understand various cyberspace issues and need.
2. To learn the various indian IT act for Cyber crime.
3. To understand the need of indian evidence law.
4. To learn the intellectual property rights for software and other.

Course Outcomes:-

1. Understand cyberspace, issues there in and need for a cyber law
2. Understand facets of India IT act n addressing e-trade and e-governance
3. Understanding of issues and problems arising out of online transactions
4. Understanding crimes with case law
5. Understand of intellectual property issues and development of the law in this regard

Syllabus:

UNIT I

Cyber Space- Fundamental definitions -Interface of Technology and Law – Jurisprudenceand- Jurisdiction in Cyber Space - Indian Context of Jurisdiction -Enforcement agencies –Need for IT act - UNCITRAL – E-Commerce basics

UNIT II

Information Technology Act, 2000 - Aims and Objects — Overview of the Act –Jurisdiction - Electronic

UNIT III

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Governance – Legal Recognition of Electronic Records and Electronic Evidence –Digital Signature Certificates - Securing Electronic records and secure digital signatures – Duties of Subscribers - Role of Certifying Authorities - Regulators under the Act -The Cyber Regulations Appellate Tribunal - Internet Service Providers and their Liability– Powers of Police under the Act – Impact of the Act on other Laws .

UNIT IV

Cyber Crimes -Meaning of Cyber Crimes –Different Kinds of Cyber crimes – Cyber crimes under IPC,Cr.P.C and Indian Evidence Law - Cyber crimes under the Information Technology Act,2000 - Cyber crimes under International Law - Hacking Child Pornography, Cyber Stalking, Denial of service Attack, Virus Dissemination, Software Piracy, Internet Relay Chat (IRC) Crime, Credit Card Fraud, Net Extortion, Phishing etc - Cyber Terrorism-Violation of Privacy on Internet - Data Protection and Privacy – Indian Court cases.

UNIT V

Intellectual Property Rights – Copyrights- Software – Copyrights vs Patents debate -Authorship and Assignment Issues - Copyright in Internet - Multimedia and Copyright issues - Software Piracy - Trademarks - Trademarks in Internet – Copyright and Trademark cases, Patents - Understanding Patents - European Position on Computer related Patents, Legal position on Computer related Patents - Indian Position on Patents – Case Law, Domain names -registration - Domain Name Disputes-Cyber Squatting-IPR cases.

Reference Books:

1. Justice Yatindra Singh: Cyber Laws, Universal Law Publishing Co., New Delhi
2. Farouq Ahmed, Cyber Law in India, New Era publications, New Delhi
3. S.R.Myneni: Information Technology Law(Cyber Laws), Asia Law House, Hyderabad.
4. Chris Reed, Internet Law-Text and Materials, Cambride University Press.
5. PawanDuggal: Cyber Law- the Indian perspective Universal Law Publishing Co.,New Delhi