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Name of Paper	Paper Code	Theory					
		Credit			Marks		
Artificial Intelligence and its Applications	**MAI-401**	**L**	**T**	**J**	**EST**	**CAT**	**Total**
		3	1	0	80	20	100

Course Objective	The primary objective of this course is to introduce the basic principles, techniques, and applications of Artificial Intelligence. And basic exposition to the goals and methods of Artificial Intelligence

Units	Contents (*Theory*)	Hours /week
I	General Issues and Overview of AI the AI problems, what is an AI technique, Characteristics of AI applications. Introduction to LISP programming: Syntax and numeric functions, Basic list manipulation functions, predicates and conditionals, input output and local variables, iteration and recursion, property lists and array	8
II	Problem Solving, Search and Control Strategies General problem solving, production systems, control strategies forward and backward chaining, exhaustive searches depth first breadth first search. Heuristic Search Techniques Hill climbing, branch and bound technique, best first search & A* algorithm, AND / OR graphs, problem reduction & AO* algorithm, constraint satisfaction problems.	8
III	Knowledge Representations First order predicate calculus, skolemization, resolution principle & unification, interface mechanisms, horn's clauses, semantic networks, frame systems and value inheritance, scripts, conceptual dependency.	8
IV	Natural Language processing Parsing techniques, context free grammer, recursive transitions nets (RNT), augmented transition nets (ATN). Game playing: Minimax search procedure, alpha-beta cutoffs, additional refinements. Planning: Overview, an example domain the block word,	8

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	component of planning systems, goal stack planning, non linear planning.	
V	Probabilistic Reasoning and Uncertainty Probability theory, bayes theorem and bayesian networks, certainty factor. Expert Systems Introduction to expert system and application of expert systems, various expert system shells, knowledge acquisition, case studies, MYCIN. Learning: Rote learning, learning by induction, explanation based learning	8

Text Books/ References Book:-

Name of Authors	**Titles of the Book**	**Edition**	**Name of the Publisher**
Dan W. Patterson	Introduction to Artificial Intelligence and Expert Systems		Prentice India
Nils J. Nilson	Principles of Artificial Intelligence		Narosa Publishing House
Clocksin & C.S.Melish	Programming in PROLOG		Narosa Publi shing House
M. Sasikumar, S. Ramani etc.	Rule based Expert System		Narosa Publishing House
Elaine Rich and Kevin Knight	Artificial Intelligence		Tata McGraw Hill

COURSE OUTCOMES: Students will be able to

CO1	Understand What is "Artificial" Intelligence and how to identify systems with Artificial Intelligence.
CO2	Understands various Heuristic search technique, game playing algorithms, planning procedures
CO3	Explain the concept of Knowledge Representation
CO4	Explain Expert Systems and its application

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Name of Paper	Paper Code	Theory					
		Credit			Marks		
		L	T	J	EST	CAT	Total
PYTHON	MAI-402 (E-III(1))	3	1	0	80	20	100

Course Objective	To provide knowledge of syntaxes and data structures of Python language to use them in application programming.

Units	Contents (*Theory*)	Hours /week
I	INTRODUCTION TO PYTHON: Python interpreter and interactive mode; values and types: int, float, boolean, string, and list; variables, expressions, statements, tuple assignment, precedence of operators, comments; modules and functions, function definition and use, flow of execution, parameters and arguments; Illustrative programs: exchange the values of two variables, circulate the values of n variables, distance between two points..	8
II	CONTROL FLOW, FUNCTIONS: Conditionals: Boolean values and operators, conditional (if), alternative (if -else), chained conditional (if-elif-else); Iteration: state, while, for, break, continue, pass; Fruitful functions: return values, parameters, local and global scope, function composition, recursion; Strings: string slices, immutability, string functions and methods, string module; Lists as arrays. Illustrative programs: square root, gcd, exponentiation, sum an array of numbers, linear search, binary search.	8
III	LISTS, TUPLES, DICTIONARIES: Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning lists, list parameters; Tuples: tuple assignment, tuple as return value; Dictionaries: operations and methods; advanced list processing – list comprehension; Illustrative programs: Sorting and Searching.	8
IV	Classes and Inheritance: Object Oriented Programming, Class Instances, Methods Classes Examples, Why OOP, Hierarchies, Your Own Types – An Extended Example: Building a Class, Visualizing the Hierarchy, Adding another Class, Using Inherited Methods.	8

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V	FILES, MODULES, PACKAGES : Files and exception: text files, reading and writing files, format operator; command line arguments, errors and exceptions, handling exceptions, modules, packages; Illustrative programs: word count, copy file..	8

Text Books/ References Book:-			
Name of Authors	**Titles of the Book**	**Edition**	**Name of the Publisher**
ReemaThareja	Python Programming using Problem Solving Approach		Oxford University Press, 2017
Allen B. Downey	Think Python: How to Think Like a Computer Scientist	Second Edition	Shroff O'Reilly Publishers, 2016
Guido van Rossum, Fred L. Drake Jr	An Introduction to Python – Revised and Updated for Python 3.2	Edition 2011	Network Theory Ltd

COURSE OUTCOMES: Students will be able to	
CO1	• Explain basic principles of Python programming language
CO2	Solve coding tasks related conditional execution, loops
CO3	Solve coding tasks related to the fundamental notions and techniques used in objectoriented programming
CO4	Understanding the concepts of Input / Output operations in file.

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Name of Paper	Paper Code	Theory					
		Credit			Marks		
		L	T	J	EST	CAT	Total
JAVA	MAI-402 (E-III(2))	3	0	1	80	20	100

Course Objective	To teach programming in the Java language, give knowledge of object-oriented paradigm in the Java programming language to teach the use of Java in a variety of technologies and on different platforms.

Units	Contents (*Theory*)	Hours /week
I	**OOP concepts** – Data abstraction, encapsulation, inheritance, benefits of inheritance, polymorphism, **The Java Environment:** Setting Class path; Data types; Operators - precedence and associativity; Type conversion; Control and Iterative statements; Modular programming methods;. **Object Oriented Programming in Java:** Class; Objects; Packages; Scope and lifetime; Access Modifiers; Constructors; Copy constructor; this pointer; finalize () method; Arrays; Memory allocation and garbage collection **Inheritance:** Inheritance basics, method overriding, dynamics method dispatch, abstract classes. **Interfaces:** Defining an interface, implementing & applying interfaces, variables in interfaces, extending interfaces.	8
II	**Multithreading and Exception Handling:** Basic idea of multithreaded programming; The lifecycle of a thread; Creating thread with the thread class and runnable interface; Thread synchronization; Thread scheduling; Producer-consumer relationship; Daemon thread, Selfish threads; The try, catch and throw; throws Constructor and finalizers in exception handling; Applets: Applet security restrictions; the class hierarchy for applets; Life cycle of applet; HTML Tags for applet.	8
III	**Input/Output:** Exploring Java I/O, Directories, stream classes The Byte stream : Input stream, output stream, file input stream, file output stream, print stream, Random access file, the character streams, Buffered reader, buffered writer, print writer, serialization. JDBC: JDBC-ODBC bridge; The connectivity model; The driver manager; Navigating the resultset object contents; java.sql Package; The JDBC exception classes; Connecting to Remote database. **Collections:** The collections framework, collection interfaces, collection classes.	8

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IV	**AWT Fundamentals:** The class hierarchy of window fundamentals; The basic user interface components, Frame, Layout managers, flow layout etc. **The Java Event Handling Model:** Java's event delegation model , Event class hierarchy; Adapter classes; Event classes action and different Events **SWINGS:** Introduction, Hierarchy of swing components. Containers, Top level containers - JFrame, JWindow, JDialog, JPanel, JButton, JToggleButton, JCheckBox, JRadioButton, JLabel, JTextField, JTextArea, JList, JComboBox, JScrollPane.	8
V	**Introduction of Web Designing:** HTML basics Servlets Overview, Servlet Lifecycle: init(), service(),destroy(), Generic Servlet, Servlet Request, and Servlet Response, http Servlet Request, http Servlet Response and http Servlet, Request response, headers, GET, POST JSP: JSP architecture, JSP tags and JSP expressions, Fixed Template Data ,Lifecycle of a JSP, Model View Controller (MVC), Files and applets in jsp Pages, using java beans components in JSP documents. **Struts Framework:** Struts Architecture, Struts classes Action Forward, Action Form, Action Servlet, Action classes, Understanding struts config. Xml, Understanding Action Mappings, Struts flow with an example application.	8

Text Books/ References Book:-

Name of Authors	Titles of the Book	Edition	Name of the Publisher
Naughton & Schildt	The Complete Reference Java 2		Tata McGraw Hill
Deitel	Java- How to Program	Vol. I & II	Pearson Education
Horstmann & Cornell	Core Java 2	Vol. I & II	Sun Microsystems
E.R. Harold, SPD	Java Network Programming	III edition	O'Reilly Media, Inc.

COURSE OUTCOMES: Students will be able to

CO1	Knowledge of the structure and model of the Java programming language
CO2	Use the Java programming language for various programming technologies (understanding)
CO3	Develop software in the Java programming language, (application)
CO4	Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements (analysis)
CO5	Propose the use of certain technologies by implementing them in the Java programming language to solve the given problem (synthesis)

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Name of Paper	Paper Code	Theory					
		Credit			Marks		
		L	T	J	EST	CAT	Total
Computer Ethics	MAI-402 (E-III (3))	3	1	0	80	20	100

Course Objective	Objective of this course is To create awareness on Engineering Ethics and Human Values and To study the moral issues and decisions confronting individuals and organizations engaged in engineering profession.

Units	Contents (*Theory*)	Hours /week
I	An Overview of Ethics: Ethics: Definition of Ethics, The Importance of Integrity, The Difference between Morals, Ethics, and Laws. Ethics in the Business World: Why Fostering Good Business Ethics Is Important, Improving Corporate Ethics, Creating an Ethical Work Environment, Including Ethical Considerations in Decision Making. Ethics in Information Technology Ethics for IT Workers and IT Users: IT Technicians, IT Professionals: Are IT Workers Professionals, Professional Relationships, Professional Codes of Ethics, Certification, Government Licensing, IT Professional Malpractice. IT Users, Common Ethical Issues for IT Users	8
II	Computer and Internet Crime, IT Security Incidents: A Major Concern, Why Computer Incidents Are So Prevalent, Types of Exploits, Types of Perpetrators, Federal Laws for Prosecuting Computer Attacks, Implementing Trustworthy Computing: Risk Assessment, Establishing a Security Policy, Educating Employees, Prevention, Detection, Response. Privacy: Privacy Concerns abound with New IRS Systems, Privacy Protection and the Law: Privacy Laws, Applications, and Court Rulings. Key Privacy and Anonymity Issues, Treating Consumer Data Responsibly.	8
III	Freedom of Expression: First Amendment Rights, Obscene Speech, Defamation, Freedom of Expression: Key Issues, Controlling Access to Information on the Internet, Anonymity on the Internet, Defamation and Hate Speech, Corporate Blogging, Pornography. Intellectual Property: What Is Intellectual Property? Copyrights: Copyright Term, Eligible Works, Fair Use Doctrine, The Prioritizing Resources and Organization for Intellectual Property (PRO-IP) Act of 2008, General Agreement on Tariffs and Trade (GATT), The WTO and the WTO TRIPS Agreement (1994), The World Intellectual Property Organization (WIPO) Copyright Treaty (1996), The Digital Millennium Copyright Act (1998), Patents. Open Source Code, Competitive Intelligence, Cyber squatting.	8

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IV	Software Development: Strategies for Engineering Quality Software,:The Importance of Software Quality, Software Product Liability, Software Development Process, Capability Maturity Model Integration. Key Issues in Software Development, Development of Safety - Critical Systems, Quality Management Standards The Impact of Information Technology on Productivity and Quality of Life: The Impact of IT on the Standard of Living and Worker Productivity, IT Investment and Productivity, The Digital Divide, The Impact of IT on Healthcare Costs, Electronic Health Records, Use of Mobile and Wireless Technology in the Healthcare Industry, Telemedicine, Medical Information Web Sites for Laypeople	8
V	Social Networking, the Use of Social Networks in the Hiring Process, Social Shopping Web Sites, Social Networking Ethical Issues, Cyberbullying, Cyberstalking, Encounters with Sexual Predators, Uploading of Inappropriate Material, Online Virtual Worlds, Crime in Virtual Worlds, Educational and Business Uses of Virtual Worlds. Ethics of IT Organizations: Key Ethical Issues for Organizations, The Need for Nontraditional Workers, Contingent Workers, Advantages of Using Contingent Workers, Disadvantages of Using Contingent Workers, Deciding When to Use Contingent, Outsourcing, Offshore Outsourcing, Pros and Cons of Offshore Outsourcing.	8

Text Books/ References Book:-

Name of Authors	Titles of the Book	Edition	Name of the Publisher
George W. Reynolds	Ethics in information technology	Third Edition	
Deborah Johnson	Computer Ethics		Computer Ethics
Richard Spinello and Herman Tavani	Cyber Ethics	2nd Edition	

COURSE OUTCOMES: Students will be able to

CO1	discuss what ethics is and what constitutes an ethical issue.
CO2	Learn the need for professional ethics, codes of ethics and roles, concept of safety, risk assessment

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Name of Paper	Paper Code	Theory					
		Credit			Marks		
		L	T	J	EST	CAT	Total
Deep Learning	MAI-402 (E-III(4))	3	1	0	80	20	100

Course Objective	The objective of this course is to provide students with a sound and comprehensive understanding of artificial neural networks Dynamic Programming, and deep-learning techniques.

Units	Contents (*Theory*)	Hours /week
I	NEURAL NETWORK : Building Intelligence Machine-Expressing Linear Perceptron as Neurons -Feed Forward Neural Netwoks - Activation function. Supervised and Unsu pervised Learning:Single Layer Perceptron Perceptron Learning Algorithm – Least Mean Square Learning Algorithm - Multilayer Perceptron – Back Propagation Algorithm – XOR problem – Limitations of Back Propagation Algorithm- Implementing Neural Networks in TensorFlow.	8
II	CONVOLUTION NEURAL NETWORK : Introduction-Filter and Feature Maps-Full Description of CNN -Max Pooling- Full Architectural Description of CNN -Image Preprocessing Pipeline Enable More Roburst Models.	8
III	Accelerating Training with Batch Normalization-Visualizing Learning with Convolution Network - Leveraging and Learning Convolution Filters - Predefined Convolutional Filters Network (PCFNet)- Transfer Learning with Convolutional Neural Networks.	8
IV	DEEP NETWORKS : History of Deep Learning - A Probabilistic Theory of Deep Learning – Back-propagation and regularization, batch normalization- VC Dimension and Neural Nets -Deep Vs Shallow Networks - Convolutional Networks - Generative Adversarial Networks (GAN), Semi - supervised Learning.	8
V	OPTIMIZATION AND GENERALIZATION : Optimization in deep learning– Non-convex optimization for deep networks- Stochastic Optimization	8

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	Generalization in neural networks- Spatial Transformer Networks- Recurrent networks, LSTM - Recurrent Neural Network Language Models - Word-Level RNNs & Deep Reinforcement Learning.	

Text Books/ References Book:-

Name of Authors	Titles of the Book	Edition	Name of the Publisher
Nikiil Buduma, Nicholas Locascio,	Fundamentals of Deep Learning: Designing Next-Generation Machine Intelligence Algorithms	First Edition	O'ReillyMedia, 2017
Sudharsan Ravichandiran	Hands on Deep Learning Algorithms with Python	First Edition	Packt Publishing Limited, 2019
François Chollet	Deep Learning with python	First edition	Manning Publications Company, 2017.
Ian Goodfellow, YoshuaBengio and Aaron Courville	Deep Learning	First edition	MIT Press, London, 2016
Rachel Schutt, Cathy O'Neil	Doing Data Science		O'Reilly

COURSE OUTCOMES: Students will be able to

CO1	Explain the basic concepts in Neural Networks and applications
CO2	Explain the deep learning concepts using Back Propagation Network
CO3	Analyze the limitation of Single layer Perceptron and Develop MLP with 2 hidden layers, Develop Delta learning rule of the output layer and Multilayer feed forward neural network with continuous perceptions,

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Name of Paper	Paper Code	Theory					
		Credit			Marks		
		L	T	J	EST	CAT	Total
Dot Net Technology	**MAI-403 (E-IV (1))**	3	1	0	80	20	100

Course Objective	The objective this course is study web development technology and tools provided by Microsoft .NET platform. Students are expected to learn how to design and develop web application along with database connectivity using Microsoft .NET Technology

Units	Contents (*Theory*)	Hours /week
I	**The .Net framework**: Introduction, The Origin of .Net Technology, Common Language Runtime (CLR), Common Type System (CTS), Common Language Specification (CLS), Microsoft Intermediate Language (MSIL), Just-In –Time Compilation, Framework Base Classes. **Assemblies and Attribute:** .Net Assemblies features and structure, private and share assemblies, Built-In attribute and custom attribute. Introduction about generic. **C -Sharp Language (C#):** Introduction, Data Types, Identifiers, Variables, Constants, Literals, Array and Strings, Object and Classes, Inheritance and Polymorphism, Operator Overloading, Interfaces, Delegates and Events. Type conversion.	8
II	**OOP C# :**Classes and Objects Instance Variables, Methods, Constructors, Properties, Access Specifiers, Static members and methods Inheritance Levels of Inheritance, Constructor and Inheritance, Polymorphism, Interfaces, Abstract classes, Delegates, Indexers, Sealed Classes, Exception handling Collections and Generics Bounded and Unbounded Collections, Generic Programming Generic classes, Functions, Constraints on Generic Programming	8
III	**Databases and C#:** File Handling Text Files, Binary Files, String Processing, Serialization and Deserialization ADO.Net Connected and Disconnected,	8

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	Architecture of ADO, Datasets, Data Readers, Data Adapters, Working with Stored Procedures LINQ and the ADO.NET Entity Framework LINQ Introduction, Mapping Your Data Model to an Object Model, Introducing Query Syntax	
IV	**Asp.Net Web Applications:** Life cycle of Asp.Net web pages, Role of client side scripting, postback posting and cross page posting, asp.net compilation model, asp.net HTML Controls, Server Controls(basic controls, Calendar, Ad Rotator, File Upload, Validation Controls	8
V	**Data and State Management in ASP.NET:** ASP.NET Websites with Themes and Master Pages, Data Source Controls, Data Bound Controls, ASP.NET State Management-Client Side and Server Side. ASP.NET and AJAX	8

Text Books/ References Book:-

Name of Authors	Titles of the Book	Edition	Name of the Publisher
Schildt, Herbert	C# 4.0: the complete reference		McGraw-Hill Education
Chirag Patel	Advance .NET Technology	II	Dream Tech Press
Andrew Trolsen,	Pro C# 5.0 and the .NET 4.5 Framework		A Press
Imar Spaanjaars	Beginning ASP.NET 4.5: in C# and VB		Wrox Publication

COURSE OUTCOMES: Students will be able to

CO1	Create UI applications using C#
CO2	Develop Web applications using various controls and programming techniques.
CO3	Solve identity management problems in web Applications application using session management and AJAX concepts.
CO4	Design and develop secure web applications using asp.net according to industry standards

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Name of Paper	Paper Code	Theory					
		Credit			Marks		
		L	T	J	EST	CAT	Total
Mobile Computing	**MAI-403 (E-IV (2))**	3	1	0	80	20	100

Course Objective	The objective of this course is to explain the principles and theories of mobile Computing technologies. Also to describe infrastructures and technologies of mobile computing technologies.

Units	Contents (*Theory*)	Hours /week
I	WIRELESS COMMUNICATION FUNDAMENTALS : Introduction to Mobile Computing- Mobile Computing V/S Wireless Computing –Mobile Computing Applications- Characteristics of Mobile Computing- Structure of Mobile Computing Applications. Generations of Mobile Communication Technologies- Multiplexing – Spread spectrum- MAC Protocols –SDMA-TDMA-FDMA-CDMA	8
II	TELECOMMUNICATION SYSTEMS : Introduction to Cellular Systems- GSM – System Architecture – Protocols – Connection Establishment – Frequency Allocation Routing – Mobility Management – Security – GPRS- Architecture - Handover	8
III	MOBILE NETWORK LAYER: Mobile IP – DHCP – Proactive protocol- DSDV, Reactive Routing Protocols – DSR, AODV Hybrid routing –ZRP, Wireless LAN – IEEE 802.11 Standards – Architecture – services – HIPERLAN – Ad- Hoc Network – Blue Tooth.	8
IV	Mobile AD-HOC Networks9 AD - HOC Basics Basic Concepts – Characteristics – Applications – Design Issues – Routing – Essential of Traditional Routing Protocols –Popular Routing Protocols – Vehicular Ad Hoc networks (VANET) – MANET Vs VANET – Security.	8

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V	MOBILE PLATFORMS AND APPLICAT IONS 9 Mobile Device Operating Systems – Special Constrains & Requirements – Commercial Mobile Operating Systems – Software Development Kit: Ios, Android, BlackBerry, Windows Phone – M Commerce – Structure – Pros & Cons – Mobile Payment System – Security Issues.	8

Text Books/ References Book:-			
Name of Authors	**Titles of the Book**	**Edition**	**Name of the Publisher**
Jochen Schiller	Mobile Communications	Second Edition	Prentice Hall of India Pearson Education, 2003
William Stallings	Wireless Communications and Networks	Second Edition	Prentice Hall of India Pearson Education, 2004

COURSE OUTCOMES: Students will be able to	
CO1	Understand fundamentals of wireless communications.
CO2	Analyze security, energy efficiency, mobility, scalability, and their unique characteristics in wireless networks.
CO3	Demonstrate basic skills for cellular networks design.
CO4	Work with Wireless application Protocols to develop mobile content application and to appreciate the social and ethical issues of mobile computing, including privacy

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Name of Paper	Paper Code	Theory					
		Credit			Marks		
		L	T	J	EST	CAT	Total
Cloud Computing Technologies	**MAI-403 (E-IV(3))**	3	1	0	80	20	100

Course Objective	Objective of this course is provide students with the fundamentals and essentials of Cloud Computing.

Units	Contents (*Theory*)	Hours /week
I	Cloud Computing Fundamentals: Cloud Computing definition, Types of cloud, Cloud services: Benefits and challenges of cloud computing, Evolution of Cloud Computing , NIST architecture of cloud computing, Applications cloud computing, Business models around Cloud – Major Players in Cloud Computing - Eucalyptus ,Nimbus ,Open Nebula, CloudSim, VMware.	8
II	Types of Computing and Clouds: Cluster Computing, Grid Computing, Grid Computing Versus Cloud Computing, Key Characteristics of Cloud Computing, Cloud Models, Benefits of Cloud Models, Public Cloud, Private Cloud, Hybrid Cloud, Community Cloud, Shared Private Cloud, Dedicated Private Cloud, and Dynamic Private Cloud.	8
III	Cloud Services and File System: Types of Cloud services: Software as a Service - Platform as a Service – Infrastructure as a Service - Database as a Service- Monitoring as a Service – Communication as services. Service providers- Google App Engine, Amazon EC2, Microsoft Azure, Sales force, Clarizen.	8
IV	Virtualization: Basics of Virtualization, Types of Virtualization, Implementation Levels of Virtualization, Virtualization Structures, Tools and Mechanisms, Virtualization of CPU, Memory, I/O Devices and OS, Virtualization for Data -center Automation, Introduction to MapReduce, GFS, HDFS, Hadoop Framework.	8

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V	Security in the Cloud: Security Overview – Cloud Security Challenges and Risks – Software-as- a-Service Security – Security Monitoring – Security Architecture Design – Data Security – Application Security – Virtual Machine Security - Identity Management and Access Control – Autonomic Security.	8

Text Books/ References Book:-

Name of Authors	Titles of the Book	Edition	Name of the Publisher
Anthony T. Velte, Tob J. Velte, Robert Elsenpeter.	Cloud Computing "A Practical Approach"		McGraw Hill, Kai Hwang, Geoffrey C Fox, Jack G Dongarra,
Morgan Kaufmann	"Distributed and Cloud Computing, From Parallel Processing to the Internet of Things"		
John W. Rittinghouse and James F. Ransome, ,	"Cloud Computing: Implementation, Management, and Security"		CRC Press, 2010.
Toby Velte, Anthony Velte, Robert Elsenpeter,	Cloud Computing, A Practical Approach		TMH, 2009.
Kumar Saurabh	Cloud Computing – insights into New -Era Infrastructure		Wiley India, 2011.
Ronald L. Krutz, Russell Dean Vines	Cloud Security – A comprehensive Guide to Secure Cloud Computing		Wiley – India

COURSE OUTCOMES: Students will be able to

CO1	Know the fundamental ideas behind Cloud Computing, the evolution of the paradigm, its applicability; benefits, as well as current and future challenges;
CO2	To understand the taxonomy and types of Cloud Computing.
CO3	cloud storage technologies and relevant distributed file systems
CO4	To understand how to secure the Cloud & how to Demystify the Cloud

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Name of Paper	Paper Code	Theory					
		Credit			Marks		
		L	T	J	EST	CAT	Total
Ecommerce & ERP	MAI-403 (E-IV(4))	3	1	0	80	20	100

Course Objective	Objective of this course is provide adequate knowledge and understanding about E-Com practices to the students.

Units	Contents (*Theory*)	Hours /week
I	**Introduction to E-commerce:** Introduction, E-commerce or Electronic Commerce- An Overview, Electronic Commerce – Cutting edge, Electronic Commerce Framework Evolution of E-commerce: Introduction, History of Electronic Commerce, Advantages and Disadvantage of E-commerce, Roadmap of e-commerce in India	8
II	**Network Infrastructure:** Introduction, Network Infrastructure- an Overview, The Internet Hierarchy, Basic Blocks of e-commerce, Networks layers & TCP/IP protocols, The Advantages of Internet, World Wide Web **E-commerce Infrastructure:** Introduction, Ecommerce Infrastructure-An Overview, Hardware, Server Operating System, Software, Network Website	8
III	**Business Models of E – commerce :** Model Based On Transaction Type, Model Based On Transaction Party - B2B, B2C, C2B, C2C, E – Governance. **E – Payment Mechanism :** Payment through card system, E – Cheque, E – Cash, E – Payment Threats & Protections. **E – Marketing :** Home –shopping, E-Marketing, Tele-marketing	8
IV	**Electronic Data Interchange(EDI):** The Meaning of EDI, History of EDI, EDI Working Concept, Implementation difficulties of EDI, Financial EDI, EDI and Internet E-Marketing: The scope of E-Marketing, Internet Marketing Techniques Website Design Issues: Factors that Make People Return to Your Site, Strategies for Website Development	8

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V	Enterprise Resource Planning (ERP) : Features, capabilities and Overview of Commercial Software, re-engineering work processes for IT applications, Business Process Redesign, Knowledge engineering and data warehouse . Business Modules: Finance, Manufacturing (Production), Human Resources, Plant Maintenance, Materials Management, Quality Management, Sales & Distribution ERP Package, ERP Market: ERP Market Place, SAP AG, PeopleSoft, BAAN, JD Edwards, Oracle Corporation ERP-Present and Future: Enterprise Application Integration (EAI), ERP and E-Commerce, ERP and Internet, Future Directions in ERP	8

Text Books/ References Book:-

Name of Authors	Titles of the Book	Edition	Name of the Publisher
Murthy	E – Commerce		Himalaya Publishing
Reynolds	Beginning E-Commerce		SPD
Elsenpete	E-Business: A beginners Guide		Tata McGraw-Hill
Ravi Kalakota & Andrew B Whinston	Frontiers of Electronic Commerce		Pearson Education.

COURSE OUTCOMES: Students will be able to

CO1	Analyze the impact of E-commerce on business models and strategy
CO2	Describe the major types of E-commerce
CO3	Identify the key security threats in the E-commerce environment.
CO4	Make basic use of Enterprise software, and its role in integrating business functions

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Name of Paper	Paper Code	Practical				
		Credit		**Marks**		
Major Project-I (Based on Computer Application)	**MAI-404**	**P**	**J**	**ESP**	**CAP**	**Total**
		6	6	200	100	300

Name of Paper	Paper Code	Practical				
		Credit		**Marks**		
Major Project-II (Based on AI Application)	**MAI-405**	**P**	**J**	**ESP**	**CAP**	**Total**
		6	6	200	100	300