

# M.L. Dahanukar College of Commerce

## Teaching Plan: 2022 - 23

Department: I.T.

Class: M.Sc.(I.T.)

Semester:III

Subject: Applied Artificial Intelligence

Name of the Faculty: Srushty Padte

Month	Topics to be Covered	Internal Assessment	Number of Lectures
July	<b>Unit I- Review of AI</b> <b>Expert System and Applications:</b> Phases in building expert system, Architecture, Expert system vs traditional system, Rule based expert system, Blackboard system, Truth maintenance, Shells and tools. <b>Unit II-Probability Theory :</b> Joint probability, Conditional probability, bayes theorem		14
August	<b>Unit II- Probability Theory:</b> rules and facts , cumulative probability, Bayesian method. <b>Unit II: Fuzzy sets:</b> Fuzzy set, operations, Types of membership functions, Multivalued logic, Fuzzy logic Linguistic variable and hedges, Fuzzy propositions, Inference rules, Fuzzy systems, Possibility theory. <b>Unit III: Machine learning:</b> Machine learning systems, supervised and unsupervised learning, inductive learning, deductive learning, clustering, vector machines, reasoning and learning.		18
September	<b>Artificial neural network:</b> Definition, Single layer and multilayer feedforward network, radial basis function, design issues of artificial neural network and recurrent network.  <b>Unit IV: Evolutionary Computations:</b> Soft Computing, GA, Genetic programming concepts, evolutionary programming, swarm intelligence, colony paradigm <b>Unit IV: Intelligent agents:</b> Agent vs software program, classification of agents,		16

	working, Single and multiagent system, performance evaluation, architecture, applications.		
October	<b>Unit V: Advance Knowledge</b> <b>representation techniques:</b> Conceptual dependency theory, script structures, CYC, case grammars, semantic web. <b>Natural language processing:</b> Sentence analysis, grammar and parsers, types of parsers, universal networking language, dictionary		12

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# M.L. Dahanukar College of Commerce

## Teaching Plan: 2022 - 2023

Department: I.T.

Class: M.Sc.(I.T.)

Semester:III

Subject: Machine Learning

Name of the Faculty:LARISSA PEGADO

Month	Topics to be Covered	Internal Assessment	Number of Lectures
July	<p><b>Machine Learning:</b>Examples Of Machine Learning Problems, Structure of Learning, learning versus Designing, Training versus Testing, Characteristics of Machine learning tasks, Predictive and descriptive tasks, Machine learning Models: Geometric Models, Logical Models, Probabilistic Models. Features: Feature types, Feature Construction and Transformation, Feature Selection.</p> <p><b>Classification:</b> Binary Classification- Assessing Classification performance, Class probability Estimation Assessing class probability Estimates, Multiclass Classification.</p> <p><b>Regression:</b> Assessing performance of Regression- Error measures, Overfitting- Catalysts for Overfitting, Case study of Polynomial Regression.</p>		20
August	<p><b>Theory of Generalization:</b> Effective number of hypothesis, Bounding the Growth function, VC Dimensions, Regularization theory.</p> <p><b>Linear models:</b> Least Squares method, Multivariate Linear Regression, Regularized Regression, Using Least Square regression for Classification. Perceptron, Support Vector Machines, Soft Margin SVM, Obtaining probabilities from Linear classifiers, Kernel methods for non-Linearity.</p> <p><b>Distance Based Models:</b> Neighbours and Examples,NearestNeighboursClassification, Distance based clustering-K means Algorithm, Hierarchical clustering.</p>		18
September	<p><b>Rule Based Models:</b> Rule learning for subgroup discovery, Association rule mining.</p>		18

	<p><b>Tree Based Models:</b> Decision Trees, Ranking and Probability estimation Trees, Regression trees, Clustering Trees.</p> <p><b>Probabilistic Models:</b> Normal Distribution and Its Geometric Interpretations, Naïve Bayes Classifier, Discriminative learning with Maximum likelihood, Probabilistic Models with Hidden Variables: Estimation-Maximization Methods, Gaussian Mixtures, and Compression based Models.</p>		
October	<p><b>Trends In Machine Learning :</b> Model and Symbols-Bagging and Boosting, Multitask learning, Online learning and Sequence Prediction, Data Streams and Active Learning, Deep Learning, Reinforcement Learning.</p>		04

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**ML Dahanukar College**  
**Teaching Plan: 2022 - 23**

Department: I.T.      Class: MSc.(I.T.) Part-II      Semester: III

Subject: Robotic Process Automation

Name of the Faculty: Mr Dhanraj Jadhav

Month	Topics to be Covered	Internal Assessment	Number of Lectures
August	<b>Unit I:</b> Robotic Process Automation Record and Play <b>Unit II:</b> Sequence, Flowchart, and Control Flow Data Manipulation		15
September	<b>Unit III:</b> Taking Control of the Controls Tame that Application with Plugins and Extensions		15
October	<b>Unit IV:</b> Handling User Events and Assistant Bots Exception Handling, Debugging, and Logging		15
November	<b>Unit V:</b> Managing and Maintaining the Code: Deploying and Maintaining the Bot		15

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# M.L. Dahanukar College of Commerce

## Teaching Plan: 2022 - 2023

Department: I.T.

Class: M.Sc.(I.T.)

Semester: III

Subject: Technical Writing and Entrepreneurship Development

Name of the Faculty: Shivanya Kadam.

Month	Topics to be Covered	Number of Lectures
JULY	<p><b>Introduction to Technical Communication:</b> What Is Technical Communication? The Challenges of Producing Technical Communication, Characteristics of a Technical Document, Measures of Excellence in Technical Documents, Skills and Qualities Shared by Successful Workplace Communicators, How Communication Skills and Qualities Affect Your Career?</p> <p><b>Understanding Ethical and Legal Considerations:</b> A Brief Introduction to Ethics, Your Ethical Obligations, Your Legal Obligations, The Role of Corporate Culture in Ethical and Legal Conduct, Understanding Ethical and Legal Issues Related to Social Media, Communicating Ethically Across Cultures, Principles for Ethical Communication</p> <p><b>Writing Technical Documents:</b> Planning, Drafting, Revising, Editing, Proofreading</p> <p><b>Writing Collaboratively:</b> Advantages and Disadvantages of Collaboration, Managing Projects, Conducting Meetings, Using Social Media and Other Electronic Tool in Collaboration, Importance of WordPress Website, Gender and Collaboration, Culture and Collaboration.</p> <p><b>Introduction to Content Writing:</b> Types of Content (Article, Blog, E-Books, Press Release, Newsletters Etc), Exploring Content Publication Channels. Distribution of your content across various channels.</p> <p><b>Blog Creation:</b> Understand the psychology behind your web traffic, Creating killing landing pages which attract users, Using Landing Page Creators, Setting up Accelerated Mobile Pages, Identifying UI UX Experience of your website or blog.</p>	20
AUGUST	<p><b>Organising Your Information:</b> Understanding Three Principles for Organising Technical Information, Understanding Conventional Organisational Patterns,</p> <p><b>Emphasising Important Information:</b> Writing Clear, Informative Titles, Writing Clear, Informative Headings, Writing Clear Informative Lists, Writing Clear Informative Paragraphs.</p> <p><b>Creating Graphics:</b> The Functions of Graphics, The Characteristics of an Effective Graphic, Understanding the Process of Creating Graphics, Using Colour Effectively, Choosing the Appropriate Kind of Graphic, Creating Effective Graphics for Multicultural Readers.</p> <p><b>Researching Your Subject:</b> Understanding the Differences Between Academic and Workplace Research, Understanding the Research Process, Conducting Secondary Research, Conducting Primary Research, Research and Documentation: Literature Reviews, Interviewing for Information, Documenting Sources, Copyright,</p>	16

	<p>Paraphrasing, Questionnaires.</p> <p><b>Report Components:</b> Abstracts, Introductions, Tables of Contents, Executive Summaries, Feasibility Reports, Investigative Reports, Laboratory Reports, Test Reports, Trip Reports, Trouble Reports</p> <p><b>Writing Proposals:</b> Understanding the Process of Writing Proposals, The Logistics of Proposals, The “Deliverables” Proposals, Persuasion and Proposals, Writing a Proposal, The Structure of the Proposal.</p> <p><b>Writing Informational Reports:</b> Understanding the Process of Writing Informational Reports, Writing Directives, Writing Field Reports, Writing Progress and Status Reports, Writing Incident Reports, Writing Meeting Minutes..</p>	
SEPTEMBER	<p><b>Writing Recommendation Reports:</b> Understanding the Role of Recommendation Reports, Using a Problem-Solving Model for Preparing Recommendation Reports, Writing Recommendation Reports.</p> <p><b>Reviewing, Evaluating, and Testing Documents and Websites:</b> Understanding Reviewing, Evaluating, and Testing, Reviewing Documents and Websites, Conducting Usability Evaluations, Conducting Usability Tests, Using Internet tools to check writing Quality, Duplicate Content Detector, What is Plagiarism? How to avoid writing plagiarism content?</p> <p><b>Innovation management: an introduction:</b> The importance of innovation, Models of innovation, Innovation as a management process.</p> <p><b>Market adoption and technology diffusion:</b> Time lag between innovation and useable product, Innovation and the market , Innovation and market vision ,Analysing internet search data to help adoption and forecasting sales ,Innovative new products and consumption patterns, Crowd sourcing for new product ideas, Frugal innovation and ideas from everywhere, Innovation diffusion theories</p> <p><b>Managing innovation within firms:</b> Organisations and innovation, The dilemma of innovation management, Innovation dilemma in low technology sectors, Dynamic capabilities, Managing uncertainty, Managing innovation projects</p> <p><b>Operations and process innovation:</b> Operations management, The nature of design and innovation in the context of operations, Process design, Process design and innovation</p> <p><b>Managing intellectual property:</b> Intellectual property, Trade secrets, An introduction to patents, Trademarks, Brand names, Copyright</p>	18
OCTOBER	<p><b>Management of research and development:</b> What is research and development?, R&amp;D management and the industrial context, R&amp;D investment and company success, Classifying R&amp;D, R&amp;D management and its link with business strategy, Strategic pressures on R&amp;D, Which business to support and how?, Allocation of funds to R&amp;D, Level of R&amp;D expenditure</p> <p><b>Managing R&amp;D projects: Successful technology management,</b> The changing nature of R&amp;D management, The acquisition of external technology, Effective R&amp;D management, The link with the product innovation process, Evaluating R&amp;D projects.</p>	04

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