M.L. Dahanukar College of Commerce

Teaching Plan: 2020 - 21

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
November	**Unit I- Review of AI** **Expert System and Applications:** Phases in building expert system, Architecture, Expert system vs traditional system, Rule based expert system, Blackboard system, Truth maintenance, Shells and tools. **Unit II-Probability Theory** : Joint probability, Conditional probability, bayes theorem, rules and facts , cumulative probability, Bayesian method. **Fuzzy sets:** Fuzzy set, operations, Types of membership functions, Multivalued logic, Fuzzy logic		20
December	**Unit II:** Linguistic variable and hedges, Fuzzy propositions, Inference rules, Fuzzy systems, Possibility theory. **Unit III: Machine learning:** Machine learning systems, supervised and unsupervised learning, inductive learning, deductive learning, clustering, vector machines, reasoning and learning. **Artificial neural network:** Definition, Single layer and multilayer feedforward network, radial basis function, design issues of artificial neural network and recurrent network. **Unit IV: Evolutionary Computations:** Soft Computing, GA, Genetic programming concepts, evolutionary programming, swarm intelligence, colony paradigm.		22
January	**Unit IV: Intelligent agents:** Agent vs software program, classification of agents, working, Single and multiagent system, performance evaluation, architecture, applications.		18

	Unit V:Advance Knowledge representation techniques: Conceptual dependency theory, script structures, CYC, case grammars, semantic web. **Natural language processing:** Sentence analysis, grammar and parsers, types of parsers, universal networking language,dictionary.		

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M.L. Dahanukar College of Commerce

Teaching Plan: 2020 - 2021

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
November	**Machine Learning**: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. **Classification:** Binary Classification- Assessing Classification performance, Class probability Estimation Assessing class probability Estimates, Multiclass Classification. **Regression**: Assessing performance of Regression- Error measures, Overfitting- Catalysts for Overfitting, Case study of Polynomial Regression.		20
December	**Theory of Generalization**: Effective number of hypothesis, Bounding the Growth function, VC Dimensions, Regularization theory. **Linear models:** 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		20

	methods for non-Linearity. **Distance Based Models:** Neighbours and Examples,NearestNeighboursClassification, Distance based clustering-K means Algorithm, Hierarchical clustering.		
January	**Rule Based Models:** Rule learning for subgroup discovery, Association rule mining. **Tree Based Models:** Decision Trees, Ranking and Probability estimation Trees, Regression trees, Clustering Trees. **Probabilistic Model**s: 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. Trends In Machine Learning : Model and Symbols-Bagging and Boosting, Multitask learning, Online learning and Sequence Prediction, Data Streams and Active Learning, Deep Learning, Reinforcement Learning.		20

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Teaching Plan: 2020 - 21

Department: I.T.   **Class: _M_Sc.(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
December	**Unit I:** Robotic Process Automation Record and Play **Unit II:** Sequence, Flowchart, and Control Flow Data Manipulation		20
January	**Unit III:** Taking Control of the Controls Tame that Application with Plugins and Extensions **Unit IV:** Handling User Events and Assistant Bots Exception Handling, Debugging, and Logging		20
February	**Unit V:** Managing and Maintaining the Code: Deploying and Maintaining the Bot		20
March			

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Teaching Plan: 2020 - 21

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

Subject: Technical Writing and Entrepreneurship Development

Name of the Faculty: Mr. Arvind Khadye & Mr Dhanraj Jadhav

Month	Topics to be Covered	Internal Assessment	Number of Lectures
December	**Unit I** Introduction to Technical Communication: Understanding Ethical and Legal Considerations: Writing Technical Documents: Writing Collaboratively		15
January	**Unit II** Introduction to Content Writing Blog Creation Organizing Your Information Emphasizing Important Information **Unit III:** Creating Graphics Researching Your Subject Research and Documentation Report Components		25
February	**Unit IV:** Writing Proposals Writing Informational Reports Writing Recommendation Reports Reviewing, Evaluating, and Testing Documents and Websites Market adoption and technology diffusion **Unit V:** Managing innovation within firms, projects Operations and process innovation, intellectual property Copyright Management of research and development Managing R&D projects		20

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