# ML Dahanukar College

# Teaching Plan: 2020 - 21

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

**Subject: Cloud Computing**

**Name of the Faculty: Mr Dhanraj Jadhav**

| Month | Topics to be Covered | Internal Assessment | Number of Lectures |
|---|---|---|---|
| January | **Unit I:**<br>Introduction to Cloud Computing<br>Parallel and Distributed Computing<br>Virtualization<br>Unit II<br>Cloud Computing Architecture<br>Fundamental Cloud Security | | 20 |
| February | **Unit II: Industrial Platforms and New Developments**<br>**Unit III:**<br>Specialized Cloud Mechanisms<br>Cloud Management Mechanisms<br>Cloud Security Mechanisms: | | 16 |
| March | **Unit IV:**<br>Fundamental Cloud Architectures<br>Advanced Cloud Architectures | | 12 |
| April | **Unit V:**<br>Cloud Delivery Model Considerations<br>Cost Metrics and Pricing Models<br>Service Quality Metrics and SLAs | | 12 |

**Sign of Faculty**                                                       **Sign of Coordinator**

# P.T.V.A.'s
# M.L.Dahanukar College of Commerce

# Teaching Plan: 2020 – 2021
# Department: Information Technology

**Class: M.Sc (part I) – Sem-I**
**Subject: DATA SCIENCE**
**Name of the Faculty: Prof. Supritha Bhandary**

| Month | Topics to be Covered | Internal Assessment | Number of Lectures |
|---|---|---|---|
| JAN | DataScience Technology stack: Rapid Information Factory, Ecosystem, Data Science Storage Tools, Data Lake, Data Vault, Data Warehouse BusMatrix. Layered Framework: Definition of DataScience Framework, Cross-Industry Standard Process for Data Mining (CRISP-DM), Business layer, Utility layer. | | 16 |
| FEB | Three Management Layers: Operational Management Layer, Processing-Stream Definition and Management, Audit, Balance, and Control Layer, Balance, Control, Yoke Solution, Cause-and-Effect, Analysis System, Functional Layer, DataScience Process. Retrieve Superstep, | | 16 |
| MAR | Assess Superstep Assess Superstep, Errors, Analysis of Data, Practical Actions, Engineering a Practical Assess Superstep , Process Superstep : Data Vault, Time-Person-ObjectLocation-Event Data Vault, Data Science Process, Data Science | | 16 |
| APR | Transform Superstep: Univariate Analysis Computer Vision(CV), NaturalLanguageProcessing(NLP),Neural Networks,TensorFlow. Organize and Report Supersteps Organize Superstep, Report Superstep, Graphics, Pictures, ShowingtheDifference | | 12 |

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# M.L. Dahanukar College of Commerce

## Teaching Plan: 2020 - 2021

**Department: I.T.      Class: M.Sc.(I.T.)      Semester:I**

**Subject: Research In Computing**

**Name of the Faculty:LARISSA PEGADO**

| Month | Topics to be Covered | Internal Assessment | Number of Lectures |
|---|---|---|---|
| January | **Introduction:** Role of Business Research, Information Systems and Knowledge Management, Theory Building, Organization ethics and Issues.<br><br>**Beginning Stages of Research Process**: Problem definition,Qualitative research tools, Secondary data research | | 20 |
| February | **Research Methods and Data Collection:** Survey research,communicating with respondents, Observation methods, Experimental research<br><br>**Measurement Concepts, Sampling and Field work:** Levels of Scale measurement, attitude measurement, questionnaire design, sampling<br><br>designs and procedures, determination of sample size | | 20 |
| March | **Data Analysis and Presentation:** Editing and Coding, Basic Data Analysis, Univariate Statistical Analysis and Bivariate Statistical analysis and differences between two variables. Multivariate Statistical Analysis. | | 20 |

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# M.L. Dahanukar College of Commerce

## Teaching Plan: 2020 - 21

**Department: I.T.**        **Class: M.Sc.(I.T.)**        **Semester:I**

### Subject: Soft Computing

### Name of the Faculty: Srushty Padte

| Month | Topics to be Covered | Internal Assessment | Number of Lectures |
|---|---|---|---|
| January | **Unit I**- Introduction of soft computing, soft computing vs. hard computing, various types of soft computing techniques, Fuzzy Computing, Neural Computing, Genetic Algorithms, Associative Memory, Adaptive Resonance Theory, Classification, Clustering, Bayesian Networks, Probabilistic reasoning, applications of soft computing. <br>**Unit II**:**Artificial Neural Network:** Fundamental concept, Evolution of Neural Networks, Basic Models, McCulloh-Pitts Neuron, Linear Separability, Hebb Network. Supervised Learning Network: Perceptron Networks, Adaptive Linear Neuron, Multiple Adaptive Linear Neurons, Backpropagation Network, Radial Basis Function, Time Delay Network, Functional Link Networks, Tree Neural Network. | | 20 |
| February | **Unit II: Associative Memory Networks:** Training algorithm for pattern Association, Autoassociative memory network, hetroassociative memory network, bi-directional associative memory, Hopfield networks, iterative autoassociative memory networks, temporal associative memory networks <br>**Unit III:** UnSupervised Learning Networks: Fixed weight competitive nets, Kohonen self-organizing feature maps, learning vectors quantization, counter propogation networks, adaptive resonance theory networks. Special Networks: Simulated annealing, Boltzman machine, Gaussian Machine, Cauchy Machine, Probabilistic neural net, cascade correlation network, cognition network, neo-cognition network, cellular neural network, optical neural network | | 22 |

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|---|---|---|---|
| | Third Generation Neural Networks: Spiking Neural networks, convolutional neural networks, deep learning neural networks, extreme learning machine model.<br>**Unit IV:** Introduction to Fuzzy Logic, Classical Sets and Fuzzy sets: Classical sets, Fuzzy sets. Classical Relations and Fuzzy Relations: Cartesian Product of relation, classical relation, fuzzy relations, tolerance and equivalence relations, non-iterative fuzzy sets | | |
| November | **Unit IV:** Membership Function: features of the membership functions, fuzzification, methods of membership value assignments. Defuzzification: Lambda-cuts for fuzzy sets, Lambda-cuts for fuzzy relations, Defuzzification methods. Fuzzy Arithmetic and Fuzzy measures: fuzzy arithmetic, fuzzy measures, measures of fuzziness, fuzzy integrals.<br>**Unit V:** Fuzzy Rule base and Approximate reasoning: Fuzzy proportion, formation of rules, decomposition of rules, aggregation of fuzzy rules, fuzzy reasoning, fuzzy inference systems, Fuzzy logic control systems, control system design, architecture and operation of FLC system, FLC system models and applications of FLC System. Genetic Algorithm: Biological Background, Traditional optimization and search techniques, genetic algorithm and search space, genetic algorithm vs. traditional algorithms, basic terminologies, simple genetic algorithm, general genetic algorithm, operators in genetic algorithm, stopping condition for genetic algorithm flow, constraints in genetic algorithm, problem solving using genetic algorithm, the schema theorem, classification of genetic algorithm, Holland classifier systems, genetic programming, advantages and limitations and applications of genetic algorithm. Differential Evolution Algorithm, Hybrid soft computing techniques – neuro – fuzzy hybrid, genetic neuro-hybrid systems, genetic fuzzy hybrid and fuzzy genetic hybrid systems. | | 18 |

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