| | |
|---|---|
| **COURSE TITLE** | **AI & ML IN MANAGEMENT** |
| **COURSE CODE** | **04BB0535** |
| **COURSE CREDITS** | **2** |

**Objective:**

1 N/A

**Course Outcomes:** After completion of this course, student will be able to:

1 Define and explain the fundamental concepts of Artificial Intelligence and Machine Learning relevant to business management

2 Classify and interpret business data sets for informed managerial decision-making using basic AI/ML concepts

3 Demonstrate the application of AI and ML tools in solving functional business problems across marketing, HR, finance, and operations

4 Evaluate real-world use cases of AI/ML in management and propose appropriate solutions based on organisational needs

5 Apply suitable machine learning algorithms to forecast product demand using historical sales and market data

**Pre-requisite of course:**Basic knowledge of statistical concepts

**Teaching and Examination Scheme**

| Theory Hours | Tutorial Hours | Practical Hours | ESE | IA | CSE | Viva | Term Work |
|---|---|---|---|---|---|---|---|
| 2 | 0 | 0 | 100 | 0 | 0 | 0 | 0 |

| Contents : Unit | Topics | Contact Hours |
|---|---|---|
| 1 | **Introduction to AI, ML and Business Data Ecosystem** Evolution and definitions of AI and ML, Differences between AI, ML, and deep learning, Types of Machine Learning: Supervised, Unsupervised, Reinforcement Learning, AI applications in the business ecosystem, Ethics and biases in AI, Role of data in AI and ML, Business data sources (CRM, ERP, Social Media), Basics of data cleaning and preprocessing, Introduction to data visualization tools: Tableau, Power BI (demo only), Case examples from retail and BFSI sectors | 12 |
| 2 | **Functional and Technical Applications in Business** Customer segmentation, Predictive analytics in marketing campaigns, Chatbots and recommendation systems, Fraud detection, Credit scoring using ML, Algorithmic trading (conceptual), AI in recruitment and screening, Predicting employee attrition, Sentiment analysis in feedback, Demand forecasting, Inventory optimization, Intelligent logistics and route planning | 12 |

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| Contents : Unit | Topics | Contact Hours |
|---|---|---|
| 3 | **ML Tools, Industry Use Cases and Project Work**<br>Hands-on with Excel and Google Colab, Introduction to Jupyter Notebook / Colab, Linear regression using Excel, Basics of classification models using Scikit-learn (e.g., Decision Trees), Reading and interpreting ML outputs, Ethics in AI usage and data privacy, Industry case studies (e.g., Netflix, Amazon, Zomato), Mini project: business problem identification, AI/ML solution design, Presentations and reflections | 8 |
| **Total Hours** | | **32** |

**Textbook :**

1 Artificial Intelligence and Machine Learning, C. S. R. Prabhu, PHI Learning, 0000

**References:**

1 Artificial Intelligence, Artificial Intelligence, Padhy N.P. , Oxford University Press, 0000

2 Machine Learning for Business Analytics, Machine Learning for Business Analytics, Galit Shmueli, Peter Bruce, Inbal Yahav, Nitin Patel , Wiley India Edition, 0000

**Suggested Theory Distribution:**

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

| Distribution of Theory for course delivery and evaluation | | | | | |
|---|---|---|---|---|---|
| **Remember / Knowledge** | **Understand** | **Apply** | **Analyze** | **Evaluate** | **Higher order Thinking / Creative** |
| 0.00 | 0.00 | 35.00 | 35.00 | 30.00 | 0.00 |

**Instructional Method:**

1 Theory

2 Case study

**Supplementary Resources:**

1 https://www.britannica.com/science/statistics/Random-variables-and-probability-distributions

2 https://machinelearningmastery.com/statistical-hypothesis-tests/

3 https://www.questionpro.com/features/correlation-analysis.html

4 https://www.sciencedirect.com/topics/medicine-and-dentistry/regression-analysis

5 https://www.aptech.com/blog/introduction-to-the-fundamentals-of-time-series-data-and-analysis/

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