Machine Learning Lab

COURSE INTRO

4th, DSE

Dept. of Data Science & Computer Applications

COURSE DETAILS

Subject Code:	DSE 2262
Credit:	1
~~Lecture Hours:~~	~~48~~
Lab/~~Tutorial~~ Hours:	36
Contacts hours per week:	03
No. of Contact Weeks:	12
Self Study Hours:	48
Teaching Staff:	**SSS Shameem, Nirmal K Nigam**

Assistant Professor, Dept. of Data Science & Computer Applications, MIT

LECTURER INFO

SSS Shameem

www.ride4pride.weebly.com

Current

Assistant Professor **(2021 onwards)**

Dept. of Data Science & Computer Applications (DSCA),
Manipal Institute of Technology (MIT),
Manipal Academy of Higher Education (MAHE), INDIA.

Contact **7892180098**

Office 4th floor, Innovation Centre, MIT

Mail ss.shameem@manipal.edu or shameem.u4@gmail.com

Earlier

Assistant Professor **(2017 – 2021)**

Dept. of Computer Engineering & Computer Sciences,
School of Science & Engineering (SoSE),
Manipal International University (MIU), Malaysia.

Assistant Professor **(2011 - 2017)**

Dept. of Computer Applications,
Manipal Institute of Technology,
MAHE, INDIA.

Assistant Software Developer **(2011)**

Huawei Technologies Pvt. Ltd.,
Bangalore, INDIA.

Area of Expertise: **Data Science, Artificial Intelligence, Big Data, Cloud Computing, Software Testing, S/W Engineering & Programming Languages.**

COURSE OBJECTIVES

At end of this course, Student should be able to:

- Write scripts in Python programming
- Perform Data analysis operations using python
- Write scripts using Python packages for Machine Learning
  - Perform model specific fitting for various regression & classification models.
  - Apply predictive models for various applications.
  - Perform clustering on data.
  - Perform dimensionality reduction.

COURSE CONTENT

- Python Basics,
- Data Analysis & Visualization using Python
- Data Preparation, Enhancement, & Dimensionality Reduction
- Regression, Classification, Clustering, & Ensembling
- Performance Evaluation & Analysis,

COURSE REFERENCES

- *Andreas C Miller, Sarah Guido*, **Introduction to Machine Learning with Python, A Guide for Data Scientists**, **Oreilly Publications**, 2016.
- *Hans Peter Langtangen*, **Python Scripting for Computational Science, (3e)**, **Springer Publishers**, 2014
- *Glenn Myatt, W. P. Johnson,* **Making Sense of Data I: A Practical Guide to Exploratory Data Analysis and Data Mining**, **Wiley Publication**,
- *Glenn Myatt, W. P. Johnson,* **Making Sense of Data II: A Practical Guide to Data Visualization, Advanced Data Mining Methods & Applications**, **Wiley**.
- *Kevin P. Murphy,* **Machine Learning: A Probabilistic Perspective**, **MIT Press, 2012**.
- *Ethem Alpaydin,* **Introduction to Machine Learning**, 3rd Edition, **PHI Learning Private Limited, 2018.**
- *Mehryar Mohri, Afshin Rostamizadeh, and Ameet Talwalkar,* "**Foundations of Machine Learning**, **MIT Press, 2012**
- *Christopher M. Bishop*, **Pattern Recognition and Machine Learning**, **Springer, 2007**
- *Pang-Ning Tan, Michael Steinbach, Vipin Kumar,* **Introduction to Data Mining, Pearson Education,** 2nd Edition.
- *Jiawei Han and Micheline Kamber,* **Data Mining Concepts And Techniques,** 3rd Edition, **Morgan Kauffmann.**
- *Galit Shmueli, Nitin R. Patel, and Peter C. Bruce,* **Data Mining for Business Intelligence, John Wiley and Sons,** 2014.
- *Ian H. Witten, Eibe Frank, Mark A. Hall,* **Data Mining: Practical Machine Learning Tools and Techniques, Morgan Kaufmann,** 2011.

COURSEWORK (TENTATIVE)

Coursework Components	Total Marks
Continuous Evaluation (4 x 15)	60
End Sem Evaluation	40
Total	**100**

Continuous Evaluation # 4	Total Marks
Execution	5
Observation book	3
Test / Viva / Quiz / *	7
Total	**15 x 4 = 60**

LET'S START