

NIRMA UNIVERSITY

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| Institute: | Institute of Management |
| Name of Programme: | Executive Diploma Programme (Business Analytics) |
| Course Code: | EDP0CCOQ10 |
| Course Title: | Advanced Data Analytics |
| Course Type: | Core |
| Year of introduction: | 2021-22 |

Credit Scheme

| L | T | Practical component | | | | C |
|---|---|---------------------|----|---|---|---|
| | | LPW | PW | W | S | |
| 2 | 0 | 0 | 0 | 0 | 0 | 2 |

Course Learning Outcomes (CLO):

After the successful completion of the course, students will be able to:

1. Identify the basic concepts and the importance of data mining tools and techniques.
2. Apply, analyze and implement some of the widely used tools and techniques in data mining.
3. Develop data analysis and modelling through R software.

Syllabus:

| Unit | Syllabus | Total Teaching Hours: 20 Teaching hours |
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| Unit-I | Data Preparation and Cleaning <ul style="list-style-type: none"> • Handling of Missing data • Data Normalization | 4 |
| Unit-II | Exploratory Data Analytics <ul style="list-style-type: none"> • Introduction • Importance of EDA • EDA Techniques | 6 |
| Unit-III | Regression, Classification and Clustering Algorithms <ul style="list-style-type: none"> • Classification vs. Regression vs. Clustering • Multiple Linear Regression and model selection • k-NN classification • Decision trees-CART • k-means clustering and Measuring cluster goodness | 10 |

- Suggested Readings/ References:
1. Larose, D.T. and Larose, C. D., *Discovering Knowledge in Data: An Introduction to Data Mining*, Wiley.
 2. Shumeli, G., Bruce, P.C., Yahav, I., Patel, N.R. and

- Lichtendahl, K.C. Jr., *Data Mining for Business Analytics*, Wiley.
3. Giudici, P., *Applied Data Mining-Statistical Methods for Business and Industry*, Wiley.
 4. Ledolter, J., *Data Mining and Business Analytics with R*, Wiley.
 5. Kumar, D. U., *Business Analytics-The Science of Data-Driven Decision Making*, Wiley.
 6. Kabacoff, R. I., *R in Action: Data Analysis and Graphics with R*, Dreamtech Press.
 7. Crawley, M. J., *The R-Book*, Wiley.

L=Lecture, T=Tutorial, P=Practical, C=Credit

w.e.f. Academic Year 2021-22 and onwards