# EC-440 Data Mining

Course Contents

Course Code EC-440

Title Data Mining

Credit hours 3 (3-0)

**Objectives**

i. To introduce students to the basic concepts and techniques of Data Mining.

ii. To develop skills of using recent data mining software for solving practical problems.

iii. To gain experience of doing independent study and research.

**Outcomes**

i. The students should be able to interpret the contribution of data warehousing and data mining to the decision-support level of organizations.

ii. The students should be able to evaluate different models used for OLAP and data preprocessing.

iii. The students should be able to categorize and carefully differentiate between situations for applying different data-mining techniques: frequent pattern mining, association, correlation. classification, prediction, cluster, and outlier analysis.

iv. The students should be able to design and implement systems for data mining and evaluate their performance.

**Details of course**

i. Introduction to Data Mining

ii. Data Warehouse and OLAP

iii. Data preprocessing

iv. Data mining knowledge representation

v. Attribute-oriented analysis

vi. Data mining algorithms: Association rules

vii. Data mining algorithms: Classification

viii. Data mining algorithms: Prediction

ix. Evaluating what's been learned

x. Mining real data

**Recommended Readings / Text Books:**

i. Data Mining and Business Analytics with R, Johannes Ledolter, Wiley, 2013, ISBN: 978-1118447147 (online access via Pitt network) (primary book, hereafter referred as "DMR")

References

i. Web Data Mining: Exploring Hyperlinks, Contents, and Usage Data (2nd ed.), Bing Liu, Springer, 2011, ISBN: 978-3642194597.

ii. Practical Data Science with R, Nina Zumel and John Mount, Manning Publications 2014, ISBN: 9781617291562.