Al-Imam Muhammad Ibn Saud Islamic University  
College of Computer and Information Sciences  
Information Systems Department  

Syllabus – IS-772: Data Mining  

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<th>Instructor</th>
<th>Office No.</th>
<th>Phone</th>
<th>e-Mail</th>
<th>Office Hours</th>
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**Course Description:**  
This course is about gaining an understanding of data warehouses and data mining techniques. It will cover the study of the data warehouses concepts like data marts, data integration... This course will present also data mining techniques to extract knowledge from data warehouses. We will cover some statistical and machine learning techniques for solving some well known decision problem like clustering and classification ... The course will not only provide the students a comprehension of the benefits of data mining, but also provide them with an understanding of the types of problems and their associated solutions. It will also impart them skills for pre-processing of data and post-processing of results.

**Main Learning Objectives:**

- Have knowledge of data warehouses definition, implementation and basic concepts.
- Understand OLAP processing.
- Have knowledge of the importance and benefits of data mining.
- Have knowledge and understanding of data mining problems and their solutions.
- Have an understanding of data mining algorithms,
- Have knowledge of the commonly used tools and techniques of data mining.
- Understand how data has to be pre-processed before application of data mining algorithms
- Understand how to analyse and use the results obtained from the algorithms.
Topics:

**Chapter 1:** Introduction

**Chapter 2:** Know Your Data

**Chapter 3:** Data Preprocessing

**Chapter 4:** Data Warehousing & OLAP

**Chapter 5:** Data Cube Technology

**Chapter 6:** Mining Frequent Patterns and Associations: Basic Concepts

**Chapter 7:** Mining Frequent Patterns, Associations: Advanced Methods

**Chapter 8:** Classification: Basic Concepts

**Chapter 9:** Cluster Analysis: Basic Concepts

**Weka Toolkit**
This module explains the basics of Weka toolkit for data mining. It serves as an introduction to Weka and a guide for further self-study and exploration by students.
Textbook and Resources:

**Main Textbook:**


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**Reference Books:**


**Evaluation**

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<th>Assignment &amp; Quizzes</th>
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<td>Midterm Exam</td>
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