



# BROWARD COMMUNITY COLLEGE COURSE OUTLINE

**LAST REVIEW: 2005-06**  
*(i.e. 2003-2004)*

**NEXT REVIEW: 2010-2011**  
*(i.e. 2008-2009)*

**STATUS:A**  
*(A, I, D)*

**COURSE TITLE: Data-Mining**

**COMMON COURSE NUMBER: CAP2777C**

**CREDIT HOURS: 3**

**CONTACT HOUR BREAKDOWN**

*(per 16 week term)*

**CLOCK HOURS:**  
*(Voc. Course ONLY)*

Lecture: 40      Lab: 8

Clinic:              Other:

**PREREQUISITE(S): STA 2023 and CAP2775C**

**COREQUISITE(S):**

**PRE/COREQUISITE(S):**

**COURSE DESCRIPTION:** *(750 characters, maximum)*

This course will provide students with an understanding of the concepts of Data-Mining. Students will also learn how to apply specific Data-Mining techniques. Statistical methods of data analysis will be covered as well as industry applications of Data-Mining tools. Topics include decision tables, decision trees, classification rules, association rules, clustering, statistical modeling, and linear models. Case studies using large data sets taken from real-life applications will also be included. Additional topics may include: Problems encountered when dealing with large data sets and deciding how much data is enough.

## **UNIT TITLES**

- 1. Introduction to Data-Mining Concepts**
- 2. Industry Applications of Data Mining**
- 3. Data-Mining Process**
- 4. Data-Mining Algorithms**
- 5. Data-Mining Tools**



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## **UNITS**

### **Unit 1**

#### **General Outcome:**

**1.0 The student shall understand basic Data-Mining concepts**

#### **Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 1.1 Explain decisions that involve judgment.
- 1.2 Understand load forecasting.
- 1.3 Understand the importance of diagnosis in Data-Mining.
- 1.4 Understand machine learning and the role of statistics.
- 1.5 Understand ethical considerations of Data-Mining.



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## **Unit 2**

### **General Outcome:**

**2.0 The student shall understand the Data-Mining Process.**

### **Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 2.1 Understand Classification
- 2.2 Understand Clustering
- 2.3 Understand Association (Market Basket.
- 2.4 Assortment Optimization
- 2.5 Prediction
- 2.6 Estimation.
- 2.7 Understand the need for a formal Data-Mining methodology.
- 2.8 Understand Data Preparation.
- 2.9 Understand and demonstrate how to define a study.
- 2.10 Understand how to read data and build a model
- 2.11 Utilize Data Prediction
- 2.12 Understand and demonstrate data summary



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## **Unit 4**

### **General Outcome:**

**3.0 The student shall work with general Data-Mining algorithms**

### **Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 3.1 Understand and utilize decision trees.
- 3.2 Explain Neural Networks.
- 3.3 Understand Bayesian Belief Networks
- 3.4 Utilize Association algorithms
- 3.5 Utilize Algorithms for Assortment Optimization.



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## **Unit 5**

### **General Outcome:**

**4.0 The student shall utilize Data-Mining tools.**

### **Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 4.1 Choose a Data-Mining tool vendor.
- 4.2 Utilize and Recognize valuable Web sites and commercially available code.
- 4.3 Compare Data-Mining products
- 4.4 Perform Data Preparation
- 4.5 Define a study of data.
- 4.6 Build the Data-Mining model.
- 4.7 Perform prediction and summary calculations.



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## **Unit 5**

### **General Outcome:**

**5.0 The student shall become aware of Industry applications of Data-Mining.**

### **Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 5.1 Explain Data-Mining applications in Banking and Finance.
- 5.2 Understand Data-Mining applications in Retail.
- 5.3 Understand Data-Mining applications in Healthcare.
- 5.4 Understand Data-Mining applications in Telecommunications.