**Ministry of Higher Education**
**Majmaah University**
**College of Applied Medical Sciences**
**Medical Equipment Department**

## Course Specifications

First Semester – 2013/2014

### General Information

| Course name | Course code | Credits | Contact hours |
|---|---|---|---|
| Pattern Recognition | BMTS 594 | (2-1-0) | (2-2-0) |

### Instructors/ Coordinators

| | Coordinator | Instructor |
|---|---|---|
| **Name** | Tarek I Haweel | Mr. Anand Sam |
| **Email** | t.haweel@mu.edu.sa | a.bose@mu.edu.sa |
| **Ext** | 2511 | 2834 |

### Text Book

| **Title** | Introduction to Pattern Recognition, a MATLAB approach. |
|---|---|
| **Author/Year** | S. Theodoridis and K. Koutroumbas/2010 |

### Supplemental materials

| Recommended Textbooks and Reference Material | | |
|---|---|---|
| **Title** | Pattern Recognition | |
| **Author/Year** | Gibson William/2003 | |
| **Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)** | | |
| **Web sites** | http://ebookbrowsee.net/gibson-william-pattern-recognition-pdf-d14260124 | |
| | | |

### Specific Course Information

| a. Brief description of the content of the course (Catalog Description) |
|---|
| This course focuses on an introduction about pattern recognition, feature extraction, Euclidian distance, parametric and nonparametric decision theoretic classification methods, statistical discrimination functions, medical applications of pattern recognition, detailed examples. |

| b. Prerequisites (P) or Co-requisites (C): |
|---|
| None |

| | |
|---|---|
| **c. Course type (Mandatory or Elective)** | |
| Elective | |

**Specific Goals**

| **a. Specific outcomes of instruction.** |
|---|
| By the end of this course, the student will be able to: <br><br> • Describe the principles of recognizing a pattern (a). <br> • Recognize the principles of feature extraction from a pattern (b). <br> • Evaluate pattern recognition systems (d). <br> • Analyze some pattern recognition techniques (f). |

**b. Student outcomes addressed by the course.**

| a | b | c | d | e | f | g | h | i | j | k |
|---|---|---|---|---|---|---|---|---|---|---|
| ✓ | ✓ | | ✓ | | ✓ | | | | | |

**Brief list of topics to be covered**

| Topics | No of Weeks | Contact hours |
|---|---|---|
| Introduction to Patterns and Pattern Recognition | 2 | 4 |
| Feature Extraction | 2 | 4 |
| Euclidian distance | 3 | 6 |
| Statistical discrimination functions | 3 | 6 |
| Nonparametric decision classification | 2 | 4 |
| Medical applications for pattern recognition | 3 | 6 |