Course Syllabus

First Semester – 2013/2014

General Information

Course name	Course code	Credits	Contact hours
Digital Image Processing	BMTS492	2 lecture+1 lab	2 lecture+2 lab

Instructors/ Coordinators

	Instructor	Coordinator
Name	Mr. Anand Bose	Prof. Tarek Haweel
Email	a.bose@mu.edu.sa	t.haweel@mu.edu.sa
Ext	2834	2511

Text Book

Title	Digital Image Processing
Author/Year	Rafael Gonzalez / 2005

Supplemental materials

Recommended Textbooks and Reference Material	
Title	Digital Image Processing
Author/Year	Anil. K. Jain / 2002
Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)	
Web sites	http://www.pearsonhighered.com/educator/product/Digital-Image-Processing/9780131687288.page

Specific Course Information

a. Brief description of the content of the course (Catalog Description)

This course deal with digital image processing on computer includes: statistics on the image, the notion of pixel, value representation in gray level images, color images, and operation on pixels for image enhancement. It covers also convolution application for different type of filters on images for noise reduction, enhancement using operation on histograms, linear and non-linear filters, image enhancement by histogram equalization; filter based on Fourier space and image restoration.

b. Prerequisites (P) or Co-requisites (C)

(P) Biomedical Digital Signal Processing - BMTS476

c. Course type (Mandatory or Elective)

Mandatory

Specific Goals

a. Specific outcomes of instruction
By the end of this course, the student should be able to: - Recognize the main concepts of Digital Image Processing. (a) - Identify the basics of a Digital Imaging system and how it is processed. (b) - Evaluate a Digital Image Processing system. (d) - Differentiate between different types of Images. (c) - Calculate the image statistics. (c) - Recognize the methods of image enhancement, compression and restoration. (b)

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 Digital Image processing system.	1	2
Dimensionality of the digital image	1	2
Resolution	2	4
Image transforms and filters	2	4
Image statistics	2	4
Image enhancement	2	4
Image compression and restoration	1	2
Introduction to videos	2	4
Medical applications of digital image processing	2	4