Course Syllabus

First Semester – 2013/2014

Course name	Course code	Credits	Contact hours
Biomedical Analog Signal Processing	BMTS 361	2 lecture	2 lecture

Instructors/ Coordinators

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

Text Book

Title	Signals & Systems
Author/Year	V. Oppenheim / 2008

Supplemental materials

Recommended Textbooks and Reference Material	
Title	Signals and Systems
Author/Year	Haykin and Veen / 2005
Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)	
Web sites	http://www.pearsonhighered.com/educator/product/Signals-and-Systems/9780138147570.page

Specific Course Information

a. Brief description of the content of the course (Catalog Description)
This course provides understanding and design of signal processing system. It starts with sampling and quantization of continuous signal, operation on analog signal, shift left and right, folding, statistical measurement, convolution, correlation, Fourier series, Fourier Transform, Laplace Transform, system analysis using Fourier Transform, Frequency response of Filters and Filter design for noise reduction.
b. Prerequisites (P) or Co-requisites (C)
(P) Applied Mathematics 2 - BMTS354
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 principles of continuous time signals. (a)
- Define the basic analog system properties (a).
- Describe the response of linear & time-invariant analog systems using the convolution (b).
- Recognize the principles of sampling of continuous-time signals (b).
- Evaluate the response of linear & time-invariant systems in the frequency domain (d).
- Evaluate the Laplace transform and Fourier Transform (d).

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 analog signal processing system	1	2
Signal classifications, signal operations, singularity functions.	2	4
Linear time-invariant (LTI) systems	2	4
Convolution	2	4
Laplace transform	2	4
Stability	2	4
Fourier Transform	1	2
Filter design	1	2
Medical applications	2	4