جامعة المجمعة
Majmaah University

Course Specifications

Muharram 1437 H

Institution:	College of Engineering
Academic Department:	Electrical Engineering
Programme:	Electrical Engineering
Course:	Signals and Systems Analysis
Course Coordinator:	Dr. Abdullah Al-Ahmadi
Programme Coordinator:	Dr. Abdullah Almohaisen
Course Specification Approved Date:	…./ … / …… H

This form compatible with NCAAA 2013 Edition

A. Course Identification and General Information

1 - Course title:	Signals and Systems Analysis	Course Code:	EE 221
2. Credit hours:	(3,1,0)		
3 - Program(s) in which the course is offered:	Electrical Engineering		
4 – Course Language:	English		
5 - Name of faculty member responsible for the course:	Dr. Abdullah Al-Ahmadi		
6 - Level/year at which this course is offered:	Spring semester, sophomore year		

7 - Pre-requisites for this course (if any):

- Differential Equations MATH 204

8 - Co-requisites for this course (if any):

- None

9 - Location if not on main campus:

(.....)

10 - Mode of Instruction (mark all that apply)

A - Traditional classroom	■	What percentage?	**100 %**
B - Blended (traditional and online)		What percentage?	**……. %**
D - e-learning		What percentage?	**……. %**
E - Correspondence		What percentage?	**……. %**
F - Other		What percentage?	**……. %**

Comments:

.....

B Objectives

What is the main purpose for this course?

Students in this course are introduced to learn: Motivation and Applications, Signal Classifications, Signal Operations, Singularity Functions; Linear time-Invariant Systems and Convolution; Correlation; Fourier Series and Transform for continuous and discrete time signals; Applications; Laplace transform and applications; Introduction to z-transform.

Briefly describe any plans for developing and improving the course that are being implemented:

None

C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Introduction and basic system properties	3	12
Linear time-invariant systems.	2	8
Continuous-time Fourier transform	2	8
Discrete-time Fourier transform.	2	8
Sampling	2	8
Laplace transform	2	8
Z-transform.	2	8

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	45	15	0	0	0	60
Credit	3	0	0	0	0	3

3. Additional private study/learning hours expected for students per week.	2

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	.....	.....	.....
1.2	.....	.....	.....
1.3			
1.4	.....	.....	.....
1.5	.....	.....	.....
1.6	.....	.....	.....
2.0	**Cognitive Skills**		
2.1	Analyze the response of linear time-invariant systems using the convolution and correlation.	Lecture, small group work, research activities, lab demonstrations, projects and individual presentation	Standardized exams, Oral exams, Micro projects
2.2	Use the principles of sampling of continuous-time signals.		
2.3	Analyze the response of linear time-invariant systems in the frequency domain using Fourier transforms.		
3.0	**Interpersonal Skills & Responsibility**		
3.1			
4.0	**Communication, Information Technology, Numerical**		
4.1	Construct basic continuous and discrete-time signals.	Lecture, research activities, lab demonstrations, projects, case studies, memorization and individual presentation	Standardized exams, Oral exams, Micro projects
4.2	Determine the properties of basic system properties.		
4.3	Represent time-domain signals using Fourier representations		
4.4	Determine the Laplace and z-transforms.		
5.0	**Psychomotor**		
5.1	.....	.....	.....

5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	**First Exam**	7	20%

2	**Second Exam**	12	20%
3	**Quizzes**	Weeks 6,11	15%
4	**Homework assignments**	Week 13	5%
5	**Final**	Week 15	40%

D. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) 1. Weekly office hours. 2. Exam solving in class. 3. Feedback from each student. 4. Weekly guidelines on student performance. 5. Instructor webpage.

E. Learning Resources

1. List Required Textbooks: • V. Oppenheim, Signals & Systems, Prentice Hall, 1998.
2. List Essential References Materials: • .....
3. List Recommended Textbooks and Reference Material: • Haykin and Veen, Signals & Systems, John Wiley, 1998.
4. List Electronic Materials: • None
5. Other learning material: •

F. Facilities Required

1. Accommodation • 25 seats in the classroom**.**
2. Computing resources • Laptop
3. Other resources • .....

- .....
- .....

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Completion course evaluation questionnaire.
- Classroom observations to measure student behavior through how well the student groups are interacting in-class activity and how well the in-class activity went.

2. Other Strategies for Evaluation of Teaching by the Program/Department Instructor:

- Faculty Peer Assessment.
- .....

3. Processes for Improvement of Teaching:

- Plan: The instructor will develop a strategy for teaching
- Do: The strategy will be implemented for one semester.
- Study: The experiences of the students will be collected through a survey.
- Act: Effective teaching strategies will be implemented and revised as more experiences are gained.

4. Processes for Verifying Standards of Student Achievement

- Check marking of a sample of examination papers**.**

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement:

- Continuous improvement is a circular process, encompassing student assessment, course planning and design, implementation, evaluation, and revision.
- A feedback from all relevant assessment tools must be considered in the continuous process of course objectives refinement and assessment.
- Continuous process for reviewing feedback from student on the quality of the course and
- planning for improvement.

Course Specification Approved
Department Official Meeting No (…..) Date … / …. / ….. *H*

Course's Coordinator **Department Head**

Name :	.....	***Name :***	.....
Signature :	.....	***Signature :***	.....
Date :	…./ … / …… *H*	***Date :***	…./ … / …… *H*