COURSE SPECIFICATION

A- Administrative Information

Course Title : Electronic Measurements
Code : EEC315
Department(s) offering the course : Electrical Engineering
Program (s) on which the course is given : Undergraduate level
Department offering the program (s) : Electrical Engineering
Academic year/level : 3rd Year..
Semester : First semester
Date of specification/revision : 2004
Date of approval by Departmental/Faculty : 2013-2014

Taught hours:

Lecture:2 hrs/week **Tutorial:** 1hr/week **Practical:** 1 hr/week **others:0**
Total: 4 hrs/week

B-Professional Information

1-1 Overall Aims of the Course

The course is designed to:

Demonstrate knowledge and understanding of different measurement systems. Recognize the different types of measuring instruments. Select the appropriate measuring device for specific measuring application.

1.2-Intended Learning Outcomes of the course (ILOs):

a- Knowledge and understanding:

Upon completing this course, the student should be able to:

a1 - Understand the different statistics techniques for errors calculation.
a2 - Understand the different measurement techniques (analog/digital).
a3- Understand the different method for measuring electrical quantities (Power, Voltage, Current, Energy, Frequency).

b- Intellectual skills

Upon completing this course, the student should be able to:

b1 - Assess the theory of operation of different measuring systems.
b2 - Suggest alternative methods for measuring electrical quantities.
b3 - Suggest alternative methods for measuring non-electrical quantities.

c- Professional and practical skills

Upon completing this course, the student should be able to:

c1 - Select an appropriate measuring system.
c2 - calculate the errors in measured results.

d- General and transferable skills

Upon completing this course, the student should be able to:

d_1- communicate effectively using written, oral and graphical presentational skills.

d_2-use information technology, IT, effectively
(word processor, spreadsheets, databases, presentations, email, net browsing)

d_3- think quietly and positively, and work independently

d4-Good communication skills through oral presentations and technical report writing

d5-work in a team environment

1-2 Syllabus

Topics	CONTENTS
Topic (1)	Digital measurements : Digital voltmeter – Digital ammeter – Digital ohmmeter
Topic (2)	Review of logical circuits
Topic (3)	converting analog signal to digital one and vice
Topic (4)	Measurements of current , voltage ,resistance , frequency , time , amplitude and power
Topic (5)	Oscilloscope and its using in measurements-
Topic (6)	signal transforms and its application

3-Teaching and Learning Methods

3.1-.Lectures.
3.2- Tutorial activities
3.3- Discussions
3.4- Reports
3.5 Office meetings.

4-Students Assessment Methods

Tutorial assignments.
Written mid-term exam.
Oral examination.
Practical/laboratory examination
Written final exam.

4.1- Assessment schedule:

Assignment 1	Week # 5 (1st semester)
Assignment 2	Week # 8 (1st semester)
Assignment 3	Week # 13 (1st semester)
Assignment 4	Week # 13 (1st semester)
Assignment 5	Week # 15 (1st semester)

4.2- Weighing of assessments:

Mid-Term Exam	10%
Oral Exam	10 %
Final Exam	60 %
Practical Exam	10 %
Tutorial assignment	10 %
Total	100 %

6-List of References

6.1-Course notes:

Course Notes: - None

6.2-Essential books (textbooks):

6.2.1 A.K.Sawhney (1978) : A Course in Electrical and Electronic Measurements and Instrumentation.

6.2.2 Rajendra Prasad (1984): Electrical Measurement and Measuring Instruments.

6.2.3 David Boll : Electronic Instrumentation and Measurements.

6.3-Recommended books:

6.4-Periodicals, websites, etc.:

7-Other Resources/ Facilities required for teaching and learning to achieve the above ILOs .

7.1- Computer and data show in the lecture room.
7.2- Computer and Internet access for the students.
7.3- Many text books available in the departmental library.
7.4- Previous student projects.

8- We certify that all of the information required to deliver this course is contained in the above specification and will be implemented.

Course Coordinator:

Name: Dr. ---- ……..--------

Signature:……..…….. **Date: Dec. 2013**

Head of Department of: ……

Name: Prof. Dr. ---- -------

Signature:…….....…….. **Date:… Dec. 2013……**

5- Course Curriculum Map

Course title: Electronic Measurements **Code:** EEC315

Course aim: Demonstrate knowledge and understanding of different measurement systems. Recognize the different types of measuring instruments. Select the appropriate measuring device for specific measuring application.

S	Week #	Intended Learning Outcomes (ILOs)				Topics	Teaching Methods	Assessment Methods	Evidences
		Knowledge and understanding	Intellectual skills	Professional and practical skills	General and transferable skills				
1	1-3	a1 + a3				Digital measurements : Digital voltmeter – Digital ammeter – Digital ohmmeter	3.1-.Lectures. 3.2- Tutorial activities 3.3- Discussions 3.4- Reports 3.5 Office meetings	4.1 Tutorial assignments. 4.2 Written mid-term exam. 4.3 Oral examination. 4.4Practical/laboratory examination 4.5 Written final exam.	Course file, Exam samples, Regular reports,
2	4-6	a2 + a3	b1 + b2	c1	d1+ d2 + d3	Review of logical circuits			
3	7	a1 + a3		c2		converting analog signal to digital one and vice			
4	8-10	a2 + a3	b1 + b3		d1+ d3+ d4	Measurements of current , voltage ,resistance , frequency , time , amplitude and power			
5	11	a1 + a2	b1 + b3	c2		Oscilliscope and its using in measurements-			
6	12-14	a1 + a3			d1+ d4 + d5	signal transforms and its application			

Course coordinator: Dr. …….

Department Head: Dr.