



Course Specification

Course Name: [Electronic-1]

Course Code: [IT111]

I. Basic Course Information

Major or minor element of program: General

Department offering the course: [Information Technology Department]

Academic level: [100 level]

Semester in which course is offered: [First (Fall) Semester]

Course pre-requisite(s): [N/A]

Credit Hours: 3

Contact Hours Through:

Lecture	Tutorial*	Practical*	Total
2.5	1.5	1.5	4.0

* 1.5 hours for **either** Tutorial or Practical

Approval date of course specification: September 2014

II. Overall Aims of Course

[Electronic-1 is designed for computer science students. The course will focus on the application to electrical physics world through exploratory investigation and activities. Student will be provided experiences to develop and enhance problem-solving skills, critical thinking skills, reasoning, graphical analysis, data collection and interpretation of data as well as the application of mathematics]

III. Program ILOs covered by course

Program Intended Learning Outcomes (By Code)			
Knowledge & Understanding	Intellectual Skills	Professional Skills	General Skills
[K1, K13]	[I2]	[P9]	[G5, G9]



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IV. Intended Learning Outcomes of Course (ILOs)

a. Knowledge and Understanding

On completing the course, students should be able to:

- K.1 Develop an understanding of basic concepts of electrical circuit elements.
- K.2 Recall basic and derived electrical quantities.
- K.3 Recognize fundamental laws of electrical circuits and their implications.
- K.4 Recognize basic theories for circuit analysis methods.]

b. Intellectual/Cognitive Skills

On completing the course, students should be able to:

- I.1 Analyse simple electrical circuits and use of electrical laws in solving problems.
- I.2 Analyse complicated electrical circuit using electrical analysis methods
- I.3 Compare between various electrical analysis methods.]

c. Practical/Professional Skills

On completing the course, students should be able to:

- P.1 Execute experiments related to the material taught in the course.
- P.2 Collect and analyse experimental that are used to investigate basic and complicated electrical circuit elements.
- P.3 Learn the function of various sorts of instruments and devices used in electrical circuits experiments.
- P.4 Represent graphically a set of data.]

d. General and Transferable Skills

On completing the course, students should be able to:

- G.1 Acquire scientific and intellectual abilities such as critical thinking, scientific data reporting and team work.
- G.2 Search available data and knowledge resources.]

V. Course Matrix Contents

	Main Topics / Chapters	Duration (Weeks)	Course ILOs Covered by Topic (By ILO Code)			
			K & U	I.S.	P.S.	G.S.
1-	Ideal basic circuit elements]	[1]	[K1,K2]	[]	[P1,P2]	[]
2-	Kirchhoff's law]	1.5]	[K1,K3]	[I1]	[P1,P3,P4]	[G1]
3-	Node voltage method]	1.5]	[K2,K3,K4]	[I3]	[P1,P3,P4]	[G1,G2]
4-	Mesh current method]	1.5]	[K2,K3,K4]	[I3]	[P1,P3,P4]	[G1,G2]
5-	Circuit theorem overview]	1.5]	[K2,K3,K4]	[I3]	[P1,P3,P4]	[G1,G2]
6-	Thévenin and Norton equivalent circuits]	[2]	[K2,K3,K4]	[I2,I3]	[P1,P3,P4]	[G1,G2]
7-	Capacitor and capacitance]	1.5]	[K1,K2,K3]	[I2]	[P1,P2,P3,P4]	[G2]
8-	AC analysis]	2.5]	[K1,K2]	[I2]	[P1,P3]	[G2]
	Net Teaching Weeks	13				



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VI. Course Weekly Detailed Topics / hours / ILOs

Week No.	Sub-Topics	Total Hours	Contact Hours	
			Theoretical Hours	Practical Hours*
1	Ideal basic circuit elements	2.5	2.5	
2	Series and parallel DC circuits	4	2.5	1.5
3	Kirchhoff's Laws	4	2.5	1.5
4	Node voltage method	4	2.5	1.5
5	Mesh current method	4	2.5	1.5
6	Circuit linearity	4	2.5	1.5
7	Midterm Exam			
8	Source transformation	4	2.5	1.5
9	Superposition method	4	2.5	1.5
10	Thévenin	4	2.5	1.5
11	Norton equivalent circuits	4	2.5	1.5
12	Capacitor and capacitance	4	2.5	1.5
13	AC Analysis	4	2.5	1.5
14	AC Analysis	4	2.5	1.5
15	Final Exam			
Total Teaching Hours		51	33	18

* No Practical/Tutorial during the first week of the semester

VII. Teaching and Learning Methods

Teaching/Learning Method	Selected Method	Course ILOs Covered by Method (By ILO Code)			
		K & U	Intellectual Skills	Professional Skills	General Skills
Lectures & Seminars	<input type="checkbox"/>	K1,K2,K3,K4	I1,I2,I3	P1,P4	G1,G2
Tutorials	<input type="checkbox"/>	K1,K2,K3,K4	I1,I2,I3	P1,P4	G1
Computer lab Sessions	<input type="checkbox"/>				
Practical lab Work	<input type="checkbox"/>	K1,K2,K3	I1	P1,P2,P3,P4	G1
Reading Materials	<input type="checkbox"/>	K3,K4		P2	G1,G2
Web-site Searches	<input type="checkbox"/>	K3,K4	I3	P2	G1,G2
Research & Reporting	<input type="checkbox"/>				
Problem Solving / Problem-based Learning	<input type="checkbox"/>				
Projects	<input type="checkbox"/>				
Independent Work	<input type="checkbox"/>				
Group Work	<input type="checkbox"/>				
Case Studies	<input type="checkbox"/>				
Presentations	<input type="checkbox"/>				
Simulation Analysis	<input type="checkbox"/>				
Others (Specify):	<input type="checkbox"/>				



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VIII. Assessment Methods, Schedule and Grade Distribution

Assessment Method	Selected Method	Course ILOs Covered by Method (By ILO Code)				Assessment Weight / Percentage	Week No.
		K & U	I.S.	P.S.	G.S.		
Midterm Exam	[]	[K1,K2,K3,K4]	[I1]	[P1,P2]	[G1]	[20%]	7
Final Exam	[]	[K1,K2,K3,K4]	[I1,I2,I3]	[P1,P2]	[G1]	60%	15
Quizzes	[]	[]	[]	[]	[]	[]	[]
Course Work	[]	[]	[I1,I2,I3]	[P1,P2]	[G1,G2]	[10%]	[Every week]
Report Writing	[]	[]	[]	[]	[]	[]	[]
Case Study Analysis	[]	[]	[]	[]	[]	[]	[]
Oral Presentations	[]	[]	[]	[]	[]	[]	[]
Practical	[]	[K1,K2,K3,K4]	[I1]	[P1,P2,P3,P4]	[G1]	[10%]	[Every week]
Group Project	[]	[]	[]	[]	[]	[]	[]
Individual Project	[]	[]	[]	[]	[]	[]	[]
Others (Specify):	[]	[]	[]	[]	[]	[]	[]

IX. List of References

Essential Text Books	<ul style="list-style-type: none"> • ["SCHAUM'S OUTLINE OF THEORY AND PROBLEMS OF BASIC CIRCUIT ANALYSIS", Second Edition JOHN O'MALLEY, Ph.D. Professor of Electrical Engineering University of Florida 1992]
Course notes	<ul style="list-style-type: none"> • [Power point presentation]
Recommended books	<ul style="list-style-type: none"> • [None]
Periodicals, Web sites, etc....	<ul style="list-style-type: none"> • [None]

X. Facilities required for teaching and learning

<p>[List the facilities required</p> <ul style="list-style-type: none"> • Computer & Data show • Electronics Lab • Computer Lab]
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Course coordinator: [Dr. Nivin Ghamry]

Head of Department: Prof. Reda Abd el-Wahab

Date: [September 2014]