Course Specifications

Program(s) on which this course is given:	Electronics & Electrical Communications Engineering
Major or Minor element of programs:	Major
Department offering the program:	Electronics & Electrical Communications Engineering
Department offering the course:	Electronics & Electrical Communications Engineering
Academic year / Level:	Second Year
Date of original/modified specification approval:	2003/
Semester of course offering:	First Semester

A- Basic Information

1.a. Title:	Circuits (2)			**1.b. Code:**	ELC 202 A			
2. Units/Credit hours per week:	2.a. Lectures	2	2.b. Tutorial	2	2.c. Practical	-	2.d. Total	4

B- Professional Information

1. Overall Aims of the Course:	This course introduces students who have only the knowledge of essential basic theorems and tools of circuits to new subject of analysis and synthesis of passive electric circuits such as resonance circuits, electric filters, and two-port networks which are prerequisites to other courses in the program.
2. Intended Learning Outcomes of Course (ILOs):	**a) Knowledge and Understanding** 1. Explain the physical meaning of resonance in electric circuits whether series or parallel (1.7). 2. Identify the applications of resonance in real life (1.7). 3. Explain the meaning of the quality factor of a resonating circuit and its physical significance (1.7). 4. Identify different types of electric passive filters (1.2, 1.7). 5. Identify the different configurations of 2-port networks (1.7).
	b) Intellectual Skills 1. Analyze different types of electric passive filters (3.4, 3.9). 2. Calculate the different 2-port networks parameters (3.1, 3.4). 3. Convert from one type of 2-port parameters to the other (3.1, 3.4). 4. Develop proper improvements to designed circuits (3.2).
	c) Professional and Practical Skills (2.1, 2.6) 1. Choose the best passive circuit required for a certain application. 2. Solve related problems. 3. Design Electric filters of different types (LP, HP, BP, BS & Double Tuned).
	d) General and Transferable Skills 1. Familiarity with recent developments.(4.9)

3. Contents

Topic	Total hours	Lectures	Tutorial/ Practical
Series, parallel and double tuned resonance circuits	16	8	8
Applications on electric filters Spectra of electric filters	20	10	10

Two-port networks Two-ports embedded in larger networks	20	10	10

4. Teaching and Learning Methods	Lectures (Y)	Practical Training/ Laboratory (N)	Seminar/Workshop (N)
	Class Activity (Y)	Case Study (N)	Projects (N)
	E-learning (Y)	Assignments /Homework (Y)	Other:

5. Student Assessment Methods	
5.a. Method	**To assess (with reference to the ILOs)**
-Class test	a1, a2, a3
-Mid-term exam	a2, a3, a4, b1, b4, c1, c2, c3
-Final Exam	All ILOs
5.b. Assessment Schedule	**Week**
-Assessment 1; Class test	6
-Assessment 2; Mid-term exam	8
-Assessment 3; Final Exam	15
5.c. Weighting of Assessments	
-Mid-Term Examination	20 %
-Final-term Examination	70 %
-Semester Work	10 %
-Total	100 %

6. List of References

6.a. Course Notes: Students take notes during lectures & tutorials , all notes are available in electronic forms.

6.b. Essential Books (Text Books):

- James W. Nilson & Susan A. Riedel, “Electric Circuits”, Addison-Wesley Pub. Comp., New York, 2008.

6.c. Recommended Books.

- J. David Irwin,”Basic Engineering Circuit Analysis” Macmillan Pub. Comp., New York, 1990.

6.d. Periodicals, Web Sites, … etc: N/A

7. Facilities Required for Teaching and Learning

- Laptop
- Data show
- Internet Connection

Course Coordinator:	**Prof. Dr. Afaf Abdel-Fattah Abdallah**
Head of Department:	**Prof. Dr. Mahmoud El- Hadidi**
Date:	**Jan., 2011**