Course Specifications

Program(s) on which this course is given:	**B. Sc. In Aerospace**
Department offering the program:	**Aerospace**
Department offering the course:	**Electrical Power and Machines**
Academic Level:	**2nd Year**
Date	**November, 2007**
Semester (based on final exam timing)	☐ Fall ■ Spring

A- Basic Information

1. Title:	Electrical Engineering			**Code:**		**EPM216**		
2. Units/Credit hours per week:	Lectures	3	Tutorial	2	Practical		Total	5

B- Professional Information

1. Coursedescription:	**This course aims to introduce the basic principles of electrical circuits and their applications in aerospace engineering**
2. Intended Learning Outcomes of Course (ILOs):	**a) Knowledge and Understanding**
	a1- Knowing basic information and concepts of electrical circuits
	a2- Providing knowledge in the basic techniques of electric circuit analysis
	a3- Understanding basics of electric machines and transformers
	b) Intellectual Skills
	b1- Developing basic skill in methods of analysis
	b2- To be able to analyze basic DC electric machines
	b3- To be able to analyze basic transformers
	c) Professional and Practical Skills
	c1- Engineering skills
	c2- Ability to identify the problem
	d) General and Transferable Skills
	d1- ability to apply methods of mathematics, calculus, differential equations and physical sciences to solve problems in electric power engineering
	d2- Computing skills
	d3- Use of technological tools
	d4- Working in a group

3. Contents

Topic	Total hours	Lectures hours	Tutorial/ Practical hours
DC circuits, theorems and methods of analysis	20	12	8
AC circuits, Basics and analysis	10	6	4
3 phase circuits	6	4	2

Magnetic Circuit	6	4	2
Single phase transformer	12	8	4
DC machine analysis	10	6	4
4. Teaching and Learning Methods	Lectures (√)	Practical Training/ Laboratory (√)	Seminar/Workshop ()
	Class Activity (√)	Case Study ()	Projects ()
	E-learning ()	Assignments /Homework ()	Other:

5. Student Assessment Methods	
• **Assessment Schedule**	**Week**
-Assessment 1; tutorial work	2 to 13
-Assessment 2; Midterm Exam	8
-Assessment 3; Final Exam	14 to 16
• **Weighting of Assessments**	
-Mid-Term Examination	20 %
-Final-term Examination	68 %
- Semester Work	12 %
-Total	100 %

6. List of References

Course Notes

. I.D. Mayergoyz and W. Lawson, “Basic Electric circuit theory”, Academic Press, San Diago, 1997.

. P.C. Sen, "Principle of electric machines and power electronics"

R.J. Smith, “Circuits Devices and Systems”, 4th edition, 1984.

Stephen J. Chapman, "Electric Machinery Fundamentals", 4th edition, 2005.

http://www.ibiblio.org/obp/electricCircuits/

7. Facilities Required for Teaching and Learning

Computer facilities

Teaching aids (e.g. data show, white board)

Course Coordinator:	**Dr. Abd El-kader Abd El-Rahman**
Head of Department:	**Prof. Dr. Ayman Hamdy**