A. Basic Information

Course Title: Test and Specifications (A) **Code**: EP413
Lecture: 1 **Tutorial**: - **Practical**: 3 **Total: 4**
Program on which the course is given: B.Sc. Electrical Engineering (Electrical Power and machines)
Major or minor element of program: N.A.
Department offering the program: Electrical Engineering Department
Department offering the course: Electrical Engineering Department
Academic year / level: Fourth Year / **First** Semester
Date of specifications approval: 10/5/2006

B. Professional Information

1. Overall aims of course

- Study of applied topics of Synchronous generator tests, Power systems & control, and High Voltage testing.

2. Intended Learning outcomes of Course (ILOs)

a- Knowledge and understanding

a.14) Design methods and tools for electrical power and machines equipment and systems.

b- Intellectual Skills

b.14) Analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical power and machines.

c- Professional and practical skills

c.5) Use computational facilities, measuring instruments, workshops and laboratories equipment to design experiments and collect, analyze and interpret results.

c.13) Design and perform experiments, as well as analyze and interpret experimental results related to electrical power and machines systems.

d- General and transferable Skills

d.1) Collaborate effectively within multidisciplinary team.

3. Contents

No	Topic	No. of hours	ILOs	Teaching / learning methods and strategies	Assessment method
1	Synchronous generator – no-load / short circuit tests for 3 phase generator	4	a14, b14, c5, d1	Lectures, Practical training / laboratory, Seminar / workshop, Class activity, Case study, Assignments / homework	Home Assignments, Quizzes, Oral Exam, Practical training
2	3 phase Synchronous generator load tests- generation and drive at rated load – load / angle	4	a14, b14, c5, d1	Lectures, Practical training / laboratory, Seminar / workshop, Class activity, Case study, Assignments / homework	Home Assignments, Quizzes, Oral Exam, Practical training
3	Transient /sub transient reactance, synchronization	4	c13, d1	Lectures, Practical training / laboratory, Seminar / workshop, Class activity, Case study, Assignments / homework	Home Assignments, Quizzes, Oral Exam, Practical training
4	Mosfet Buk Choppers , MOSFET Boost choppers, electrical machines specifications: performance , rated values, Losses, efficient ,	8	c13, d1	Lectures, Practical training / laboratory, Seminar / workshop, Class activity, Case study, Assignments / homework	Home Assignments, Quizzes, Oral Exam, Practical training

	protecting values				
5	Power systems & control	16	a14, b14, c5, d1	Lectures, Practical training / laboratory, Seminar / workshop, Class activity, Case study, Assignments / homework	Home Assignments, Quizzes, Oral Exam, Practical training
6	Impulse testing, HV capacitor, Grounding systems, insulation resistance testing	20	a14, b14, c5,c13, d1	Lectures, Practical training / laboratory, Seminar / workshop, Class activity, Case study, Assignments / homework	Home Assignments, Quizzes, Oral Exam, Practical training
	Final exam				

4. Teaching and Learning Methods

Lectures
Practical training / laboratory
Seminar / workshop
Class activity
Case study
Assignments / homework

5. Student Assessment Methods

Assignments to assess knowledge and intellectual skills.
Quiz to assess knowledge, intellectual and professional skills.
Mid-term exam to assess knowledge, intellectual, professional and general skills.
Oral exam to assess knowledge and intellectual skills.
Final exam to assess knowledge, intellectual, professional and general skills.

6. Assessment schedule

Assessment 1 on weeks 2, 5, 9, 11
Assessment 2 Quizzes on weeks 4, 6, 10, 12

Assessment 3 Mid-term exam on week 8
Assessment 4 Oral Exam on week 14
Assessment 5 Final exam on week 15

7. Weighting of Assessments

4%	Home assignments
4%	Quizzes
10%	Mid-term examination
8%	Oral examination
10%	Practical examination
64%	Final-term examination
100%	Total

8. List of References

8.1 Course Notes

- Electrical Testing by Prof. Dr. M. Abouelsaad, Dr S. Abdelmaksoud, D. M. Eisa and Dr. M.Anwar.

8.2 Essential Books (Text Books)
Acceptance Testing Specifications for Electric Power Distribution Equipment and Systems, NETA Standards Review Council.

8.3 Recommended Books
Fluke, 1550B MegOhmMeter, user manual

9. Facilities Required for Teaching and learning
Lecture room equipped with overhead projector
Presentation board, computer and data show
Laboratory

Course coordinator: Prof. Dr. M.Abouelsad
Course instructor: Prof. Dr. M.Abouelsad, Dr. Mohamed Eissa, Dr. Samir Abdelmaksoud, Dr. Mohamed Anwar
Head of department: Prof. Dr. Mousa Abd-Allah **Date: 1/ 12 / 2011**