



Annual Course Report

(Power Electronics Circuits)

A- Basic Information

1 Title and Code	Power Electronics Circuits AC442
2 Programme(s) on which this course is given	AC
3 Academic year / Level of programme	4 th year/ 1 st Semester
4 Units/Weekly hours	

Lecture Tutorial/Practical Total

5- Names of lecturers contributing to the delivery of the course

Prof. Abdelazem S. Ibrahim
Course coordinator: Prof. Abdelazem S. Ibrahim.

External evaluators:

B- Statistical Information

No. of students attending the course: No. 382
No. of students completing the course: No. 380 % 99.48

Results:

Passed: No. 378 % 99.47
Failed: No. 2 % 0.53

Grading of successful students:

Excellent: No. 93 % 24.47
Very Good: No. 109 % 28.68
Good: No. 84 % 22.11
Pass: No. 92 % 24.21

C- Professional Information

1. Course Teaching

Topic	No of hours	Lecturer
1. Introduction to power - electronics circuits . * power electronics defined * Key characteristics * Trends in power supplies	5	Prof. Abdelazem S. Ibrahim
2. Silicon- controlled rectifier circuits * Characteristic curve of the SCR * SCR turn off circuits * Applications	5	
3. AC voltage controllers * Principle of phase control * Principle of on-off control * Single-phase bidirectional Controllers	5	
* Three-phase full-wave controllers * Single-phase transformer connection changer * Cycloconverters	5	
4. Pulse-width modulated inverters * Principle of operation * Performance parameters	5	
* Single-phase bridge Inverters * Three-phase inverters * Voltage control of single-phase inverters	5	
* Single-pulse-width Modulation * Multiple-pulse-width modulation	5	
5. Static switches * Single-phase AC switches * Three-phase AC switches	5	
* AC switches for bus transfer * DC switches * Solid-state relays	5	

* Photovoltaic relay		
* Design of static switches * Thyristor ratings of AC switch	5	
6. DC-DC converters * Types of Chopper circuits * Step-down converters * Step-up converters * Performance parameters	5	
* Comparison of Regulators * Chopper circuit design * Magnetically coupled choppers	5	
7. Power electronics for wind energy systems * Basics of wind power * Types of wind power systems * Grid-connected wind energy Systems	5	
*Control of wind turbines * Electrical/power electronics * Isolated grid supply system with multiple wind turbines	5	
Total sum	70	

Topics taught as a percentage of the content specified:

>90 % 70-90 % <70%

2. Teaching and Learning Methods:

Lectures:

Practical Training/ Laboratory:

Seminar/Workshop:

Class Activity:

Case Study:

Other Assignments/Homework:

Case Study

Other assignments/homework:
A real world project assigned.

3. Student Assessment:

Method of Assessment	Percentage of total
Written examination	68
Midterm exams	16
Oral Examination	0
Practical/laboratory work	0
Other Assignments/class work	16
Total	100 %

Members of Examination Committee:

- a. Dr. Dosoky Etim.
- b. Assoc. Prof. Mohammad El Bardini
- c. Dr. Samir Badawy.

Role of external evaluator:

4. Facilities and Teaching Materials:

Totally adequate	<input type="checkbox"/>
Adequate to some extent	<input checked="" type="checkbox"/>
Inadequate	<input type="checkbox"/>

5. Administrative Constraints

- Students need extra hours
- Insufficient class rooms and halls.
- Insufficient assistant staff members.

6. Student Evaluation of the course: Response of Course Team

- Insufficient background in Power Elec. -

7. Comments from external evaluator(s):

Response will be received.

8. Course Enhancement:

Progress on actions identified in the previous year's action plan:

This is the first year plan

9. Action Plan for Academic Year 2012 – 2013

Improvement	Weak points	Action required	Person	Completion
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Field			Responsible	Date
Assessment Methods	No feedback of the examination to the students, so exams can not be used for learning.	<ul style="list-style-type: none"> - During course design the assessment methods suitable for each ILOs must be specified and these methods must be strictly followed by examiners. - Formative exams during the term with a feedback to the students, so these examinations can be used as a method of learning. 	<ul style="list-style-type: none"> - Faculty - Department 	2013
Quality of Teaching and Learning	Students attendance at lecture are not very good	<ul style="list-style-type: none"> - Engagement of students from different academic years to the curriculum development 	<ul style="list-style-type: none"> - Faculty - Department 	2013
Learning resources	<ul style="list-style-type: none"> - Space of most laboratories is unsatisfactory - The system of maintenance and repair is not flexible enough. 	<ul style="list-style-type: none"> - speed up process in new building - To acquire more facilities to laboratories - Purchase more laboratory equipments - Maintain and repair the present equipments 	<ul style="list-style-type: none"> - University - Faculty 	2013
Course content	Gap between up-to-date information and reference text books	<ul style="list-style-type: none"> - Give students the formal and theoretical bases in Power Elec. - Give students different algorithms dedicated to Power Elec. - Give students more implementation exercises that cover their understanding of course. 	Course coordinator	2013

Course Coordinator: Prof. Abdelazem S. Ibrahim

Signature:

Date: / /