

<p>Kingdom of Saudi Arabia Ministry of Higher Education <b>Qassim University</b> College of Engineering</p>		<p>المملكة العربية السعودية وزارة التعليم العالي جامعة القصيم كلية الهندسة</p>
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## Selected Topics in Power Electronics

**College:** Engineering

**Department:** Electrical

### First: Course Definition

**1- Course Code:** EE 639

**2- Units:** 3 credit hrs

**3- Semester:**

**4- Prerequisite:**

**5- Co-requisite:**

**6- Location** (if not on main Campus):

### Second: Course Objectives

Developing the knowledge of the students in selected advanced and recent up-to-date topics.

### Third: Course Description

#### 1- Topics to be covered

Subject	No of Weeks	Units
To be selected by the instructors to serve the thesis subject	15	45

#### 2- Course components (Total hrs in the Semester: 60)

Lectures	Exercises	Other
45	---	----

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**3- Intended Learning Outcomes of the Course (ILO's)**

**a. Knowledge**

**i) Description of the knowledge to be acquired:**  
Advanced and recent topics in the field of power electronics

**ii) Teaching strategies to be used to develop that knowledge**

- Class lectures.
- Students' presentations
- Group discussion in the Class
- Assignments
- Case study Report (data collection, internet search, and reporting)

**iii) Methods of assessment of knowledge acquired**

- Exams.
- Quizzes.
- Homework assignments.
- Term projects.

**b- Cognitive (Intellectual) Skills**

**i) Cognitive skills to be developed**  
**Skills To be determined in the field of analysis and design of power electronics systems.**

**ii) Teaching strategies to be used to develop these cognitive skills**

- Class lectures.
- Case studies analysis.
- Term projects.

**iii) Methods of assessment of students' cognitive skills**

- Students' seminars and presentations.
- Term projects.
- Written reports.

**c. Interpersonal Skills and Responsibility**

**i) Description of the interpersonal skills and capacity to carry responsibility to be developed**

- Decision making based on engineering analysis.

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- Communication skills.
- Team work.

- ii) Teaching strategies to be used to develop these skills**
- Reports.
  - Term team projects.
  - Presentations and seminars
- iii) Methods of assessment of students' interpersonal skills and capacity to carry responsibility**
- Evaluation of the team projects.
  - Written reports.
  - Students' seminars and presentations.

**d. Communication, Information Technology and Numerical Skills**

- i) Description of the skills to be developed in this domain**
- Literature search.
  - Problems numerical modelling.
  - Utilization of computer applications in analysis and design.

- ii) Teaching strategies to be used to develop these skills**
- Class lectures.
  - Case studies analysis.
  - Computer lab sessions.
  - Term projects.
- iii) Methods of assessment of students numerical and communication skills**
- Term projects.
  - Written reports.
  - Students' seminars and presentations.

**e. Psychomotor (if applicable) & Other Non-cognitive Skills**

- i) Description of the psychomotor or other skills to be developed and the level of performance required**
- NA

- ii) Teaching strategies to be used to develop these skills-**
- NA

- iii) Methods of assessment of student's psychomotor skills**

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- NA

#### 4- Student Assessment Schedule

<i>Serial</i>	<i>Assessment tool (test, group project, examination etc.)</i>	<i>Week due</i>	<i>Weight</i>
1	Term Project – 1	3 <sup>rd</sup>	15 %
2	Mid Term Exam -1	7 <sup>th</sup>	15 %
3	Term Project – 2	10 <sup>th</sup>	15 %
4	Term Project – 3	13 <sup>th</sup>	15 %
5	Final Exam	16 <sup>th</sup>	40 %

#### 5- Student Support

- Providing electronic library for references and scientific periodicals.  
- Providing the necessary computer applications for the course.

#### 6- Learning Resources

**i) Essential Books (References)**  
- To be determined by the instructors.

**ii) Course Notes** Course materials are uploaded on the College Web-Site ([www.qec.edu.sa](http://www.qec.edu.sa)) to be available for the students.

**iii) Recommended Books**  
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**iv) Electronic Books & Web Sites:**  
- Scientific journals and forums.

**v) Periodicals**  
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#### 7- Course Evaluation and Improvement Processes

**i) Strategies for Obtaining Student Feedback on Effectiveness of Teaching**

- Students' Questionnaires,
- Observing the students opinions recorded in the college student site
- Appeal box

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- Carrying out extensive questioners by a sample of the distinguished students just after the graduation from the college.-

**ii) Other Strategies for Evaluation of Teaching by the Instructor or by the Department**

- Instructor report
- Public faculty seminars.
- Periodical review of the teaching methods by both the department council and the education affairs vice dean.-

**iii) Processes for Improvement of Teaching**

- Assessment of students' work by external examiners.
- Analysis of students' evaluation of course and instructor.
- Seminars by industry professionals.
- Evaluation of the course outlines and student works by external staff member,
- Periodical contact with different engineering authorities and industries for evaluating and getting their feedback and suggestions concerning the course outlines.

**iv) Processes for verifying standards of student achievement**

- Check marking by an independent faculty member of a sample of student work.
- Periodic exchange and remarking of a sample of assignments/exams with a external evaluator.

**v) Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.**

- Assessment and evaluation of the level of achieving the course outcomes through a continuous improvement process (part of a quality assurance system established by the university),
- Consequently, actions are to be taken to improve the course delivery when necessary.
- Review of the course objectives, outcomes and curriculum every 2 years.