



Course Descriptor EETE 4011 Power Electronics

ACADEMIC YEAR	2020-2021		
Course Code & Title	EETE 4011 Power Electronics		
Credit hours	3	Level of study	Undergraduate
College / Centre	COE		
Co-requisites		Pre-requisites	EETE2011 Fundamentals of Electronics

1. COURSE OUTLINE

Fundamentals of power electronics and applications. Switch-mode power conversion, power supplies, inverters, motor drives, and power semiconductor devices. System analysis, design, and modeling. The course includes hands-on hardware and software (PSpice or NI Multisim) laboratory sessions.]

2. AIMS

This course prepares students for engineering practice through discussion of design and performance of power electronic circuits and their applications. This course includes engineering topics and engineering design.]

3. LEARNING OUTCOMES, TEACHING, LEARNING and ASSESSMENT METHODS

Learning Outcomes (Definitive)	Teaching and Learning methods (Indicative)	Assessment (Indicative)
Upon successful completion of this course, students will be able to:		
1. Design rectifiers and inverters	Lecturer, Presentation, seminar	Assignments, Written Examination, quizzes
2. Implement DC-DC switch-mode converters	Lecturer, Presentation, seminar	Assignments, Written Examination, quizzes
3. Develop DC-AC switch-mode converters	Lecturer, Presentation, seminar	Assignments, Written Examination, quizzes
4. Create switching DC power supplies	Lecturer, Presentation, seminar	Assignments, Written Examination, quizzes
5. Illustrate the motor drive applications	Lecturer, Presentation, seminar	Assignments, Written Examination, quizzes
6. [Assemble power electronic circuits for residential and industrial applications.]	[Lecturer, Presentation, seminar, lab experiments]	[Written Examination and Lab reports]

4. ASSESSMENT WEIGHTING

Assessment	Percentage of final mark (%)
Mid-term examination I	30
	0
Assignments	30
Final Examination	40



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7. RECOMMENDED READING

Core text/s:

< Ned Mohan, Tore Undeland, and William Robbins, Power Electronics: Converters, Applications, and Design, 3rd edition, John Wiley & Sons, 2003 >

Library + online resources:

MIT OpenCourseWare, Power Electronics

<https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-334-power-electronics-spring-2007/lecture-notes/chp1.pdf>

OpenCourseWare

<https://www.oercommons.org/courses/electronic-power-conversion>