

University of Macau  
Faculty of Science and Technology  
Department of Electrical and Electronics Engineering

**Part A: Course Outline**

Course Title:	Introduction to Electrical Engineering		
Course Code:	ELEC191	Year of Study:	1
Compulsory/Elective:	Compulsory		
Course Prerequisites:	None		
Prerequisite Knowledge	Basic science		
Class/Laboratory Schedule:	3-hour lecturer per week		
Duration	One semester	Credit Units	2.5
Text Books and References:	[1] Introduction to Electrical Engineering, J.David Irwin, Prentice Hall		
Course Description:	This course provides the students with basic concepts of electrical Engineering, introduction to situation of electrical engineering in Macau and basic knowledge used in the Laboratory.		
Topics Covered	<ol style="list-style-type: none"> <li>1. Introduction of electrical engineering.</li> <li>2. Sub-disciplines in Electrical Engineering</li> <li>3. Electrical Engineering in Macau</li> <li>4. Basic Knowledge used in the Laboratory</li> </ol>		
Course Objectives:	<ol style="list-style-type: none"> <li>1. To introduce the students with the importance, impact to society, sub-disciplines of electrical engineering [a,e,f,h,i]</li> <li>2. Let the students understand the situation of electrical engineering in Macau. [f,g,h,i,j]</li> <li>3. To equip the students to handle experiment in future. [b,g]</li> </ol>		
Course Assessment:	Reports: 55% Project/experiment :30% Presentation: 15%		
Relationship to Program Objectives and Outcomes	This course primarily contributes to EEE program outcomes that develop students abilities to: <ol style="list-style-type: none"> <li>f. Understanding of professional and ethical responsibility.</li> <li>g. Ability to communicate effectively.</li> <li>h. Broad education necessary to understand the impact of engineering solutions in global and societal context.</li> <li>i. Recognition of the need for and an ability to engage in life-long learning.</li> <li>j. Knowledge of contemporary issues.</li> </ol>		



Probability and Statistics (PS), Differential and Integral Calculus (DIC), Basic Science (BS), Computer Science (CS), Engineering Science (ES), Differential Equation (DE), Linear Algebra (LA), Complex Variables (CV), Discrete Mathematics (DM)

**Program Outcome Policy:**

Course VS Course Outcomes

(H= Highly Related, S = Supportive, N = None)

Course	a	b	c	d	e	f	g	h	i	j	k
Introduction to Electrical Engineering	S	S	N	N	N	S	S	S	S	S	N

The electrical and electronics engineering program outcomes are:

- a. Ability to apply knowledge of mathematics, science and engineering.
- b. Ability to design and conduct experiments.
- c. Ability to design a system, component or process to meet desired needs.
- d. Ability to function on multidisciplinary teams.
- e. Ability to identify, formulate and solve engineering problems.
- f. Understanding of professional and ethical responsibility.
- g. Ability to communicate effectively.
- h. Broad education necessary to understand the impact of engineering solutions in global and societal context.
- i. Recognition of the need for and an ability to engage in life-long learning.
- j. Knowledge of contemporary issues.
- k. Ability to use the techniques, skills and modern engineering tools necessary for engineering practice.

**Course Assessment Policy:**

- 2-page report with specific format should be submitted on each visit and seminar. No late submission is allowed. Zero mark will be given when report is copied
- One group (3-4 students/group) project is performed at the end of semester.
- Project presentation is required.
- One experiment will be performed.