

澳門大學 UNIVERSIDADE DE MACAU UNIVERSITY OF MACAU

Major Programme:	Bachelor of Science in Electrical and	d Computer	r Engineering						
Course Type:	CM – Compulsory Major 🛛 CPE – Community a	nd Peer Educatio	n	□ MI – Minor					
	□RE – Required Elective □ L&S – Languages an	d Skills	□ FE – Free Elective						
GE Area in 2017/201	8 model (applicable to students admitted	in academic	year 2017/2018 onward	<u>ls)</u>					
Science and Techr	nology, FHS	Society and Behaviour, FSS							
□ Literature and Hun	nanities, FAH	🗆 Global Awareness, FSS							
Equivalent to 2011/2	012 GE model (applicable to students adr	nitted in aca	demic year 2016/2017 o	or before)					
$\Box$ Area 1 – English L	anguage	□ Area 8 – World Histories and Cultures							
$\Box$ Area 2 – Chinese/F	Foreign Language	$\Box$ Area 9 – Macao, China and other Societies							
□ Area 3 – Communi	cation	$\Box$ Area 10 – Values, Ethics and Meaning of life							
$\Box$ Area 4 – Mathemat	tics/Quantitative Reasoning	□ Area 11 – Physical Education							
□ Area 5 – Informatio	on Technology and Knowledge Society	□ Area 12 – Visual and Performing Arts							
□ Area 6 – Physical S	Science and the World	□ Area 13	□ Area 13 – University Life						
□ Area 7 – Life Scier	nce, Health and the Human Condition								
Course Title: (in English, Chinese and Portuguese)	Circuit Analysis 電路分析								
	Análise de Circuitos	Cred	it Units:						
Course code	ECEN1005	Cicu	n onns.	4					
Duration:	Semester Course 🗆 Yearly Course	Sugg	ested Year of Study:	Year 1					
Grading System:	✓ Letter Grade □ P/NP	Pre-r (if any	equisite:	None					
Medium of Instruction	n:	English							
Text Book and Reference	Introduction to Electric Circuits, 9th ed	ition, Wiley	Press, J. Svoboda and R	. C. Dorf.					
Course Description	Elementary Resistive Circuit Theorems and Analysis Techniques: KCL. KVL, Nodal & Mesh Analysis and their Matrix formulation, Superposition, Source Transformation, Thevenin & Norton Equivalents, Maximum Power Transfer. Ideal OP AMP Model and its Circuit Analysis Methods. Energy Storage Elements, 1st- and 2nd-Order Circuit Analysis: Natural, Forced and Completed Response. Sinusoidal Steady-State Analysis: Phasor, Impedance and Admittance. AC Steady-State Power: Instantaneous and Average Power, Power Factor and RMS Values. Practice includes problem solving, PSPICE and Laboratory Works.								
Course Content	1. Elementary Resistive Circuit Theorems and Analysis Techniques: KCL. KVL, Nodal & Mesh Analysis and their Matrix formulation, Superposition, Source Transformation, Thevenin & Norton Equivalents, Maximum Power Transfer.								

	<ol> <li>Ideal OP AMP Model and its Circuit Analysis Methods. Energy Storage Elements, 1st- and 2nd- Order Circuit Analysis: Natural, Forced and Completed Response.</li> <li>Given it h Structure and the instrumentation of the structure of the structure</li></ol>													
	3. Sinusoidal Steady-State Analysis: Phasor, Impedance and Admittance.													
	CILO 1: Ability to apply knowledge of mathematics, science and engineering.													
Course Intended	CILO 2: Ability to identify, formulate and solve engineering problems.									, for				
Learning Outcomes	CILO 3: Ability to use the techniques, skills and modern engineering tools necessary for													
(CILO):	•	engineering practice. CILO 4: Ability to design and conduct experiments.												
(CILO).		CILO 5: Ability to design a system, component or process to meet desired needs.												
	CILO 6: Ability to function on multidisciplinary teams.													
Major Assessment Methods:	Case Study	Role Playing	Student Presentation	Individual project / paper	Group project / paper	Group discussions	Writing Assignment	Exercises & problems	Service learning	Internship	Field study	Company visits	Reading & Writing Assessments / tests	Listening & Oral Assessments / tests
Assignment(s) 15%					~									
Quiz 45%								1					1	
Final 40%													1	