

Major Programme:	Bachelor of Science in Electrical and Computer Engineering									
Course Type:	☐ CM – Compulsory Major ☐ CPE – Community an	d Peer Education	□ GE – General Education	□ MI – Minor						
	☑ RE – Required Elective □ L&S – Languages and	□ FE – Free Elective								
GE Area in 2017/2018 model (applicable to students admitted in academic year 2017/2018 onwards)										
☐ Science and Techn	ology, FHS	□ Society and Behaviour, FSS								
☐ Literature and Hun	nanities, FAH	□ Global Awareness, FSS								
Equivalent to 2011/2012 GE model (applicable to students admitted in academic year 2016/2017 or before)										
□ Area 1 – English L	anguage	☐ Area 8 – World Histories and Cultures								
□ Area 2 – Chinese/F	Foreign Language	□ Area 9 – Macao, China and other Societies								
□ Area 3 – Communi	ication	☐ Area 10 – Values, Ethics and Meaning of life								
□ Area 4 – Mathemat	tics/Quantitative Reasoning	□ Area 11 – Physical Education								
□ Area 5 – Information	on Technology and Knowledge Society	☐ Area 12 – Visual and Performing Arts								
☐ Area 6 – Physical S	Science and the World	□ Area 13 – University Life								
☐ Area 7 – Life Science, Health and the Human Condition										
Course Title:	Principles of Communication Systems									
(in English, Chinese and Portuguese)	通信系統基礎									
Fortuguese)	Princípios de Sistemas de Comunicação  Credit Units: 2									
Course code	ECEN3012	Credi	Cilits:	3						
Duration:	Semester Course   Yearly Course	Sugge	ested Year of Study:	Year 3						
Grading System:	✓ Letter Grade □ P/NP	Pre-re (if any)	requisite: None							
Medium of Instruction:		English								
Text Book and	J. G. Proakis, M. Salehi, "Fundament	als of Com	munication Systems", 2	2nd Ed., Pearson						
Reference	Education, 2013									
	This course is the basic discipline of telecommunication theory and relevant techniques. In									
Course Description:	addition to an information theory introduction, it includes the study of signal and architecture of communication systems, amplitude and angle modulation, modulation and demodulation									
	techniques and so forth. The important concepts like noise, interference, channel distortion,									
	intersymbol interference and entropy are also elucidated with the help of system simulator.									
1	Example transmitter and receiver of broadcasting communication systems and cellular									
	communication systems are also highlighted. The course objective allows the students to									
	acquire the basic engineering understanding to the modern communication systems and; the									
	relevant theory and technique.									
Course Content	<ol> <li>Introduction of communications</li> <li>Signals: its spectra, transmission and filtering</li> </ol>									
	3. Linear and angle continuous wave (CW) modulations									

	Sampling & pulse modulation + Multiplexing techniques     Noise in communication systems													
	6. Analog communication systems													
	7. Baseband digital transmission													
		8. Digital modulation												
Course Intended Learning Outcomes (CILO):	CILO CILO CILO CILO engin CILO	CILO 1: Ability to apply knowledge of mathematics, science and engineering. CILO 2: Ability to design a system, component or process to meet desired needs. CILO 3: Ability to identify, formulate and solve engineering problems. CILO 4: Ability to design and conduct experiments. CILO 5: Ability to use the techniques, skills and modern engineering tools necessary for engineering practice. CILO 6: Ability to use the computer/IT tools relevant to the discipline along with an												
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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) 30%					1									
Quiz 40%								1					1	
Final 30%													1	