UNIVERSITI MALAYA	**PRO FORMA KURSUS** ***COURSE PRO FORMA***

PENTING / *IMPORTANT*:

Kandungan Pro Forma ini tidak boleh diubah tanpa kelulusan Senat bagi perkara-perkara yang telah ditandakan*. Pindaan kepada perkara lain boleh diluluskan di peringkat Akademi/Fakulti/Institut/Pusat.

*Contents of this Pro Forma shall not be changed without the Senate's approval for items indicated with *. Changes to the other items can be approved at the Academy/Faculty/Institution/Centre level.*

	Versi Bahasa Malaysia ***Malay Version***	**Versi Bahasa Inggeris** ***English Version***
Akademi/Fakulti/Institut/Pusat *Academy/Faculty/Institute/Centre*	Fakulti Kejuruteraan	*Faculty of Engineering*
Jabatan *Department*	Jabatan Kejuruteraan Elektrik	*Department of Electrical Engineering*
Nama Program Akademik Name of Academic *Programme*	Sarjana Muda Kejuruteraan (Elektrik)	*Bachelor of Engineering (Electrical)*
Kod Kursus* *Course Code**	KIE4020	*KIE4020*
Tajuk Kursus* *Course Title**	Elektronik dan Sistem Gelombang Miko	*Microwave Electronics and Systems*
Kredit* *Credit**	2	*2*
Masa Pembelajaran Pelajar (SLT) *Student Learning Time (SLT)*	80	*80*
Prasyarat/Keperluan Minimum Kursus *Course Pre-requisite(s)/Minimum Requirement(s)*	Tiada	*No*
Hasil Pembelajaran Kursus* *Course Learning Outcomes**	Di akhir kursus ini, pelajar dapat: 1) Menghuraikan konsep teori litar 2-port (galangan dan ABCD matriks) 2) Menganalisis konsep litar penyerakan gelombang mikro. 3) Merekabentuk litar galangan kesepadanan dengan Smith Chart.	*At the end of the course, students are able to:* *1) Describe the theoretical concepts of 2-port network (impedance and ABCD matrix).* *2) Analyze the scattering parameter concepts of microwave circuit.* *3) Design impedance matching network with Smith Chart.*

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Kemahiran Insaniah *Soft Skills*	Kemahiran Pemikiran Kritis dan Penyelesaian Masalah (CT1-CT3)	*Critical Thinking and Problem Solving Skills (CT1-CT3)*
Sinopsis Kandungan Kursus *Synopsis of Course Contents*	Kursus ini memperkenalkan elektronik gelombang mikro dan system applikasi. Kursus ini dibentuk untuk memenuhi minimum permintaan industri. Teori yang cukup kukuh dari galangan dan matrix ABCD, konsep talian penghantaran dan parameter penyerakan akan diberikan. Pengenalan Carta Smith dan perlaksanaan dan litar kesepadanan galangan dan transformasi akan diperkenalkan. Komponen gelombang mikro dan teknologi peranti, gelombang mikro penapis, pengayun, penguat kuasa, gelung phased-lock dan peguat kuasa tinggi akan dibincangkan. Juga, gelombang mikro system transceiver akan disertakan sebagai system integrasi keseluruhan. Pelajar akan diberikan pelajaran untuk memahami standard industry EDA untuk rekabentuk, mengoptimumkan dan simulasi komponen gelombang mikro dan system.	*The goal of this course is to introduce microwave electronics and system applications. This course is developed to meet minimum industrial requirements in the topic area. A strong theoretical background from the impedance and ABCD matrix of 2-port network, transmission line concept and the scattering parameter will be covered. Overview of Smith Chart and the implementations and impedance matching network and transformations will be given. Microwave electronics components and device technologies that aligned with state-of-art, microwave filter design, low noise amplifier, oscillator, high power amplifier and phased-lock loop will be covered. Also, microwave transceiver system will be included as overall system integration. Students will be exposed to use industry standard EDA tools to design, optimize and simulate microwave electronics circuit and systems.*
Pemberatan Penilaian* *Assessment Weightage**	Penilaian Berterusan: 40% Peperiksaan Akhir: 60%	*Continuous Assessment: 40%* *Final Examination: 60%*
Kaedah Maklum Balas Tentang Prestasi *Methodologies for Feedback on Performance*	Gred/markah untuk tugasan, ujian dan/atau pembentangan individu diumumkan dalam kelas dan/atau dipamerkan di papan kenyataan.	*Grades/marks for assignment, test and/or individual presentation announced in class and/or displayed on the notice board*
Kriteria Dalam Penilaian Sumatif *Criteria in Summative Assessment*	Sila rujuk Kaedah-Kaedah Universiti Malaya (Pengajian Ijazah Pertama) 2017 dan Peraturan-Peraturan Universiti Malaya (Pengajian Ijazah Pertama) 2017	*Please refer to the University Of Malaya (First Degree Studies) Rules 2017 And University Of Malaya (First Degree Studies) Regulations 2017*