INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS)
FAKULTAS TEKNOLOGI ELEKTRO DAN INFORMATIKA CERDAS
DEPARTEMEN TEKNIK ELEKTRO
Program Studi Sarjana (S1) Teknik Telekomunikasi

1	**Nama Mata Kuliah**	:	Rangkaian Gelombang Mikro
2	**Kode Mata Kuliah**	:	EL234709
3	**Kredit**	:	3 SKS
4	**Semester**	:	Pilihan

Deskripsi Mata Kuliah

Mata kuliah ini merupakan mata kuliah pilihan yang ditawarkan kepada mahasiswa Program Studi Sarjana Teknik Telekoomunikasi, Departemen Teknik Elektro ITS. Secara umum, capaian pembelajaran pada topik Sistem Gelombang Mikro meliputi definisi dan karakteristik sistem gelombang mikro, komponen pembentuknnya, dan teknik pengukuran komponen gelombang mikro.

Capaian Pembelajaran Lulusan (CPL) Yang Dibebankan Mata Kuliah

1. (CPL-02) Mampu mengkaji dan memanfaatkan ilmu pengetahuan dan teknologi dalam rangka mengaplikasikannya pada bidang Teknik Telekomunikasi, serta mampu mengambil keputusan secara tepat dari hasil kerja sendiri maupun kerja kelompok dalam bentuk laporan tugas akhir atau bentuk kegiatan pembelajaran lain yang luarannya setara dengan tugas akhir melalui pemikiran logis, kritis, sistematis dan inovatif.
2. (CPL-04) Mampu menerapkan ilmu pengetahuan alam dan matematika serta teknologi dan rekayasa informasi untuk memperoleh pemahaman komprehensif pada bidang Teknik Telekomunikasi.
3. (CPL-05) Mampu merancang komponen, sistem, dan proses yang logis dan realistis sesuai dengan spesifikasi yang ditentukan dengan mempertimbangkan aspek keselamatan, sosial, budaya, lingkungan, dan ekonomi.

Capaian Pembelajaran Mata Kuliah

1. Mampu menjelaskan konsep dasar sistem gelombang mikro
2. Mampu menjelaskan karakteristik komponen gelombang mikro
3. Mampu melakukan perancangan dasar sistem gelombang mikro
4. Mampu menjelaskan fungsi dan mekanisme kerja instrumentasi pengukuran RF

Pokok Bahasan

1. Definsi dan karakteristik sistem gelombang mikro
2. Komponen Aktif Gelombang Mikro
3. Komponen Pasif Gelombang Mikro
4. Saluran Transmisi Gelombang Mikro
5. Arsitektur Sistem Gelombang Mikro
6. Perancangan Sistem Gelombang Mikro
7. Teknik Pengukuran Gelombang Mikro

Prasyarat
Elektronika Telekomunikasi
Pustaka
1. David M. Pozar, “Microwave and RF wireless Systems”, John Wiley & Sons, 2001. 2. R. Garg & Bahl, Microstrip Lines & Slotlines, Artech, 1979.

INSTITUTE TECHNOLOGI SEPULUH NOPEMBER (ITS)
FACULTY OF INTELLIGENT ELECTRICAL AND INFORMATICS TECHNOLOGY
DEPARTMENT OF ELECTRICAL ENGINEERING
Undergraduate Study Program (S1) Telecommunication Engineering

1	**Course Name**	:	Microwave Circuit
2	**Course Code**	:	EL234709
3	**Credit**	:	3 CREDITS
4	**Semester**	:	Options

Course Description

This course is an elective course offered to students of the Telecommunication Engineering Undergraduate Study Program, Department of Electrical Engineering ITS. In general, the learning outcomes on the topic of Microwave Systems include the definition and characteristics of microwave systems, their constituent components, and measurement techniques of microwave components.

Graduate Learning Outcomes (SLOs) Charged Courses

1. (CPL-02) Able to study and utilize science and technology in order to apply it in the field of Telecommunication Engineering, and be able to make decisions appropriately from the results of their own work and group work in the form of a final project report or other forms of learning activities whose output is equivalent to the final project through logical, critical, systematic and innovative thinking.
2. (CPL-04) Able to apply natural science and mathematics as well as technology and information engineering to gain a comprehensive understanding of the field of Telecommunication Engineering.
3. (ELO-05) Able to design logical and realistic components, systems, and processes in accordance with the specified specifications by considering safety, social, cultural, environmental, and economic aspects.

Course Learning Outcomes

1. Able to explain the basic concepts of microwave system
2. Able to explain the characteristics of microwave components
3. Able to do basic microwave system design
4. Able to explain the function and working mechanism of RF measurement instrumentation

Subject matter

1. Definition and characteristics of microwave systems
2. Active Components of Microwaves
3. Passive Components of Microwaves
4. Microwave Transmission Line
5. Microwave System Architecture
6. Microwave System Design
7. Microwave Measurement Technique

Prerequisites

Telecommunication Electronics

Library

1. David M. Pozar, "Microwave and RF wireless Systems", John Wiley & Sons, 2001.
2. R. Garg & Bahl, Microstrip Lines & Slotlines, Artech, 1979.