



KRISHNASAMY
College of
ENGINEERING & TECHNOLOGY

Approved by AICTE & Affiliated to Anna University
Anand Nagar, Nellikuppam Main Road, S. Kumarapuram, Cuddalore - 607 109, Tamil Nadu.
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DEPARTMENT OF ECE

23.07.2024


CIRCULAR

Ref.: KCET/ECE/VAC/CIRCULAR/2023-24/01.

The following Value Added Course will be conducted during the academic year 2023-2024. The course will be conducted from 05.08.2024 to 09.08.2024. Students are instructed to register their names in the course allotted to them.

Note: Students are instructed to attend the program without fail.

S.No.	Course Code	Name of the Course	Year	No. of Period	Course Coordinator
1	EC-VAC2303	MICROWAVE INTEGRATED CIRCUIT DESIGN	III	30	Er.V.SUDHA,AP-ECE


24/7/24
Vice-Principal




23/7/24
HOD/ECE

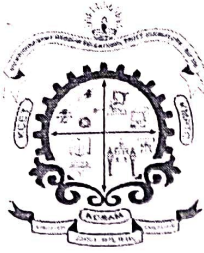
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Department File


24/7/24
Principal



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SYLLABUS

Subject Code: EC-VAC2303 Subject Name: MICROWAVE INTEGRATED CIRCUIT DESIGN

Duration: 30 Hours

Objectives:

- To understand the conventional microwave transmission structures and principles and conceptualize the working of various microwave components and its design.
- To focus on processing techniques and fabrication of components.
- To analyze the industrial oriented microwave components and gain knowledge in microwave semiconductors and its applications

Module 1:

6

Transmission Lines: Characteristics of conventional transmission structures, various planar transmission lines for MICs, comparison of various MIC transmission media. Design of stripline and microstrip transmission lines.

Module 2:

6

Microwaves Integrated Circuits Components: Lumped elements for MIC: Design of lumped elements, design of inductors, capacitors and resistors. Resonators: Resonator parameters, resonant frequency, quality factor, rectangular microstrip resonator. Hybrids and couplers.

Module 3:

6

Active and Passive Microwave Devices: Microwave transistor, equivalent circuit. Basic operation principles of FET, MESFET model, power FETs. Introduction, equivalent circuit and figure of merit of schottky barrier junctions, varactor diodes, step recovery diodes and pin diodes.

Module 4:

6

Microwave Semiconductor Sources and Amplifiers: Oscillators: Introduction, concept of negative resistance, three port S-parameter characterization of transistors, oscillation and stability conditions, design of fixed frequency oscillators.

Module 5:

6

Fabrication of MMC's/MMIC's: Introduction, materials, mask layouts and mask fabrication, hybrid MIC, Mimics- design considerations, design procedures and MMIC fabrication.

Duration: 30 Hours

Course Outcomes: At the end of the course the student will be able to

CO1: Design microwave circuits and fabricate components based on industrial scale.

CO2: Understand the design limitations of the industrial oriented microwave components.

CO3: Design the parameters for working of microwave components for practical purposes by understanding the conventional microwave transmission structures and principle

S. Suresh
HoD/ECE 22/1/24.

