

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Name of the programme and specialization	B.TECH. ELECTRONICS AND COMMUNICATION ENGINEERING		
Course Title	MICROWAVE LABORATORY		
Course Code	ECLR19	No. of Credits	1
Course Code of Pre-requisite subject(s)	ECPC25 & ECPC29		
Session	July - 2021	Section (if, applicable)	A
Name of Faculty	Dr.N.Gunavathi	Department	ECE
Email	gunavathi@nitt.edu	Telephone No.	0431-250-3315
Name of Course Coordinator(s) (if, applicable)	--		
E-mail	---	Telephone No.	----
Course Type	Core course		
Syllabus (approved in BoS)			
<ol style="list-style-type: none"> 1. Characteristics of Gunn diode 2. Characteristics of Reflex klystron 3. Measurement of directional coupler parameters 4. Characteristics of isolator and circulator 5. Characteristics of waveguide tees 6. Frequency and wavelength measurement 7. VSWR and Impedance measurement 8. Antenna measurement 9. Propagation of microwaves 			
COURSE OBJECTIVES			
<ul style="list-style-type: none"> • To understand the characteristics of Microwave sources and reciprocal & nonreciprocal components 			
COURSE OUTCOMES (CO)			
Course Outcomes			Aligned Programme Outcomes (PO)
<ul style="list-style-type: none"> • Understand the characteristics of microwave sources 		PO1, PO2, PO3, PO4, PO6, PO9, PO10,PO12	
<ul style="list-style-type: none"> • Understand the measurement of frequency and wavelength of the input signal 		PO1, PO2, PO3, PO4, PO6, PO9, PO10,PO12	
<ul style="list-style-type: none"> • Understand the measurement of VSWR and Impedance of the unknown device 		PO1, PO2, PO3, PO4, PO6, PO9, PO10,PO12	

<ul style="list-style-type: none"> Understand the characteristics of reciprocal microwave components 	PO1, PO2, PO3, PO4, PO6, PO9, PO10, PO12
<ul style="list-style-type: none"> Understand the characteristics of non-reciprocal microwave components & understand working antenna using simulation tool 	PO1, PO2, PO3, PO4, PO6, PO9, PO10, PO12

COURSE PLAN – PART II				
COURSE OVERVIEW				
Students get exposure to the fundamentals level of microwave sources and components. Course includes series of hardware and one software experiments which provide hands- on- experiment needed to understand the basic concepts. The lab is well equipped with computers, microwave simulation software such as HFSS.				
COURSE TEACHING AND LEARNING ACTIVITIES				
S.No.	Week/Contact Hours	Topic	Mode of Delivery	
1	1 st week	Characteristics of reflex klystron and Gunn diode	Online – MS TEAM	
2	2 nd week	Frequency & wavelength measurement		
3	3 rd week	Characteristics of directional coupler		
4	4 th week	Characteristics of Waveguide Tees		
5	5 th week	VSWR and Impedance measurement/		
6	6 th week	Design and Analysis of antenna		
7	7 th week	Design and Analysis of filter		
8	8 th week	Characteristics of Non reciprocal devices		
9	9 th week	Compensation class		
COURSE ASSESSMENT METHODS (shall range from 4 to 6)				
S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	OBSEVATION	Entire course duration	-	20
2	RECORD/MATLAB program	Entire course duration	-	20
3	VIVA VOCE (WRITTEN TEST)	One week prior to the end semester	45 Minutes	30
4	END SEMESTER EVALUATION	End of the semester	120 Minutes	30
*mandatory; refer to guidelines on page 4				
COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)				

1. Feedback from the students during class committee meeting.
2. Queries through questionnaire.
3. Course Attainment is calculated through Direct tools (Exams)

COURSE POLICY (preferred mode of correspondence with students, compensation assessment policy to be specified)

MODE OF CORRESPONDENCE (email/ phone etc)

Correspondence:

1. All the students are advised to come to class regularly. All the correspondence (schedule of classes/ schedule of assessment/ course material/ any other information regarding this course) will be intimated in the class / over phone.
2. Queries (if required) to the course teacher shall be emailed to the email id specified.

COMPENSATION ASSESSMENT POLICY

1. Attending all the assessments is MANDATORY for every student.
2. If any student is not able to attend either one or both of the continuous assessments I & II due to genuine reason, student is permitted to attend the compensation assessment (CPA) with only 20 % weightage for both the cases.
3. At any case, CPA will not be considered as an improvement test.
4. If any student is not able to attend the End semester due to genuine reason with valid attestation, student is permitted to take up FORMATIVE ASSESSMENT.

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- **At least 75% attendance in each course is mandatory.**
- **A maximum of 10% shall be allowed under On Duty (OD) category.**
- Students with **less than 65% of attendance** shall be prevented from writing the final assessment and **shall be awarded 'V' grade.**

ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.

The above policy against academic dishonesty shall be applicable for all the

programmes.

ADDITIONAL INFORMATION

Queries and feedback may also be emailed to the Course Faculty directly at gunavathi@nitt.edu

FOR APPROVAL

  
Course Faculty _____ CC-Chairperson _____ HOD _____