



<b>Course: M.Tech. (Electronics &amp; Communication Engineering)</b>	<b>Name of Faculty: Dr. Deepti Das Krishna</b>
<b>Topic: 18-437-0109 MICROWAVE DEVICES AND CIRCUITS</b>	<b>Semester: FIRST</b>
<b>Lecture Hall: MTech 1<sup>st</sup> (Electronics &amp; Communication)</b>	<b>Timings: as per CBCS, Slot D</b>

<i>Week and date</i>	<i>Lecture topics</i>	<i>Assignments</i>	<i>Remarks</i>
Week 1 (10 <sup>th</sup> July 19)	Module 1: Review of Transmission lines, Smith Chart		
Week 2 (15 <sup>th</sup> July 19)	Module 1: Microstrip Line, Strip line, Coplanar line. Basic theory and design of planar filters.		
Week 3 (22 <sup>nd</sup> July 19)	Module 1: Basic theory and design of planar filters.	<b>Assignment-1</b>	
Week 4 (29 <sup>th</sup> July 19)	Module 2: BJT, IMPATT devices, Transferred Electron devices		
Week 5 (5 <sup>th</sup> Aug 19)	Module 2: Gunn diodes, MESFET, HEMT, control devices, Varactors, PIN diodes		
Week 6 (12 <sup>th</sup> Aug 19)	Module 2: Switches, phase shifters, modulators and attenuators, Detectors.	<b>Assignment-1 submission</b>	
Week 7 (19 <sup>th</sup> Aug 19)	Module 3: S Parameters of a network		
Week 8 (26 <sup>th</sup> Aug 19)	<b>First Internals</b>		
Week 9 (2 <sup>nd</sup> Sep 19)	Module 3: Stability consideration in active networks, Stability circles, stability criteria	<b>Assignment-2</b>	
Week 10 (16 <sup>th</sup> Sep 19 )	Module 3: Matching networks, power gain concepts, unilateral transistor, gain circles, noise figure circles, bilateral design		
<b>Onam Vacation</b>			
Week 11 (23 <sup>rd</sup> Sep 19)	Module 4: Oscillation conditions, Two port and one port oscillators, Oscillator and stability conditions, tunable oscillators	<b>Assignment-2 submission</b>	
Week 12 (30 <sup>th</sup> Sep 19)	Module 4: Mixers, mixer types, up convertors, down convertors		
Week 13 (14 <sup>th</sup> Oct 19)	<b>Second Internals</b>		
Week 14 (21 <sup>st</sup> Oct 19)	Module 4: Harmonic mixers, circuits design, conversion loss and noise figure, cascaded circuits, Inter modulation		
Week 15 (28 <sup>th</sup> Oct 19)	Module 5: Monolithic and hybrid MICs, Substrate and conductor materials		
Week 16 (4 <sup>th</sup> Nov 19)	Module 5: IC design, reproducibility and reliability issues, chip manufacturing aspects, RF MEMS		
Week 17 (6 <sup>th</sup> Nov 19)	<b>Publication of Sessional</b>		
Week 18 (7 <sup>th</sup> Nov 19)	<b>REVISION</b>		