**LESSON PLAN**

**Subject Code & Name: Microwave engineering (**13EC4029)

**Branch: E.C.E-A C Class / Semester: IV/IV-SEM 1 Academic Year:2016-17**

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| **Period** | **Date (Tentative)** | **Topic** | **Unit No.** | **Teaching Methodology** | **Remarks** | **Corrective action upon review** |
|  |  | MICROWAVE TRANSMISSION LINES: Introduction, | **I** |  |  |  |
| 1 | **27.06.2016** | Introduction, |  | CB |  |  |
| 2 | **28.06.2016** | Microwave Bands, Application |  | CB |  |  |
| 3 | **28.06.2016** | Introduction to guided waves- TE, TM, |  | CB |  |  |
| 4 | **30.06.2016** | TEM Modes Waveguides |  | CB |  |  |
| 5 | **01.07.2016** | Rectangular wave guide –TE mode analysis |  | CB |  |  |
| 6 | **04.07.2016** | TM mode analysis, Expressions for Fields |  | CB |  |  |
| 7 | **05.07.2016** | Characteristic Equation |  | CB |  |  |
| 8 | **05.07.2016** | Cut-off Frequencies, Dominant and Degenerate Modes |  | CB |  |  |
| 9 | **07.07.2016** | Mode Characteristics . |  | CB |  |  |
| 10 | **08.07.2016** | Cavity Resonators– Introduction, types. |  | CB |  |  |
|  |  | WAVEGUIDE COMPONENTS | **II** |  |  |  |
| 11 | **11.07.2016** | Coupling Mechanisms - probe, loop |  | CB |  |  |
| 12 | **12.07.2016** | Waveguide Attenuators, |  | CB |  |  |
| 13 | **12.07.2016** | Phase Shifters |  | CB |  |  |
| 14 | **14.07.2016** | Scattering Matrix |  | CB |  |  |
| 15 | **15.07.2016** | Waveguide Multiport Junctions – E plane Tee |  | CB |  |  |
| 16 | **18.07.2016** | H plane Tees |  | CB |  |  |
| 17 | **19.07.2016** | Magic Tee, |  | CB |  |  |
| 18 | **19.07.2016** | Hybrid Ring |  | CB |  |  |
| 19 | **21.07.2016** | Directional Couplers |  | CB |  |  |
| 20 | **22.07.2016** | Faraday Rotation; Ferrite Components |  | CB |  |  |
| 21 | **25.07.2016** | Gyrator |  | CB |  |  |
| 22 | **26.07.2016** | Isolator, |  | CB |  |  |
| 23 | **26.07.2016** | Circulator. |  | CB |  |  |
|  |  | MICROWAVE TUBES – I | **III** |  |  |  |
| 24 | **29.07.2016** | Introduction |  | CB |  |  |
| 25 | **01.08.2016** | Limitations of conventional tubes |  | CB |  |  |
| 26 | **02.08.2016** | at microwave frequencies |  | CB |  |  |
| 27 | **02.08.2016** | classifications.  O-type tubes |  | CB |  |  |
| 28 | **05.08.2016** | Two Cavity Klystrons |  | CB |  |  |
| 29 | **08.08.2016** | Velocity Modulation Process, Bunching Process |  | CB |  |  |
| 30 | **09.08.2016** | o/p Power,efficiency,Multi cavity klystron |  | CB |  |  |
| 31 | **16.08.2016** | Reflex Klystrons – Mathematical Theory of Bunching |  | CB |  |  |
| 32 | **19.08.2016** | Power Output, Efficiency, Oscillating Modes |  | CB |  |  |
| 33 | **29.08.2016** | o/p Characteristics |  | CB |  |  |
|  |  | MICROWAVE TUBES –II: | **IV** |  |  |  |
| 34 | 30.08.2016 | Introduction |  | CB |  |  |
| 35 | **02.09.2016** | HELIX TWTS: |  | CB |  |  |
| 36 | **06.09.2016** | Slow Wave Structures, TWT- Amplification Process |  | CB |  |  |
| 37 | **06.08.2016** | Suppression of Oscillations |  | CB |  |  |
| 38,39,40 | **08.09.2016** | Nature of the four Propagation Constants |  | CB |  |  |
| 41 | **09.09.206** | Gain Considerations. |  | CB |  |  |
| 42 | **12.09.2016** | M-type Tube: Magnetrons – Types |  | CB |  |  |
| 43 | **13.09.2016** | 8-Cavity Cylindrical Magnetron |  | CB |  |  |
| 44, 45 | **16.09.2016** | Hull Cut-off, Hartree Conditions |  | CB |  |  |
| 46 | **19.09.2016** | PI- Mode Operation. |  | CB |  |  |
|  |  | MICROWAVE SOLID STATE DEVICES& MICROWAVE MEASUREMENTS | **V** |  |  |  |
| 47 | **20.09.2016** | introduciton |  |  |  |  |
| 48 | **27.09.2016** | Gunn Diode – Principle, |  | CB |  |  |
| 49,50 | **30.09.2016 & 03.10.2016** | RWH Theory, Characteristics |  | CB |  |  |
| 51 | **04.10.2016** | Avalanche Transit Time Devices |  | CB |  |  |
| 52 | **06.10.2016** | IMPATT |  | CB |  |  |
| 53 | **07.10.2016** | TRAPATT Diodes |  | CB |  |  |
| 54,55 | **10.10.2016 & 11.10.2016** | Principle of Operation and Characteristics. |  | CB |  |  |
| 56,57 | **14.10.2016** | Description of Microwave Bench |  | CB |  |  |
| 58 | **17.10.2016** | Different Blocks and their Features, Precautions |  | CB |  |  |
| 59 | **20.10.2016** | Microwave Power Measurement – Bolometer Method |  | CB |  |  |
| 60 | **21.10.2016** | Measurement of Attenuation |  | CB |  |  |
| 61 | **24.10.2016** | Frequency measurement |  | CB |  |  |
| 62 | **25.10.2016** | VSWR measurement |  | CB |  |  |
| 63 | **25.10.2016** | Impedance measurement |  | CB |  |  |

**CB: CHALK & BOARD PPT: POWER POINT PRESENTATION**