**D-1**

NIT POLYTECHNIC, NASHIK .

Maharashtra State Board of Technical Education

# TEACHING PLAN (TP)

Academic Year:-2020-2021 Institute code: - 1479

Program: Electronics & Telecommunication Course: Principles of Electronics Communication Course Code: 22334(PEC) Semester: 3rd Scheme : I Name of the faculty-: Mr. G.R.Kshrisagar Date-:15/06/2020

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| **Chapter No. (Allocated Hrs)** | **CO**  **No.** | **UO**  **No.** | **Title/Details** | **Plan** | | | **Actual Execution** | | | **Teaching Method/ Media** | **Remarks** |
| **From** | **To** | **No. of Lect.** | **From** | **To** | **No. of Lect.** |
| **01**  **(08)** | **CO 305.1** |  | **Basics of Electronic Communication** | | | | | | |  |  |
| 1a | The elements of basic electronic communication system | 15/06/2020 | 15/06/2020 | 01 |  |  |  | Video, PPT  Online |  |
| 1b | Electromagnetic spectrum | 16/06/2020 | 16/06/2020 | 01 |  |  |  |  |
| 1c | Transmission modes: Simplex, half duplex and full duplex, | 17/06/2020 | 17/06/2020 | 01 |  |  |  |  |
| Synchronous and Asynchronous | 19/06/2020 | 19/06/2020 | 01 |  |  |  |  |
| Comparison of various types of transmission modes | 20/06/2020 | 20/06/2020 | 01 |  |  |  |  |
| 1d | Sources of Noise (internal and external), signal to noise ratio | 22/06/2020 | 22/06/2020 | 01 |  |  |  |  |
| Different types of noise | 23/06/2020 | 23/06/2020 | 01 |  |  |  |  |
|  | Revision, question bank | 24/06/2020 | 24/06/2020 | 01 |  |  |  |  |

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| **02**  **(16)** | **CO 305.2** |  | **Modulation and Demodulation** | | | | | | |  |  |
| 2a | Need for modulation | 26/06/2020 | 26/06/2020 | 01 |  |  |  | Video, PPT  Online |  |
| 2b | Types of modulation techniques | 27/06/2020 | 27/06/2020 | 01 |  |  |  |  |
| Amplitude Modulation | 29/06/2020 | 29/06/2020 | 01 |  |  |  |  |
| 2c | Modulation index, bandwidth requirement , | 30/06/2020 | 30/06/2020 | 01 |  |  |  |  |
| Mathematical representation of amplitude modulated wave, | 01/07/2020 | 01/07/2020 | 01 |  |  |  |  |
| Representation of AM signal in time and frequency domain | 03/07/2020 | 03/07/2020 | 01 |  |  |  |  |
| 2d | Simple Numericals | 04/07/2020 | 04/07/2020 | 01 |  |  |  |  |
| 2c | types of AM with respect to frequency spectrum (DSB, SSB and VSB), | 06/07/2020 | 06/07/2020 | 01 |  |  |  |  |
| 2d | Power relations in AM wave | 07/07/2020 | 07/07/2020 | 01 |  |  |  |  |
| SimpleNumericals | 08/07/2020 | 08/07/2020 | 01 |  |  |  |  |
|  | Frequency Modulation | 10/07/2020 | 10/07/2020 | 01 |  |  |  |  |
| representation of FM signal in time domain and frequency domain | 11/07/2020 | 11/07/2020 | 01 |  |  |  |  |
| frequency deviation ratio,modulation index(β), | 13/07/2020 | 13/07/2020 | 01 |  |  |  |  |
| Mathematical representation of FM, | 14/07/2020 | 14/07/2020 | 01 |  |  |  |  |
| Bandwidth requirements, types of frequency modulation (NB and WBFM) | 15/07/2020 | 15/07/2020 | 01 |  |  |  |  |
| 2f | Simple numericals ,Phase Modulation2e | 17/07/2020 | 17/07/2020 | 01 |  |  |  |  |
| **03**  **(16)** | **CO 305.3** |  | **Transmitters and Receivers** | | | | | | |  |  |
| 3a | Generation of AM. | 18/07/2020 | 18/07/2020 | 01 |  |  |  | Video, PPT  Online |  |
| 3b | Block diagram of AM super heterodyne receiver and its working with waveforms | 20/07/2020 | 20/07/2020 | 01 |  |  |  |  |
| 21/07/2020 | 21/07/2020 | 01 |  |  |  |  |
| 3c | Demodulation of AM signal: Diode detector | 22/07/2020 | 22/07/2020 | 01 |  |  |  |  |
| practical diode detector | 24/07/2020 | 24/07/2020 | 01 |  |  |  |  |

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|  |  |  | Automatic gain control, AGC types. | 25/07/2020 | 25/07/2020 | 01 |  |  |  |  |  |
| 3d | Concept of pre-emphasis and De-emphasis | 27/07/2020 | 27/07/2020 | 01 |  |  |  |  |
| Generation of FM using direct, varactor diode | 28/07/2020 | 28/07/2020 | 01 |  |  |  |  |
| reactance modulator | 29/07/2020 | 29/07/2020 | 01 |  |  |  |  |
| and indirect method (Armstrong method) | 31/07/2020 | 31/07/2020 | 01 |  |  |  |  |
| 01/08/2020 | 01/08/2020 | 01 |  |  |  |  |
| 3e | Block diagram of FM receiver and its working with waveforms | 03/08/2020 | 03/08/2020 | 01 |  |  |  |  |
| FM detector circuits: Ratio detector | 04/08/2020 | 04/08/2020 | 01 |  |  |  |  |
| 05/08/2020 | 05/08/2020 | 01 |  |  |  |  |
| and PLL as FM demodulator | 07/08/2020 | 07/08/2020 | 01 |  |  |  |  |
|  | Revision for Test | 08/08/2020 | 08/08/2020 | 01 |  |  |  |  |
| **04**  **(10)** | **CO 305.4** |  | **Wave propagation** | | | | | | |  |  |
| 4a | Concept of propagation of radio waves | 10/08/2020 | 10/08/2020 | 01 |  |  |  | Video, PPT  Online |  |
| 4b | Ground Wave propagation | 11/08/2020 | 11/08/2020 | 01 |  |  |  |  |
| 4c | Sky wave: Ionospheric layers, | 12/08/2020 | 12/08/2020 | 01 |  |  |  |  |
| Concept of actual height and virtual height, | 14/08/2020 | 14/08/2020 | 01 |  |  |  |  |
| Critical frequency, skip distance , skip zone, concept of fading, maximum usable frequency, multiple hop sky wave propagation | 17/08/2020 | 17/08/2020 | 01 |  |  |  |  |
| 4b | Space Wave propagation : line of sight, | 18/08/2020 | 18/08/2020 | 01 |  |  |  |  |
| 4d | multipath space wave propagation , optical and radio horizon, shadow zones | 19/08/2020 | 19/08/2020 | 01 |  |  |  |  |
| 4e | Duct propagation (microwave space-wave propogation) | 21/08/2020 | 21/08/2020 | 01 |  |  |  |  |
| Troposphere scatter propagation. | 22/08/2020 | 22/08/2020 | 01 |  |  |  |  |
|  | Revision | 24/08/2020 | 24/08/2020 | 01 |  |  |  |  |

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| **05**  **(14)** | **CO 305.5** |  | **Antennas** | | | | | | |  |  |
| 5a | Antenna fundamentals | 25/08/2020 | 25/08/2020 | 01 |  |  |  | Board Chalk, Duster, PPT |  |
| 5b | Resonant antenna and Non-resonant antennas | 26/08/2020 | 26/08/2020 | 01 |  |  |  |  |
| 5c | Antenna parameters : Radiation pattern , polarization, bandwidth, beamwidth, | 28/08/2020 | 28/08/2020 | 01 |  |  |  |  |
| 5c | antenna resistance, directivity and power gain, antenna gain | 29/08/2020 | 29/08/2020 | 01 |  |  |  |  |
| 5d | Dipole antenna: Half wave dipole antenna (Resonant Antenna) & its Radiation pattern. | 31/08/2020 | 31/08/2020 | 01 |  |  |  |  |
| Folded dipole antenna and its radiation pattern, | 01/09/2020 | 01/09/2020 | 01 |  |  |  |  |
| Radiation pattern for Dipole Antenna of different length | 02/09/2020 | 02/09/2020 | 01 |  |  |  |  |
| Loop antenna, Telescopic antenna, | 04/09/2020 | 04/09/2020 | 01 |  |  |  |  |
| Yagi-Uda antenna | 05/09/2020 | 05/09/2020 | 01 |  |  |  |  |
| Micro wave antenna – Dish antenna, | 07/09/2020 | 07/09/2020 | 01 |  |  |  |  |
| Horn antenna | 08/09/2020 | 08/09/2020 | 01 |  |  |  |  |
| and Micro-strip patch antennae- Rectangular, | 11/09/2020 | 11/09/2020 | 01 |  |  |  |  |
| square and circular  (Structure, radiation pattern and application of antennas) | 12/09/2020 | 12/09/2020 | 01 |  |  |  |  |
|  | Revision/test | 14/09/2020 | 14/09/2020 | 01 |  |  |  |  |

Name & Signature of Faculty Name & Signature of HOD