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| DISCIPLINE: Electrical & Electronics Engg. | SEMESTER: 4 th Semester | NAME OF THE TEACHING FACULTY: Mr.Bibhuti Gampai PTGF IN EEE |
| SUBJECT: CONTROL SYSTEM (TH-04) | NO OF DAYS/PER WEEK CLASSES ALLOTTED: 3 | SEMESTER FROM DATE: 22.12.2025 TO DATE: 18.04.2026 NO OF WEEKS: 15 |

| Week | Class Day | Topics |
|------------------------|-----------------|---------------------------------------------------------------------|
| | | 1. Open loop-and closed loop control systems |
| 1st | 1st | Feedback principle |
| | 2nd | Transfer function of LTI systems |
| | 3rd | Mechanical and Electromechanical system |
| 2nd | 1 ST | ASSIGNMENT |
| | 2 ND | Force voltage and force current analogy |
| | 3 RD | Block diagram representation - block diagram reduction |
| 3rd | 1st | CLASS NOTE REVISION |
| | 2nd | Signal flow graph - Mason's gain formula - characteristic equation. |
| | 3rd | CLASS TEST |
| 4th | | 2. Time domain analysis of control systems |
| | 1 ST | Standard test signal |
| | 2 ND | Transient and steady state response |
| | 3 RD | ASSIGNMENT |
| 5th | 1st | Time domain specifications |
| | 2nd | first and second order systems |
| | 3rd | ASSIGNMENT |
| 6th | 1 ST | Step responses of first and second order systems |
| | 2 ND | CLASS NOTE REVISION |
| | 3 RD | CLASS TEST |
| 7th | | 3. Error analysis |
| | 1st | Steady state error analysis |
| | 2nd | static error coefficient of type 0, 1, 2 systems |
| | 3rd | Dynamic error coefficients |
| 8th | 1 ST | ASSIGNMENT |
| | 2 ND | Concept of stability: Time response for various pole location |
| | 3 RD | stability of feedback system |
| 9th | 1st | CLASS NOTE REVISION |
| | 2nd | Route's stability criterion |
| | 3rd | CLASS TEST |
| 10th | | 4. Root locus and Polar plot |
| | 1 ST | General rules for constructing Root loci |
| | 2 ND | stability from root loci |
| | 3 RD | ASSIGNMENT |
| 11th | 1st | Effect of addition of poles and zeros. |
| | 2nd | Lag, Lead and Lead Lag compensators |
| | 3rd | Nyquist stability criterion |

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| 12 th | 1 ST | Nichols chart |
| | 2 ND | Non-minimum phase system |
| | 3 RD | transportation lag |
| 13 th | 1st | CLASS TEST |
| | | 5. Frequency domain analysis |
| | 2nd | Frequency domain specifications |
| | 3rd | Analysis based on Bode plot |
| 14 th | 1 ST | Log magnitude vs. phase plot |
| | 2 ND | ASSIGNMENT |
| | 3 RD | State space model |
| 15 th | 1st | State Transition matrix |
| | 2nd | CLASS NOTE REVISION |
| | 3rd | CLASS TEST |

G. Bibhuti
22.12.25
Lecturer

Omkar
HOD 22.12.25

Principal
22/12/25

