

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



PROGRESS REGISTER

Session-2022-2023

Discipline: Electrical Engg.

Semester: 6th

Subject: Control system Engg.

Name of the Teaching Faculty: Subhasis Nanda

Section B

Subject: Control System Engg. No. of Days/per week class allotted 5

Semester From Date: 18-2-23 To Date: 23-05-23 No. of Weeks: 15

| Date | Topics to be covered as per Lesson Plan | Topics actually covered | Points/contents Discussed (in brief) | Signature of Teacher |
|----------|---|-------------------------|---|-----------------------------|
| 13/02/23 | Introduction. | - do - | - do - | <u>S. Suresh</u> 13/2/23 |
| 14/02/23 | Classification of CS | - do - | open, closed. Time variant, Invariant. SISO, MIMO. | <u>S. Suresh</u> 14/2/23 |
| 15/02 | open loop CS | - do - | - do - | <u>S. Suresh</u> 15/2/23 |
| 17/02 | closed loop CS | - do - | - do - | <u>S. Suresh</u> 17/2/23 |
| 22/02 | Effect of feedback | do - | do - | <u>S. Suresh</u> 22/2/23 |
| 24/02 | Standard Test Signal. | - do - | Step, ramp, Parabolic, Impulse. | <u>S. Suresh</u> 24/2/23 |
| 25/02 | Servomechanism | - do - | do - | <u>S. Suresh</u> 25/2/23 |
| 27/02 | Transfer func | do - | - do - | <u>S. Suresh</u> 27/2/23 |
| 28/02 | Impulse respo | - do - | - do - | <u>S. Suresh</u> 28/2/23 |
| 01/03 | Poles & Zeros. | - do - | - do - | <u>S. Suresh</u> 01/3/23 |
| 03/03 | Problem Practice | - do - | - do - | <u>S. Suresh</u> 03/3/23 |

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|-------|---|-------------------------|--------------------------------------|-------------------------|
| 04/03 | Problem Paeth | - do - | - do - | <u>Sund</u> |
| 06/03 | Mathematical Modeling | - do - | Man, spring, damper, RLC series, etc | <u>Sund</u> 06/03/21 |
| 10/03 | Analogous | - do - | - do - | <u>Sund</u> 10/03/21 |
| 11/03 | Problem Paeth | - do - | - do - | <u>Sund</u> 11/03/21 |
| 13/03 | Components of CS | - do - | - do - | <u>Sund</u> 13/03/21 |
| 14/03 | DC servomotor | - do - | - do - | <u>Sund</u> 14/03/20 |
| 15/03 | AC Servomotor | - do - | - do - | <u>Sund</u> 15/03/20 |
| 17/03 | Technique | - do - | - do - | <u>Sund</u> 18/03/21 |
| 18/03 | Synthesias | - do - | - do - | <u>Sund</u> 18/03/21 |
| 20/03 | Cyrospe - | - do - | - do - | <u>Sund</u> 20/03/21 |
| 21/03 | Block diagram Algebra - | - do - | - do - elements of block diagram | <u>Sund</u> 21/03/21 |

Subject: C.S.E. No. of Days/per week class allotted 05

Semester From Date: 16.02.23 To Date: 23.05.23 No. of Weeks: 15

| Date | Topics to be covered as per Lesson Plan | Topics actually covered | Points/contents Discussed (in brief) | Signature of Teacher |
|-------|---|-------------------------|--|--------------------------|
| 22/03 | Block diagram - | of closed loop | Block diagram - | <u>Sasand</u> 22/3/23 |
| 24 | Block diagram - | Rules of Reduction. | -d- | <u>Sasand</u> 24/3/23 |
| 25 | Transfer function | from Block diagram. | -d- | <u>Sasand</u> 25/3/23 |
| 27 | Problem Practice | -d- | -d- | <u>Sasand</u> |
| 28 | " | -d- | -d- | <u>Sasand</u> |
| 29 | SFG. | Definition | Properties, Elements. | <u>Sasand</u> 29/3/23 |
| 31 | SFG | Equation. | drawn - | <u>Sasand</u> |
| 03/04 | Problem Practice | -d- | -d- | <u>Sasand</u> 3/4/23 |
| 04 | Mason's gain formula | -d- | $T = \sum \frac{\Delta_k P_k}{\Delta}$ | <u>Sasand</u> 24/4/23 |
| 05 | Problem Practice | -d- | -d- | <u>Sasand</u> |
| 06 | " | -d- | -d- | <u>Sasand</u> |

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Semester From Date : _____ To Date : _____ No. of Weeks : _____

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| 10 | Time Response | of CS. | -d- | |
| 11 | Standard 1st type | step, ramp, Parabolic | -d- | |
| 12 | Time Response | of 1 st order CS | Subject to step input | |
| 13 | // | // | Subject to impulse input. | <u>Sand</u> |
| 14 | // | of 2 nd order CS | Subject to step input. | |
| 18 | // | Specifications Definition. | $t_r, t_p, M_p,$ $t_s, e_n.$ | |
| 19 | // | Derivation | $t_r, t_p, M_p,$ $t_s, e_n.$ | |
| 20 | Problem Practice | -d- | -d- | |
| 21 | // | -d- | -d- | |
| 24 | Steady state error. | Definition | Formulae. | <u>Sand</u> |
| 25 | // | Constant | $K_p, K_v, K_a.$ | |

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| 26 | Steady state error - | For type 0, 1, 2 - | -d- | |
| 27 | Effect of adj. poles & zeros | to transfer function | -de- | |
| 28 | Response with | P, PI | Controlled | |
| 01/05 | " | PD & PID | " | <u>Singh</u> |
| 02 | Problem sheet | -de- | -d- | |
| 03 | Stability Analysis. | w.r.to. position of roots | in L.H.S, origin, R.H.S. | |
| 04 | Routh Hurwitz Criterion. | Routh Array | -de- | |
| 08 | Problem sheet | -de- | -d- | |
| 09 | Root locus concept | -de- | -d- | |
| 10 | Construction of Root locus | Rules. | Properties, | |
| 11 | " | Finding Parameter | 10 points. | |

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| 12/05 | Drawing of Root locus. | - do - | - do - | |
| 15 | Polar Plot | - do - | - do - | |
| 16 | Bode Plot | - do - | - do - Magnitude Plot | <u>S. S. S.</u> |
| 17 | // | - do - | Phase Plot | |
| 18 | Nyquist Plot | - do - | - do - | |
| 22 | M Circle N circle | - do - | - do - | |
| 23/05 | Stability | - do - | - do - | <u>S. S. S.</u> |
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