PMRF-ISSS Teaching Programme
Prime Minister Research Fellowship students' teaching requirement
facilitated by the Institute of Smart Structures and Systems

Module PMRF-ISSS041/II/2024

Linear Control Systems

Name of the PMRF student

Ratnangshu Das

Required background of the students taught

Introductory level course for students of ME, EE, AE, particularly interested in robotics.

Prerequisites: MATLAB, Linear Algebra

Details of the content of the module

Week 1: Introduction to linear control systems with examples, State Transition Matrix, Solutions to LTI Systems.

Week 2: Equilibrium points, Linearization, Stability, Lyapunov Equation, Examples.

Week 3: Controllability, Reachability, Stabilizability, Grammians, Controllable Decomposition.

Week 4: Observability, Constructability, Detectability, State Estimation, Observable Decomposition.

Week 5: Kalman Decomposition, Pole Placement, Observer Design.

Week 6: Basics of Optimal Control, Linear Quadratic Regulator, Ricatti Equation
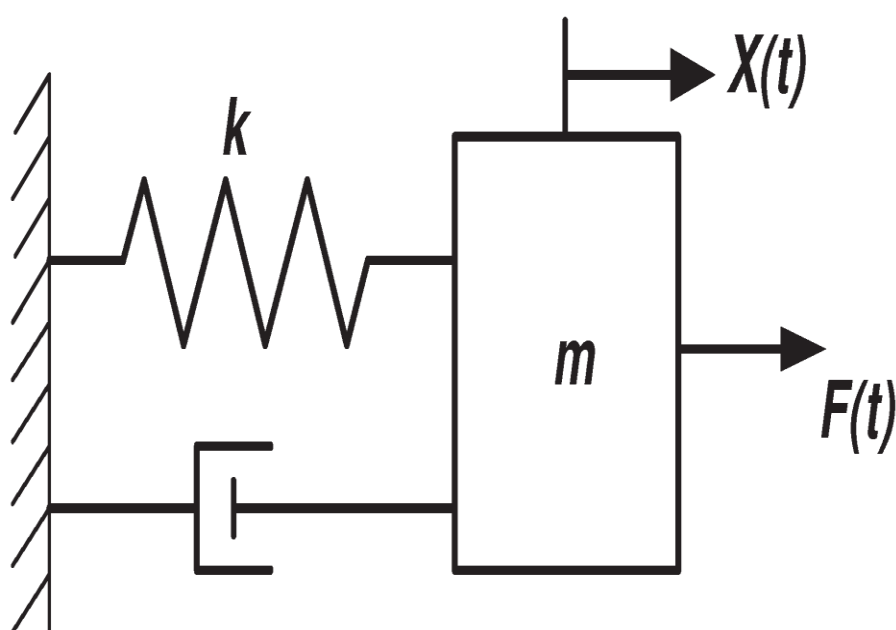
Schedule of the module

Start Date: 01 March, 2024

Live lectures will be conducted on Wednesdays and Fridays from 10:30 am to 12:30 pm

End Date: Tentatively 12 April, 2024

Meeting link : Will be shared later

Link

Contact email ID: isss.forum@gmail.com

Registration link: https://forms.office.com/r/ET36fsUeTJ