Mathematical aspects of control theory

Course Title	Mathematical aspects of control theory
Course Category	Pedagogy / Specialized Skills/ Research/ Generalized skills
Relevant Discipline(s)	Mech-Engg, Elect-Engg, Electronics & TeleComm Engg, Chemical Engg, Aero space Engg, Mathematics
Duration of course in equivalent integer no. of days (min 6 days, 1 day = 3 hrs of lectures/hands on sessions)	**10 days**
Proposed dates	5th to 14th Dec 2020 Everyday: 5:00 PM – 6:30 PM, 7:00 PM – 8:30 PM

Brief Course Description and Course Contents
- Basic problems arising in control - Linear systems models: autonomous and non-autonomous - Linear algebra tools and their relevance - Fundamentals of linear algebra - Rank, Singular Value Decomposition (SVD) - Eigenvalues, eigenvectors, eepeated eigenvalues - Link with poles, zeros of an LTI system - Stability for autonomous and non-autonomous systems - Controllability and observability of LTI systems - Reachability and detectability - Pole placement and observer design - Lyapunov theory for LTI systems as a special case - Tutorials on numerical computation packages

Instructor Details			
S. No.	Name of the Instructor	Department	Email
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