Subject	Fund. Of Control Sys.	**Course Code**	CT227	**Theoretical**	4 hrs / wk
Semester	4	**Prerequisite**	MA252	**Practical**	0 hrs / wk

Program Learning Component

Week 1-3

- **To understand the principle of automatic control.**
- **The ability to introduce the concept of basic control systems.**
- **To understand the concept of Controller design.**

Specific Learning Outcomes	Resources	Practical
• **To understand the:** basic principle of automatic control. Types and Models of automatic control Systems Block diagrams and Signal flow charts. • **Comprehend an overview of**: Relational data model..	A computer & data-show. White board	

Week 4-5

- **To understand the methods of mathematical modeling of dynamic systems.**
- **To understand the differences between open loop and closed loop control Systems.**

Specific Learning Outcomes	Resources	Practical
• **Understanding of the:** Methods of mathematical modeling of dynamic systems. • **Comprehend:** The feedback control Systems. The response of different control systems.	A computer & data-show. White board	Ability to create a simulink control system model (linear & nonlinear)

Week 6-11

- **To understand the behavior of dynamic systems.**
- **To understand the Errors of steady state of the dynamic systems.**
- **To understand the Stability issues of control systems.**

Specific Learning Outcomes	Resources	Practical
• **understanding the:**	A computer &	Ability to simulate a

	Techniques of Laplace transform, the dynamic systems behavior. Signal flow chart, models of dynamic systems. Errors associated with steady state of dynamic systems. Stable and Unstable Control Systems..	data-show. White board.	simple control systems Ability to analyze and simulate a control system using Matlab program
Week 12-14	• **Ability to analysis in Frequency response domain.** • **Ability to use simulation tools by MATLAB for control sytems.**		
	Specific Learning Outcomes	**Resources**	**Practical**
	• **Understanding the:** Root locus methods for decomposition of control systems Controller design. Frequency response Bode Blot design. • Simulation process of control systems using **MAT LAB**.	A computer & data-show. White board	Ability to design the control systems using matlab. Obtain the transfer function practically