

***M. Tech. And Dual Degree (M.Tech. and Ph.D.)
in Cyber Physical Systems***

Proposed Program's Structure Overall Structure

Category	Program Core (MC)	Program Elective (ME)	Open Elective (MO)	Project (MP)	Total Graded Credits	Total Graded + Nongraded Credits
Credits	18	18	06	16	58	62

Semester wise distribution of credits

Cat.	Course Title	L-T-P	Credits	Cat.	Course Title	L-T-P	Credits
I Semester				II Semester			
MC	Introduction to Cyber Physical Systems	3-0-0	3	MC	Security in CPS	2-0-0	2
MC	Cyber Physical System Modelling and Simulation Laboratory	0-0-2	1	MC	Data Communication and Networking	3-0-0	3
				MC	Advanced Control System	3-0-0	3
MC	Introduction to Modelling (Fractal offered by Dept. Of Mathematics)	1-0-0	1	MC	Embedded System Design	3-0-0	3
MC	Simulation of Dynamical Systems	1-0-0	1	ME	Program Elective-3	3-0-0	3
ME	Program Elective-1	3-0-0	3	MC	Embedded System Design Laboratory	0-0-2	1
ME	Program Elective-2	3-0-0	3				
MO	Open Elective-1	3-0-0	3				
NG	Professional Ethics	1-0-0	1	NG	Technical Communication	1-0-0	1
Total(Graded+Non-graded)			16	Total(Graded+Non-graded)			16
III Semester				IV Semester			
MP	Project-1		6	MP	Project-2		10
ME	Program Elective-4	3-0-0	3	MO	Open Elective- 2	3-0-0	3
ME	Program Elective-5	3-0-0	3	NG	IP Management and Exploitation	1-0-0	1
ME	Program Elective-6	3-0-0	3				
NG	Systems Engineering and Project Management	1-0-0	1				
Total(Graded+Non-graded)			16	Total(Graded+Non-graded)			14

List of Program Electives

Course Title	L-T-P	Credits	Department offers the course
Computer Vision	3-0-0	3	CSE
Advanced Digital Signal Processing	3-0-0	3	EE
Vehicular Ad-Hoc Networks(VANETs)	3-0-0	3	CSE
Edge & Fog Computing	3-0-0	3	CSE
Robotics : Fractal 1 Robot Modelling	1-0-2	2	ME
Robotics : Fractal 2 Control	1-0-0	1	ME
Robotics : Fractal 3 Motion Planning and Programming	1-0-0	1	ME
Machine Learning I	3-0-0	3	CSE
Digital and Systems-on-Chips Design	3-0-0	3	EE
Introduction to Virtual Reality	3-0-0	3	CSE
Smart Grid	3-0-0	3	EE
Adaptive Signal processing	3-0-0	3	EE
Computer Architecture	3-0-0	3	CSE
Digital Twin	3-0-0	3	EE
Machine Learning II	3-0-0	3	CSE
Artificial Intelligence I	3-0-0	3	CSE

Artificial Intelligence II	3-0-0	3	CSE
Smart Manufacturing	1-0-2	2	ME
Resource Constrained AI	3-0-0	3	CSE
Real Time Communications	3-0-0	3	EE
Industry 4.0 Applications in Manufacturing Systems	1-0-0	1	ME
Optimization	1-0-0	1	Mathematics

The department may add new electives from time to time.