Curriculum for Dual Degree

B.Tech. in Mechanical Engineering & M.Tech. in AI and Robotics

(From The Academic Year 2024-25)



Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram Chennai-600 127

		Semester 1							
S.No	Course Code	Course Name Category				Р	С		
1	MA1000	Calculus	BSC	3	1	4			
2	PH1000	Engineering Electromagnetics	BSC	3	0	0	3		
3	EC1000	Electrical Circuits for Engineers	BEC	3	1	0	4		
4	CS1000	Problem Solving and Programming	BEC	3	0	0 3			
5	ME1000	Materials for Engineers	BEC	3	0	0	3		
6	DS1000	Foundation for Engineering and Product Design	DSC	1	2	0	3		
7	PH1001	Engineering Electromagnetics Practice	BSC	0	0	3	1.5		
8	CS1001	Problem Solving and Programming Practice	BEC	0	0	3	1.5		
9	HS1000	Effective Language and Communication Skills	HSC	1	0	2	2		
10	HS1001	NSO/NCC/SSG/NSS	HSC	0	0	2	P/F		
							25.0		
	1	Semester 2	1	1	1				
S.No	Courses Code	Course Name	Category	L	Т	Р	С		
1	MA1001	Differential Equations	BSC	3	1	0	4		
2		Science Elective 1	BSC	3	1	0	4		
3	ME1001	Engineering Graphics	BEC	2	0	4	4		
4	CS1002	Elementary Data Structures and Logical Thinking	ITC	3	0	0	3		
5	DS1001	Sociology of Design	DSC	1	2	0	3		
6	ID1000	Design and Manufacturing Lab	ITC	0	0	2	1		
7	ME1004	Engineering Mechanics	PCC	3	0	0	3		
8	CS1003	Elementary Data Structures and Logical Thinking Practice	ITC	0	0	4	2		
9	ME1005	Mechanics and Materials Practice	PCC	0	0	2	1		
10	HS1001	NSO/NCC/SSG/NSS	HSC	0	0	2	P/F		
11	11 HS1002 Earth, Environment and Design				0	0	P/F		
							25.0		

		Semester 3						
S.No	Course Code	Course Name	Category	L	Т	P	С	
1		Science Elective 2	BSC	3	1	0	4	
2	DS2000	Systems Thinking for Design	Design DSC 1 2					
3	ME2000	Engineering Thermodynamics	PCC	3	1	0	4	
4	ME2001	Fluid Mechanics and Fluid Machinery	PCC	3	1	0	4	
5	ME2002	Mechanics of Materials	PCC	3	1	0	4	
6	ME2003	Manufacturing Processes - 1	PCC	3	1	0	4	
7	ME2004	Manufacturing Processes Practice - 1	PCC	0	0	4	2	
8	HS2000	Indian Constitution, Essence of Indian Traditional Knowledge	HSC	1	0	0	P/F	
							25.0	
		Semester 4	1			ı		
S.No	Course Code	Course Name	Category	L	Т	Р	C	
1		Science Elective 3	BSC	3	1	0	4	
2	DS2001	Smart Product Design	DSC	1	2	0	3	
3	ME2005	Heat Transfer	PCC	3	1	0	4	
4	ME2006	Kinematics and Dynamics of Machinery	PCC	3	1	0	4	
5	ME2007	Manufacturing Processes - 2	PCC	3	1	0	4	
6	ME2008	Fluid Mechanics and Heat Transfer Practice	PCC	0	0	3	1.5	
7	ME2009	Mechanical Design Practice	PCC	0	0	4	2	
8	ME2010	Manufacturing Processes Practice - 2	PCC	0	0	3	1.5	
9	HS2001	Human Values and Stress Management	HSC	1	0	0	P/F	
							24.0	
	T ~	Semester 5						
S.No	Courses Code	Course Name	Category	L	Т	Р	С	
1	CS2005	Introduction of Data Science for Engineers	ITC	3	0	2	4	
2	DS3000	Entrepreneurship and Management Functions	DSC	1	2	0	3	
3	ME3000	Design of Machine Elements	PCC	3	1	0	4	
4		Professional Elective Course 1	PEC	3	1	0	4	
5	ME3002	Thermal Engineering Practice	PCC	0	0	3	1.5	
6	ME3003	Production Drawing and Inspection Practice	PCC	0	0	3	1.5	
7	ME3001	Measurement and Automation	PCC	3	1	0	4	
8	HS3000	Professional Ethics and Organizational Behaviour	HSC	1	0	0	P/F	
	•		•				22.0	

		Semester 6								
S.No	Courses Codes	Course Name	Category	L	ТР		C			
1	DS3001	Prototyping and Testing	DSC	1	2	+ +				
2		Professional Elective Course 2	PEC	3	1	0 4				
3		Professional Elective Course 3	PEC	3	1	0	0 4			
4		Elective Course 1	ELC	3	1	0	4			
5		Elective Course 2	ELC	3	1	0	4			
6	HS3001	Professional Communication	HSC	1	0	2	2			
7	HS3002	Intellectual Property Rights	HSC	1	0	0	P/F			
			·				21.0			
		Semester 7		•						
S.No	Courses Codes	Course Name	Category	L	Т	Р	С			
1		Mathematical Foundations for AI	PCC	3	1	0	4			
2		Modelling and Control of Robot Manipulators	PCC	3	0	2	4			
3		Design of Manufacturing Automation Systems	PCC	3	0	2	4			
4		Professional Elective Course 4	PEC	3	1	0	4			
5		Elective Course 3	ELC	3	1	0	4			
6		Elective Course 4	3	1	0	4				
			•				24.0			
		Semester 8								
S.No	Courses Codes	Course Name	Category	L	Т	P	С			
1		AI for Autonomous Systems	PCC	3	1	0	4			
2		Sensors and Actuators for Robots	PCC	3	0	2	4			
3		Professional Elective Course 5	PEC	3	1	0	4			
4		Professional Elective Course 6	PEC	3	1	0 4				
5		Elective Course 5	ELC	3	1	0	4			
6		Elective Course 6	ELC	3	1	0	4			

	Semester 9										
S.No	Courses Codes	Course Name	Category	L	Т	P	С				
1		Project Phase I (May – July)	0	0	8	4					
2		Project Phase II (Aug – Nov) PCD					6				
							10.0				
		Semester 10									
S.No	Courses Codes	Course Name	Category	L	Т	P	С				
1		Project Phase III (Dec – May)	PCD	0	0	20	10.0				
							10.0				

Semester wise Credit Distribution

Category												
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Total	%
Basic Science Course (BSC)	8.5	4	0	0	0	0	0	0	0	0	12.5	6.0
Science Elective Course (SEC)	0	4	4	4	0	0	0	0	0	0	12	5.7
Basic Engineering Course (BEC)	11.5	4	0	0	0	0	0	0	0	0	15.5	7.4
Design Course (DSC)	3	3	3	3	3	3	0	0	0	0	18	8.6
IT Skill Course (ITC)	0	6	0	0	4	0	0	0	0	0	10	4.8
Professional Core Course (PCC)	0	4	18	17	11	0	12	8	0	0	70	33.3
Professional Elective Course (PEC)	0	0	0	0	4	8	4	8	0	0	24	11.4
Elective Course (ELC)	0	0	0	0	0	8	8	8	0	0	24	11.4
Humanities and Social Science Course (HSC)	2	0	0	0	0	2	0	0	0	0	4	1.9
Professional Career Development (PCD)	0	0	0	0	0	0	0	0	10	10	20	9.5
Total	25.0	25.0	25.0	24.0	22.0	21.0	24.0	24.0	10	10	210.0	100.0