KGISL INSTITUTE OF TECHNOLOGY: COIMBATORE – 641 035
REGULATIONS 2024 (for students admitted from AY2024-25)
CHOICE BASED CREDIT SYSTEM
B.E. MECHANICAL ENGINEERING
CURRICULUM FOR SEMESTERS I - VIII

OVERVIEW OF CREDITS

SEMESTER	HSMC	BSC	ESC	PCC	PEC	OEC	EEC	TOTAL
I	4	10	9					23
II	4	9	9				3	25
III		4		20			2	26
IV		4		15			6	25
V	2			12	6		3	23
VI				7	9	3	4	23
VII	3			3		3	6	15
VIII							10	10
TOTAL	13	27	18	57	15	6	34	170
% OF CATEGORY	7.6 %	15.9 %	10.6 %	33.5 %	8.8 %	3.5 %	20 %	100 %

CATEGORY OF COURSES

HSMC	Humanities Science and Management Course	**PEC**	Professional Elective Course
BSC	Basic Science Course	**OEC**	Open Elective Course
ESC	Engineering Science Course	**EEC**	Employability Enhancement Course
PCC	Professional Core Course	**MC**	Mandatory Course

TYPE OF COURSES

LIT	Laboratory Integrated Theory	**PCD**	Personality Character Development
T	Theory	**VC**	Value Added Course
L	Laboratory Course	**COT**	Community Outreach and Intervention through Technical Activities
IP	Induction Programme	**IT**	Industrial Training/ Internship
MC	Mandatory Course	**CC**	Comprehension Course
NCC	NCC Credit Course	**PW**	Project Work

CREDIT ALLOCATION

S.No.	Category	Suggested Breakup of Credits	Credits
1	Humanities, Social Sciences and Management Courses (HSMC)	10-13*	13
2	Basic Science Courses (BSC)	23 – 27*	27
3	Engineering Science Courses (ESC)	18 - 22*	18
4	Professional Core Courses (PCC)	50-62*	57
5	Professional Elective Courses (PEC)	15-18*	15
6	Open Elective Courses (OEC)	6*	6
7	Employability Enhancement Courses (EEC)	30-36*	34
8	Mandatory Courses (MC)	Non Credit	Non Credit
	Total	**165 - 170***	**170**

SEMESTER – I							
S. NO	**COURSE CODE**	**COURSE TITLE**	**COURSE TYPE**	**PERIODS / WEEK**		**CREDITS**	**CATEGORY**
				L-T-P	**TCP***		
1	24UTA161	தமிழர் மரபு / Heritage of Tamils	T	1-0-0	1	1	HSMC
2	24UEN171	Communicative English for Engineers and Professionals - I	LIT	2-0-2	4	3	HSMC
3	24UMA161	Calculus and Matrix Algebra	T	3-1-0	4	4	BSC
4	24UPY172	Engineering Physics	LIT	2-0-2	4	3	BSC
5	24UCH173	Materials Chemistry	LIT	2-0-2	4	3	BSC
6	24UCS161	Computational Thinking	T	2-1-0	3	3	ESC
7	24UCS171	Python Programming	LIT	3-0-2	5	4	ESC
8	24UME266	Engineering Practices Laboratory	L	0-0-4	4	2	ESC
9	24UPD191	Personality and Character Development	PCD	-	2	-	EEC
10	24UIP181	Induction Programme	IP	-	-	-	MC
11	24UMC001	Mandatory Course I - Yoga and Meditation Fundamentals	MC	1-0-0	1	-	MC
					Total Credits	**23**	

SEMESTER – II							
S. NO	**COURSE CODE**	**COURSE TITLE**	**COURSE TYPE**	**PERIODS / WEEK**		**CREDITS**	**CATEGORY**
				L-T-P	**TCP**		
1	24UTA261	தமிழரும் தொழில் நுட்பமும் / Tamils and Technology	T	1-0-0	1	1	HSMC
2	24UEN271	Communicative English for Engineers and Professionals - II	LIT	2-0-2	4	3	HSMC
3	24UMA261	Statistics and Numerical Methods	T	3-1-0	4	4	BSC
4	24UPY263	Physics for Mechanical Engineering	T	3-0-0	3	3	BSC
5	24UCH261	Environmental Sciences and Sustainability	T	2-0-0	2	2	BSC
6	24UCS271	Programming in C	LIT	2-0-4	6	4	ESC
7	24UEC271	Electrical and Instrumentation Engineering	LIT	2-0-2	4	3	ESC
8	24UME166	Engineering Graphics	L	0-0-4	4	2	ESC
9	24USD296	Skill Development Course	LIT	2-0-2	4	3	EEC
10	24UPD291	Personality and Character Development	PCD	-	2	-	EEC
11	24UMC002	Mandatory Course II – Emotional Balance and Mental Wellness	MC	1-0-0	1	-	MC
12	24UNC201	NCC Credit Course Level 1	NCC	-	-	1	-
					Total Credits	**25**	

SEMESTER – III							
S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UMA363	Transforms and Partial Differential Equations	T	3-1-0	4	4	BSC
2	24UME301	Engineering Mechanics	T	3-1-0	4	4	PCC
3	24UME302	Engineering Thermodynamics	T	3-1-0	4	4	PCC
4	24UME311	Engineering Materials and Metallurgy	LIT	2-0-2	4	3	PCC
5	24UME312	Fluid Mechanics and Machinery	LIT	3-0-2	5	4	PCC
6	24UME313	Manufacturing Processes	LIT	2-0-2	4	3	PCC
7	24UME321	Computer Aided Machine Drawing	L	0-0-4	4	2	PCC
8		Skill Development Elective I	L	0-0-4	4	2	EEC
9	24UPD391	Personality and Character Development	PCD	-	2	-	EEC
10	24UVC386	Value Added Course	VC	-	-	2	EEC
					Total Credits	**26**	

SEMESTER – IV							
S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UMA463	Optimization Techniques	T	3-1-0	4	4	BSC
2	24UME411	Hydraulics and Pneumatics	LIT	2-0-2	4	3	PCC
3	24UME412	Thermal Engineering	LIT	2-0-2	4	3	PCC
4	24UME413	Theory of Machines	LIT	2-0-2	4	3	PCC
5	24UME414	Manufacturing Technology	LIT	2-0-2	4	3	PCC
6	24UME415	Strength of Materials	LIT	2-0-2	4	3	PCC
7		Career Progression Elective	T	3-0-0	3	3	EEC
8		Skill Development Elective II	L	0-0-4	4	2	EEC
9	24UPD491	Personality and Character Development	PCD	-	2	-	EEC
10	24UCO492	Community Outreach And Intervention through Technical Activities	COT	-	1	1	EEC
11	24UVC486	Value Added Course	VC	-	-	2	EEC
12	24UNC401	NCC Credit Course Level 2	NCC	-	-	2	-
					Total Credits	**25**	

SEMESTER - V							
S. NO	**COURSE CODE**	**COURSE TITLE**	**COURSE TYPE**	**PERIODS / WEEK**		**CREDITS**	**CATEGORY**
				L-T-P	**TCP**		
1	24UHV501	Universal Human Values	T	2-0-0	2	2	HSMC
2	24UME501	Design of Machine Elements	T	3-0-0	3	3	PCC
3	24UME511	Heat and Mass Transfer	LIT	3-0-2	5	4	PCC
4	24UME512	Metrology and Measurements	LIT	2-0-2	4	3	PCC
5	24UME521	CAD / CAM Laboratory	L	0-0-4	4	2	PCC
6		Professional Elective I	T / LIT	-	-	3	PEC
7		Professional Elective II	T / LIT	-	-	3	PEC
8		Skill Development Elective III	L	0-0-4	4	2	EEC
9	24UME593	Industrial Training/ Internship	IT	-	-	1	EEC
10	24UPD591	Personality and Character Development	PCD	-	2	-	EEC
11	24UVC586	Value Added Course	VC	-	-	2	EEC
12		Mandatory Course III	MC	2-0-0	2	-	MC
					Total Credits	**23**	

SEMESTER – VI							
S. NO	**COURSE CODE**	**COURSE TITLE**	**COURSE TYPE**	**PERIODS / WEEK**		**CREDITS**	**CATEGORY**
				L-T-P	**TCP**		
1	24UME601	Design of Transmission Systems	T	3-0-0	3	3	PCC
2	24UME611	Finite Element Analysis	LIT	3-0-2	5	4	PCC
3		Professional Elective III	T / LIT	-	-	3	PEC
4		Professional Elective IV	T / LIT	-	-	3	PEC
5		Professional Elective V	T / LIT	-	-	3	PEC
6		Open Elective I	T / LIT	-	-	3	OEC
7		Skill Development Elective IV	L	0-0-4	4	2	EEC
8	24UPD691	Personality and Character Development	PCD	-	2	-	EEC
9	24UCO692	Community Outreach And Intervention through Technical Activities	COT	-	-	2	EEC
10	24UVC686	Value Added Course	VC	-	-	2	EEC
11		Mandatory Course IV	MC	2-0-0	2	-	MC
12	24UNC601	NCC Credit Couse Level 3	NCC	-	-	3	-
					Total Credits	**23**	

SEMESTER – VII							
S. NO	**COURSE CODE**	**COURSE TITLE**	**COURSE TYPE**	**PERIODS / WEEK**		**CREDITS**	**CATEGORY**
				L-T-P	**TCP**		
1	24UME701	Economics and Project Management	T	3-0-0	3	3	HSMC
2	24UME711	Mechatronics and IoT	LIT	2-0-2	4	3	PCC
3		Open Elective II	T / LIT	-	-	3	OEC
4	24UME793	Industrial Training / Internship	IT	-	-	2	EEC
5	24UME794	Comprehension Course	CC	2-0-0	2	2	EEC
6	24UME795	Mini Project	PW	0-0-4	4	2	EEC
7	24UVC786	Value Added Course	VC	-	-	2	EEC
					Total Credits	**15**	

SEMESTER – VIII							
S. NO	**COURSE CODE**	**COURSE TITLE**	**COURSE TYPE**	**PERIODS / WEEK**		**CREDITS**	**CATEGORY**
				L-T-P	**TCP**		
1	24UME895	Project Work	PW	0-0-20	20	10	EEC
					Total Credits	**10**	

MANDATORY COURSES

S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CATEGORY
				L-T-P	TCP	
1	24UMC001	Yoga and Meditation Fundamentals	T	1-0-0	1	MC
2	24UMC002	Emotional Balance and Mental Wellbeing	T	1-0-0	1	MC
3	24UMC003	Ethical behavior and code of conduct for Engineers	T	2-0-0	2	MC
4	24UMC004	Disaster Management	T	2-0-0	2	MC
5	24UMC005	Indian Constitution and Knowledge System	T	2-0-0	2	MC
6	24UMC006	Ergonomics and Industrial Safety	T	2-0-0	2	MC
7	24UMC007	Introduction to Women and Gender Studies	T	2-0-0	2	MC

CAREER PROGRESSION ELECTIVE

S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UCPE11	Entrepreneurship Development	T	3-0-0	3	3	EEC
2	24UCPE12	Research Methodology	T	3-0-0	3	3	EEC
3	24UCPE13	Career Development Course	T	3-0-0	3	3	EEC

CATEGORY: PROFESSIONAL ELECTIVE COURSES (PEC)

VERTICAL 1: ENGINEERING DESIGN							
S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UMEP11	Design Concepts in Engineering	T	3-0-0	3	3	PEC
2	24UMEP12	Design for Manufacture and Assembly	T	3-0-0	3	3	PEC
3	24UMEP13	Ergonomics in Design	T	3-0-0	3	3	PEC
4	24UMEP14	Vibration Analysis and Control	T	3-0-0	3	3	PEC
5	24UMEP15	Design of Jigs, Fixtures and Press Tools	T	3-0-0	3	3	PEC
6	24UMEP16	Machine Tool Design	T	3-0-0	3	3	PEC
7	24UMEP17	CAD / CAM	T	3-0-0	3	3	PEC
8	24UMEP18	Tribology and Industrial Applications	T	3-0-0	3	3	PEC
9	24UMEP19	Product Development and Life Cycle Management	T	3-0-0	3	3	PEC

VERTICAL 2: MATERIALS AND MANUFACTURING							
S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UMEP21	Physical Metallurgy	T	3-0-0	3	3	PEC
2	24UMEP22	Composite Materials	T	3-0-0	3	3	PEC
3	24UMEP23	Smart Materials and Structures	T	3-0-0	3	3	PEC
4	24UMEP24	Biomaterials and Ceramics	T	3-0-0	3	3	PEC
5	24UMEP25	Welding Technology	LIT	2-0-2	4	3	PEC
6	24UMEP26	Additive Manufacturing	LIT	2-0-2	4	3	PEC
7	24UMEP27	Lean Manufacturing	T	3-0-0	3	3	PEC
8	24UMEP28	Digital Manufacturing and IoT	T	3-0-0	3	3	PEC
9	24UMEP29	Non-Traditional Machining Processes	T	3-0-0	3	3	PEC
10	24UMEP30	Failure Analysis and Non-Destructive Testing	T	3-0-0	3	3	PEC

VERTICAL 3: INDUSTRIAL ENGINEERING							
S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UMEP31	Principles of Management	T	3-0-0	3	3	PEC
2	24UMEP32	Total Quality Management	T	3-0-0	3	3	PEC
3	24UMEP33	Industrial Safety	T	3-0-0	3	3	PEC
4	24UMEP34	Computer Integrated Manufacturing	T	3-0-0	3	3	PEC
5	24UMEP35	Plant Layout and Material Handling	T	3-0-0	3	3	PEC
6	24UMEP36	Lean Supply Chain Management	T	3-0-0	3	3	PEC
7	24UMEP37	Process Planning and Cost Estimation	T	3-0-0	3	3	PEC
8	24UMEP38	Industrial Management	T	3-0-0	3	3	PEC
9	24UMEP39	Operations Research	T	3-0-0	3	3	PEC

VERTICAL 4: THERMAL ENGINEERING							
S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UMEP41	Turbo machines	T	3-0-0	3	3	PEC
2	24UMEP42	Renewable Energy Resources and Systems	T	3-0-0	3	3	PEC
3	24UMEP43	Power Plant Engineering	T	3-0-0	3	3	PEC
4	24UMEP44	Advanced Internal Combustion Engines	LIT	2-0-2	4	3	PEC
5	24UMEP45	Heating, Ventilation and Air-Conditioning	LIT	2-0-2	4	3	PEC
6	24UMEP46	Thermal Power Engineering	T	3-0-0	3	3	PEC
7	24UMEP47	Computational Solid Mechanics	T	3-0-0	3	3	PEC
8	24UMEP48	Gas Dynamics and Jet Propulsion	T	3-0-0	3	3	PEC
9	24UMEP49	Computational Fluid Dynamics and Heat Transfer	LIT	2-0-2	4	3	PEC

VERTICAL 5: ROBOTICS AND AUTOMATION							
S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UMEP51	Sensors and Instrumentation	T	3-0-0	3	3	PEC
2	24UMEP52	Measurements and Controls	LIT	2-0-2	4	3	PEC
3	24UMEP53	Automation in Manufacturing	T	3-0-0	3	3	PEC
4	24UMEP54	Smart Manufacturing	T	3-0-0	3	3	PEC
5	24UMEP55	Robotics	LIT	2-0-2	4	3	PEC
6	24UMEP56	Embedded Systems and Programming	T	3-0-0	3	3	PEC
7	24UMEP57	Industry 4.0	T	3-0-0	3	3	PEC
8	24UMEP58	Microprocessor and Artificial Intelligence for Industry	T	3-0-0	3	3	PEC

VERTICAL 6: AUTOMOTIVE AND ENERGY ENGINEERING							
S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS	CATEGORY
				L-T-P	TCP		
1	24UMEP61	Automotive Engines and Subsystems	LIT	2-0-2	4	3	PEC
2	24UMEP62	Hybrid and Electric Vehicle Technology	T	3-0-0	3	3	PEC
3	24UMEP63	Smart Mobility and Vehicle Systems	T	3-0-0	3	3	PEC
4	24UMEP64	Bioenergy Conversion Technologies	T	3-0-0	3	3	PEC
5	24UMEP65	Energy Storage Devices	T	3-0-0	3	3	PEC
6	24UMEP66	Energy Conservation in Industries	T	3-0-0	3	3	PEC
7	24UMEP67	Energy Management and Equipment Design	T	3-0-0	3	3	PEC
8	24UMEP68	Carbon Footprint Estimation and Reduction Techniques	T	3-0-0	3	3	PEC
9	24UMEP69	Equipment for Pollution Control	T	3-0-0	3	3	PEC

OPEN ELECTIVES

B. TECH. ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS
				L-T-P	TCP	
1	24UADO01	Introduction to Artificial Intelligence and Machine Learning	T	3-0-0	3	3
2	24UADO02	Introduction to Data Science	T	3-0-0	3	3
3	24UADO03	Introduction to Big Data Analytics	T	3-0-0	3	3
4	24UADO04	Data Visualization Techniques	T	3-0-0	3	3
5	24UADO05	Introduction to Devops Tools	T	3-0-0	3	3
6	24UADO06	Fundamentals of Storage Technologies	T	3-0-0	3	3
7	24UADO07	Basics of Cloud Services	T	3-0-0	3	3

B.E. CSE (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS
				L-T-P	TCP	
1	24UAMO01	Fundamentals of Artificial Intelligence	T	3-0-0	3	3
2	24UAMO02	Principles of Machine Learning	T	3-0-0	3	3
3	24UAMO03	Fundamentals of Deep Learning	LIT	2-0-2	4	3
4	24UAMO04	Virtualization and Container Technologies	LIT	2-0-2	4	3
5	24UAMO05	Python Frameworks for Web Applications	LIT	2-0-2	4	3
6	24UAMO06	Fundamentals of Natural Language Processing	T	3-0-0	3	3
7	24UAMO07	AI for Mechanical Engineering	T	3-0-0	3	3
8	24UAMO08	AI for food processing	T	3-0-0	3	3
9	24UAMO09	AI for Game Development	T	3-0-0	3	3

B. TECH. COMPUTER SCIENCE AND BUSINESS SYSTEMS

S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS
				L-T-P	TCP	
1	24UCBO01	Modern Web Applications	T	3-0-0	3	3
2	24UCBO02	Applied Design Thinking	T	3-0-0	3	3
3	24UCBO03	Human Computer Interaction	T	3-0-0	3	3
4	24UCBO04	Social Information Network	T	3-0-0	3	3
5	24UCBO05	Artificial Intelligence and Expert Systems	T	3-0-0	3	3
6	24UCBO06	Usability Design of Software Applications	T	3-0-0	3	3
7	24UCBO07	Data Mining and Analytics	T	3-0-0	3	3

B.E. COMPUTER SCIENCE AND ENGINEERING

S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS
				L-T-P	TCP	
1	24UCSO01	Fundamentals of Data Structures	LIT	2-0-2	4	3
2	24UCSO02	Principles of Computer Networks	LIT	2-0-2	4	3
3	24UCSO03	Video Creation and Editing	LIT	2-0-2	4	3
4	24UCSO04	Fundamentals of Database Systems	LIT	2-0-2	4	3
5	24UCSO05	Basics of Web Development	LIT	2-0-2	4	3
6	24UCSO06	Introduction to Digital Currency	T	3-0-0	3	3

B.E. COMPUTER SCIENCE AND ENGINEERING (CYBER SECURITY)

S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS
				L-T-P	TCP	
1	24UCYO01	Cybersecurity Fundamentals	T	3-0-0	3	3
2	24UCYO02	Information Security Management	T	3-0-0	3	3
3	24UCYO03	Incident Response and Forensics	T	3-0-0	3	3
4	24UCYO04	Cyber Law and Ethics	T	3-0-0	3	3
5	24UCYO05	Security Operations	T	3-0-0	3	3
6	24UCYO06	Introduction to Open Source Intelligence	T	3-0-0	3	3

B.E. ELECTRONICS AND COMMUNICATION ENGINEERING

S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS
				L-T-P	TCP	
1	24UECO01	Remote Sensing Concepts	T	3-0-0	3	3
2	24UECO02	Sensors and Actuators	T	3-0-0	3	3
3	24UECO03	Concepts in Mobile Robots	T	3-0-0	3	3
4	24UECO04	Drone Technologies	T	3-0-0	3	3
5	24UECO05	Geographical Information System	T	3-0-0	3	3
6	24UECO06	Introduction to Embedded C	LIT	2-0-2	4	3
7	24UECO07	Fundamentals of Microprocessors and Microcontrollers	LIT	2-0-2	4	3
8	24UECO08	Energy Storing Devices	T	3-0-0	3	3
9	24UECO09	Semiconductor and Devices	T	3-0-0	3	3

B.Tech. INFORMATION TECHNOLOGY

S. NO	COURSE CODE	COURSE TITLE	COURSE TYPE	PERIODS / WEEK		CREDITS
				L-T-P	TCP	
1	24UITO01	Functional Programming	T	3-0-0	3	3
2	24UITO02	Fundamentals of Cryptography	T	3-0-0	3	3
3	24UITO03	Software Engineering	T	3-0-0	3	3
4	24UITO04	Concepts of Object Oriented Programming	LIT	2-0-2	4	3
5	24UITO05	Fundamentals of Computer Vision	T	3-0-0	3	3
6	24UITO06	Foundations of Block chain	T	3-0-0	3	3
7	24UITO07	Game Theory and Mechanism Design	T	3-0-0	3	3

GUIDELINES FOR CHOOSING COURSES UNDER PEC

	PEC- I	PEC- II		PEC- III	PEC- IV	PEC- V
	ENGINEERING DESIGN	MATERIALS AND MANUFACTURING	INDUSTRIAL ENGINEERING	THERMAL ENGINEERING	ROBOTICS AND AUTOMATION	AUTOMOTIVE AND ENERGY ENGINEERING
Cluster A	24UMEP11 Design Concepts in Engineering	24UMEP21 Physical Metallurgy	24UMEP33 Industrial Safety	24UMEP44 Advanced Internal Combustion Engines	24UMEP51 Sensors and Instrumentation	24UMEP61 Automotive Engines and Subsystems
	24UMEP13 Ergonomics in Design	24UMEP22 Composite Materials		24UMEP41 Turbo machines	24UMEP52 Measurements and Controls	24UMEP62 Hybrid and Electric Vehicle Technology
	24UMEP12 Design for Manufacture and Assembly	24UMEP23 Smart Materials and Structures			24UMEP56 Embedded Systems and Programming	24UMEP63 Smart Mobility and Vehicle Systems
		24UMEP24 Biomaterials and Ceramics				
Cluster B	24UMEP15 Design of Jigs, Fixtures and Press Tools	24UMEP26 Additive Manufacturing	24UMEP31 Principles of Management	24UMEP43 Power Plant Engineering	24UMEP54 Smart Manufacturing	24UMEP64 Bioenergy Conversion Technologies
	24UMEP16 Machine Tool Design	24UMEP27 Lean Manufacturing	24UMEP32 Total Quality Management	24UMEP42 Renewable Energy Resources and Systems	24UMEP57 Industry 4.0	24UMEP65 Energy Storage Devices
	24UMEP18 Tribology and Industrial Applications	24UMEP28 Digital Manufacturing and IoT	24UMEP38 Industrial Management	24UMEP46 Thermal Power Engineering		
Cluster C	24UMEP17 CAD / CAM	24UMEP25 Welding Technology	24UMEP36 Lean Supply Chain Management	24UMEP47 Computational Solid Mechanics	24UMEP55 Robotics	24UMEP66 Energy Conservation in Industries
		24UMEP29 Non-Traditional Machining Processes	24UMEP35 Plant Layout and Material Handling	24UMEP49 Computational Fluid Dynamics and Heat Transfer	24UMEP53 Automation in Manufacturing	24UMEP67 Energy Management and Equipment Design
			24UMEP37 Process Planning and Cost Estimation			
			24UMEP39 Operations Research			
Cluster D	24UMEP14 Vibration Analysis and Control	24UMEP30 Failure Analysis and Non-Destructive Testing	24UMEP34 Computer Integrated Manufacturing	24UMEP48 Gas Dynamics and Jet Propulsion	24UMEP58 Microprocessor and Artificial Intelligence for Industry	24UMEP68 Carbon Footprint Estimation and Reduction Techniques
Cluster E	24UMEP19 Product Development and Life Cycle Management			24UMEP45 Heating, Ventilation and Air-Conditioning		24UMEP69 Equipment for Pollution Control

Pre-requisite Courses	24UME301 Engineering Mechanics	24UPY172 Engineering Physics	24UME313 Manufacturing Processes	24UME302 Engineering Thermodynamics	24UEC271 Electrical and Instrumentation Engineering	24UEC271 Electrical and Instrumentation Engineering
	24UME413 Theory of Machines	24UCH173 Materials Chemistry	24UME414 Manufacturing Technology	24UME312 Fluid Mechanics and Machinery	24UME312 Fluid Mechanics and Machinery	24UCH261 Environmental Sciences and Sustainability
	24UME415 Strength of Materials	24UPY263 Physics for Mechanical Engineering	24UMA463 Optimization Techniques	24UME412 Thermal Engineering	24UME413 Theory of Machines	24UME412 Thermal Engineering
		24UME313 Manufacturing Processes		24UME511 Heat and Mass Transfer	24UME411 Hydraulics and Pneumatics	24UME501 Design of Machine Elements
		24UME311 Engineering Materials and Metallurgy				

Criteria for Choosing Courses for Professional Electives

PEC - I: Any course from any cluster is fine.

PEC - II: Can be from “Materials and Manufacturing” and “Industrial Engineering”. Any course from any cluster is fine.

PEC - III: Any course from any cluster is fine.

PEC - IV: Any course from any cluster is fine.

PEC - V: Better to choose a course from cluster A, C or D. Any other course is also fine.

It is better to choose Courses from a Cluster in the prescribed order

Open elective - Course Preferences for students belonging to MECH Department

S.No	Departments	Course Preference
1	AI & DS	24UADO02, 24UADO06
2	AI & ML	24UAMO01, 24UAMO07
3	CSBS	24UCBO03, 24UCBO07
4	CSE	24UCSO03, 24UCSO06
5	CYS	24UCYO01, 24UCYO04
6	ECE	24UECO02, 24UECO07
7	IT	24UITO01, 24UITO03