



Curriculum and Syllabi

B.E. MECHATRONICS ENGINEERING

SEMESTERS I to VIII

Regulations 2025

Programme: B.E. MECHATRONICS ENGINEERING

2025 Regulations

(2025-29 Batch Onwards)

Curriculum for Semesters I to VIII

SEMESTER I

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
1	25IP101	Makerspace - Induction Program	-	-	-	-	-	-	-	-	-	0	-	-
Theory Cum Practical Courses														
2	25ES101	Problem Solving Techniques using Python	3	0	2	3	45	0	30	45	120	4	50/50	ES
3	25HS101	English for Communication	3	0	2	3	45	0	30	45	120	4	50/50	HS
4	25ES102	Innovation and Design Thinking	1	0	2	1	15	0	30	15	60	2	100/0	ES
Theory Courses														
5	25MA101	Matrices and Calculus	3	1	0	4	45	15	0	60	120	4	40/60	BS
6	25PH101	Applied Engineering Physics	3	0	0	3	45	0	0	45	90	3	40/60	BS
7	25ES103	Engineering Graphics	2	1	0	3	30	15	0	45	90	3	40/60	ES
8	25AC101	Heritage of Tamils	1	0	0	1	15	0	0	15	30	1	100/0	AC
Practical Course														
9	25ES104	Engineering Practices Laboratory	0	0	4	0	0	0	60	0	60	2	60/40	ES

SEMESTER II

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Cum Practical Courses														
1	25ES201	Product Design and Development	1	0	2	1	15	0	30	15	60	2	100/0	ES
2	25ES205	Electronic Devices and Circuits	3	0	2	3	45	0	30	45	120	4	50/50	ES
3	25ME201	Conventional and Digital Manufacturing	1	0	4	1	15	0	60	15	90	3	50/50	PC
Theory Courses														
4	25MA201	Numerical Techniques	3	1	0	4	45	15	0	60	120	4	40/60	BS
5	25ES202	Engineering	3	0	0	3	45	0	0	45	90	3	40/60	ES

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
		Mechanics												
6	25CH201	Engineering Chemistry	3	0	0	3	45	0	0	45	90	3	40/60	BS
7	25HS201	Universal Human Values	2	0	0	2	30	0	0	30	60	2	40/60	HS
8	25HS202	Business Communication	3	0	0	3	45	0	0	45	90	3	40/60	HS
9	25AC201	Tamils and Technology	1	0	0	1	15	0	0	15	30	1	100/0	AC
10		Foreign Language	2	0	0	2	30	0	0	30	60	2	100/0	HS
11		Value Added Course	1	0	0	1	15	0	0	15	30	1	100/0	VAC*

*Value Added Course is Optional

SEMESTER III

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Cum Practical Courses														
1	25MT301	Digital Electronics	1	0	4	1	15	0	60	15	90	3	50/50	PC
2	25MT302	Electrical Drives and Controls	3	0	2	3	45	0	30	45	120	4	50/50	PC
Theory Courses														
3	25MA301	Transform Techniques and Partial Differential Equations	3	1	0	4	45	15	0	60	120	4	40/60	BS
4	25MT303	Mechanics of Fluids and Solids	3	1	0	4	45	15	0	60	120	4	40/60	PC
5	25MT304	Thermal Systems Engineering	3	1	0	4	45	15	0	60	120	4	40/60	PC
6	25EEC304	Aptitude and Soft Skills - I	1	0	0	1	15	0	0	15	30	1	100/0	EEC
Practical Courses														
7	25ME305	Machine Drawing with GD&T	0	0	4	0	0	0	60	0	60	2	60/40	PC
8	25EEC305	Industrial Training - I	-	-	-	-	-	-	-	-	2 Weeks	1	100/0	EEC

SEMESTER IV

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Cum Practical Courses														
1	25MT401	Microprocessor and Microcontroller	3	0	2	3	45	0	30	45	120	4	50/50	PC
2	25MT402	Robotic Vision Systems	3	0	2	3	45	0	30	45	120	4	50/50	PC
3	25ME401	Theory of	1	0	4	1	15	0	60	15	90	3	50/50	PC

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
		Machines												
Theory Courses														
4	25MA302	Probability and Statistics	3	1	0	4	45	15	0	60	120	4	40/60	BS
5		Open Elective I	3	0	0	3	45	0	0	45	90	3	40/60	OE
6	25EEC401	Aptitude and Soft Skills - II	1	0	0	1	15	0	0	15	30	1	100/0	EEC
7	25MC405	Disaster Management and Preparedness	3	0	0	0	45	0	0	0	45	0	100/0	MC
Practical Courses														
8	25ME405	Computer Aided Modelling Laboratory	0	0	4	0	0	0	60	0	60	2	60/40	PC

SEMESTER V

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Cum Practical Courses														
1	25MT501	Embedded Systems and IoT	1	0	4	1	15	0	60	15	90	3	50/50	PC
2	25MT502	Mechanical Instrumentation	3	0	2	3	45	0	30	45	120	4	50/50	PC
Theory Courses														
3	25ME503	Design of Machine Elements	3	1	0	4	45	15	0	60	120	4	40/60	PC
4		Professional Elective I									90	3	40/60	PE
5		Open Elective II	3	0	0	3	45	0	0	45	90	3	40/60	OE
6		Open Elective III	3	0	0	3	45	0	0	45	90	3	40/60	OE
7	25MC501	Industrial Safety	3	0	0	0	45	0	0	0	45	0	100/0	MC
Practical Course														
8	25MT503	Modeling and Simulation using MAT LAB	0	0	4	0	0	0	60	0	60	2	60/40	PC
9	25EEC501	Industrial Training - II	-	-	-	-	-	-	-	-	2 Weeks	1	100/0	EEC
For Honours Degree														
1		Honours Elective I									90	3	40/60	
2		Honours Elective II									90	3	40/60	
For Minor Degree														
1		Minor Elective I									90	3		
2		Minor Elective II									90	3		

SEMESTER VI

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Cum Practical Course														
1	25MT601	PLC and Automation	1	0	4	1	15	0	60	15	90	3	50/50	PC
Theory Courses														
2	25MT602	Micro Electro Mechanical Systems	3	0	0	3	45	0	0	45	90	3	40/60	PC
3	25MT603	CNC Technology	3	0	0	3	45	0	0	45	90	3	40/60	PC
4		Professional Elective II									90	3	40/60	PE
5		Professional Elective III									90	3	40/60	PE
6		Open Elective IV	3	0	0	3	45	0	0	45	90	3	40/60	OE
Practical Course														
7	25MTP601	Mini Project	0	0	4	0	0	0	60	0	60	2	60/40	EEC
For Honours Degree														
1		Honours Elective III									90	3	40/60	
2		Honours Elective IV									90	3	40/60	
For Minor Degree														
1		Minor Elective III									90	3		
2		Minor Elective IV									90	3		

SEMESTER VII

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Cum Practical Course														
1	25ES702	Fluid Power Systems and Industrial Automation	1	0	4	1	15	0	60	15	90	3	50/50	ES
Theory Course														
2	25ES703	Mechatronics System Design	3	0	0	3	45	0	0	45	90	3	40/60	ES
3	25HS707	Professional Ethics in Engineering	3	0	0	3	45	0	0	45	90	3	40/60	HS
4		Professional Elective IV									90	3	40/60	PE
5		Professional Elective V									90	3	40/60	PE
Practical Course														
6	25MTP701	Project Work - I	0	0	4	0	0	0	60	0	60	2	100/0	EEC
For Honours Degree														
1		Honours Elective V									90	3	40/60	
2		Honours									90	3	40/60	

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
		Elective VI												
For Minor Degree														
1		Minor Elective V									90	3		
2		Minor Elective VI									90	3		

SEMESTER VIII

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Practical Course														
1	25MTP801	Project Work - II	0	0	20	0	0	0	300	0	300	10	60/40	EEC

TOTAL NO. OF CREDITS: 164

FOREIGN LANGUAGE

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25HS203	German	2	0	0	2	30	0	0	30	60	2	100/0	HS
2	25HS204	Japanese	2	0	0	2	30	0	0	30	60	2	100/0	HS

VALUE ADDED COURSE

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25VAC01	French	1	0	0	1	15	0	0	15	30	1	100/0	VAC
2	25VAC02	Hindi	1	0	0	1	15	0	0	15	30	1	100/0	VAC

PROFESSIONAL ELECTIVE COURSES : VERTICALS

VERTICAL I Industrial Automation	VERTICAL II Internet of Things	VERTICAL III Modern Robotics	VERTICAL IV Simulation and Modelling	VERTICAL V Electronics Architecture and Control in Aircrafts	VERTICAL VI Applied Mechatronics	VERTICAL VII Smart Mobility Systems	VERTICAL VIII Diversified Courses Group I	VERTICAL IX Diversified Courses Group II
Logic and Distributed Control System	Industrial IoT	Robot Manipulators and Grippers	Robotics Simulation and Virtual Reality	Aircraft Electronic Architecture	Virtual Instrumentation	Computer Aided Design and Prototyping	RF Transceivers Design	Total Quality Management
Programmable Automation	Sensor for IoT Application	Human-Robot Interaction	Digital Twin	Intelligent Control Engineering	Robotics for Manufacturing	Tool Design	Body Area Networks	Renewable Energy Sources
Robotics and Automation	Data Analytics for IoT	Bio-inspired Robotics	Predictive Maintenance using Data Analytics	Guidance, Navigation, and Control	Medical Robotics	Wireless Sensor Networks and IoT in Automation	VLSI Testing and Design for Testability	Fuzzy Logic Control
Artificial Intelligence in Automation	IoT Security	Soft Robotics	Systems Engineering and Optimization	Airborne Navigation and Communication Systems	Under Water Robotics	Electric Vehicle Design	Medical Imaging Systems	Operations Research
Smart Factory Automation	IoT and Edge Computing	Robotics Safety and Standards	Modeling and Simulation of Mechanical Systems	Design of UAV Systems	Mechatronics in Defense	Integrated Product Design and Development	Satellite Communication	Process Planning and Cost Estimation
Quadcopter Technology	Cloud Services Management	Surgical Robotics	Multi-Body Dynamics Simulation	Flight Dynamics of Small Aerial Vehicles	Space Technology	Design for Manufacturing and Assembly	CAD for VLSI Design	Advanced Digital Signal Processing

VERTICAL I : Industrial Automation

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25PMT11	Logic and Distributed Control System	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PMT12	Programmable Automation	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PMT13	Robotics and Automation	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PMT14	Artificial Intelligence in Automation	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PMT15	Smart Factory Automation	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PMT16	Quadcopter Technology	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL II : Internet of Things

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25PMT21	Industrial IoT	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PMT22	Sensor for IoT Application	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PMT23	Data Analytics for IoT	2	1	0	3	30	15	0	45	90	3	40/60	PE
4	25PMT24	IoT Security	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PMT25	IoT and Edge Computing	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PMT26	Cloud Services Management	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL III : Modern Robotics

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25PMT31	Robot Manipulators and Grippers	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PMT32	Human-Robot Interaction	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PMT33	Bio-inspired Robotics	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PMT34	Soft Robotics	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PMT35	Robotics Safety and Standards	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PMT36	Surgical Robotics	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL IV : Simulation and Modelling

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25PMT41	Robotics Simulation and Virtual Reality	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PMT42	Digital Twin	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PMT43	Predictive Maintenance using Data Analytics	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PMT44	Systems Engineering and Optimization	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PMT45	Modeling and Simulation of Mechanical Systems	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PMT46	Multi-Body Dynamics Simulation	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL V : Electronics Architecture and Control in Aircraft

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25PMT51	Aircraft Electronic Architecture	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PMT52	Intelligent Control Engineering	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PMT53	Guidance, Navigation, and Control	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PMT54	Airborne Navigation and Communication Systems	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PMT55	Design of UAV Systems	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PMT56	Flight Dynamics of Small Aerial Vehicles	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL VI : Applied Mechatronics

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25PMT61	Virtual Instrumentation	3	0	0	3	45	0	0	45	90	3	40/60	PE

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
2	25PMT62	Robotics for Manufacturing	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PMT63	Medical Robotics	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PMT64	Under Water Robotics	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PMT65	Mechatronics in Defense	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PMT66	Space Technology	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL VII : Smart Mobility Systems

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25PMT71	Computer Aided Design and Prototyping	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PMT72	Tool Design	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PMT73	Wireless Sensor Networks and IoT in Automation	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PMT74	Electric Vehicle Design	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PMT75	Integrated Product Design and Development	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PME21	Design for Manufacturing and Assembly	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL VIII : Diversified Courses Group I

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25PMT81	RF Transceivers Design	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PMT82	Body Area Networks	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PEC14	VLSI Testing and Design for Testability	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PMT83	Medical Imaging Systems	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PME84	Satellite Communication	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PME85	CAD for VLSI Design	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL IX : Diversified Courses Group II

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/ External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25PMT91	Total Quality Management	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PME92	Renewable Energy Sources	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PMT93	Fuzzy Logic Control	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PME94	Operations Research	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PME95	Process Planning and Cost Estimation	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PMT94	Advanced Digital Signal Processing	3	0	0	3	45	0	0	45	90	3	40/60	PE

OPEN ELECTIVES

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/ External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25OHS11	Foundation Skills in Integrated Product Development	3	0	0	3	45	0	0	45	90	3	40/60	OE
2	25OHS12	Human Rights	3	0	0	3	45	0	0	45	90	3	40/60	OE
3	25OHS13	Intellectual Property Rights	3	0	0	3	45	0	0	45	90	3	40/60	OE
4	25OHS14	Sustainable Management	3	0	0	3	45	0	0	45	90	3	40/60	OE
5	25OHS15	Supply Chain Management	3	0	0	3	45	0	0	45	90	3	40/60	OE
6	25OAG11	Bioenergy and Waste Utilization	3	0	0	3	45	0	0	45	90	3	40/60	OE
7	25OAG12	Agribusiness and Entrepreneurship	3	0	0	3	45	0	0	45	90	3	40/60	OE
8	25OAG13	Precision Agriculture and Smart Farming	3	0	0	3	45	0	0	45	90	3	40/60	OE
9	25OAG14	GIS and Remote Sensing Applications	3	0	0	3	45	0	0	45	90	3	40/60	OE
10	25OAG15	Renewable Energy in Agriculture	3	0	0	3	45	0	0	45	90	3	40/60	OE
11	25OAG16	Post-Harvest Engineering	3	0	0	3	45	0	0	45	90	3	40/60	OE
12	25OIT11	UI & UX Design	3	0	0	3	45	0	0	45	90	3	40/60	OE
13	25OIT12	High Performance Computing	3	0	0	3	45	0	0	45	90	3	40/60	OE
14	25OCY11	Information Security	3	0	0	3	45	0	0	45	90	3	40/60	OE
15	25OCY12	Cyber Physical Systems	3	0	0	3	45	0	0	45	90	3	40/60	OE
16	25OCY13	Information Retrieval System	3	0	0	3	45	0	0	45	90	3	40/60	OE
17	25OAI11	Intelligent Healthcare Solutions	3	0	0	3	45	0	0	45	90	3	40/60	OE
18	25OCS12	Cloud Web Services	3	0	0	3	45	0	0	45	90	3	40/60	OE
19	25OCS13	Blockchain Technologies	3	0	0	3	45	0	0	45	90	3	40/60	OE
20	25OCS14	Data Mining	3	0	0	3	45	0	0	45	90	3	40/60	OE
21	25OML12	AI for Precision Agriculture	3	0	0	3	45	0	0	45	90	3	40/60	OE
22	25OBT11	Microbiology	3	0	0	3	45	0	0	45	90	3	40/60	OE
23	25OBT12	Nano Biotechnology	3	0	0	3	45	0	0	45	90	3	40/60	OE
24	25OBT13	Immuno Technology	3	0	0	3	45	0	0	45	90	3	40/60	OE
25	25OBT14	Genomics and Proteomics	3	0	0	3	45	0	0	45	90	3	40/60	OE
26	25OBT15	Basic Industrial Biotechnology	3	0	0	3	45	0	0	45	90	3	40/60	OE
27	25OEC11	Wireless	3	0	0	3	45	0	0	45	90	3	40/60	OE

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/ External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
		Communication												
28	25OEC12	Internet of Things and Applications	3	0	0	3	45	0	0	45	90	3	40/60	OE
29	25OEC13	Embedded Systems	3	0	0	3	45	0	0	45	90	3	40/60	OE
30	25OEC14	Introduction to Quantum Communication	3	0	0	3	45	0	0	45	90	3	40/60	OE
31	25OEC15	Introduction to Quantum Sensing	3	0	0	3	45	0	0	45	90	3	40/60	OE
32	25OEC16	Engineering Foundations of Quantum Technologies	3	0	0	3	45	0	0	45	90	3	40/60	OE
33	25OEC17	Solid State Physics for Quantum Technologies	3	0	0	3	45	0	0	45	90	3	40/60	OE
34	25OEC18	Quantum Optics	3	0	0	3	45	0	0	45	90	3	40/60	OE

VERTICALS FOR MINOR DEGREE (In addition to all the verticals of other programmes)

VERTICAL I Fintech and Block Chain	VERTICAL II Entrepreneurship	VERTICAL III Public Administration	VERTICAL IV Business Data Analytics	VERTICAL V Environment and Sustainability	VERTICAL VI Quantum Technologies
Finance for Managers	Foundations of Entrepreneurship	Principles of Public Administration	Statistics for Management	Sustainable Infrastructure Development	Foundations of Quantum Computing: Physics, Engineering, and Mathematics Computing
Fundamentals of Investment	Team Building and Leadership Management for Business	Public Finance and Budgeting	Business Analytics and Decision-Making	Sustainable Agriculture and Environmental Management	Survey of Quantum Technologies and Applications
Banking, Financial Services and Insurance	Creativity and Innovation in Entrepreneurship	Public Personnel Administration	Human Resource Analytics	Sustainable Bio Materials	Foundations of Quantum Technologies
Introduction to Blockchain and its Applications	Principles of Marketing Management for Business	Administrative Law and Governance	Marketing and Social Media Web Analytics	Materials for Energy Sustainability	Basic Laboratory Course for Quantum Technologies
Fintech Personal Finance and Payments	Human Resource Management for Entrepreneurs	Indian Administrative System	Operation and Supply Chain Analytics	Waste Management and Circular Economy	Introduction to Quantum Computation
Introduction to Fintech	Financing New Business Ventures	Public Policy Administration	Financial Analytics	Environmental Quality Monitoring and Analysis	Introduction to Quantum Materials
		Comparative Public Administration and Development Studies		Integrated Energy Planning for Sustainable Development	
				Energy Efficiency for Sustainable Development	

VERTICAL I : Fintech and Block Chain

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/ External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25OMI11	Finance for Managers	3	0	0	3	45	0	0	45	90	3	40/60	OE
2	25OMI12	Fundamentals of Investment	3	0	0	3	45	0	0	45	90	3	40/60	OE
3	25OMI13	Banking, Financial Services and Insurance	3	0	0	3	45	0	0	45	90	3	40/60	OE
4	25OMI14	Introduction to Blockchain and its Applications	3	0	0	3	45	0	0	45	90	3	40/60	OE
5	25OMI15	Fintech Personal Finance and Payments	3	0	0	3	45	0	0	45	90	3	40/60	OE
6	25OMI16	Introduction to Fintech	3	0	0	3	45	0	0	45	90	3	40/60	OE

VERTICAL II : Entrepreneurship

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/ External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25OMI21	Foundations of Entrepreneurship	3	0	0	3	45	0	0	45	90	3	40/60	OE
2	25OMI22	Team Building and Leadership Management for Business	3	0	0	3	45	0	0	45	90	3	40/60	OE
3	25OMI23	Creativity and Innovation in Entrepreneurship	3	0	0	3	45	0	0	45	90	3	40/60	OE
4	25OMI24	Principles of Marketing Management for Business	3	0	0	3	45	0	0	45	90	3	40/60	OE
5	25OMI25	Human Resource Management for Entrepreneurs	3	0	0	3	45	0	0	45	90	3	40/60	OE
6	25OMI26	Financing New Business Ventures	3	0	0	3	45	0	0	45	90	3	40/60	OE

VERTICAL III : Public Administration

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/ External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25OMI31	Principles of Public Administration	3	0	0	3	45	0	0	45	90	3	40/60	OE
2	25OMI32	Public Finance and Budgeting	3	0	0	3	45	0	0	45	90	3	40/60	OE

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
3	250MI33	Public Personnel Administration	3	0	0	3	45	0	0	45	90	3	40/60	OE
4	250MI34	Administrative Law and Governance	3	0	0	3	45	0	0	45	90	3	40/60	OE
5	250MI35	Indian Administrative System	3	0	0	3	45	0	0	45	90	3	40/60	OE
6	250MI36	Public Policy Administration	3	0	0	3	45	0	0	45	90	3	40/60	OE
7	250MI37	Comparative Public Administration and Development Studies	3	0	0	3	45	0	0	45	90	3	40/60	OE

VERTICAL IV : Business Data Analytics

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	250MI41	Statistics for Management	3	0	0	3	45	0	0	45	90	3	40/60	OE
2	250MI42	Business Analytics and Decision-Making	3	0	0	3	45	0	0	45	90	3	40/60	OE
3	250MI43	Human Resource Analytics	3	0	0	3	45	0	0	45	90	3	40/60	OE
4	250MI44	Marketing and Social Media Web Analytics	3	0	0	3	45	0	0	45	90	3	40/60	OE
5	250MI45	Operation and Supply Chain Analytics	3	0	0	3	45	0	0	45	90	3	40/60	OE
6	250MI46	Financial Analytics	3	0	0	3	45	0	0	45	90	3	40/60	OE

VERTICAL V : Environment and Sustainability

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	250MI51	Sustainable Infrastructure Development	3	0	0	3	45	0	0	45	90	3	40/60	OE
2	250MI52	Sustainable Agriculture and Environmental Management	3	0	0	3	45	0	0	45	90	3	40/60	OE
3	250MI53	Sustainable Bio Materials	3	0	0	3	45	0	0	45	90	3	40/60	OE
4	250MI54	Materials for Energy Sustainability	3	0	0	3	45	0	0	45	90	3	40/60	OE

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/ External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
5	25OMI55	Waste Management and Circular Economy	3	0	0	3	45	0	0	45	90	3	40/60	OE
6	25OMI56	Environmental Quality Monitoring and Analysis	3	0	0	3	45	0	0	45	90	3	40/60	OE
7	25OMI57	Integrated Energy Planning for Sustainable Development	3	0	0	3	45	0	0	45	90	3	40/60	OE
8	25OMI58	Energy Efficiency for Sustainable Development	3	0	0	3	45	0	0	45	90	3	40/60	OE

VERTICAL VI : Quantum Technologies

S. No.	Course Code	Course Title	Hours per week				Hours per sem				Total no. of Hours per semester	Credits	Internal/ External Marks	Course Category
			L	T	P	SL	L	T	P	SL				
Theory Courses														
1	25OMI61	Foundations of Quantum Computing: Physics, Engineering, and Mathematics Computing	3	0	0	3	45	0	0	45	90	3	40/60	OE
2	25OMI62	Survey of Quantum Technologies and Applications	3	0	0	3	45	0	0	45	90	3	40/60	OE
3	25OMI63	Foundations of Quantum Technologies	3	0	0	3	45	0	0	45	90	3	40/60	OE
Practical Course														
4	25OMI64	Basic Laboratory Course for Quantum Technologies	2	0	2	2	30	0	30	30	90	3	50/50	OE
Theory Courses														
5	25OMI65	Introduction to Quantum Computation	3	0	0	3	45	0	0	45	90	3	40/60	OE
6	25OMI66	Introduction to Quantum Materials	3	0	0	3	45	0	0	45	90	3	40/60	OE

SUMMARY

S.No.	COURSE CATEGORY	CREDITS AS PER SEMESTER								TOTAL CREDITS
		I	II	III	IV	V	VI	VII	VIII	
1	HS	4	7					3		14
2	BS	7	7	4	4					22
3	ES	11	9					6		26
4	PC		3	17	13	13	9			55
5	PE					3	6	6		15
6	OE				3	6	3			12
7	EEC			2	1	1	2	2	10	18
8	AC	1	1							2
9	MC				✓	✓				
TOTAL CREDITS		23	27	23	21	23	20	17	10	164