



Curriculum and Syllabi

B.Tech. AGRICULTURAL ENGINEERING

SEMESTERS I to VIII

Regulations 2025

Programme: B.Tech. AGRICULTURAL 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	25ES106	Basics of Electrical and Electronics Engineering	3	0	2	3	45	0	30	45	120	4	50/50	ES
2	25ES201	Product Design and Development	1	0	2	1	15	0	30	15	60	2	100/0	ES
Theory Courses														
3	25MA201	Numerical Techniques	3	1	0	4	45	15	0	60	120	4	40/60	BS
4	25ES202	Engineering Mechanics	3	0	0	3	45	0	0	45	90	3	40/60	ES
5	25CH201	Engineering	3	0	0	3	45	0	0	45	90	3	40/60	BS

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				
		Chemistry												
6	25HS201	Universal Human Values	2	0	0	2	30	0	0	30	60	2	40/60	HS
7	25HS202	Business Communication	3	0	0	3	45	0	0	45	90	3	40/60	HS
8	25AC201	Tamils and Technology	1	0	0	1	15	0	0	15	30	1	100/0	AC
9		Foreign Language	2	0	0	2	30	0	0	30	60	2	100/0	HS
10		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	25AG301	Principles of Soil Science and Engineering	2	0	2	2	30	0	30	30	90	3	50/50	PC
2	25ME301	Fluid Mechanics and Machinery	1	0	4	1	15	0	60	15	90	3	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	25ME302	Strength of Materials	3	0	0	3	45	0	0	45	90	3	40/60	PC
5	25AG302	Principles and Practices of Crop Production	3	0	0	3	45	0	0	45	90	3	40/60	PC
6	25ES301	Engineering Thermodynamics	3	0	0	3	45	0	0	45	90	3	40/60	ES
7	25EEC304	Aptitude and Soft Skills - I	1	0	0	1	15	0	0	15	30	1	100/0	EEC
Practical Courses														
8	25AG303	Crop Husbandry Laboratory	0	0	4	0	0	0	60	0	60	2	60/40	PC
9	25ME304	Strength of Materials Laboratory	0	0	4	0	0	0	60	0	60	2	60/40	PC
10	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	25AG401	Surveying and Levelling	2	0	2	2	30	0	30	30	90	3	50/50	PC
2	25AG402	Food and Dairy Engineering	3	0	2	3	45	0	30	45	120	4	50/50	PC
3	25ME401	Theory of Machines	1	0	4	1	15	0	60	15	90	3	50/50	PC
Theory Courses														
4	25MA302	Probability and Statistics	3	1	0	4	45	15	0	60	120	4	40/60	BS
5	25ES401	Applications of IoT in Agricultural Engineering	3	0	0	3	45	0	0	45	90	3	40/60	ES
6	25AG403	Hydrology and Groundwater Engineering	3	0	0	3	45	0	0	45	90	3	40/60	PC
7	25EEC401	Aptitude and Soft Skills - II	1	0	0	1	15	0	0	15	30	1	100/0	EEC
8	25MC401	Disaster Risk Reduction and Management	3	0	0	0	45	0	0	0	45	0	100/0	MC
Practical Course														
9	25AG404	CAD Laboratory for Agriculture Engineering	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	25AG501	Farm Machinery and Equipment	3	0	2	3	45	0	30	45	120	4	50/50	PC
2	25AG502	Irrigation and Drainage Engineering	2	0	2	2	30	0	30	30	90	3	50/50	PC
Theory Courses														
3	25ES502	Mobile Computing for Agricultural Systems	3	0	0	3	45	0	0	45	90	3	40/60	ES
4	25AG503	Tractor and Farm Engines	3	0	0	3	45	0	0	45	90	3	40/60	PC
5	25AG504	Solar and Wind Energy Engineering	3	0	0	3	45	0	0	45	90	3	40/60	PC
6		Open Elective I	3	0	0	3	45	0	0	45	90	3	40/60	OE
7		Open Elective II	3	0	0	3	45	0	0	45	90	3	40/60	OE
8	25MC501	Industrial Safety	3	0	0	0	45	0	0	0	45	0	100/0	MC
Practical 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				
9	25EEC501	Industrial Training - II	-	-	-	-	-	-	-	-	2 Weeks	1	100/0	EEC
For Honours Degree														
1		Honours Elective I	3	0	0	3	45	0	0	45	90	3	40/60	
2		Honours Elective II	3	0	0	3	45	0	0	45	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 Courses														
1	25AG601	Post Harvest Technology	3	0	2	3	45	0	30	45	120	4	50/50	PC
2	25AG602	Remote Sensing and GIS Applications	2	0	2	2	30	0	30	30	90	3	50/50	PC
Theory Courses														
3	25AG603	Soil and Water Conservation Engineering	3	0	0	3	45	0	0	45	90	3	40/60	PC
4		Professional Elective I	3	0	0	3	45	0	0	45	90	3	40/60	PE
5		Professional Elective II	3	0	0	3	45	0	0	45	90	3	40/60	PE
6		Open Elective III	3	0	0	3	45	0	0	45	90	3	40/60	OE
7		Open Elective IV	3	0	0	3	45	0	0	45	90	3	40/60	OE
Practical Course														
8	25AGP601	Mini Project	0	0	4	0	0	0	60	0	60	2	60/40	EEC
For Honours Degree														
1		Honours Elective III	3	0	0	3	45	0	0	45	90	3	40/60	
2		Honours Elective IV	3	0	0	3	45	0	0	45	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 Courses														
1	25HS701	Principles of Management	3	0	0	3	45	0	0	45	90	3	40/60	HS
2	25AG701	Protected Cultivation	3	0	0	3	45	0	0	45	90	3	40/60	PC
3		Professional Elective III	3	0	0	3	45	0	0	45	90	3	40/60	PE
4		Professional Elective IV	3	0	0	3	45	0	0	45	90	3	40/60	PE
5		Professional Elective V	3	0	0	3	45	0	0	45	90	3	40/60	PE
Practical Course														
6	25AGP701	Project Work - I	0	0	4	0	0	0	60	0	60	2	100/0	EEC
For Honours Degree														
1		Honours Elective V	3	0	0	3	45	0	0	45	90	3	40/60	
2		Honours Elective VI	3	0	0	3	45	0	0	45	90	3	40/60	
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	25AGP801	Project Work - II	0	0	20	0	0	0	300	0	300	10	60/40	EEC

TOTAL NO. OF CREDITS: 169

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 Farm Machinery	VERTICAL II Renewable Energy Engineering	VERTICAL III Crop Production and Protection	VERTICAL IV Agri Business and Entrepreneurship	VERTICAL V Climate-Adaptive Water Resource Systems	VERTICAL VI Food Processing	VERTICAL VII Agri-Tech and Integrated Farming	VERTICAL VIII Smart Agricultural Inputs and Precision Delivery Systems
Human Engineering and Safety	Bio and Thermo-Chemical Conversion of Biomass	Soil Fertility and Nutrient Management	Agri Business Management and Entrepreneurship	On-Farm Water Management	Refrigeration and Cold Storage	Climate Smart Agriculture	Drone Applications in Precision Agriculture
Automation in Agricultural Machinery	Waste to Energy Technology	Plant Protection	Agricultural Finance, Banking and Co-operation	Irrigation Water Quality and Waste Water Management	Process Engineering of Fruits and Vegetables	Systems Analysis in Agricultural Engineering	Drone Sensor Technologies and Data Analytics
Testing and Evaluation of Farm Machinery and Equipment	Energy Conservation In Agro- Based Industry	Extension Methodology and Transfer of Technology	Technology of Seed Processing	Climate Change and Adaptation	Storage and Packaging Technology	IT in Agricultural Systems	Smart Farming using Drone and IoT Integration
Farm Power and Machinery Management	Co-Generation and Waste Heat Recovery Systems	Agricultural Marketing	Mushroom Cultivation and Vermicomposting	Watershed Planning and Management	Food Process Equipment and Design	Automation in Agriculture	Micronutrient Fertilizer Technology
Hydraulic Drives and Controls	Green Buildings	Integrated Farming System	Engineering Economy and Project Planning	Groundwater and Well Engineering	Food Plant Design and Management	Landscape Architecture	Integrated Nutrient Management
Precision Farming Equipment	Energy Storage Systems	Sustainable Agriculture and Food Security	Value Addition of Indigenous Fruits and Vegetables	Design of Micro Irrigation System	Emerging Technologies in Food Processing	Protected Cultivation and Smart Greenhouses	Smart Fertilizer Delivery through UAV Technology

VERTICAL I : Farm Machinery

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	25PAG11	Human Engineering and Safety	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PAG12	Automation in Agricultural Machinery	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PAG13	Testing and Evaluation of Farm Machinery and Equipment	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PAG14	Farm Power and Machinery Management	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PAG15	Hydraulic Drives and Controls	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PAG16	Precision Farming Equipment	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL II : Renewable Energy Engineering

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	25PAG21	Bio and Thermo-Chemical Conversion of Biomass	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PAG22	Waste to Energy Technology	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PAG23	Energy Conservation In Agro- Based Industry	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PAG24	Co-Generation and Waste Heat Recovery Systems	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PAG25	Green Buildings	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PAG26	Energy Storage Systems	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL III : Crop Production and Protection

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	25PAG31	Soil Fertility and Nutrient Management	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	25PAG32	Plant Protection	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PAG33	Extension Methodology and Transfer of Technology	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PAG34	Agricultural Marketing	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PAG35	Integrated Farming System	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PAG36	Sustainable Agriculture and Food Security	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL IV : Agri Business and 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	25PAG41	Agri Business Management and Entrepreneurship	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PAG42	Agricultural Finance, Banking and Co-operation	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PAG43	Technology of Seed Processing	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PAG44	Mushroom Cultivation and Vermicomposting	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PAG45	Engineering Economy and Project Planning	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PAG46	Value Addition of Indigenous Fruits and Vegetables	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL V : Climate-Adaptive Water Resource 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	25PAG51	On-Farm Water Management	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PAG52	Irrigation Water Quality and Waste Water Management	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PAG53	Climate Change and Adaptation	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PAG54	Watershed Planning and Management	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PAG55	Groundwater and	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				
		Well Engineering												
6	25PAG56	Design of Micro Irrigation System	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL VI : Food Processing

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	25PAG61	Refrigeration and Cold Storage	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PAG62	Process Engineering of Fruits and Vegetables	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PAG63	Storage and Packaging Technology	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PAG64	Food Process Equipment and Design	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PAG65	Food Plant Design and Management	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PAG66	Emerging Technologies in Food Processing	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL VII : Agri-Tech and Integrated Farming

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	25PAG71	Climate Smart Agriculture	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PAG72	Systems Analysis in Agricultural Engineering	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PAG73	IT in Agricultural Systems	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PAG74	Automation in Agriculture	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PAG75	Landscape Architecture	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PAG76	Protected Cultivation and Smart Greenhouses	3	0	0	3	45	0	0	45	90	3	40/60	PE

VERTICAL VIII : Smart Agricultural Inputs and Precision Delivery 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	25PAG81	Drone Applications in Precision Agriculture	3	0	0	3	45	0	0	45	90	3	40/60	PE
2	25PAG82	Drone Sensor Technologies and Data Analytics	3	0	0	3	45	0	0	45	90	3	40/60	PE
3	25PAG83	Smart Farming using Drone and IoT Integration	3	0	0	3	45	0	0	45	90	3	40/60	PE
4	25PAG84	Micronutrient Fertilizer Technology	3	0	0	3	45	0	0	45	90	3	40/60	PE
5	25PAG85	Integrated Nutrient Management	3	0	0	3	45	0	0	45	90	3	40/60	PE
6	25PAG86	Smart Fertilizer Delivery through UAV Technology	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	25OBT11	Microbiology	3	0	0	3	45	0	0	45	90	3	40/60	OE
7	25OBT12	Nano Biotechnology	3	0	0	3	45	0	0	45	90	3	40/60	OE
8	25OBT13	Immuno Technology	3	0	0	3	45	0	0	45	90	3	40/60	OE
9	25OBT14	Genomics and Proteomics	3	0	0	3	45	0	0	45	90	3	40/60	OE
10	25OBT15	Basic Industrial Biotechnology	3	0	0	3	45	0	0	45	90	3	40/60	OE
11	25OBT16	Bioprocess Technology	3	0	0	3	45	0	0	45	90	3	40/60	OE
12	25OBT17	Biotechnology in Agriculture	3	0	0	3	45	0	0	45	90	3	40/60	OE
13	25OBT18	Bioinformatics and Computational Biology	3	0	0	3	45	0	0	45	90	3	40/60	OE
14	25OIT11	UI & UX Design	3	0	0	3	45	0	0	45	90	3	40/60	OE
15	25OIT12	High Performance Computing	3	0	0	3	45	0	0	45	90	3	40/60	OE
16	25OCY11	Information Security	3	0	0	3	45	0	0	45	90	3	40/60	OE
17	25OCY12	Cyber Physical Systems	3	0	0	3	45	0	0	45	90	3	40/60	OE
18	25OCY13	Information Retrieval System	3	0	0	3	45	0	0	45	90	3	40/60	OE
19	25OCS11	Data Mining and Data Warehousing	3	0	0	3	45	0	0	45	90	3	40/60	OE
20	25OCS12	Cloud Web Services	3	0	0	3	45	0	0	45	90	3	40/60	OE
21	25OAI11	Intelligent Healthcare Solutions	3	0	0	3	45	0	0	45	90	3	40/60	OE
22	25OML11	Sustainable AI	3	0	0	3	45	0	0	45	90	3	40/60	OE
23	25OML12	AI for Precision Agriculture	3	0	0	3	45	0	0	45	90	3	40/60	OE
24	25OME11	Air Pollution and Control	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				
		Engineering												
25	25OME12	Automotive Systems	3	0	0	3	45	0	0	45	90	3	40/60	OE
26	25OME13	Digital Manufacturing	3	0	0	3	45	0	0	45	90	3	40/60	OE
27	25OME14	Industrial Design and Rapid Prototyping Techniques	3	0	0	3	45	0	0	45	90	3	40/60	OE
28	25OME15	Lean Six Sigma	3	0	0	3	45	0	0	45	90	3	40/60	OE
29	25OME16	Low-Cost Automation	3	0	0	3	45	0	0	45	90	3	40/60	OE
30	25OME17	Micro and Precision Engineering	3	0	0	3	45	0	0	45	90	3	40/60	OE
31	25OME18	Plant Layout and Material Handling	3	0	0	3	45	0	0	45	90	3	40/60	OE
32	25OME19	Vehicle Styling and Design	3	0	0	3	45	0	0	45	90	3	40/60	OE
33	25OEC11	Wireless Communication	3	0	0	3	45	0	0	45	90	3	40/60	OE
34	25OEC12	Internet of Things and Applications	3	0	0	3	45	0	0	45	90	3	40/60	OE
35	25OEC13	Embedded Systems	3	0	0	3	45	0	0	45	90	3	40/60	OE
36	25OEC14	Introduction to Quantum Communication	3	0	0	3	45	0	0	45	90	3	40/60	OE
37	25OEC15	Introduction to Quantum Sensing	3	0	0	3	45	0	0	45	90	3	40/60	OE
38	25OEC16	Engineering Foundations of Quantum Technologies	3	0	0	3	45	0	0	45	90	3	40/60	OE
39	25OEC17	Solid State Physics for Quantum Technologies	3	0	0	3	45	0	0	45	90	3	40/60	OE
40	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	3	3	3				29
4	PC			16	15	13	10	3		57
5	PE						6	9		15
6	OE					6	6			12
7	EEC			2	1	1	2	2	10	18
8	AC	1	1							2
9	MC				✓	✓				
TOTAL CREDITS		23	24	25	23	23	24	17	10	169