

Government College of Engineering, Jalgaon

(An Autonomous Institute of Govt. of Maharashtra)

List of Baskets for MDM/Specialization Minor//Honors/Honors-Research (under NEP Curriculum)

Colour	
Yellow	Departmental/Institute MDM of 14 credits
Blue	Departmental/Institute Specialization minor of 18 credits
Green	Departmental Honors of 18 credits
Yellow	Departmental Honors with Research of 18 credits
	ME

List of Multidisciplinary Minor (MDM) Courses offered by Department of Mechanical Engineering (For Students of departments other than Mechanical Engineering)

Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	MEM210N Manufacturing Technology	2
2	IV	MDM-II	MEM262N Theory of Machines	2
3	V	MDM-III	MEM363N Fluid Mechancis	4
4	VI	MDM-IV	MEM313N Introduction to IC Engines	2
5	VII	MDM-V	MEM407N Introduction to Automobile Engineering	2
6	VIII	MDM-VI	MEM461N Introduction to Refrigeration and Airconditioning	2
Total Credits for MDM Courses				14

List of Specialization Minor Courses offered by Department of Mechanical Engineering (For Students of departments other than Mechanical Engineering; who have not opted for Mechanical track in MDM) - Applicable only for Double Minor Degree

Sl. No.	Semester	Course Code and Name of Course	Credits
1	III	MDM-I MEM210N Manufacturing Technology	2
2	IV	MDM-II MEM262N Theory of Machines	2
3	V	MDM-III MEM363N Fluid Mechancis	4
4	VI	MDM-IV MEM313N Introduction to IC Engines	2
5	VII	MDM-V MEM407N Introduction to Automobile Engineering	2
6	VIII	MDM-VI MEM461N Introduction to Refrigeration and Airconditioning	2
7	VIII	MDM-VI MEM462N Introduction to Vibrations Engineering	4
Total Specialization Minor Credits			18

List of additional courses for B. Tech. Honours Degree offered by Department of Mechanical Engineering (For Students of Department of Mechanical Engineering) - Applicable only for Honours Degree

Sl. No.	Semester	Course Code and Name of Course	Credits
1	V	ME311N Advanced Mechanisms	3
2	V	ME312N Advanced Mechanisms Lab	1
3	VI	ME361N Stress Analysis	3
4	VII	ME405N Advanced Mechanical Design (Online Mode)	4
5	VII	ME406N Smart Materials and Sensors (Online Mode)	3
6	VIII	ME459N Vibrations Engineering	3
7	VIII	ME460N Vibrations Engineering Lab	1
Total Credits for Honours Degree			18

List of additional courses for B. Tech. multidisciplinary minor and Honors with Research Degree offered by Department of Mechanical Engineering (For Students of Department of Mechanical Engineering) - Applicable only for Honours with Research Degree

Sl. No.	Semester	Course Code and Name of Course	Credits
1	V	ME311N Advanced Mechanisms	3
2	V	ME312N Advanced Mechanisms Lab	1
3	VI	ME361N Stress Analysis	3
4	VII	ME407N Dissertation Specific Course (Online)	3
5	VII	ME408N Disseration Phase-1	4
6	VIII	ME461N Dissertation Phase - 2	4
Total Credits for Honours with Research Degree			18

Robotics Institute Level MDM Courses List [Applicable to all departments]				
Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	RB201N	Embedded Control Systems	2
2	IV	RB202N	Robot Kinematics and Dynamics	2
3	V	RB301N	Autonomous Robotics and Telecherics	4
4	VI	RB302N	Advanced Robotics Programming	2
5	VII	RB401N	Experimental Robotics (online)	2
6	VIII	RB402N	Control of Robotic Systems	2
Total Credits for MDM Courses				14

Robotics Specialization Minor Courses offered (For Students who have not opted for Robotics Institute Level MDM - Applicable only for Double Minor Degree)				
Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	RB201N	Embedded Control Systems	2
2	IV	RB202N	Robot Kinematics and Dynamics	2
3	V	RB301N	Autonomous Robotics and Telecherics	4
4	VI	RB302N	Advanced Robotics Programming	2
5	VII	RB401N	Experimental Robotics (online)	2
6	VIII	RB402N	Control of Robotic Systems	2
7	VIII	RB404N	Project related with robotics	4
Total Credits for MDM Courses				18

Product Lifecycle Management Institute Level MDM Courses List [Applicable to all departments]				
Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	PL201N	PLM Fundamentals	2
2	IV	PL202N	New Product Design	2
3	V	PL301N	Data Management	4
4	VI	PL302N	PLM Advanced Concepts	2
5	VII	PL401N	Rapid Manufacturing (Online)	2
6	VIII	PL402N	Supply Chain Management	2
Total Credits for MDM Courses				14

Product Lifecycle Management Specialization Minor Courses offered (For Students who have not opted for Product Lifecycle Management Institute Level MDM - Applicable only for Double Minor Degree)				
Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	PL201N	PLM Fundamentals	2
2	IV	PL202N	New Product Design	2
3	V	PL301N	Data Management	4
4	VI	PL302N	PLM Advanced Concepts	2
5	VII	PL401N	Rapid Manufacturing (Online)	2
6	VIII	PL402N	Supply Chain Management	2
7	VIII	PL404N	Project Management for PLM	4
Total Credits for MDM Courses				18

ET

List of Multidisciplinary Minor (MDM) Courses offered by Department of Electronics and Telecommunication (E&Tc) Engineering (For Students of departments other than E&Tc Engineering)				
Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	ETM205N Electronic Components and Devices	2
2	IV	MDM-II	ETM255N Electronic Measurement Techniques	2
3	V	MDM-III	ETM306N Principles of Analog and Digital Communication	4
4	VI	MDM-IV	ETM354N Integrated Circuits and Applications	2
5	VII	MDM-V	ETM403N Principles of Modern CDMA/ MIMO/ OFDM Wireless Communications (NPTEL Course)	2
6	VIII	MDM-VI	ETM453N Control Systems	2
Total Credits for MDM Courses				14

List of Specialization Minor Courses offered by Department of Electronics and Telecommunication (E&Tc) Engineering (For Students of departments other than E&Tc Engineering; who have not opted for E&Tc track in MDM) - Applicable only for Double Minor Degree				
Sl. No.	Semester	Course Code and Name of Course	Credits	
1	III	ETM205N Electronic Components and Devices	2	

2	IV	ETM255N Electronic Measurement Techniques	2
3	V	ETM306N Principles of Analog and Digital Communication	4
4	VI	ETM354N Integrated Circuits and Applications	2
5	VI	ETM364N Optical Fiber Communications	2
6	VII	ETM403N Principles of Modern CDMA/ MIMO/ OFDM Wireless Communications (NPTEL Course)	2
7	VIII	ETM453N Control Systems	2
8	VIII	ETM461N Principles of Satellite Communication	2
Total Specialization Minor Credits			18

List of additional courses for B. Tech. Honours Degree offered by Department of Electronics and Telecommunication (E&Tc) Engineering (For Students of Department of E&Tc Engineering) - Applicable only for Honours Degree

Sl. No.	Semester	Course Code and Name of Course	Credits
1	V	ET311N Biomedical Engineering	3
2	V	ET312N Biomedical Engineering Lab	1
3	VI	ET363N Nanoelectronics	3
4	VII	ET411N Real Time Digital Signal Processing (12 Weeks NPTEL Course)	4
5	VII	ET412N Principles and Techniques of Modern Radar Systems (NPTEL Course)	3
6	VIII	ET460N Networking in IoT	4
Total Credits for Honours Degree			18

List of additional courses for B. Tech. multidisciplinary minor and Honors with Research Degree offered by Department of Electronics and Telecommunication (E&Tc) Engineering (For Students of Department of E&Tc Engineering) - Applicable only for Honours with Research Degree

Sl. No.	Semester	Course Code and Name of Course	Credits
1	V	ET311N Biomedical Engineering	3
2	V	ET312N Biomedical Engineering Lab	1
3	VI	ET411N Real Time Digital Signal Processing (12 Weeks NPTEL Course)	4
4	VII	ET413N Dissertation Specific Course (Online)	3
5	VII	ET414N Dissertation Phase-1	3
6	VIII	ET461N Dissertation Phase - 2	4
Total Credits for Honours with Research Degree			18

Semiconductor Manufacturing Institute Level MDM Courses List [Applicable to all departments]

Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	SM201N	Introduction to VLSI lifecycle	2
2	IV	SM202N	Introduction to VLSI Fabrication	2
3	V	SM301N	Semiconductor Packaging and Testing	4
4	VI	SM302N	Semiconductor Technology Equipment Maintenance	2
5	VII	SM401N	Clean Room Technologies	2
6	VIII	SM402N	Safety Protocols for IC Foundry	2
Total Credits for MDM Courses				14

Semiconductor Manufacturing Specialization Minor Courses offered (For Students who have not opted for Semiconductor Manufacturing Institute Level MDM - Applicable only for Double Minor Degree)

Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	SM201N	Introduction to VLSI lifecycle	2
2	IV	SM202N	Introduction to VLSI Fabrication	2
3	V	SM301N	Semiconductor Packaging and Testing	4
4	VI	SM302N	Semiconductor Technology Equipment Maintenance	2
5	VII	SM401N	Clean Room Technologies	2
6	VIII	SM402N	Safety Protocols for IC Foundry	2
7	VIII	SM404N	Electronic System Assembly	4
Total Credits				18

List of Multidisciplinary Minor (MDM) Courses offered by Department of Instrumentation Engineering (For Students of departments other than Instrumentation Engineering)

Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	INM205N Transducers	2
2	IV	MDM-II	INM255N Virtual Instrumentation	2
3	V	MDM-III	INM306N Industrial Automation	4
4	VI	MDM-IV	INM354N Opto Electronic Instrumentation	2
5	VII	MDM-V	INM403N Instrumentation and Process Control in Food Industry (NPTEL Course)	2
6	VIII	MDM-VI	INM453N Instrumentation System Design	2
Total Credits for MDM Courses				14

List of Specialization Minor Courses offered by Department of Instrumentation Engineering (For Students of departments other than Instrumentation Engineering; who have not opted for Instrumentation track in MDM or equivalent Open Elective) - Applicable only for Double Minor Degree

Sl. No.	Semester	Course Code and Name of Course	Credits
1	III	INM205N Transducers	3
2	IV	INM255N Electronics Measurement and Instrumentation	2
3	V	INM306N Industrial Automation	4
4	VI	INM354N Opto Electronic Instrumentation	3
5	VII	INM403N Instrumentation and Process Control in Food Industry (NPTEL Course)	3
6	VIII	INM453N Advanced Control Systems	3
Total Specialization Minor Credits			18

List of additional courses for B. Tech. Honours Degree offered by Department of Instrumentation Engineering (For Students of Department of Instrumentation Engineering) - Applicable only for Honours Degree

Sl. No.	Semester	Course Code and Name of Course	Credits
1	V	IN311N Control System for Electrical Vehicle	3
2	V	IN312N Control System for Electrical Vehicle Lab	1
3	VI	IN363N Control of Robotic System	3
4	VII	IN411N Air Pollution and Control (12 Weeks NPTEL Course) (12 Weeks NPTEL Course)	4
5	VII	IN412N Instrumentation and Process Control in Food Industry (NPTEL Course 8 Week)	3
6	VIII	IN460N Modelling and Simulation	4
Total Credits for Honours Degree			18

List of additional courses for B. Tech. multidisciplinary minor and Honors with Research Degree offered by Department of Instrumentation Engineering (For Students of Department of E&Tc Engineering) - Applicable only for Honours with Research Degree

Sl. No.	Semester	Course Code and Name of Course	Credits
1	VII	IN413N Dissertation Specific Course (Online)	3
2	VII	IN414N Dissertation Phase-1	6
3	VIII	IN461N Dissertation Phase - 2	9
Total Credits for Honours with Research Degree			18

Industry 4.0 Institute Level MDM Courses List [Applicable to all departments]

Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	IFM201N	Fundamentals of IoT and Smart Instrumentation Techniques	2
2	IV	IFM202N	Industrial Internet of Things and Applications	2
3	V	IFM301N	Fundamentals of Industry 4.0	4
4	VI	IFM302N	Artificial Intelligence: Principles and Techniques	2
5	VII	IFM401N	Digital Transformation in Industry 4.0(NPTEL course/workshop)	2
6	VIII	IFM402N	Advanced Industrial Automation and Applications	2
Total Credits for MDM Courses				14

Industry 4.0 Specialization Minor Courses offered [For Students who have not opted for Industry 4.0 Institute Level MDM - Applicable only for Double Minor Degree]

Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	IFM201N	Fundamentals of IoT and Smart Instrumentation Techniques	2
2	IV	IFM202N	Industrial Internet of Things and Applications	2
3	V	IFM301N	Fundamentals of Industry 4.0	4
4	VI	IFM302N	Artificial Intelligence: Principles and Techniques	2
5	VII	IFM401N	Digital Transformation in Industry 4.0(NPTEL course/workshop)	2
6	VIII	IFM402N	Advanced Industrial Automation and Applications	2
7	VIII	IFM404N	Advanced Manufacturing and Automation	4
				18

Agriculture 4.0 Institute Level MDM Courses List [Applicable to all departments]

Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	AFM101	Agriculture 4.0: The Future of Farming Technology	2
2	IV	AFM102	Smart Sensors in Agriculture 4.0	2
3	V	AFM103	Agriculture Internet of Things and Applications	4
4	VI	AFM104	Remote Sensing Technologies	2
5	VII	AFM105	Computing for Agriculture 4.0(NPTEL course/workshop)	2
6	VIII	AFM106	Artificial Intelligence in Smart Farming	2
Total Credits for MDM Courses				14

Agriculture 4.0 Specialization Minor Courses offered [For Students who have not opted for Agriculture 4.0 Institute Level MDM - Applicable only for Double Minor Degree]

Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	AFM101	Agriculture 4.0: The Future of Farming Technology	2
2	IV	AFM102	Smart Sensors in Agriculture 4.0	2
3	V	AFM103	Agriculture Internet of Things and Applications	4
4	VI	AFM104	Remote Sensing Technologies	2
5	VII	AFM105	Computing for Agriculture 4.0 (NPTEL course/workshop)	2
6	VIII	AFM106	Artificial Intelligence in Smart Farming	2
7	VIII	AFM107	Agriculture Crop Management	4
				18

EE

List of Multidisciplinary Minor (MDM) Courses offered by Department of Electrical Engineering Engineering (For Students of departments other than Electrical Engineering)

Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	EEM205N:DC Machines & Transformer	2
2	IV	MDM-II	EEM255N:Power system-I	2
3	V	MDM-III	EEM306N:AC Machines	4
4	VI	MDM-IV	EEM354N:Power system-II	2
5	VII	MDM-V	EEM403N:Switchgear & Protection	2
6	VIII	MDM-VI	EEM453N:Illumination Engineering	2
Total Credits for MDM Courses				14

List of Specialization Minor Courses offered by Department of Electrical Engineering Engineering (For Students of departments other than Electrical Engineering; who have not opted for EE track in MDM) - Applicable only for Double Minor Degree

Sl. No.	Semester	Course Code and Name of Course	Credits
1	III	EEM205N:DC Machines & Transformer	2
2	IV	EEM255N:Power system-I	2
3	V	EEM306N:AC Machines	4
4	VI	EEM354N:Power system-II	2
5	VII	EEM403N:Switchgear & Protection	2
6	VIII	EEM453N:Illumination Engineering	2
7	VIII	EEM457N:Renewable Energy Technology	4
Total Specialization Minor Credits			18

List of additional courses for B. Tech. Honours Degree offered by Department of Electrical Engineering (For Students of Electrical Engineering Department) - Applicable only for Honours Degree

Sl. No.	Semester	Course Code and Name of Course	Credits
1	V	EE310N: Special Machines	3
2	VI	EE360N: Computer Aided Power System Analysis	3
3	VI	EE361N: Electric Machine Modeling and Analysis	3
4	VII	EE405N: Modern Power Electronics (NPTEL COURSE 8 week/Online Mode)	3
5	VII	EE406N: Modern Control System (NPTEL COURSE 8 week/Online Mode)	3
6	VIII	EE457N: Modern Protective Relaying	3
Total Credits for Honours Degree			18

List of additional courses for B. Tech. multidisciplinary minor and Honors with Research Degree offered by Department of Electrical Engineering (For Students of Department of Electrical Engineering) - Applicable only for Honours with Research Degree

Sl. No.	Semester	Course Code and Name of Course	Credits
1	VII	EE407N: Optimization Techniques (NPTEL COURSE 8 week/ Online Mode)	4
2	VII	EE408N: Power Quality (NPTEL COURSE 8 week/ Online Mode)	3
3	VII	EE409N: Research Project Phase-I	2
4	VIII	EE458N: Circuit Simulation Lab	1
5	VIII	EE459N: Research Project Phase-II	8
Total Credits for Honours with Research Degree			18

E-Vehicle Technology Institute Level MDM Courses List [Applicable to all departments]

Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	EV201N	Fundamentals of Electric Vehicles and Simulations	2
2	IV	EV202N	Battery and Charging System	2
3	V	EV301N	Automobile Engineering for Electric Vehicles	4
4	VI	EV302N	Electrical Machines and Modelling	2
5	VII	EV401N	Embedded System for EV	2
6	VIII	EV402N	Emerging EV Technologies	2
Total Credits for MDM Courses				14

E-Vehicle Technology Specialization Minor Courses offered (For Students who have not opted for E-Vehicle Technology Institute Level MDM - Applicable only for Double Minor Degree)

Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	EV201N	Fundamentals of Electric Vehicles and Simulations	2
2	IV	EV202N	Battery and Charging System	2
3	V	EV301N	Automobile Engineering for Electric Vehicles	4
4	VI	EV302N	Electrical Machines and Modelling	2
5	VII	EV401N	Embedded System for EV	2
6	VIII	EV402N	Emerging EV Technologies	2
7	VIII	EV404N	EV Project	4
Total Credits for Specialization Minor Courses				18

CO

List of Multidisciplinary Minor (MDM) Track-I (AI & ML) Courses offered by Department of Computer Engineering (For Students of departments other than Computer Engineering)

Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	AIM205N Data Mining	2
2	IV	MDM-II	AIM255N Fundamentals of Artificial Intelligence	2
3	V	MDM-III	AIM306N Machine Learning	4
4	VI	MDM-IV	AIM354N Data Visualisation	2
5	VII	MDM-V	AIM403N Deep Learning(NPTEL Course)	2
6	VIII	MDM-VI	AIM453N Computer Vision	2
Total Credits for MDM Courses				14

List of Multidisciplinary Minor (MDM) Track-II (Computer Programming) Courses offered by Department of Computer Engineering (For Students of departments other than Computer Engineering)				
Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	CPM205N Object Oriented Programming Using C++	2
2	IV	MDM-II	CPM255N Fundamentals of Data Structures	2
3	V	MDM-III	CPM306N Python Programming	4
4	VI	MDM-IV	CPM354N Database Management System	2
5	VII	MDM-V	CPM403N Cloud Computing (NPTEL Course)	2
6	VIII	MDM-VI	CPM453N Full Stack Development	2
Total Credits for MDM Courses				14
List of Specialization Minor Courses offered by Department of Computer Engineering (For Students of departments other than Computer Engineering; who have not opted for Computer Engineering track-I(AI & ML) in MDM) - Applicable only for Double Minor Degree				
Sl. No.	Semester	Course Code and Name of Course		Credits
1	III	AIM205N Data Mining		2
2	IV	AIM255N Fundamentals of Artificial Intelligence		2
3	V	AIM306N Machine Learning		4
4	VI	AIM354N Data Visualisation		2
5	VI	AIM364N Natural Language Processing		2
6	VII	AIM403N Deep Learning(NPTEL Course)		2
7	VIII	AIM453N Computer Vision		2
8	VIII	AIM461N Applications of AI and ML		2
Total Specialization Minor Credits				18
List of Specialization Minor Courses offered by Department of Computer Engineering (For Students of departments other than Computer Engineering; who have not opted for Computer Engineering track-II(Computer Programming) in MDM) - Applicable only for Double Minor Degree				
Sl. No.	Semester	Course Code and Name of Course		Credits
1	III	CPM205N Object Oriented Programming Using C++		2
2	IV	CPM255N Fundamentals of Data Structures		2
3	V	CPM306N Python Programming		4
4	VI	CPM354N Database Management System		2
5	VI	CPM364N Web Development		2
6	VII	CPM403N Cloud Computing (NPTEL Course)		2
7	VIII	CPM453N Full Stack Development		2
8	VIII	CPM461N DevOps		2
Total Specialization Minor Credits				18
List of additional courses for B. Tech. Honours Degree offered by Department of Computer Engineering (For Students of Department of Computer Engineering) - Applicable only for Honours Degree				
Sl. No.	Semester	Course Code and Name of Course		Credits
1	V	CO311N UI Design using React and Angular		3
2	V	CO312N UI Design using React and Angular Lab		1
3	VI	CO363N Full Stack Development using Java		3
4	VII	CO411N Cloud Computing (12 Weeks NPTEL Course)		4
5	VII	CO412N Cyber Security(NPTEL Course)		3
6	VIII	CO460N DevOps		4
Total Credits for Honours Degree				18
List of additional courses for B. Tech. multidisciplinary minor and Honors with Research Degree offered by Department of Computer Engineering (For Students of Department of Computer Engineering) - Applicable only for Honours with Research Degree				
Sl. No.	Semester	Course Code and Name of Course		Credits
1	V	COR311N Fundamentals of Research and Ethics		3
2	V	COR312N Fundamentals of Research and Ethics Lab		1
3	VI	COR371N Research/Thesis Writing related Subjects (12 Weeks NPTEL Course)		4
4	VII	COR413N Dissertation Specific Course (Online)		3
5	VII	COR414N Disseration Phase-1		3
6	VIII	COR461N Dissertation Phase - 2		4
Total Credits for Honours with Research Degree				18
Drone Technology Institute Level MDM Courses List [Applicable to all departments]				
Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	DTM205N	Drone Technology and Systems	2
2	IV	DTM255N	Drone Electronics	2

3	V	DTM306N	Drone Programming and Automations	4
4	VI	DTM354N	GIS and Remote Sensing	2
5	VII	DTM403N	Aerospace Engineering (NPTEL)	2
6	VIII	DTM453N	Drone Navigation and Autonomous Flight	2
Total Credits for MDM Courses				14

Drone Technology Specialization Minor Courses offered (For Students who have not opted for Drone Technology Institute Level MDM - Applicable only for Double Minor Degree)

Sl. No.	Semester	Course Code	Name of Course	Credits
1	III	DTM205N	Drone Technology and Systems	2
2	IV	DTM255N	Drone Electronics	2
3	V	DTM306N	Drone Programming and Automations	4
4	VI	DTM354N	GIS and Remote Sensing	2
5	VI	DTM364N	Thermal Imaging and Aerodynamics	2
6	VII	DTM403N	Aerospace Engineering (NPTEL)	2
7	VIII	DTM453N	Drone Navigation and Autonomous Flight	2
8	VIII	DTM461N	UAV design and Simulation	2
Total Credits for MDM Courses				18

Data Science and Cybersecurity Institute Level MDM Courses List [Applicable to all departments including Computer Engineering]

Sl. No.	Semester	Course Code	Course Code and Name of Course	Credits
1	III	DCM205N	Data Science and Tools	2
2	IV	DCM255N	Cyber Laws and Cyber Security Principles	2
3	V	DCM306N	Data Analytics and Visualisation	4
4	VI	DCM354N	Cryptography and Application	2
5	VII	DCM403N	Block Chain and its applications (NPTEL Course)	2
6	VIII	DCM453N	Digital Forensics	2
Total Credits for MDM Courses				14

List of Specialization Minor Courses offered by Department of Computer Engineering (For Students of departments other than Computer Engineering; who have not opted for Computer Engineering track (Data Science and Cybersecurity) in MDM) - Applicable only for Double Minor Degree

Sl. No.	Semester	Course Code	Course Code and Name of Course	Credits
1	III	DCM205N	Data Science and Tools	2
2	IV	DCM255N	Cyber Laws and Cyber Security Principles	2
3	V	DCM306N	Data Analytics and Visualisation	4
4	VI	DCM354N	Cryptography and Application	2
5	VI	DCM364N	Information Security	2
6	VII	DCM403N	Block Chain and its applications (NPTEL Course)	2
7	VIII	DCM453N	Digital Forensics	2
8	VIII	DCM461N	Cybersecurity Social Engineering	2
Total Credits for MDM Courses				18

CE

List of Multidisciplinary Minor (MDM) Courses offered by Department of Civil Engineering (For Students of departments other than Civil Engineering)

Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	CEM202N Building Materials	2
2	IV	MDM-II	CEM 255N Environmental Engg	2
3	V	MDM-III	CEM 305N Concrete Technology	4
4	VI	MDM-IV	CEM 356N Hydrology and Irrigation Engg	2
5	VII	MDM-V	CEM404N Transportation Engg	2
6	VIII	MDM-VI	CEM454N Quality and Safety in construction	2
Total Credits for MDM Courses				14

List of Multidisciplinary Minor (MDM) Courses offered by Department of Civil Engineering At Institute Level)				
Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	CEM209N Geology	2
2	IV	MDM-II	CEM259N Smart Cities Planning and Management	2
3	V	MDM-III	CEM313N Remote Sensing and GIS	4
4	VI	MDM-IV	CEM366N Green Buildings and Energy Conservation	2
5	VII	MDM-V	CEM413N Disaster Management	2
6	VIII	MDM-VI	CEM463N Environmental Law	2
Total Credits for MDM Courses				14
List of Specialization Minor Courses offered by Department of Civil Engineering (For Students of departments other than Civil Engineering; who have not opted for Civil track in MDM) - Applicable only for Double Minor Degree				
Sl. No.	Semester	Course Code and Name of Course		Credits
1	III	CEM202N Building Materials		2
2	IV	CEM 255N Environmental Engg		2
3	V	CEM 305N Concrete Technology		4
4	VI	CEM 356N Hydrology and Irrigation Engg		2
5	VII	CEM404N Transportation Engg		2
6	VIII	CEM454N Quality and Safety in construction		2
7	VIII	CEM458N Estimation, Contract and Valuation		4
Total Specialization Minor Credits				18
List of additional courses for B. Tech. Honours Degree offered by Department of Civil Engineering (For Students of Department of Civil Engineering) - Honor in Structural Engineering				
Sl. No.	Semester	Course Code and Name of Course		Credits
1	V	CE 311N Advanced Concrete Technology		3
2	VI	CE 362N Theory of Elasticity and Plasticity		3
3	VI	CE 363N Finite Element Analysis		3
4	VII	CE 406N Theory of Plates and Shells		3
5	VII	CE407N Rehabilitation and Retrofitting of structure		3
6	VIII	CE 459N Design of Earthquake Resistance structure		3
Total Credits for Honours Degree				18
List of additional courses for B. Tech. Honours Degree offered by Department of Civil Engineering (For Students of Department of Civil Engineering) - Honor in Water Resource Engineering				
Sl. No.	Semester	Course Code and Name of Course		Credits
1	V	CE312N Groundwater Hydrology		3
2	VI	CE364N Engineering Hydrology and Hydrologic Systems		3
3	VI	CE365N Land and Water Management		3
4	VII	CE408N Advanced Fluid Mechanics		3
5	VII	CE409N Channel and River Hydraulic		3
6	VIII	CE460N Hydraulic Structures		3
Total Credits for Honours Degree				18
List of additional courses for B. Tech. multidisciplinary minor and Honors with Research Degree offered by Department of Civil Engineering (For Students of Department of Civil Engineering) - Applicable only for Honours with Research Degree				
Sl. No.	Semester	Course Code and Name of Course		Credits
1	VII	CE410N Emerging Research Topics in Civil Engg		3
2	VII	CE411N Emerging Research Topics in Civil Engg Lab		1
3	VII	CE412N Research Project (Synopsis) Phase-I		4
4	VIII	CE461N Research Specific Core Course-I		3
5	VIII	CE462N Research Project		7
Total Credits for Honours with Research Degree				18

List of Multidisciplinary Minor (MDM) Courses offered by Science & Humanities Department - MANAGEMENT [for all branches]

Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	SHM201N - Management Science	2
2	IV	MDM-II	SHM202N - Organizational Behaviour	2
3	V	MDM-III	SHM301N - Accounting, Financial & Marketing Management	4
4	VI	MDM-IV	SHM302N - Human Resource Management	2
5	VII	MDM-V	SHM401N - Corporate Social Responsibility	2
6	VIII	MDM-VI	SHM402N - Operations Management	2
Total Credits for MDM Courses				14

List of Multidisciplinary Minor (MDM) Courses offered by Science & Humanities Department - ECONOMICS [for all branches]

Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	SHM203N - Introductory Micro Economics	2
2	IV	MDM-II	SHM204N - Introductory Macro Economics	2
3	V	MDM-III	SHM303N - Public Finance & Financial Economics	4
4	VI	MDM-IV	SHM304N - Environmental Economics	2
5	VII	MDM-V	SHM403N - Agricultural Economics	2
6	VIII	MDM-VI	SHM404N - International Economics	2
Total Credits for MDM Courses				14

List of Multidisciplinary Minor (MDM) Courses offered by Science & Humanities Department - Legal Aspects in Technology [for all branches]

Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	SHM205N-Constitutional Law of India	2
2	IV	MDM-II	SHM206N-Human Rights Law	2
3	V	MDM-III	SHM305N-Intellectual SHM308N-Property Rights	4
4	VI	MDM-IV	SHM306N-Cyber Laws	2
5	VII	MDM-V	SHM405N-Company Law	2
6	VIII	MDM-VI	SHM406N-Indian Contract Act	2
Total Credits for MDM Courses				14

List of Multidisciplinary Minor (MDM) Courses offered by Science & Humanities Department - German Language [for all branches]

Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	SHM207N - German Language – A1 Level	2
2	IV	MDM-II	SHM208N - German Language – A1.1 Level	2
3	V	MDM-III	SHM307N - German Language – A2 Level	4
4	VI	MDM-IV	SHM308N - German Language – B1.1 Level	2
5	VII	MDM-V	SHM407N - German Language – B1.2 Level	2
6	VIII	MDM-VI	SHM408N - German Language – B2 Level	2
Total Credits for MDM Courses				14

List of Multidisciplinary Minor (MDM) Courses offered by Science & Humanities Department -Japanese language [for all branches]

Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	SHM205N - Japanese Language – A1 Level	2
2	IV	MDM-II	SHM206N - Japanese Language – A1.1 Level	2
3	V	MDM-III	SHM305N - Japanese Language – A2 Level	4
4	VI	MDM-IV	SHM306N - Japanese Language – B1.1 Level	2
5	VII	MDM-V	SHM405N - Japanese Language – B1.2 Level	2
6	VIII	MDM-VI	SHM406N - Japanese Language – B2 Level	2
Total Credits for MDM Courses				14

List of Multidisciplinary Minor (MDM) Courses offered by Science & Humanities Department - अहिराणी भाषेचा साहित्यिक अभ्यास [for all branches]

Sl. No.	Semester	MDM Level	Course Code and Name of Course	Credits
1	III	MDM-I	SHM209N अहिराणी : पूर्वपरंपरा	2
2	IV	MDM-II	SHM210N अहिराणी : भाषा परिचय	2
3	V	MDM-III	SHM309N अहिराणी : व्याकरण परिचय	4
4	VI	MDM-IV	SHM310N अहिराणी : ललित साहित्य	2
5	VII	MDM-V	SHM409N अहिराणी : समाजभाषा वैज्ञानिक अभ्यास	2
6	VIII	MDM-VI	SHM410N अहिराणी : लोकवाङ्मयाचा अभ्यास	2
Total Credits for MDM Courses				14