

Appendice (FY)

First Year Structure is common to All Engineering & Technology Programmes except the following

Biomedical Engineering

Biotechnology

Food Processing Technology

First Year - Semester I (Group A)

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			
					L	P	Internal	External	Total	Internal	External	Total	
BSC	APS21BSL101	Single and Multivariable Calculus	Lecture	4	4	-	60	40	100	-	16	40	
BSC	APS21BSL102	Engineering Physics	Lecture	3	3	-	60	40	100	-	16	40	
ESC	APS21ESL101	Python Programming	Lecture	2	2	-	60	40	100	-	16	40	
ESC	APS21ESL102	Engineering Graphics	Lecture	2	2	-	60	40	100	-	16	40	
AEC	MGM54AEL101	Communicative English	Lecture	1	1	-	30	20	50	-	8	20	
VSEC	APS21VSP101	Engineering Exploration	Practical	2	-	4	60	40	100	-	16	40	
BSC	APS21BSP101	Engineering Physics Lab	Practical	1	-	2	30	20	50	-	8	20	
ESC	APS21ESP101	Python Programming Lab	Practical	1	-	2	30	20	50	-	8	20	
ESC	APS21ESP102	Engineering Graphics Studio	Practical	2	-	4	30	20	50	-	8	20	
ESC	APS21ESP103	Recent Trends in Integrated Technology	Practical	1	-	2	30	20	50	-	8	20	
AEC	MGM54AEP101	Communicative English Lab	Practical	1	-	2	30	20	50	-	8	20	
CCA	MGM82CCP101 MGM82CCP102 MGM82C CP103	NCC /Yoga /Sports	Practical	2	-	4	50	-	50	20	-	20	
TOTAL					22	12	20	530	320	850	-	-	-

Note:

Nature of Course : L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

Course Category: PCC-Program Core Course, PEC-Program Elective Course, MDM-Multidisciplinary Minor, OE-Open Elective, EEMC-Entrepreneurship/Economic/Management Course, VSEC-Vocational Skill and Skill Enhancement Course, AEC-Ability Enhancement Course, IKS-Indian Knowledge System, VEC-Value Education Course, OJT-On Job Training / Internship / Apprenticeship, FP-Field Project, CEP-Community Engagement and Service, CC-Co curricular course, RM-Research Methodology, RP-Research Project, HSSM- Humanities, Social Science and Management

First Year - Semester II (Group A)												
Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
BSC	APS21BSL103	Linear Algebra and Differential Equations	Theory	4	4	-	60	40	100	-	16	40
BSC	APS21BSL104	Engineering Chemistry	Theory	3	3	-	60	40	100	-	16	40
ESC	APS21ESL103	Engineering Mechanics	Theory	2	2	-	60	40	100	-	16	40
ESC	APS21ESL104	Building Programming logic in C	Theory	1	1	-	30	20	50	-	8	20
PCC	APS21PCL101	Basics of Electrical and Electronics Engineering	Theory	2	2	-	60	40	100	-	16	40
IKS	APS21IKL101	Indian Knowledge System	Theory	2	2	-	60	40	100	-	16	40
VSEC	APS21VSP102	Workshop Practices	Practical	2	-	4	60	40	100	-	16	40
BSC	APS21BSP102	Engineering Chemistry Lab	Practical	1	-	2	30	20	50	-	8	20
ESC	APS21ESP104	Engineering Mechanics Lab	Practical	1	-	2	30	20	50	-	8	20
ESC	APS21ESP105	Building Programming logic in C Lab	Practical	1	-	2	30	20	50	-	8	20
PCC	APS21PCP101	Electrical and Electronics Technology Lab	Practical	1	-	2	30	20	50	-	8	20
CCA	MGM85CCP107 MGM82CCP104 MGM73CCP105 MGM73C CP106	Cultural Activities/ NSS/ Fine Art/ Visual Art	Practical	2	-	4	50	-	50	20	-	20
TOTAL				22	14	16	560	340	900	-	-	-

First Year - Semester I (Group B)												
Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
BSC	APS21BSL101	Single and Multivariable Calculus	Theory	4	4	-	60	40	100	-	16	40
BSC	APS21BSL104	Engineering Chemistry	Theory	3	3	-	60	40	100	-	16	40
ESC	APS21ESL101	Python Programming	Theory	2	2	-	60	40	100	-	16	40
ESC	APS21ESL103	Engineering Mechanics	Theory	2	2	-	60	40	100	-	16	40
AEC	MGM54AEL101	Communicative English	Theory	1	1	-	30	20	50	-	8	20
PCC	APS21PCL101	Basics of Electrical and Electronics Engineering	Theory	2	2	-	60	40	100	-	16	40
VSEC	APS21VSP102	Workshop Practices	Practical	2	-	4	60	40	100	-	16	40
BSC	APS21BSP102	Engineering Chemistry Lab	Practical	1	-	2	30	20	50	-	8	20
ESC	APS21ESP101	Python Programming Lab	Practical	1	-	2	30	20	50	-	8	20
ESC	APS21ESP104	Engineering Mechanics Lab	Practical	1	-	2	30	20	50	-	8	20
AEC	MGM54AEP101	Communicative English Lab	Practical	1	-	2	30	20	50	-	8	20
PCC	APS21PCP101	Electrical and Electronics Technology Lab	Practical	1	-	2	30	20	50	-	8	20
CCA	MGM82CCP101 MGM82CCP102 MGM82CCP103	NCC / Yoga / Sports	Practical	2	-	4	50	-	50	20	-	20
TOTAL				23	14	18	590	360	950	-	-	-

First Year - Semester II (Group B)

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
BSC	APS21BSL103	Linear Algebra and Differential Equations	Theory	4	4	-	60	40	100	-	16	40
BSC	APS21BSL102	Engineering Physics	Theory	3	3	-	60	40	100	-	16	40
ESC	APS21ESL102	Engineering Graphics	Theory	2	2	-	60	40	100	-	16	40
IKS	APS21IKL101	Indian Knowledge System	Theory	2	2	-	60	40	100	-	16	40
ESC	APS21ESL104	Building Programming logic in C	Theory	1	1	-	30	20	50	-	8	20
VSEC	APS21VSP101	Engineering Exploration	Practical	2	-	4	60	40	100	-	16	40
BSC	APS21BSP101	Engineering Physics Lab	Practical	1	-	2	30	20	50	-	8	20
ESC	APS21ESP102	Engineering Graphics Studio	Practical	2	-	4	30	20	50	-	8	20
ESC	APS21ESP105	Building Programming logic in C Lab	Practical	1	-	2	30	20	50	-	8	20
ESC	APS21ESP103	Recent Trends in Integrated Technology	Practical	1	-	2	30	20	50	-	8	20
CCA	MGM85CCP107 MGM82CCP104 MGM73CCP105 MGM73C CP106	Cultural Activities/ NSS/ Fine Art/ Visual Art	Practical	2	-	4	50	-	50	20	-	20
TOTAL				21	12	18	500	300	800	-	-	-

Semester III

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
PCC	CHE21PCL201	Chemical Process Calculations	Lecture	3	3	-	60	40	100	-	16	40
PCC	CHE21PCL202	Mechanical Operations	Lecture	2	2	-	60	40	100	-	16	40
PCC	CHE21PCL203	Fluid Flow and Operations	Lecture	3	3	-	60	40	100	-	16	40
PCC	CHE21PCP202	Mechanical Operations Lab	Practical	1	-	2	30	20	50	-	8	20
PCC	CHE21PCP203	Fluid Flow and Operations Lab	Practical	1	-	2	30	20	50	-	8	20
MDM		Refer MGMU Basket (Annexure A)	Lecture	2	2	-	60	40	100	-	16	40
OE	OE-1	Refer MGMU Basket of Open Electives	Lecture	2	2	-	30	20	50	-	8	20
OE	OE-2	Refer MGMU Basket of Open Electives	Lecture	2	2	-	30	20	50	-	8	20
EEMC	CHE21HSL204	Business Management and Financial Accounting	Lecture	2	2	-	60	40	100	-	16	40
VEC	MGM56VEL102	Constitution of India	Lecture	2	2	-	30	20	50	-	8	20
CEP/FP	CHE21FPJ205	Field Project	Project	2	-	4	50	-	50	20	-	20
		TOTAL		22	18	8	500	300	800			

Semester IV

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
PCC	CHE21PCL251	Chemical Engineering Thermodynamics – I	Lecture	3	2	-	60	40	100	-	16	40
PCC	CHE21PCL252	Heat Transfer Operations	Lecture	2	2	-	60	40	100	-	16	40
PCC	CHE21PCL253	Industrial Pollution Control	Lecture	3	3	-	60	40	100	-	16	40
PCC	CHE21PCP252	Heat Transfer Operations Lab	Practical	1	-	2	30	20	50	-	8	20
PCC	CHE21PCP253	Industrial Pollution Control Lab	Practical	1	-	2	30	20	50	-	8	20
MDM		Refer MDM Basket (Annexure A)	Lecture	2	2	-	60	40	100	-	16	40
OE	OE-3	Refer MGMU Basket of Open Electives	Lecture	2	2	-	30	20	50	-	8	20
VSEC	CHE21VSP254	Organic Qualitative Analysis Lab	Practical	2	-	4	60	40	100	-	16	40
AEC		Refer MGMU Basket of AEC	Lecture	2	2	-	30	20	50	-	8	20
EEMC	CHE21HSL255	Entrepreneurship Development	Lecture	2	2	-	60	40	100	-	16	40
VEC	MGM21VEL101	Environmental Studies	Lecture	2	2	-	30	20	50	-	8	20
		TOTAL		22	13	8	510	340	850			

Multidisciplinary Minor (MDM) Basket Available – Second Year Onwards

Sr. No.	Title of MDM
1	Civil Engineering
2	Remote Sensing and GIS Applications
3	Robotics
4	3D Printing
5	Drone Technology
6	Energy Management
7	Internet of Things
8	Data Science
9	Augmented Reality and Virtual Reality
10	Chemical Technology
11	Computer Applications
12	Artificial Intelligence and Machine Learning
13	Cyber Security
14	Experimental Biotechnology
15	Global Standards for Food Industry
16	Bioengineering
17	Business Analytics
18	Fintech

1) NAME OF THE MDM: Civil Engineering													
Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)		Minimum Passing (Marks)			Total	Semester
					L	P	Internal	External	Total	Internal	External		
MDM	CIV21MDL201	Basics of Civil Engineering	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	CIV21MDL202	Basics of Map Making	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	CIV21MDL203	Public health Engineering	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	CIV21MDL204	Basics of building planning	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	CIV21MDL305	Basics of Irrigation Engineering	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	CIV21MDL306	Basics of Transportation Engineering	Lecture	2	2	-	60	40	100	-	16	40	VIII
			Total	14	14	0	360	240	600				

2) NAME OF THE MDM: Remote Sensing and GIS Applications

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)		Minimum Passing (Marks)			Semester	
					L	P	Internal	External	Total	Internal	External		Total
MDM	CIV21MDL211	Fundamentals of remote sensing	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	CIV21MDL212	Fundamentals of GIS	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	CIV21MDL213	Digital image processing for remote sensing	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	CIV21MDL214	Spatial analysis and modelling	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	CIV21MDL315	Geospatial data visualization and interpretation	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	CIV21MDL316	Advanced topics in remote sensing and GIS	Lecture	2	2	-	60	40	100	-	16	40	VIII
			Total	14	14	0	360	240	600				

3) NAME OF THE MDM: Robotics

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)		Minimum Passing (Marks)			Semester	
					L	P	Internal	External	Total	Internal	External		Total
MDM	MEN21MDL201	Introduction to Robotics	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	MEN21MDL202	Industrial Robot Applications	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	MEN21MDL203	Microcontroller & Embedded Systems	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	MEN21MDL204	Mechanics of Robots	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	MEN21MDL305	Control of Robotic Systems	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	MEN21MDJ306	Project in Robotics	Project	2	-	4	60	40	100	-	16	40	VIII
			Total	14	12	4	360	240	600				

4) NAME OF THE MDM: 3D Printing

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	MEN21MDL211	Introduction to Additive Manufacturing	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	MEN21MDL212	Advanced Additive Manufacturing Techniques	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	MEN21MDL213	Design for Additive Manufacturing	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	MEN21MDL214	Materials for Additive Manufacturing	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	MEN21MDL315	Additive Manufacturing Quality Control	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	MEN21MDJ316	Project in 3D Printing	Project	2	-	4	60	40	100	-	16	40	VIII
Total				14	12	4	360	240	600				

5) NAME OF THE MDM: Drone Technology

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	MEN21MDL221	Basics of Drone Technology	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	MEN21MDL222	Assembly and Calibration of Drone	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	MEN21MDL223	Operation maintenance and Safety of Drones	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	MEN21MDL224	Remote Sensing and GIS	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	MEN21MDL325	Drone software and programming	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	MEN21MDJ326	Project in Drone Technology	Project	2	-	4	60	40	100	-	16	40	VIII
Total				14	12	4	360	240	600				

6) NAME OF THE MDM: ENERGY MANAGEMENT

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	ECE21MDL201	Solar Photovoltaic Devices and Systems	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	ECE21MDL202	Solar Energy Utilization	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	ECE21MDL203	Grid Integration of Renewables	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	ECE21MDL204	Energy and Power Audit	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	ECE21MDL305	Power Quality Audit	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	ECE21MDL306	Industrial Safety	Lecture	2	2	-	60	40	100	-	16	40	VIII
			Total	14	14	0	360	240	600				

7) NAME OF THE MDM: Internet of Things

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	ETC21MDL201	Basics of Electronics	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	ETC21MDL202	Sensors and Actuators	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	ETC21MDL203	Introduction To IoT	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	ETC21MDL204	Wireless Sensor Network	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	ETC21MDL305	Application of IoT and Case Study	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	ETC21MDJ306	Project	Project	2	-	4	60	40	100	-	16	40	VIII
Total				14	12	4	360	240	600				

8) NAME OF THE MDM: Data Science

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	CSE21MDL201	Introduction to Data Science	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	CSE21MDL202	Adv. Python Programming	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	CSE21MDL203	Applied probability & statistic	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	CSE21MDL204	SQL for Data Science	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	CSE21MDL305	Introduction to Machine Learning	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	CSE21MDJ306	Capstone Project	Project	2	-	4	60	40	100	-	16	40	VIII
TOTAL				14	12	4	360	240	600				

9) NAME OF THE MDM: Augmented Reality and Virtual Reality

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	CSE21MDL211	Computer Graphics	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	CSE21MDL212	Introduction to Virtual Reality	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	CSE21MDL213	Concepts of Virtual and Augmented Reality	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	CSE21MDL214	Scientific and Engineering Data Visualization	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	CSE21MDL315	Mobile VR and AI in Module	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	CSE21MDJ316	Capstone Project	Project	2	-	4	60	40	100	-	16	40	VIII
TOTAL				14	12	4	360	240	600				

10) NAME OF THE MDM: Chemical Technology

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	CHE21MDL201	Pulp & Paper Technology	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	CHE21MDL202	Petrochemical Technology	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	CHE21MDL203	Plastic and Polymer Technology	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	CHE21MDL204	Oil and Fat Technology	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	CHE21MDL305	Surface Coating Technology	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	CHE21MDJ306	Project work on any Chemical Technology based Industry	Project	2	-	4	60	40	100	-	16	40	VIII
TOTAL				14	12	4	360	240	600				

11) NAME OF THE MDM: Computer Applications

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	MCA21MDL201	Object-Oriented Programming	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	MCA21MDL202	Database management system	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	MCA21MDL203	Web Application development	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	MCA21MDL204	Data Visualization	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	MCA21MDL305	Data Mining	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	MCA21MDJ306	Project	Project	2	-	4	60	40	100	-	16	40	VIII
TOTAL				14	14	-	360	240	600				

12) NAME OF THE MDM: Artificial Intelligence and Machine Learning

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	ITY23MDL201	Python for AIML	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	ITY23MDL202	Introduction to Machine Learning	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	ITY23MDL203	Artificial Intelligence	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	ITY23MDL204	Introduction to Data Analytics	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	ITY23MDL305	Artificial Neural Network	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	ITY23MDJ306	Project	Project	2	-	4	60	40	100	-	16	40	VIII
TOTAL				14	12	4	360	240	600				

13) NAME OF THE MDM: Cyber Security

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	ITY23MDL211	Information Theory for Cyber Security	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	ITY23MDL212	Data Encryption and Compression	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	ITY23MDL213	Steganography and Digital Watermarking	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	ITY23MDL214	Security Assessment and Risk Analysis	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	ITY23MDL315	Database Security and Access Control	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	ITY23MDJ316	Project	Project	2	-	4	60	40	100	-	16	40	VIII
TOTAL				14	12	4	360	240	600				

14) NAME OF THE MDM: Experimental Biotechnology

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	BBT42MDL201	System Biology	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	BBT42MDL202	Bioelectronics and Medical Instrumentation	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	BBT42MDL203	Computational Biology	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	BBT42MDL204	Biomedical Signal Processing	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	BBT42MDL305	Biophysics and Biophysical techniques	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	BBT42MDL306	Biological Engineering Design	Lecture	2	2	-	60	40	100	-	16	40	VIII
TOTAL				14	12	-	360	240	600				

15) NAME OF THE MDM: Global Standards for Food Industry

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	BFT42MDL201	Global standard for food safety and quality	Lecture	2	2	-	60	40	100		16	40	III
MDM	BFT42MDL202	Food Regulatory affairs professionals	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	BFT42MDL203	Food Safety Management system and HACCP	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	BFT42MDL204	Food and Agri business management	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	BFT42MDL305	Food Marketing Ethics and Consumer Rights	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	BFT42MDL306	Advanced Marketing Strategies and Case Studies	Lecture	2	2	-	60	40	100	-	16	40	VIII
TOTAL				14	12	-	360	240	600				

16) NAME OF THE MDM: Bioengineering

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	BBE42MDL201	Dynamic System	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	BBE42MDL202	Biomedical Device Design	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	BBE42MDL203	Fundamentals of Bioinformatics	Lecture	4	2	-	60	40	100	-	16	40	V
MDM	BBE42MDL204	Biomedical Signal Processing	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	BBE42MDL305	Biophysical techniques	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	BBE42MDL306	Bioengineering Design	Lecture	2	2	-	60	40	100	-	16	40	VIII
TOTAL				14	12	0	360	240	600				

17) NAME OF THE MDM: Business Analytics

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	BAH31MDL201	Introduction to Business Analytics	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	BAH31MDL202	Data Science	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	BAH31MDL203	Data Warehousing and Data Base Management	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	BAH31MDL204	Artificial Intelligence and Machine Learning	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	BAH31MDL305	Data Analysis and Decision Making	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	BAH31MDP306	Block Chain Technologies	Practical	2	-	4	60	40	100	-	16	40	VIII
TOTAL				14	12	4	360	240	600				

18) NAME OF THE MDM: Fintech

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)			Semester
					L	P	Internal	External	Total	Internal	External	Total	
MDM	FIN31MDL201	Introduction to Fintech	Lecture	2	2	-	60	40	100	-	16	40	III
MDM	FIN31MDL202	Financial Institutions and Markets	Lecture	2	2	-	60	40	100	-	16	40	IV
MDM	FIN31MDL203	E-commerce	Lecture	4	4	-	60	40	100	-	16	40	V
MDM	FIN31MDL204	Investment Management	Lecture	2	2	-	60	40	100	-	16	40	VI
MDM	FIN31MDL305	Indirect Tax and GST	Lecture	2	2	-	60	40	100	-	16	40	VII
MDM	FIN31MDP306	Financial and Risk Management	Practical	2	-	4	60	40	100	-	16	40	VIII
TOTAL				14	12	4	360	240	600				

Semester V

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
PCC	CHE21PCL301	Mass Transfer Operations - I	Theory	3	3	-	60	40	100	-	16	40
PCC	CHE21PCL302	Chemical Reaction Engineering - I	Theory	3	3	-	60	40	100	-	16	40
PCC	CHE21PCL303	Chemical Engineering Thermodynamics - II	Theory	2	2	-	60	40	100	-	16	40
PCC	CHE21PCL304	Industrial Safety	Theory	2	2	-	60	40	100	-	16	40
PCC	CHE21PCP301	Mass Transfer Operations - I Lab	Practical	1	-	2	30	20	50	-	8	20
PCC	CHE21PCP302	Chemical Reaction Engineering - I Lab	Practical	1	-	2	30	20	50	-	8	20
PEC	CHE21PEL305	Organic Chemistry	Lecture	4	4	-	60	40	100	-	16	40
	CHE21PEL306	Nanotechnology										
	CHE21PEL307	Plant Utilities										
	CHE21PEL308	Biochemical Engineering										
MDM		Refer MDM Basket (Annexure A)	Theory	4	4	-	60	40	100	-	16	40
OE	OE-4	Refer MGMU Basket of Open Electives	Theory	2	-	-	30	20	50	-	8	20
		TOTAL		22	18	4	450	300	750			

Semester VI

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
PCC	CHE21PCL351	Mass Transfer Operations – II	Lecture	3	3	-	60	40	100	-	16	40
PCC	CHE21PCL352	Chemical Reaction Engineering - II	Lecture	2	2	-	60	40	100	-	16	40
PCC	CHE21PCL353	Process Dynamics and Control	Lecture	2	2	-	60	40	100	-	16	40
PCC	CHE21PCP351	Mass Transfer Operations – II Lab	Practical	1	-	2	30	20	50	-	8	20
PCC	CHE21PCP352	Chemical Reaction Engineering - II Lab	Practical	1	-	2	30	20	50	-	8	20
PCC	CHE21PCP353	Process Dynamics and Control Lab	Practical	1	-	2	30	20	50	-	8	20
PEC	CHE21PEL354	Industrial Piping	Lecture	4	4	-	60	40	100	-	16	20
	CHE21PEL355	Renewable Energy Sources										
	CHE21PEL356	Analytical Chemistry										
	CHE21PEL357	Catalysis										
PEC	CHE21PEL358	Food Technology	Lecture	4	4	-	60	40	100	-	16	20
	CHE21PEL359	Physical Chemistry										
	CHE21PEL360	Disaster Management in Chemical Industries										
	CHE21PEL361	Petrochemical Engineering										
MDM		Refer MDM Basket (Annexure A)	Theory	2	2	-	60	40	100	-	16	40
VSEC	CHE21VSL362	Computer Aided Design	Practical	2	-	4	60	40	100	-	16	40
		TOTAL		22	17	10	510	340	850			

Semester VII

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
PCC	CHE21PCL401	Process Modeling and Simulation	Lecture	2	2	-	60	40	100	-	16	40
PCC	CHE21PCL402	Advanced Separation Processes	Lecture	2	2	-	60	40	100	-	16	40
PCC	CHE21PCP401	Process Modeling and Simulation Lab	Practical	1	-	2	30	20	50	-	8	20
PCC	CHE21PCP402	Advanced Separation Processes Lab	Practical	1	-	2	30	20	50	-	8	20
PEC	CHE21PEL403	Energy Audit and Conservation	Lecture	2	2	-	60	40	100	-	16	40
	CHE21PEL404	Green Technology										
	CHE21PEL405	Fuel Cell Engineering										
	CHE21PEL406	Electrochemical Engineering										
MDM		Refer MDM Basket (Annexure A)	Lecture	2	2	-	60	40	100	-	16	40
Internship/OJT	CHE21JTI407	Internship	Internship	12	-	24	100	50	150	-	20	60
		TOTAL		22	8	28	400	250	650			

Semester VIII

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
PCC	CHE21PCL451	Transport Phenomena	Lecture	3	3	-	60	40	100	-	16	40
PCC	CHE21PCL452	Chemical & Allied Industries	Lecture	3	3	-	60	40	100	-	16	40
PEC	CHE21PEL453	Advanced Membrane Separations	Lecture	3	3	-	60	40	100	-	16	40
	CHE21PEL454	Process Economics and Management										
	CHE21PEL455	Materials for Engineering Applications										
	CHE21PEL456	Carbon Capture & Sequestration										
PEC	CHE21PEL457	Industrial Management	Lecture	3	3	-	60	40	100	-	16	40
	CHE21PEL458	Polymer Technology										
	CHE21PEL459	Chemical Engineering Mathematics										
	CHE21PEL460	Instrumentation and Artificial Intelligence in Chemical Engineering										
MDM		Refer MDM Basket (Annexure A)	Lecture	2	2	-	60	40	100	-	16	40
Research Methodology	CHE21RML401	Research Methodology	Lecture	4	4	-	60	40	100	-	16	40
Project	CHE21MMJ401	Project	Project	4	-	8	60	40	100	-	16	40
		TOTAL		22	18	8	420	280	700			

EXIT Options for Students

Exit Options after FY

One Year UG certificate in(Chemical Engineering).

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
Internship/OJT	CHE21JTI101	In-Plant Training (8 weeks)	Internship	8	-	16	60	40	100	-	16	40
		TOTAL		8	-	16	60	40	100	-	16	40

Exit Options after SY

UGDiplomainChemical Engineering

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
Internship/OJT	CHE21JTI201	In-Plant Training (8 Weeks)	Internship	8	-	16	60	40	100	-	16	40
		TOTAL		8	-	16	60	40	100	-	16	40

Exit Options after TY

B.Vocin Chemical Engineering.

Course Category	Course Code	Course Title	Nature of Course	No of Credits	Teaching (Contact hrs/ week)		Evaluation Scheme (Marks)			Minimum Passing (Marks)		
					L	P	Internal	External	Total	Internal	External	Total
Internship/OJT	CHE21JTI301	In-Plant Training (8 Weeks)	Internship	6	-	12	60	40	100	-	16	40
		TOTAL		6	-	12	60	40	100	-	16	40

MGM University
Chhatrapati Sambhajnagar



Academic Section
Open Electives

Open Elective -3 (For Non Engineering Programmes) - 2 Sem

Sr No	Faculty of	Name of College/ Institute/ Department/ School	Course Code	Open Elective Course Name
1	Engineering & Technology	JNEC (CSE)	MGM21OEL152	Python for Beginners
		JNEC (Chem Engg)	MGM21OEL153	Green Technologies
		JNEC (ECT)	MGM21OEL154	Internet Of Things (IoT)
		JNEC (Civil Engg)	MGM21OEL155	Watershed Management Practices
		JNEC (Mech Engg)	MGM21OEL156	Industry 4.0
		University Department of Information & Communication Technology	MGM23OEL157	Cyber Security
2	Management & Commerce	Institute of Management & Research	MGM31OEL158	Business Law
		Institute of Hotel Management	MGM32OEL159	Basics of Restaurant Business Management
		Nath School of Business & Technology	MGM33OEL160	Basic C Programming
3	Basic & Applied Science	Dr. G Y Pathrikar College	MGM41OEL161	CCTV Surveillance System
		Institute of Biosciences &	MGM42OEL162	Introduction to Bioinformatics
		School of Basic & Applied Sciences - Physics	MGM43OEL163	Optics for Photography
		School of Basic & Applied Sciences - Mathematics	MGM43OEL164	Quantitative Aptitude and Logical Reasoning
		School of Basic & Applied Sciences - Forensic	MGM43OEL165	Crime scene investigation
4	Social Sciences & Humanities	College of Journalism & Mass Communication	MGM51OEL166	Media, Culture and Society
		School of Film Arts	MGM52OEL167	Basics of Script Writing
		IoSS (Economics)	MGM55OEL168	Personal Finance & Investments
		IoSS (Social Work)	MGM55OEL169	Corporate Social Responsibility(CSR) and Social Work
5	Design	Institute of Fashion Design	MGM71OEL170	Traditional indian embroidery
		College of Fine Arts	MGM72OEL171	Landscape Painting

6	Interdisciplinary Studies	School of Interdisciplinary Studies (Women & Gender Studies)	MGM84OEL172	Understanding Gender Justice
		Department of Music & Theater	MGM85OEL173	Bollywood Singing
7	Performing Arts	Mahagami Gurukul Center for Performing Arts.	MGM61OEL265	Natyashastric Theatre

Open Elective -4 (For Non Engineering Programmes) - 2 Sem

Sr No	Faculty of	Name of College/Institute/Department/School	Course Code	Open Elective Course Name
1	Engineering & Technology	JNEC (CSE)	MGM21OEL174	Excel for statistics
		JNEC (Chem Engg)	MGM21OEL175	Handmade and recycled Paper products for self-Employment
		JNEC (ECT)	MGM21OEL176	Basics of Computer Hardware and Networks.
		JNEC (Civil Engg)	MGM21OEL177	Basics of Residential Building Construction
		JNEC (Mech Engg)	MGM21OEL178	Basics of Mechanical Engineering
		JNEC (MCA)	MGM21OEL179	Basics of website Development
		University Department of Information & Communication Technology	MGM23OEL180	Computer Forensic
2	Management & Commerce	Institute of Management & Research	MGM31OEL181	Advance Excel
		Institute of Hotel Management	MGM32OEL182	Indian Cuisine
		Nath School of Business & Technology	MGM33OEL183	Advanced C Programming
3	Basic & Applied Science	Dr. G Y Pathrikar College	MGM41OEL184	Advance Presentation Skill Development
		Institute of Biosciences & Technology	MGM42OEL185	Food Product Development
		School of Basic & Applied Sciences - Physics	MGM43OEL186	The Physics of Musical Instruments
		School of Basic & Applied Sciences - Forensic	MGM43OEL187	Science of Fingerprints
		College of Journalism & Mass Communication	MGM51OEL188	Radio Jockeying
		School of Film Arts	MGM52OEL189	Basics of Film Appreciation

4	Social Sciences & Humanities	Institute of Indian & Foreign Language	MGM54OEL190	Grooming Etiquettes
		IoSS (Economics)	MGM55OEL191	Share & Stock Market
		IoSS (Political Science)	MGM55OEL192	A study of Political Biography: Lok Maze Sangati
5	Design	Institute of Fashion Design	MGM71OEL193	Resist Dyeing-Tie n Dye
		College of Fine Arts	MGM72OEL194	Bidri Craft
6	Interdisciplinary Studies	School of Interdisciplinary Studies (Women & Gender Studies)	MGM84OEL195	Introduction to Women Studies

Open Elective -6 (Non-Engineering Programmes) - 4 Sem

Sr No	Faculty of	Name of College/ Institute/ Department/ School	Course Code	Open Elective Course Name
1	Engineering & Technology	CSE- JNEC	MGM21OEL230	Java Foundation
		CSE- JNEC	MGM21OEL231	Basics of Data Science
		Mechanical-JNEC	MGM21OEL232	Fundamentals of Robotics
		Electrical- JNEC	MGM21OEL233	Renewable Energy Sources
		ECT-JNEC	MGM21OEL234	Mobile Communication
		University Department of Information &	MGM23OEL235	Basic of IOT
2	Management & Commerce	Institute of Management & Research	MGM31OEL237	Wealth and Portfolio Management
			MGM31OEL238	Rural Marketing & Communication
		Institute of Hotel Management	MGM32OEL239	Culinary Tourism
			MGM32OEL240	Basics of Bakery and Patisserie
		Nath School of Business & Technology	MGM33OEL241	Consumer Behaviour
3	Basic & Applied Science	Dr. G Y Pathrikar College	MGM41OEL242	Social Media Marketing
			MGM41OEL243	OS Installation & Trouble-shooting
		Institute of Bioscience and Technology	MGM42OEL244	Bioinspired Fashion and Textile
			MGM42OEL245	Science communication and Journalism in Biotechnology
		Physics - SoBAS	MGM43OEL246	Space Science
			MGM43OEL247	Physics of Toys
		Mathematics- SoBAS	MGM43OEL248	Regression Analysis
			MGM43OEL249	Logical Deduction and Non - verbal reasoning
		Chemistry- SoBAS	MGM43OEL250	Chemistry in Everyday Life I
			MGM43OEL251	Chemistry in Everyday Life II
		Geology- SoBAS	MGM43OEL252	Rocks and Minerals: Everyday Uses
		CJMC	MGM51OEL253	Advert Appreciation

4	Social Sciences & Humanities	School of Film Arts	MGM52OEL254	Basic of Music Production
			MGM52OEL255	Set Designing
		Institute of Indian and Foreign Language	MGM54OEL256	Introduction to Natyashastra
			MGM54OEL257	Art of Poetry Recitation
		IoSS (Psychology)	MGM55OEL258	Stress Management Skills
			MGM55OEL259	Personality Development
		IoSS (Economics)	MGM55OEL260	Taxation Policy in India
MGM55OEL261	Environment, Society & Governance			
5	Interdisciplinary Studies	School of Interdisciplinary Studies (Philosophy)	MGM55OEL262	Indian Philosophy
			MGM55OEL263	Philosophy of Religion

Open Elective -3 (Engineering Programmes) - 4 Sem

Sr No	Faculty of	Name of College/ Institute/ Department/ School	Course Code	Open Elective Course Name
1	Engineering & Technology	JNEC (CSE)	MGM21OEL152	Python for Beginners
		JNEC (Chem Engg)	MGM21OEL153	Green Technologies
		JNEC (ECT)	MGM21OEL154	Internet Of Things (IoT)
		JNEC (Civil Engg)	MGM21OEL155	Watershed Management Practices
		JNEC (Mech Engg)	MGM21OEL156	Industry 4.0
		University Department of Information & Communication Technology	MGM23OEL157	Cyber Security
2	Management & Commerce	Institute of Management & Research	MGM31OEL158	Business Law
		Institute of Hotel Management	MGM32OEL159	Basics of Restaurant Business Management
		Nath School of Business & Technology	MGM33OEL160	Basic C Programming
3	Basic & Applied Science	Dr. G Y Pathrikar College	MGM41OEL161	CCTV Surveillance System
		Institute of Biosciences & Technology	MGM42OEL162	Introduction to Bioinformatics
		School of Basic & Applied Sciences - Physics	MGM43OEL163	Optics for Photography
		School of Basic & Applied Sciences - Mathematics	MGM43OEL164	Quantitative Aptitude and Logical Reasoning
		School of Basic & Applied Sciences - Forensic	MGM43OEL165	Crime scene investigation
4	Social Sciences & Humanities	College of Journalism & Mass Communication	MGM51OEL166	Media, Culture and Society
		School of Film Arts	MGM52OEL167	Basics of Script Writing
		IoSS (Economics)	MGM55OEL168	Personal Finance & Investments

	Humanities	IoSS (Social Work)	MGM55OEL169	Corporate Social Responsibility(CSR) and Social Work
5	Design	Institute of Fashion Design	MGM71OEL170	Traditional indian embroidery
		College of Fine Arts	MGM72OEL171	Landscape Painting
6	Interdisciplinary Studies	School of Interdisciplinary Studies (Women & Gender Studies)	MGM84OEL172	Understanding Gender Justice
		Department of Music & Theater	MGM85OEL173	Bollywood Singing
7	Performing Arts	Mahagami Gurukul Center for Performing Arts.	MGM61OEL265	Natyashastric Theatre