



**DMI COLLEGE OF ENGINEERING, CHENNAI
(AN AUTONOMOUS INSTITUTION)**

REGULATIONS 2024

**B. TECH. ARTIFICIAL INTELLIGENCE AND DATA SCIENCE
CHOICE BASED CREDIT SYSTEM
CURRICULA FOR SEMESTERS III TO VIII**

SEMESTER III

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	MA1202	Discrete Mathematics	BS	3	1	0	4	4
2	AD1201	Database Design and Management	PC	3	0	0	3	3
3	CS1201	Digital Principles and Computer Organization	PC	3	0	2	5	4
4	AD1202	Data Structures and Algorithms	PC	3	0	0	3	3
5	AD1203	Data Exploration and Visualization	PC	3	0	2	5	4
6	AD1204	Object Oriented Programming using Java	PC	2	0	2	4	3
PRACTICALS								
7	AD1205	Data Structures and Algorithms Lab	PC	0	0	3	3	1.5
8	AD1206	Database Design and Management Laboratory	PC	0	0	3	3	1.5
9	EM1201	Value Added Course I	EEC	0	0	2	2	1
TOTAL				17	1	14	32	25

SEMESTER IV

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	MA1252	Probability and Statistics	BS	3	1	0	4	4
2	GE1251	Environmental Sciences and Sustainability	BS	2	0	0	2	2
3	AD1251	Fundamentals of Data Science and Analytics	PC	3	0	0	3	3
4	AM1251	Artificial Intelligence	PC	3	0	0	3	3
5	AM1252	Machine Learning	PC	3	0	0	3	3
6	AD1252	Operating Systems	PC	3	0	2	5	4
PRACTICALS								
7	AD1253	Data Science and Analytics Laboratory	PC	0	0	3	3	1.5
8	AM1253	Artificial Intelligence and Machine Learning Laboratory	PC	0	0	3	3	1.5
9	EM1251	Value Added Course II	ECC	0	0	2	2	1
TOTAL				17	1	10	28	23

SEMESTER V

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	CS1301	Computer Networks	PC	3	0	0	3	3
2	CS1303	Cryptography and Network Security	PC	3	0	0	3	3
3	IT1302	Internet of Things	PC	3	0	2	5	4
4	AD1301	Deep Learning	PC	3	0	2	5	4
5		Professional Elective -I	PE	2	0	2	4	3
6		Professional Elective -II	PE	2	0	2	4	3
7		Mandatory Course I	MC	2	0	0	2	0
PRACTICALS								
8	AD1303	Value Added Course II	EEC	0	0	2	2	1
TOTAL				18	0	10	28	21

SEMESTER VI

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	AD1351	Big Data Analytics	PC	2	0	2	4	3
2	CS1351	Object Oriented Software Engineering	PC	3	0	2	5	4
3		Open Elective I	OE	3	0	0	3	3
4		Professional Elective III	PE	2	0	2	4	3
5		Professional Elective IV	PE	2	0	2	4	3
6		Professional Elective V	PE	2	0	2	4	3
7		Mandatory Course II	MC	2	0	0	2	0
PRACTICALS								
8	AD1350	Mini Project	EEC	0	0	4	4	2
TOTAL				16	0	14	30	21

SEMESTER VII

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1	GE1401	Principles of Management and Ethics	HS	3	0	0	3	3
2		Open Elective II	OE	3	0	0	3	3
3		Open Elective III	OE	3	0	0	3	3
4		Open Elective IV	OE	3	0	0	3	3
5		Professional Elective VI	PE	2	0	2	4	3
PRACTICALS								
6	AD1401	Summer Internship	EEC	0	0	0	0	2
TOTAL				14	0	2	16	17

SEMESTER VIII

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1	AD1451	Project Work / Internship	EEC	0	0	20	20	10
TOTAL				0	0	20	20	10

TOTAL CREDITS: 163

- **Mandatory Courses** are Non-credit Courses (Student shall select one course from the list of Mandatory Courses)
- **Value Added Courses** shall be organized by the Institute or Industry. Minimum duration of a course is 30 hours
- **Open Elective Courses** shall be chosen from the list of open electives offered by other Programmes
- **Professional Elective Courses** are listed in groups called verticals that represent a particular area of specialization. Students are permitted to choose all the Professional Electives from a particular vertical or from different verticals. When they choose Professional Electives from different verticals, they are not permitted to choose the courses with similar course contents offered by different verticals.

MANDATORY COURSE I

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	MX1301	Introduction to Women and Gender Studies	MC	2	0	0	2	0
2.	MX1302	Elements of Literature	MC	2	0	0	2	0
3.	MX1303	Film Appreciation	MC	2	0	0	2	0
4.	MX1304	Disaster Risk Reduction and Management	MC	2	0	0	2	0

MANDATORY COURSE II

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	MX1351	Well Being with Traditional Practices - Yoga, Ayurveda and Siddha	MC	2	0	0	2	0
2.	MX1352	History of Science and Technology in India	MC	2	0	0	2	0
3.	MX1353	Political and Economic Thought for a Humane Society	MC	2	0	0	2	0
4.	MX1354	State, Nation Building and Politics in India	MC	2	0	0	2	0
5.	MX1355	Industrial Safety	MC	2	0	0	2	0

PROFESSIONAL ELECTIVE COURSES: VERTICALS**VERTICAL 1: DATA SCIENCE**

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	IT1911	Recommender System	PEC	2	0	2	4	3
2.	AM1911	Artificial Neural Networks	PEC	2	0	2	4	3
3.	CS1913	Image and Video Analytics	PEC	2	0	2	4	3
4.	CS1914	Natural Language Processing	PEC	2	0	2	4	3
5.	CS1915	Computer Vision	PEC	2	0	2	4	3
6.	AD1911	Business Intelligence and Analytics	PEC	2	0	2	4	3
7.	AD1912	Programming with large data sets	PEC	2	0	2	4	3
8.	IT1912	Time series analysis and Forecasting	PEC	2	0	2	4	3

VERTICAL 2: FULL STACK DEVELOPMENT

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CS1921	Advanced Internet Programming	PEC	2	0	2	4	3
2.	CS1922	Web Application Development	PEC	2	0	2	4	3
3.	CS1923	UI and UX Design	PEC	2	0	2	4	3
4.	CS1924	Web Application Security	PEC	2	0	2	4	3
5.	CS1925	Dev-ops	PEC	2	0	2	4	3
6.	CS1926	Human Computer Interaction	PEC	2	0	2	4	3
7.	IT1922	Agile Methodologies	PEC	2	0	2	4	3
8.	CS1927	Software Testing and Automation	PEC	2	0	2	4	3

VERTICAL 3: CLOUD COMPUTING

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CS1931	Cloud Computing	PEC	2	0	2	4	3
2.	CS1932	Virtualization	PEC	2	0	2	4	3

3.	CS1933	Cloud Services Management	PEC	2	0	2	4	3
4.	CS1934	Data Warehousing	PEC	2	0	2	4	3
5.	CS1935	Distributed Computing	PEC	2	0	2	4	3
6.	CS1936	Security and Privacy in Cloud	PEC	2	0	2	4	3
7.	CS1937	Software Defined Networks	PEC	2	0	2	4	3
8.	CS1938	Cloud Storage Technologies	PEC	2	0	2	4	3

VERTICAL 4: CYBER SECURITY

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CS1941	Cyber Security Essentials	PEC	2	0	2	4	3
2.	CS1942	Digital Forensics	PEC	2	0	2	4	3
3.	CS1943	Social Network Security	PEC	2	0	2	4	3
4.	CS1944	Cyber Physical System	PEC	2	0	2	4	3
5.	CS1945	Blockchain Technologies	PEC	2	0	2	4	3
6.	CS1946	Ethical Hacking	PEC	2	0	2	4	3
7.	IT1941	Malware Detection and Analysis	PEC	2	0	2	4	3
8.	CS1936	Security and Privacy in Cloud	PEC	2	0	2	4	3

VERTICAL 5: CREATIVE MEDIA

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CS1951	Augmented Reality and Virtual Reality	PEC	2	0	2	4	3
2.	CS1952	Multimedia Computing	PEC	2	0	2	4	3
3.	CS1953	Graphic Design and Animation	PEC	2	0	2	4	3
4.	CS1923	UI and UX Design	PEC	2	0	2	4	3
5.	CS1915	Computer Vision	PEC	2	0	2	4	3
6.	CS1955	Game Development	PEC	2	0	2	4	3
7.	IT1952	Visual Effects	PEC	2	0	2	4	3
8.	CS1956	Digital Marketing	PEC	2	0	2	4	3

VERTICAL 6: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CS1961	Knowledge Engineering	PEC	2	0	2	4	3
2.	AM1961	Generative AI	PEC	2	0	2	4	3
3.	CS1962	Optimization Techniques	PEC	2	0	2	4	3
4.	AM1911	Artificial Neural Networks	PEC	2	0	2	4	3
5.	CS1963	Text and Speech Analysis	PEC	2	0	2	4	3
6.	CS1964	Game Theory	PEC	2	0	2	4	3
7.	AM1962	AI on Edge Computing	PEC	2	0	2	4	3
8.	CS1965	Robotics Process and Automation	PEC	2	0	2	4	3



OPEN ELECTIVES I

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	ME1701	Introduction to Industrial Engineering	OEC	3	0	0	3	3
2	CE1701	Environmental and Social Impact Assessment	OEC	3	0	0	3	3
3	EE1701	Renewable Energy System	OEC	3	0	0	3	3
4	EE1702	Introduction to Industrial Instrumentation and Control	OEC	3	0	0	3	3
5	MA1701	Graph Theory	OEC	3	0	0	3	3

OPEN ELECTIVES II

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	ME1702	Resource Management Techniques	OEC	3	0	0	3	3
2	IT1701	IT in Agricultural System	OEC	3	0	0	3	3
3	EE1703	Introduction to Control Engineering	OEC	3	0	0	3	3
4	PH1701	Pharmaceutical Nanotechnology	OEC	3	0	0	3	3
5	MG1702	Aviation Management	OEC	3	0	0	3	3

OPEN ELECTIVES III

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	SH1701	English for Competitive Examinations	OEC	3	0	0	3	3
2	MG1703	NGOs and Sustainable Development	OEC	3	0	0	3	3
3	MG1704	Democracy and Good Governance	OEC	3	0	0	3	3
4	SH1702	Applied Design Thinking	OEC	3	0	0	3	3
5	ME1703	Reverse Engineering	OEC	3	0	0	3	3
6	ME1704	Sustainable Manufacturing	OEC	3	0	0	3	3
7	EE1704	Electric and Hybrid Vehicles	OEC	3	0	0	3	3
8	ME1705	Fire Safety Engineering	OEC	3	0	0	3	3
9	CE1702	Remote Sensing Concepts	OEC	3	0	0	3	3

10	ME1706	Introduction to non-destructive testing	OEC	3	0	0	3	3
11	EC1701	Foundation of Robotics	OEC	3	0	0	3	3
12	EC1702	Introduction to PLC Programming	OEC	3	0	0	3	3
13	ME1707	Nano Technology	OEC	3	0	0	3	3
14	ME1708	Functional Materials	OEC	3	0	0	3	3
15	EE1705	Energy Conservation and Management	OEC	3	0	0	3	3
16	EC1703	Signals and Systems	OEC	3	0	0	3	3
17	EC1704	Assistive Technology	OEC	3	0	0	3	3
18	MA1702	Operations Research	OEC	3	0	0	3	3

OPEN ELECTIVES IV

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	CE1703	Basics of Integrated Water Resources Management	OEC	3	0	0	3	3
2	SH1703	Project Report Writing	OEC	3	0	0	3	3
3	MA1703	Advanced Numerical Methods	OEC	3	0	0	3	3
4	MG1705	Production and Operations Management for Entrepreneurs	OEC	3	0	0	3	3
5	MA1704	Multivariate Data Analysis	OEC	3	0	0	3	3
6	ME1709	Micro and Precision Engineering	OEC	3	0	0	3	3
7	EE1706	Sensors and Actuators	OEC	3	0	0	3	3
8	ME1710	Nanomaterials and applications	OEC	3	0	0	3	3
9	EE1707	Sensors	OEC	3	0	0	3	3
10	EC1705	Concepts in Mobile Robots	OEC	3	0	0	3	3
11	EC1706	Drone Technologies	OEC	3	0	0	3	3
12	MG1706	Agriculture Entrepreneurship Development	OEC	3	0	0	3	3
13	EC1707	Wearable devices	OEC	3	0	0	3	3
14	EC1708	Medical Informatics	OEC	3	0	0	3	3
15	CE1704	Biotechnology for Waste Management	OEC	3	0	0	3	3
16	EC1709	Biotechnology in Health Care	OEC	3	0	0	3	3

COURSE COMPONENTS – SUMMARY

S. No.	COURSE COMPONENTS	CREDITS AS PER SEMESTER								TOTAL CREDITS	PERCENTAGE %
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	3	3					3		9	5.52 %
2.	BS	8.5	8.5	4	6					27	16.56 %
3.	ES	10.5	12.5							23	14.11 %
4.	PC			20	16	14	7			57	34.97 %
5.	PE					6	9	3		18	11.04 %
6.	OE						3	9		12	7.36 %
7.	MC									0	0 %
8.	EEC			1	1	1	2	2	10	17	10.43 %
		22	24	25	23	21	21	17	10	163	100 %

