



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

**REGULATIONS 2024**

**B. TECH. INFORMATION TECHNOLOGY**

**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.	CS1201	Digital Principles and Computer Organization	ES	3	0	2	5	4
3.	CS1202	Data Structures	PC	3	0	0	3	3
4.	CS1203	Object Oriented Programming	PC	3	0	0	3	3
5.	CS1204	Data Science Essentials	PC	3	0	2	5	4
PRACTICALS								
6.	CS1205	Data Structures Laboratory	PC	0	0	3	3	1.5
7.	CS1206	Object Oriented Programming Laboratory	PC	0	0	3	3	1.5
8.	EM1201	Value Added Course I	EEC	0	0	2	2	1
TOTAL				15	1	12	28	22

**SEMESTER IV**

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CS1252	Artificial Intelligence and Machine Learning	PC	3	0	2	5	4
2.	CS1253	Database Management Systems	PC	3	0	0	3	3
3.	CS1254	Design and Analysis of Algorithms	PC	3	0	0	3	3
4.	CS1255	Operating Systems	PC	3	0	0	3	3
5.	IT1251	Web Essentials	PC	3	0	2	5	4
6.	GE1251	Environmental Sciences and Sustainability	BS	2	0	0	2	2
PRACTICALS								
7.	CS1256	Database Management Systems Laboratory	PC	0	0	3	3	1.5
8.	CS1257	Operating Systems Laboratory	PC	0	0	3	3	1.5
9	EM1251	Value Added Course II	EEC	0	0	2	2	1
TOTAL				17	0	12	29	23

### SEMESTER V

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CS1301	Computer Networks	PC	3	0	2	5	4
2.	CS1303	Cryptography & Network Security	PC	3	0	0	3	3
3.	IT1301	Full Stack web Development	PC	3	0	0	3	3
4.	IT1302	Internet of Things	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.	IT1305	Full Stack web Development Laboratory	PC	0	0	4	4	2
9	EM1301	Value Added Course III	EEC	0	0	2	2	1
TOTAL				18	0	14	32	23

### SEMESTER VI

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CS1351	Object Oriented Software Engineering	PC	3	0	2	5	4
2	IT1301	Cloud Computing	PC	3	0	0	3	3
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.	IT1352	Mini Project	EEC	0	0	4	4	2
TOTAL				17	0	12	29	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.		Professional Elective VI	PE	2	0	2	3	3
3.		Open Elective II	OE	3	0	0	3	3
4.		Open Elective III	OE	3	0	0	3	3
5.		Open Elective IV	OE	3	0	0	3	3
PRACTICALS								
6.	IT1401	Summer Internship	EEC	0	0	0	0	2
TOTAL				14	0	2	15	17

### SEMESTER VIII

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1.	IT1451	Project Work	EEC	0	0	20	20	10
TOTAL				0	0	20	20	10

**TOTAL CREDITS: 162**

- **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.

## **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.	CS1911	Data Analysis and Visualization	PE	2	0	2	4	3
2.	IT1911	Recommender Systems	PE	2	0	2	4	3
3.	CS1912	Neural Networks and Deep Learning	PE	2	0	2	4	3
4.	CS1913	Image and video analytics	PE	2	0	2	4	3
5.	CS1915	Computer Vision	PE	2	0	2	4	3
6.	CS1916	Big Data Analytics	PE	2	0	2	4	3
7.	AD1911	Business Intelligence and Analytics	PE	2	0	2	4	3
8.	IT1912	Time series Analysis and Forecasting	PE	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.	IT1921	XML and Web Services	PE	2	0	2	4	3
2.	CS1922	Web Application Development	PE	2	0	2	4	3
3.	CS1923	UI and UX Design	PE	2	0	2	4	3
4.	CS1924	Web Application Security	PE	2	0	2	4	3
5.	CS1925	Dev-ops	PE	2	0	2	4	3
6.	CS1927	Software Testing and Automation	PE	2	0	2	4	3
7.	CS1928	Principles of Programming Languages	PE	2	0	2	4	3
8.	IT1922	Agile Methodologies	PE	2	0	2	4	3

### VERTICAL 3: CLOUD COMPUTING AND DATA CENTRE TECHNOLOGIES

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CS1932	Virtualization	PE	2	0	2	4	3
2.	CS1933	Cloud Services Management	PE	2	0	2	4	3
3.	CS1934	Data Warehousing	PE	2	0	2	4	3
4.	CS1935	Distributed Computing	PE	3	0	0	3	3
5.	CS1936	Security and Privacy in Cloud	PE	2	0	2	4	3
6.	CS1937	Software Defined Networks	PE	2	0	2	4	3
7	IT1931	Cloud Automation Tools and Applications	PE	2	0	2	4	3
8	CS1938	Cloud Storage Technologies	PE	2	0	2	4	3

### VERTICAL 4: CYBER SECURITY AND DATA PRIVACY

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	Cs1941	Cyber Security Essentials	PE	2	0	2	4	3
2.	CS1942	Digital Forensics	PE	2	0	2	4	3
3.	CS1943	Social Network Security	PE	2	0	2	4	3
4.	CS1945	Block chain Technologies	PE	2	0	2	4	3
5.	CS1946	Ethical Hacking	PE	2	0	2	4	3
6.	CS1947	Modern Cryptography	PE	2	0	2	4	3
7.	IT1941	Malware Detection and Analysis	PE	2	0	2	4	3
8.	CS1936	Security and Privacy in Cloud	PE	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/Virtual Reality	PE	2	0	2	4	3
2.	IT1951	Graphics and Multimedia	PE	2	0	2	4	3
3.	CS1954	Data Compression and Storage	PE	2	0	2	4	3
4.	CS1923	UI and UX Design	PE	2	0	2	4	3
5.	CS1915	Computer Vision	PE	2	0	2	4	3
6.	CS1955	Game Development	PE	2	0	2	4	3
7.	IT1952	Visual Effects	PE	2	0	2	4	3
8.	CS1956	Digital Marketing	PE	2	0	2	4	3

**VERTICAL 6: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CS1961	Knowledge Engineering	PE	2	0	2	4	3
2.	AM1961	Generative AI	PE	2	0	2	4	3
3.	CS1962	Optimization Techniques	PE	2	0	2	4	3
4.	CS1912	Neural Networks and Deep Learning	PE	2	0	2	4	3
5.	CS1963	Text and Speech Analysis	PE	2	0	2	4	3
6.	CS1964	Game Theory	PE	2	0	2	4	3
7.	AM1961	AI on Edge Computing	PE	2	0	2	4	3
8.	CS1965	Robotic Process Automation	PE	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 12	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	5.56 %
2.	BS	8.5	8.5	4	2					23	14.20 %
3.	ES	10.5	12.5	4						27	16.67 %
4.	PC			13	20	16	7			56	34.57 %
5.	PE					6	9	3		18	11.11 %
6.	OE						3	9		12	7.41 %
7.	MC									0	0 %
8.	EEC			1	1	1	2	2	10	17	10.49 %
		<b>22</b>	<b>24</b>	<b>22</b>	<b>23</b>	<b>23</b>	<b>21</b>	<b>17</b>	<b>10</b>	<b>162</b>	<b>100 %</b>

