



**DMI COLLEGE OF ENGINEERING, CHENNAI**  
**(AN AUTONOMOUS INSTITUTION)**  
**REGULATIONS 2024**  
**B. E. COMPUTER SCIENCE AND ENGINEERING**  
**(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)**  
**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		
<b>THEORY</b>								
1.	MA1202	Discrete Mathematics	BS	3	1	0	4	4
2.	CS1201	Digital Principles and Computer Organization	ES	3	0	2	5	4
3.	AD1202	Data Structures and Algorithms	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
<b>PRACTICALS</b>								
6.	AD1205	Data Structures and Algorithms Lab	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
<b>TOTAL</b>				<b>15</b>	<b>1</b>	<b>12</b>	<b>28</b>	<b>22</b>

**SEMESTER IV**

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1.	CS1251	Formal Language and Automata Theory	PC	3	1	0	4	4
2.	AM1251	Artificial Intelligence	PC	3	0	0	3	3
6.	AD1201	Database Design and Management	PC	3	0	0	3	3
4.	AM1252	Machine Learning	PC	3	0	0	3	3
5.	AD1252	Operating Systems	PC	3	0	2	5	4
6.	GE1251	Environmental Sciences and Sustainability	BS	2	0	0	2	2
<b>PRACTICALS</b>								
7.	AD1206	Database Design and Management Laboratory	PC	0	0	3	3	1.5
8.	AM1253	Artificial Intelligence & Machine Learning Laboratory	PC	0	0	3	3	1.5
9.	EM1251	Value Added Course II	EEC	0	0	2	2	1
<b>TOTAL</b>				<b>17</b>	<b>1</b>	<b>10</b>	<b>28</b>	<b>23</b>

**SEMESTER V**

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1.	AM1301	Natural Language Processing	PC	3	0	2	3	4
2.	AD1301	Deep Learning	PC	3	0	2	5	4
3.	CS1303	Cryptography and Network Security	PC	3	0	0	3	3
4.		Professional Elective I	PE	2	0	2	4	3
5.		Professional Elective II	PE	2	0	2	4	3
6.		Professional Elective III	PE	2	0	2	4	3
7.		Mandatory Course I	MC	2	0	0	2	0
<b>PRACTICALS</b>								
8.	EM1301	Value Added Course III	EEC	0	0	2	2	1
<b>TOTAL</b>				<b>17</b>	<b>0</b>	<b>12</b>	<b>29</b>	<b>21</b>

**SEMESTER VI**

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1.	CS1351	Object Oriented Software Engineering	PC	3	0	2	5	4
2.	CS1352	Internet of Things	PC	3	0	2	5	4
3.	AM1353	Generative AI	PC	3	0	2	5	4
4.		Professional Elective IV	PE	2	0	2	4	3
5.		Professional Elective V	PE	2	0	2	4	3
6.		Open Elective I	OE	3	0	0	3	3
7.		Mandatory Course II	MC	2	0	0	2	0
<b>PRACTICALS</b>								
8.	EM1351	Mini Project	EEC	0	0	4	4	2
<b>TOTAL</b>				<b>18</b>	<b>0</b>	<b>14</b>	<b>32</b>	<b>23</b>

**SEMESTER VII**

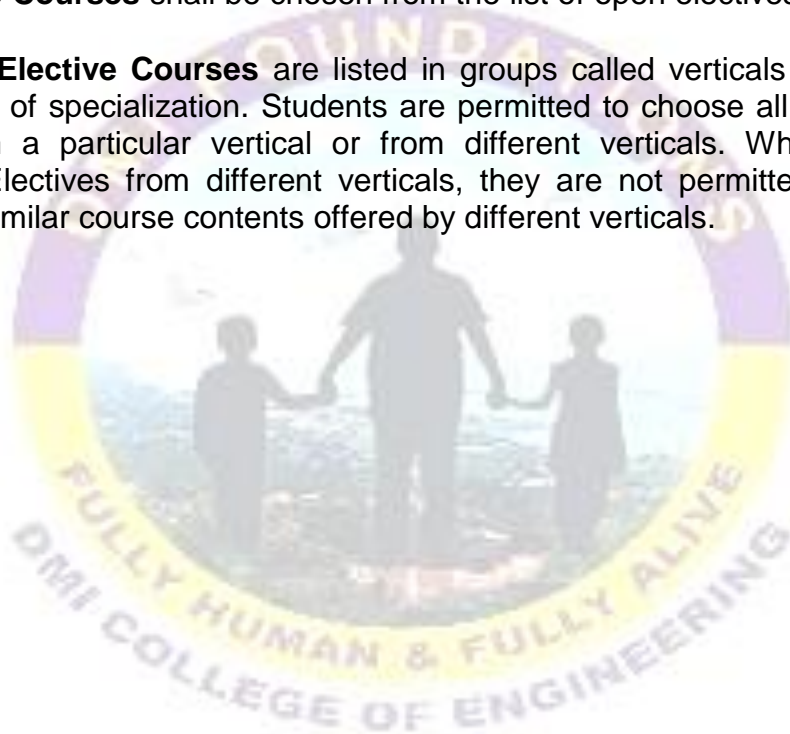
S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>THEORY</b>								
1.	GE1401	Principles of Management and Ethics	HS	3	0	0	3	3
2.		Professional Elective VI	PE	2	0	2	4	3
3.		Open Elective – II	OE	3	0	0	3	3
4.		Open Elective – III	OE	3	0	0	3	3
5.		Open Elective – IV	OE	3	0	0	3	3
<b>PRACTICALS</b>								
6.	EM1401	Summer internship	EEC	0	0	0	0	2
<b>TOTAL</b>				<b>14</b>	<b>0</b>	<b>2</b>	<b>16</b>	<b>17</b>

### SEMESTER VIII

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
<b>PRACTICALS</b>								
1.	AM1451	Project Work / Internship	EEC	0	0	20	20	10
<b>TOTAL</b>				<b>0</b>	<b>0</b>	<b>20</b>	<b>20</b>	<b>10</b>

**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.



### MANDATORY COURSE I

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	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	CATEGORY	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.	CS1911	Data Analysis and Visualization	PEC	2	0	2	4	3
2.	AM1911	Artificial Neural Networks	PEC	2	0	2	4	3
3.	IT1912	Recommender Systems	PEC	2	0	2	4	3
4.	CS1913	Image and Video Analytics	PEC	2	0	2	4	3
5.	CS1915	Computer Vision	PEC	2	0	2	4	3
6.	CS1916	Big Data Analytics	PEC	2	0	2	4	3
7.	AD1911	Business Intelligence and Analytics	PEC	2	0	2	4	3
8.	AD1912	Programming with Large Datasets	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 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.	CS1927	Software Testing and Automation	PEC	2	0	2	4	3
8.	CS1928	Principles of Programming Languages	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.	CS1947	Modern Cryptography	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.	CS1954	Data Compression and Storage	PEC	2	0	2	4	3
5.	CS1923	UI and UX Design	PEC	2	0	2	4	3
6.	CS1915	Computer Vision	PEC	2	0	2	4	3
7.	CS1955	Game Development	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.	AM1962	AI on Edge Computing	PEC	2	0	2	4	3
3.	CS1913	Image and Video Analytics	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
8.	CS1965	Robotic Process 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	5.56 %
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	11	12			56	34.57 %
5.	PE					9	6	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>21</b>	<b>23</b>	<b>17</b>	<b>10</b>	<b>162</b>	<b>100 %</b>

