



VINAYAKA MISSION'S RESEARCH FOUNDATION

(Deemed to be University under section 3 of the UGC Act 1956)

FAULTY OF ENGINEERING AND TECHNOLOGY

ME:CSE – WORKING PROFESSIONALS (2 YEARS)

CURRICULUM AND SYLLABUS

CHOICE BASED CREDIT SYSTEM (CBCS)

MASTER OF COMPUTER SCIENCE AND ENGINEERING

(SEMESTER I to IV)

REGULATION 2025

(FOR THE STUDENTS ADMITTED FROM 2025 ONWARDS)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VISION

To establish a centre of excellence in computer education and research and to create a platform for professionals there by reaching a pinnacle of glory.

MISSION

Computer Science and Engineering is committed

- To develop innovative, competent and quality computer engineers by imparting the state-of-the-art technology
- To enrich the knowledge of students through value based education
- To develop consultancy activities for industrial sectors
- To endeavors for constant up gradation of technical expertise of students to cater to the needs of the society.

PROGRAMME OUTCOMES

Post Graduates will be able to:

PO1	An ability to independently carry out research /investigation and development work to solve practical problems
PO2	An ability to write and present a substantial technical report/document
PO3	Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program

PROGRAMME SPECIFIC OUTCOMES (PSO)

Graduating Students of Artificial Intelligence and Data Science programmed will be able to:

PSO1	Demonstrate understanding of the principles and working of the hardware and software aspects of computer systems.
PSO2	Understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics and networking for efficient design of computer-based systems of varying complexity.
PSO3	Apply standard Software Engineering practices and strategies in software project development using open-source programming environment to deliver a quality product for business success and to be acquainted with the contemporary issues, latest trends in technological development and thereby innovate new ideas and solutions to existing problems.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOS)

PEO1	Technical Expertise: Implement fundamental domain knowledge of core courses for developing effective computing solutions by incorporating creativity and logical reasoning.
PEO2	Graduate will establish effective professionals by solving real world problems using investigative and analytical skills along with the knowledge acquired in the field of Computer Science and Engineering.
PEO3	Graduate will prove a ability to work and communicate effectively as a team member and / or leader to complete the task with minimal resources, meeting deadlines.
PEO4	Graduate will demonstrate his/her ability to adapt to rapidly changing environment in advanced areas of Computer Science and scale new height in their profession through lifelong learning.

Mapping of PEOs with Pos for M.E. (CSE) Programme

PEO/PO	1	2	3
1	S	S	S
2	S	S	S
3	M	M	S
4	M	S	S

S-Strong Correlation, M-Medium Correlation, L-Low Correlation

**VINAYAKA MISSIONS RESEARCH FOUNDATIONS
(Deemed to be University)
FACULTY OF ENGINEERING AND TECHNOLOGY**

**STRUCTURE OF POST GRADUATE ENGINEERING
PROGRAMME FOR WORKING PROFESSIONALS**

S.No	Category of courses	Type of courses	Suggested breakup of credits	
1.	A. Foundation courses (5)	Mathematics / Applied Mathematics	3	
		Research Methodology and IPR	2	
2.	B. Professional Core Courses (32)	Core courses	32	
3.	C. Elective Courses (19)	Professional electives	15	
		Open Elective	Interdepartmental Open Electives	3
			University Multidisciplinary Open Electives	1
4.	D. Employability Enhancement Courses and courses for presentation of Technical skills related to the specialization (19)	Project work phase I	6	
		Project work phase II	12	
		Research Presentation Skills	1	
5.	E. Mandatory Courses (2)**	1. English for Research Paper Writing 2. Personality Development Through Life Enlighten Skills	One Credit Course	
Minimum Credits to be earned			77	
** The credits earned in category 'E' Courses will not be counted in CGPA calculation.				

**CURRICULAM FULL TIME - ME CSE
SEMESTER I TO IV – R2025**

CATEGORY A.FOUNDATION COURSES – CREDITS (5)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PRE REQUISITE
1.	45125B01	OPERATIONS RESEARCH	MATHS	FC-BS	2	1	0	3	Nil
2.	45125H01	RESEARCH METHODOLOGY AND IPR	MANAG	FC-HS	2	0	0	2	Nil

CATEGORY B. PROFESSIONAL CORE COURSES - CREDITS(32)

SL. NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PRE REQUISITE
1	45125C01	OBJECT ORIENTED SOFTWARE ENGINEERING	CSE	CC-C	3	0	0	3	Nil
2	45125C02	COMPUTER NETWORKS AND MANAGEMENT	CSE	CC-C	3	0	0	3	Nil
3	45125C03	DATA STRUCTURES AND ALGORITHMS	CSE	CC-C	3	0	0	3	Nil
4	45125C04	PARALLEL COMPUTING ARCHITECTURE	CSE	CC-C	3	0	0	3	Nil
5	45125C05	DATABASE TECHNOLOGY	CSE	CC-C	3	0	0	3	Nil
6	45125C06	ADVANCED OPERATING SYSTEM	CSE	CC-C	3	0	0	3	Nil
7	45125C07	COMPILER OPTIMIZATION TECHNIQUES	CSE	CC-C	3	0	0	3	Nil
8	45125C08	WEB PROGRAMMING AND DESIGN	CSE	CC-C	3	0	0	3	Nil
9	45125C81	ALGORITHMIC DESIGN AND DATA STRUCTURES LAB	CSE	CC-C	0	0	4	2	Nil
10	45125C82	NETWORK PROTOCOLS LAB	CSE	CC-C	0	0	4	2	Nil
11	45125C83	ADVANCED OPERATING SYSTEMS LAB	CSE	CC-C	0	0	4	2	Nil
12	45125C84	WEB PROGRAMMING LAB	CSE	CC-C	0	0	4	2	Nil
13	45125C09	IOT ARCHITECTURE	CSE	CC-C	3	0	0	3	Nil
14	45125C10	MANAGING BIG DATA	CSE	CC-C	3	0	0	3	Nil

CATEGORY C.ELECTIVE COURSES-CREDITS (19)									
C.1.Professional electives (15)									
S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PRE REQUISITE
1	45125P01	AD-HOC NETWORKS	CSE	EC-PS	3	0	0	3	Nil
2	45125P02	ADVANCED ARTIFICIAL INTELLIGENCE	CSE	EC-PS	3	0	0	3	Nil
3	45125P03	ADVANCED DATABASES	CSE	EC-PS	3	0	0	3	Nil
4	45125P04	AGENT BASED INTELLIGENT SYSTEMS	CSE	EC-PS	3	0	0	3	Nil
5	45125P05	BIO INFORMATICS	CSE	EC-PS	3	0	0	3	Nil
6	45125P06	ADVANCED CLOUD COMPUTING	CSE	EC-PS	3	0	0	3	Nil
7	45125P07	COGNITIVE COMPUTING	CSE	EC-PS	3	0	0	3	Nil
8	45125P08	COMPONENT BASED TECHNOLOGY	CSE	EC-PS	3	0	0	3	Nil
9	45125P09	DATA WAREHOUSING AND DATA MINING	CSE	EC-PS	3	0	0	3	Nil
10	45125P10	DIGITAL IMAGING	CSE	EC-PS	3	0	0	3	Nil
11	45125P11	DISTRIBUTED SYSTEM AND MANAGEMENT	CSE	EC-PS	3	0	0	3	Nil
12	45125P12	EMBEDDED SYSTEMS	CSE	EC-PS	3	0	0	3	Nil
13	45125P13	EXPERT SYSTEMS	CSE	EC-PS	3	0	0	3	Nil
14	45125P14	GRID COMPUTING	CSE	EC-PS	3	0	0	3	Nil
15	45125P15	INFORMATION SECURITY	CSE	EC-PS	3	0	0	3	Nil
16	45125P16	MOBILE APPLICATION DESIGN AND DEVELOPMENT	CSE	EC-PS	3	0	0	3	Nil
17	45125P17	WIRELESS COMMUNICATIONS AND MOBILE COMPUTING	CSE	EC-PS	3	0	0	3	Nil
18	45125P18	MULTIMEDIA SYSTEMS	CSE	EC-PS	3	0	0	3	Nil
19	45125P19	NETWORK SECURITY	CSE	EC-PS	3	0	0	3	Nil
20	45125P20	PREDICTIVE ANALYSIS	CSE	EC-PS	3	0	0	3	Nil
21	45125P21	PERFORMANCE EVALUATION OF COMPUTER SYSTEMS AND NETWORKS	CSE	EC-PS	3	0	0	3	Nil
22	45125P22	PRINCIPLES OF CYBER SECURITY	CSE	EC-PS	3	0	0	3	Nil

23	45125P23	PROJECT MANAGEMENT IN SOFTWARE DEVELOPMENT	CSE	EC-PS	3	0	0	3	Nil
24	45125P24	PROMPT ENGINEERING	CSE	EC-PS	3	0	0	3	Nil
25	45125P25	QUANTUM COMPUTING	CSE	EC-PS	3	0	0	3	Nil
26	45125P26	SOFT COMPUTING	CSE	EC-PS	3	0	0	3	Nil
27	45125P27	SOFTWARE ARCHITECTURE	CSE	EC-PS	3	0	0	3	Nil
28	45125P28	SOFTWARE QUALITY ASSURANCE	CSE	EC-PS	3	0	0	3	Nil
29	45125P29	THEORY OF COMPUTATION AND AUTOMATA	CSE	EC-PS	3	0	0	3	Nil
30	45125P30	VIRTUAL REALITY AND AUGMENTED REALITY	CSE	EC-PS	3	0	0	3	Nil
31	45125P31	VISUALIZATION TECHNIQUES	CSE	EC-PS	3	0	0	3	Nil
32	45125P32	XML AND WEB SERVICES	CSE	EC-PS	3	0	0	3	Nil

C.2. Interdepartmental Open Electives (3)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PRE REQUISITE
1	43425001	BIOMEDICAL PRODUCT DESIGN AND DEVELOPMENT	BME	OE-EA	3	0	0	3	NIL
2	41025001	AGRO-FOOD SYSTEMS	BTE	OE-EA	3	0	0	3	NIL
3	48125001	WASTE TO ENERGY	BTE	OE-EA	3	0	0	3	NIL
4	40925001	ENVIRONMENTAL IMPACT ASSESSMENT	CIVIL	OE-EA	3	0	0	3	NIL
5	44725001	SOLAR AND ENERGY STORAGE SYSTEMS	EEE	OE-EA	3	0	0	3	NIL
6	43325001	BIO MEMS	ECE	OE-EA	3	0	0	3	NIL
7	41125001	INDUSTRIAL SAFETY	MECH-ISE	OE-EA	3	0	0	3	NIL
8	40225001	METAL ADDITIVE MANUFACTURING	MECH-MFE	OE-EA	3	0	0	3	NIL

C.3. University Multidisciplinary Open Electives (1)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PRE REQUISITE
1	40625U01	DENTAL HYGIENE & QUALITY OF LIFE	DENTISTRY	OE-UOE	1	0	0	1	NIL
2	40625U02	NUTRITION FOR WELLNESS & SPECIFIC DISEASES	NURSING	OE-UOE	1	0	0	1	NIL
3	40625U03	FUNDAMENTALS OF HOMOEOPATHY	HOMOEOPATHY	OE-UOE	1	0	0	1	NIL
4	40625U04	ADVERTISING	ARTS & SCIENCE	OE-UOE	1	0	0	1	NIL
5	40625U05	TEAMWORK & COLLABORATION	ARTS & SCIENCE	OE-UOE	1	0	0	1	NIL
6	40625U06	EMOTIONAL INTELLIGENCE	ARTS & SCIENCE	OE-UOE	1	0	0	1	NIL
7	40625U07	MEDIA MANAGEMENT	ARTS & SCIENCE	OE-UOE	1	0	0	1	NIL
8	40625U08	EXERCISE ESSENTIALS FOR PHYSICAL FITNESS	PHYSIOTHERAPY	OE-UOE	1	0	0	1	NIL
9	40625U09	ESSENTIAL SKILLS FOR MEDICAL EMERGENCIES	MEDICINE	OE-UOE	1	0	0	1	NIL
10	40625U10	MEDICINE PLANTS IN DISEASE MANAGEMENT	PHARMACY	OE-UOE	1	0	0	1	NIL
11	40625U11	BASIC LIFE SUPPORT	ALLIED HEALTH SCIENCES	OE-UOE	1	0	0	1	NIL
12	40625U12	MALLARKHAMBAM	PHYSICAL EDUCATION	OE-UOE	1	0	0	1	NIL
13	40625U13	SILAMBAM	PHYSICAL EDUCATION	OE-UOE	1	0	0	1	NIL
14	40625U14	BASIC FITNESS TRAINING	PHYSICAL EDUCATION	OE-UOE	1	0	0	1	NIL
15	40625U15	RECREATIONAL GAMES	PHYSICAL EDUCATION	OE-UOE	1	0	0	1	NIL
16	40625U16	INTRODUCTION TO LAW	LAW	OE-UOE	1	0	0	1	NIL
17	40625U17	FUNDAMENTALS OF LAW IN TECHNOLOGY AND CYBER SPACE	LAW	OE-UOE	1	0	0	1	NIL
18	40625U18	FOUNDATION COURSE IN YOGA	REHABILITATION AND BEHAVIORAL SCIENCES	OE-UOE	1	0	0	1	NIL
19	40625U19	INTRODUCTION TO PSYCHOLOGY	REHABILITATION AND BEHAVIORAL SCIENCES	OE-UOE	1	0	0	1	NIL
20	40625U20	INTRODUCTION TO PUBLIC POLICY AND GOVERNANCE	LIBERAL ARTS	OE-UOE	1	0	0	1	NIL

21	40625U21	INDIAN ECONOMY AND DEVELOPMENT CHALLENGES	LIBERAL ARTS	OE-UOE	1	0	0	1	NIL
22		ANY SWAYAM / MOOC / NPTEL COURSES WHICH ARE NOT RELATED TO THE DISCIPLINE OF STUDY OF THE STUDENT CAN BE CHOSEN AS AN OPEN ELECTIVE IN CONSULTATION WITH THE RESPECTIVE FACULTY ADVISOR OF THE INSTITUTION.	DENTISTRY	OE-UOE	1	0	0	1	NIL

CATEGORY D. Employability Enhancement Courses and courses for presentation of Technical skills related to the specialization (19)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PRE REQUISITE
1	45125RP1	PROJECT WORK PHASE - I	CSE	EE-P	0	0	12	6	Nil
2	45125RP2	PROJECT WORK PHASE - II	CSE	EE-P	0	0	24	12	Nil
3	45125D81	RESEARCH PRESENTATION SKILLS	CSE	EE-PS	0	0	2	1	Nil

CATEGORY E – MANDATORY COURSES/AUDIT COURSES
(ONE CREDIT COUESES NOT INCLUDED FOR CGPA CALCULATIONS)**

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PRE REQUISITE
1	44125Z81	ENGLISH FOR RESEARCH PAPER WRITING	GEN	AC	0	0	2	1	Nil
2	44125Z82	PERSONALITY DEVELOPMENT THROUGH LIFE ENLIGHTEN SKILLS	GEN	AC	0	0	2	1	Nil

Minimum Credits to be earned for the award of M.E degree

77

**** The credits earned in category 'E' Courses will not be counted in CGPA calculation for awarding of the degree.**