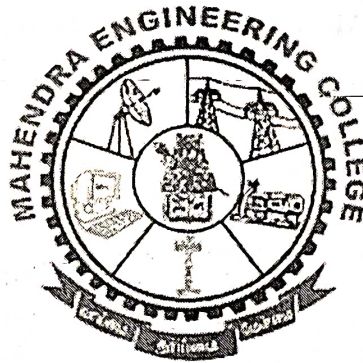# MAHENDRA ENGINEERING COLLEGE

An Autonomous Institution, affiliated to Anna University Chennai and

Accredited by NAAC with 'A' Grade & NBA Tier-I (WA) UG : CSE, ECE, EEE)

Namakkal-637503, Tamilnadu

11th Board of Studies Meeting

Minutes of the Meeting

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

06-05-2023

Date: 06.05.2023

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
MINUTES OF BOARD OF STUDIES MEETING

The 11th Board of Studies meeting for B.E Computer Science and Engineering & M.E. Computer Science and Engineering was held on 06th May 2023 at 10.00 A.M.

Agenda of the Meeting:

(i) To review and confirm the minutes of previous Board of Studies Meeting held on 22.04.2022

(ii) Revision / amendment if any, in the Curriculum Structure for Regulations - 2022 - B.E Computer Science and Engineering program & M.E Computer Science and Engineering program as per AICTE Model Curriculum and Syllabi.

(iii) To consider and approve the Curriculum / Syllabi (5th to 8th Semesters) of Regulations – 2022 UG program - keeping in view the Vision, Mission of the College and Department, PEOs, POs and interest of the stakeholders and national requirement.

(iv) Methodologies for innovative Teaching and Evaluation Techniques

(v) Suggestions for names of Panel members for appointment of Examiners

(vi) Credit allotment for various activities like NPTEL online courses, Industrial Training and Industry Co-Teaching courses, etc.

(vii) Any other point with the permission of the Chairperson.

3

The following Board of Studies members were present:

1. **Dr. M.KANNAN,** Professor and Head, Department of CSE, Mahendra Engineering College (Autonmous) - **BoS Chairman.**

2. **Dr. B.VINOTH KUMAR,** Associate Professor, Department of Information technology, P.S.G College of Technology (Autonomous), Coimbatore. - **Anna University Nominee**

3. **Dr.B.SURENDIRAN,** Associate Professor Department of Computer Science and Engineering , NIT, Pondicherry.- **Subject Expert**

4. **Dr.T.THIRUMALAI,** Chief Technology Officer, OSCORP Technologies, Perungudi, Chennai- **Subject Expert**

5. **Mr.SIVAKUMAR VEERABADRAN,** Senior Cyber Security Consultant. Wipro Technologies, Chennai, Tamilnadu. - **Industry Expert**

6. **Mr. M.MURALI,** Program Manager, TechMahindra, Telangana -**Industry Expert**

7. **Dr.A.M.KALPANA,** Professor and Head, Dept. of CSE, Government College of Engineering. Salem - **Academic Expert**

8. **Dr.S.RAJU,** Professor and Head, Department of Information Technology, Mahendra Engineering College (Autonomous), Namakkal– **Member (Allied Department)**

9. **Dr.R.JAYAKUMAR,** Professor & HoD, Department of MCA, Mahendra Engineering College (Autonomous), - **Member (Allied Department)**

10. **Mr.P.PINTOO RAJ,** Cyber Security Manager -D&AI, TVS Motor Company - **PG Alumnus**

11. **Mr.N.SRINIVASAN,** Director, Oracle India Private Limited, Bangalore, **UG Alumnus.**

12. **MS.S.SHURITHI,** II Year. M.E CSE, - **PG Student (CSE)**

13. **MS. S. MOHANA PRIYA,** IV year B.E CSE, **UG Student (CSE)**

14. All **Faculty Members of Computer Science and Engineering** Department.

The following points were discussed, deliberated:

1. Dr.M.Kannan, Chairman of BOS of Computer Science and Engineering welcomed and introduced the members of 11th Board of Studies and thanked each one of them for sparing their valuable time.

2. Reviewed and confirmed minutes of previous BoS meeting held on 22nd April 2022 and action taken.

3. The Chairperson of BoS, made a brief presentation on the Curriculum of Regulation 2022(V to VIII Sem) for the students of B.E Computer Science and Engineering & M.E Computer Science and Engineering in the academic year 2022-23.

4. The Chairperson of the BoS, then presented the proposed structure of the curriculum and detailed syllabus of Program Core, Program Elective, Open Elective, Employability Enhancing course and Mandatory courses mentioned in AICTE Model curriculum for the Regulation-2022 of B.E and M.E Computer Science and Engineering students, to the members present and invited comments from the members.

5. Academic Experts and Industry Experts discussed about introduction of subjects on Heritage of Tamils, Tamils and Technology in the academic year 2022-23.

6. The BoS Members discussed and approved the courses to be offered for B.E. Honors Degree under Regulations 2022.

7. Academic Experts and Industry Experts discussed and finalized the number of verticals as four. And also suggested to increase the number of subjects for each vertical.

8. Anna University nominee suggested to include the subject **'Social Network Analysis'**.

9. UG alumnus recommended to include **'DevOps'** subject as core subject.

10. Dr.B.Surendiran, subject expert referred to include **'Data Analytics'** as core subject.

11. Anna university nominee gave his opinion on 'Search Engine Optimization' and suggested to have some of the topics in Digital Marketing.

12. Subject Expert Dr.B.Surendiran recommended to include the **'Natural Language Processing'** subject in the list of Elective subjects.

13. Mr.M.Murali, Expert from the industry mentioned that **'NoSQL, Web Technology'** and 'R **Programming'** subjects can be reformed as an integrated subject.

14. The BoS members suggested to include few Non Credit courses in the semesters when required.

15. Cloud Computing tool ANEKA can be added in syllabus, it was the suggestion given by the Academic Expert Dr.B.Vinoth Kumar.

16. BoS members suggested to include the ideas of edge computing in the relevant subjects.

17. Academic Experts suggested including IBM Qubit tool in Quantum Computing Elective subject.

18. Board members advised that Flutter and Firebase can be added in Mobile Application Development subject.

19. Academic Experts recommended to include Unity Engine in Game development subject.

20. The Value added courses to be offered to UG Programme under Regulations 2022 were discussed and approved.

- Linux System Administration

- Data Analytics using Tableau / Celonis

- Business Analytics through Microsoft

- Cloud Foundations using Amazon Web Service

- Machine Learning using Amazon Web Service

- Network Security Foundation through Palo Alto Networks
- AR/VR Foundation – Metaverse
- Cyber Security Foundation using Palo Alto Networks
- Robotics Process Automation using UiPath

21. Board members suggested to include Open Source Tools as much as possible.

22. BoS members recommended to include more applications related topics in all possible subjects.

23. Mr.Sivakumar Veerabadran, Industry Expert suggested to change the subject name of Real Time Systems into Advanced Real Time Systems in PG syllabus.

24. Academic experts accepted to add the following subjects in elective for Ph.D. course work purpose.
- Social Network Analysis
- Computer Vision
- Speech Processing and Synthesis
- Real Time Systems
- Software Architectures and Design

25. Board members suggested to increase the elective subjects in curriculum for PG in the next regulation.

26. Open Elective subjects and Internship in Industry were reviewed.

27. **Changes/Revision in Curriculum and Syllabus**
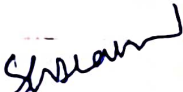
The changes/revision in curriculum and syllabi are provided in Annexure I.

28. **New Courses introduced**

The list of new courses introduced is provided in Annexure II.

29. It was resolved to submit all the above discussed matters to Academic Council for approval.

Finally, **Dr.M.Kannan, Head of the Department, Computer Science and Engineering, Mahendra Engineering College,** thanked all the members for their valuable suggestions and support for the successful conduct of the BOS meeting.

Convener
(Dr.S.G Balakrishnan)
Professor
Dept. of CSE

Chairperson
(Dr.M.Kannan)
Professor & Head
Dept. of CSE

Principal 16/5/23

Sl. No.	Name with full address of the members		Position in BoS
1	Name Designation Department Address Phone Mail Id	Dr.M.Kannan Professor & HoD Computer Science and Engineering Mahendra Engineering College, Mallasamudram 98431 32476 hodcse@mahendra.info	Chairperson
2	Name Designation Department Address Phone Mail Id	Dr.B.Vinoth Kumar Associate Professor Department of Information Technology PSG College of Technology, Coimbatore 95007 21416 bvk.it@psgtech.ac.in	Anna University Nominee
3	Name Designation Department Address Phone Mail Id	Dr.B.Surendiran Associate Professor Department of Computer Science and Engineering NIT, Pondicherry 99427 61363 surendiran@nitpy.ac.in	Subject Expert
4	Name Designation Company Address Phone Mail Id	Dr.T.Thirumalai Chief Technology Officer OSCORP Technologies Perungudi, Chennai 9442213923 ttm_jayala@yahoo.com	Subject Expert
5	Name Designation Company Address Phone Mail Id	Mr.Sivakumar Veerabadran Senior Cyber Security Consultant Wipro Technologies Survey No.602 & 603, Medavakkam Road, Sholinganallur, Chennai – 600 119. 9952985090 sivaspl@gmail.com	Industry Expert

6	Name	Mr.M.Murali	Industry Expert
	Designation	Program Manager	
	Company	TechMahindra	
	Address	Survey No.64, Unit No.12, Plot No.35&36, Hi-Tech City Layout, Jubilee Enclave, Madhapur, Telangana	
	Phone	9948860011	
	Mail Id	murali.m@techmahindra.com	
7	Name	Dr.A.M.Kalpana	Academic Expert
	Designation	Professor & HoD	
	College	Government College of Engineering	
	Address	Karuppur, Salem	
	Phone	9944826102	
	Mail Id	kalpana.gce@gmail.com	
8	Name	Dr.S.Raju	Allied Department
	Designation	Professor & HoD	
	Department	Information Technology	
	Address	Mahendra Engineering College	
	Phone	96007 64244	
	Mail Id	hodit@mahendra.info	
9	Name	Dr.R.Jayakumar	Allied Department
	Designation	Professor & HoD	
	Department	MCA	
	Address	Mahendra Engineering College	
	Phone	9677346220	
	Mail Id	hodmca@mahendra.info	
10	All Faculty Members of Computer Science and Engineering Department		Members
11	Name	Mr.P.Pintoo Raj	PG Alumnus
	Designation	Cyber Security Manager -D&AI	
	Company	TVS Motor Company	
	Address	Hosur	
	Phone	9663768005	
	Mail Id	pintooraj.p08@gmail.com	

12	Name	Mr.N.Srinivasan	UG Alumnus
	Designation	Director	
	Compa	Oracle India Private Limited, Bangalore	
	Address	OTH Block B, Sarjapur Marathalli Outer Ring Road, Kadubeesanahalli,Banglore-560103	
	Phone	9731111050	
	Mail Id	srinivasan.narayanan@oracle.com	
13	Name	Ms.S.Shurithi	PG Student (CSE)
	Year	II	
	Department	M.E, CSE	
	Phone	8072542306	
	Mail Id	shurithi99@gmail.com	
14	Name	Ms. S. Mohana Priya	UG Student (CSE)
	Year	IV	
	Department	B.E,CSE	
	Phone	9087841979	
	Mail Id	sandhiya2472001@gmail.com	

(Dr.M.Kannan)

Chairman – BoS

Professor & Head

Dept. of CSE

MAHENDRA ENGINEERING COLLEGE

(Autonomous)

Accredited by NAAC 'A' Grade & NBA Tier-I (WA) UG: CSE,ECE,EE

Mahendhirapuri, Mallasamudram, Namakkal Dt. - 637 503.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Percentage of changes/revision in Syllabi-Regulations-2022 as compared to R-2019

Academic Year -2022-2023   Annexure -I

Name of the Programme: B.E-Computer Science and Engineering

S.No.	Semester	Course Code	Course Name	Lecture	Tutorial	Practical	Credits	Category	Course Type	Changes in contents (No. of Hrs) (X)	Total no. of Hrs (Y)	Changes/ Revision (%) = (X*100/Y)
1.	I	22MA12101	Engineering Mathematics-I	3	1	0	4	BS	T	12	60	20
2.	I	22PY12101	Engineering Physics	3	0	0	3	BS	T	28	45	62.22
3.	I	22CS13001	Problem Solving Techniques using C	3	0	0	3	ES	T	8	45	17.78
4.	I	22CS14101	Digital Logic & Microprocessors	3	0	0	3	ES	T	45	45	100
5.	I	22EE33101	Basics of Electrical and Electronics Engineering	2	0	0	2	ES	T	4	15	26.67
				0	0	2	1	ES	L	2	10	20

S.No	Sem	Course Code	Course Title	L	T	P	C	Cat	T/L			%
6.	I	22HS11001	Heritage of Tamils	1	-	-	1	HS	T	-	-	-
7.	I		Induction Program	-	-	-	-	MC	T	-	45	-
8.	I	22PY22001	Physics Laboratory	0	0	3	1.5	BS	L	1	7	14.29
9.	I	22CS23001	Problem Solving Techniques using C Laboratory	0	0	3	1.5	BS	L	2	14	14.28
10.	II	22EN11001	Communicative English	3	0	0	3	HS	T	7	45	15.55
11.	II	22MA12102	Engineering Mathematics –II	3	1	0	4	BS	T	11	60	18.33
12.	II	22CY12001	Chemistry for Engineering	3	0	0	3	BS	T	20	45	44.44
13.	II	22GE13001	Engineering Graphics & Design	3	0	0	3	BS	L	0	45	-
14.	II	22CS13201	Data Structures	3	1	0	4	ES	T	6	15	40
15.	II	22HS11002	Tamils and Technology	1	0	0	1	HS	T	-	-	-
16.	II	22CY22001	Chemistry Laboratory	0	0	3	1.5	BS	L	1	12	8.33
17.	II	22CS23201	Data Structures Lab	0	0	3	1.5	ES	L	1	12	8.33
18.	II	22EN21001	Personality Development Practice Lab	0	0	2	1	HS	L	0	15	-
19.	III	22MA12301	Probability and Discrete Mathematics	3	1	0	4	BS	T	45	45	100
20.	III	22CS13301	Computer Architecture and Organization	3	0	0	3	ES	T	4	45	8.89
21.	III	22CS14301	Operating Systems	3	0	0	3	PC	T	7	45	15.56
22.	III	22CS14302	Python Programming	3	0	0	3	PC	T	22	45	48.8
23.	III		Open Elective –I	2	1	0	3	OE	T	-	45	-

No.	Sem	Course Code	Course Name	L	T	P	Credit	Category	Type			%
24.	III	22CY11001	Environmental Science and Engineering	3	0	0	-	MC	T	5	45	11.11
25.	III	22CS24301	Python Programming Lab	0	0	3	1.5	PC	L	10	15	66.67
26.	III	22CS24302	Operating Systems Lab	0	0	3	1.5	PC	L	3	9	33.33
27.	IV	22SH11401	Universal Human Values	3	0	0	3	HS	T	-	-	-
28.	IV	22CS14401	Database Management Systems	3	0	0	3	PC	T	-	-	-
29.	IV	22CS14402	Design and Analysis of Algorithms	3	0	2	3	PC	T	-	-	-
30.	IV	22CS14403	Java Programming	3	0	0	3	PC	T	10	45	22.22
31.	IV		Program Elective-I	3	0	0	3	PE	T	-	45	-
32.	IV		Open Elective-II	3	0	0	3	OE	T	-	45	-
33.	IV	22CS24401	Database Systems Lab	0	0	3	1.5	PC	L	4	12	33.33
34.	IV	22CS24402	Java Programming Lab	0	0	3	1.5	PC	L	3	11	27
35.	IV	22EN60001	Professional Communication Skills	0	1	2	2	EEC	L	-	-	-
36.	V	22CS14501	Data Analytics	3	0	0	3	PC	T	45	45	100
37.	V	22CS14502	Computer Networks	3	0	0	3	PC	T	13	45	28
38.	V	22CS14503	Object Oriented Analysis and Software Engineering	3	0	0	3	PC	T	45	45	100
39.	V		Program Elective – II	3	0	0	3	PC	T	-	-	-
40.	V		Open Elective – III	2	1	0	3	OE	T	-	-	-

S.No	Sem	Course Code	Course Title	L	T	P	C	Category	T/L/P			
41.	V		Open Elective – IV	3	0	0	3	OE	T	-	-	-
42.			Constitution of India	3	0	0	-	MC	-	-	-	-
43.	V	22CS24501	Object Oriented Analysis and Software Engineering Lab	0	0	3	1.5	PC	L	12	12	100
44.	V	22CS24502	Network Programming Lab	0	0	3	1.5	PC	L	10	10	100
45.	V		Interview Skills and Soft Skills	0	1	2	2	HS	L	-	-	-
46.	VI		Managerial Skills, Project and Quality Management	3	0	0	3	HS	T	-	-	-
47.	VI	22CS14601	Compiler Design	3	1	0	4	PC	T	21	45	50
48.	VI	22CS14602	Mobile Application Development	3	0	0	3	PC	T	14	45	30
49.	VI	22CS14603	Web Technologies	2	0	2	3	PC	T	45	45	100
50.	VI		Program Elective – III	3	0	0	3	PE	T	-	-	-
51.	VI		Open Elective – V	3	0	0	3	OE	T	-	-	-
52.	VI	22CS24601	Mobile Application Development Lab	0	0	3	1.5	PC	L	2	10	20
53.	VI	22CS36601	Mini Project	0	0	6	3	EEC	P	-	-	-
54.	VII	22CS14701	Cryptography and Network Security	3	0	0	3	PC	T	14	45	31.1
55.	VII	22CS14702	DevOps	2	0	2	3	PC	T	45	45	100
56.	VII	22CS14703	Agile Methodology	3	0	0	3	PC	T	11	45	24.44
57.	VII		Program Elective – IV	3	0	0	3	PE	T	-	-	-

No.	Sem.	Course Code	Course Title	L	T	P	C	Cat.	T/L/P	Hours	Changes
58.	VII		Open Elective – VI	3	0	0	3	OE	T	-	-
59.	VII	22CS24701	Cryptography and Network Security Lab	0	0	3	1.5	PC	L	3	27
60.	VII	22CS24702	Project work Phase – I	0	0	6	3	EEC	P	30	100
61.	VII	22CS56701	Internship in Industry	-	-	-	1	EEC	P	30	30
62.	VIII		Program Elective – 5	3	0	0	3	PE	T	-	-
63.	VIII		Program Elective – 6	3	0	0	3	PE	T	-	-
64.	VIII	22AI36801	Project Work	0	0	12	6	EEC	P	-	-

Total No. of credits	164

	Changes/Revision in Theory course (%)	Changes/Revision in Laboratory course (%)
	(481/1305) = 37%	(90/205) = 44%

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Total no. of hours (Y)	286	249	294	203	157	145	176	-	1510
Change/Revision in contents (No. of Hours) (X)	102	46	96	17	125	82	103	-	571
Changes/Revision (%) = (X*100/Y)	36	18	33	8	80	57	59	-	38%

'T' - Theory Course, 'L' - Laboratory Course, 'P' - Internship/Project work

Convener

Chairperson

Principal

MAHENDRA ENGINEERING COLLEGE

(Autonomous)

Accredited by NAAC 'A' Grade & NBA Tier-I (WA) UG: CSE,ECE,EEE

Mahendhirapuri, Mallasamudram, Namakkal Dt. - 637 503.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

List of New Courses
Academic Year -2022-2023

Annexure -II

S.No.	Semester	Course Code	Course Name	Lecture	Tutorial	Practical	Credits	Category
1	I	22CS13101	Digital Logic and Microprocessors	3	0	0	3	ES
2	I	22HS11001	Heritage of Tamils	1	0	0	3	MC
3	II	22HS11002	Tamils and Technology	1	0	0	3	MC
4	III	22MA12301	Probability &Discrete Mathematics	3	1	0	4	BS
5	V	22CS14501	Data Analytics	3	0	0	3	PC
6	V	22CS14503	Object Oriented Analysis and Software Engineering	3	0	0	3	PC
7	V	22CS24501	Object Oriented Analysis and Software Engineering Lab	0	0	3	1.5	PC
8	V	22CS24502	Network Programming Lab	0	0	3	1.5	PC
9	VI	22CS14603	Web Technologies	2	0	2	3	PC
10	VII	22CS14702	DevOps	2	0	2	3	PC
11	VII	22CS24702	Project work Phase – I	0	0	6	3	EEC

Convener

Chairperson

Principal

B.E. COMPUTER SCIENCE AND ENGINEERING

CURRICULUM FOR

CHOICE BASED CREDIT SYSTEM

Regulations 2022

DEPARTMENT OF COMPUTER SCIENCE AND

ENGINEERING

MAHENDRA ENGINEERING COLLEGE

(AUTONOMOUS)

MALLASAMUDRAM WEST, TAMIL NADU 637503

MAHENDRA ENGINEERING COLLEGE,

(AUTONOMOUS)
MALLASAMUDRAM WEST, TAMIL NADU 637503
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Institute Vision

To be an internationally recognized institute for engineering education research with ethical values

Institute Mission

- To ensure the effective use of resources to mould the students as professionals and entrepreneurs
- To enhance industry institute interaction for innovative technology practice
- To encourage the faculty members and students for advanced research
- To inculcate ethical values among the faculty members and students

Department Vision

To produce competent computer engineers proficient with state of the art technologies

Department Mission

- To impart technical education through effective teaching-learning process
- To enhance the students employability through mentoring and skill development
- To promote research activities with analytical skills to face global challenges
- To enable students imbibe ethical and enterprising characteristics to become socially responsible engineers

Programme educational objectives

- PEO1 – Good communication, leadership and entrepreneurship skills
- PEO2 – Expertise on advanced computer technologies to become competitive
- PEO3 – The habit of learning and nurture the research attitude
- PEO4 – The ability to work in a team with professional ethics

Programme Specific Outcomes

1. PSO1 - Ability to comprehend the underlying principles and systematic methods for the development, operation and maintenance of software, using professional engineering practices
2. PSO2 - Ability to develop socially acceptable technical solutions to real world problems with various strategies for sustainable development
3. PSO3 - Ability to apply the skills in the areas related to Algorithms, Networking, Web Designing, Artificial Intelligence, Internet of Things and Data Analytics of various complexities towards successful employment

MAHENDRA ENGINEERING COLLEGE
(Autonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Regulations 2022

I Semester

Sl. No.	Course Code	Course Title	L	T	P	C	Category
		THEORY					
1	22MA12101	Engineering Mathematics-I	3	1	0	4	BS
2	22PY12101	Engineering Physics	3	0	0	3	BS
3	22CS13001	Problem Solving Techniques using C	3	0	0	3	ES
4	22EE33101	Basics of Electrical and Electronics Engineering	2	0	2	3	ES
5	22CS14101	Digital Logic & Microprocessors	3	0	0	3	ES
6	22HS11001	Heritage of Tamils	1	0	0	1	HS
7		Induction Program	-	-	-	-	MC
		PRACTICAL					
8	22PY22001	Physics Lab	0	0	3	1.5	BS
9	22CS23001	Problem Solving Techniques using C Lab	0	0	3	1.5	ES
		TOTAL	15	1	8	20	

BoS Chairman 6/5/23

MAHENDRA ENGINEERING COLLEGE
(Autonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Regulations 2022
II Semester

Sl. No.	Course Code	Course Title	L	T	P	C	Category
THEORY							
1	22EN11001	Communicative English	3	0	0	3	HS
2	22MA12102	Engineering Mathematics-II	3	1	0	4	BS
3	22CY12001	Chemistry for Engineering	3	0	0	3	BS
4	22GE13001	Engineering Graphics and Design	3	0	2	4	ES
5	22CS13201	Data Structures	3	1	0	4	ES
6	22HS11002	Tamils and Technology	1	0	0	1	HS
PRACTICAL							
7	22CY22001	Chemistry Laboratory	0	0	3	1.5	BS
8	22CS23201	Data Structures Lab	0	0	3	1.5	ES
9	22EN21001	Personality Development Practice Lab	0	0	2	1	HS
		TOTAL	16	2	10	23	

BoS Chairman

MAHENDRA ENGINEERING COLLEGE
(Autonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Regulations 2022

III Semester

Sl. No.	Course Code	Course Title	L	T	P	C	Category
		THEORY					
1	22MA12301	Probability and Discrete Mathematics	3	1	0	4	BS
2	22CS13301	Computer Architecture and Organization	3	0	0	3	ES
3	22CS14301	Operating Systems	3	0	0	3	PC
4	22CS14302	Python Programming	3	0	0	3	PC
5		Open Elective-I	2	1	0	3	OE
6	22CY11001	Environmental Science and Engineering	3	0	0	-	MC
		PRACTICAL					
7	22CS24301	Python Programming Lab	0	0	3	1.5	PC
8	22CS24302	Operating Systems Lab	0	0	3	1.5	PC
		TOTAL	17	2	6	19	

BoS Chairman

MAHENDRA ENGINEERING COLLEGE
(Autonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Regulations 2022

IV Semester

Sl. No.	Course Code	Course Title	L	T	P	C	Category
THEORY							
1	22SH11401	Universal Human Values	3	0	0	3	HS
2	22CS14401	Database Management Systems	3	0	0	3	PC
3	22CS14402	Design and Analysis of Algorithms	3	0	0	3	PC
4	22CS14403	Java Programming	3	0	0	3	PC
5		Program Elective-I	3	0	0	3	PE
6		Open Elective-II	2	1	0	3	OE
PRACTICAL							
7	22CS24401	Database Management Systems Lab	0	0	3	1.5	PC
8	22CS24402	Java Programming Lab	0	0	3	1.5	PC
9	22EN60001	Professional Communication Skills	0	1	2	2	EEC
		TOTAL	17	2	8	23	

BoS Chairman

MAHENDRA ENGINEERING COLLEGE

(Autonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Regulations 2022

V Semester

Sl. No.	Course Code	Course Title	L	T	P	C	Cate-gory
		THEORY					
1	22CS14501	Data Analytics	3	0	0	3	PC
2	22CS14502	Computer Networks	3	0	0	3	PC
3	22CS14503	Object Oriented Analysis and Software Engineering	3	0	0	3	PC
4		Program Elective – II	3	0	0	3	PE
5		Open Elective – III	2	1	0	3	OE
6		Open Elective – IV	3	0	0	3	OE
7		Constitution of India	3	0	0	-	MC
		PRACTICAL					
8	22CS24501	Object Oriented Analysis and Software Engineering Lab	0	0	3	1.5	PC
9	22CS24502	Network Programming Lab	0	0	3	1.5	PC
10		Interview Skills and Soft Skills	0	1	2	2	HS
		TOTAL	20	2	8	23	

BoS Chairman

MAHENDRA ENGINEERING COLLEGE
(Autonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Regulations 2022

VI Semester

Sl. No.	Course Code	Course Title	L	T	P	C	Category
		THEORY					
1		Managerial Skills and Quality Management	3	0	0	3	HS
2	22CS14601	Compiler Design	3	1	0	4	PC
3	22CS14602	Mobile Application Development	3	0	0	3	PC
4	22CS14603	Web Technologies	2	0	2	3	PC
5		Program Elective – III	3	0	0	3	PE
6		Open Elective - V	3	0	0	3	OE
		PRACTICAL					
7	22CS24601	Mobile Application Development Lab	0	0	3	1.5	PC
8	22CS36601	Mini Project	0	0	6	3	EEC
		TOTAL	17	1	11	23.5	

BoS Chairman

MAHENDRA ENGINEERING COLLEGE
(Autonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Regulations 2022

VII Semester

Sl. No.	Course Code	Course Title	L	T	P	C	Cate-gory
THEORY							
1	22CS14701	Cryptography and Network Security	3	0	0	3	PC
2	22CS14702	DevOps	2	0	2	3	PC
3	22CS14703	Agile Methodology	3	0	0	3	PC
4		Program Elective – IV	3	0	0	3	PE
5		Open Elective – VI	3	0	0	3	OE
PRACTICAL							
6	22CS24701	Cryptography and Network Security Lab	0	0	3	1.5	PC
7	22CS24702	Project work Phase – I	0	0	6	3	EEC
8	22CS56701	Internship in Industry	0	0	-	1	EEC
		TOTAL	14	0	11	20.5	

BoS Chairman

MAHENDRA ENGINEERING COLLEGE
(Autonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Regulations 2022
VIII Semester

Sl. No.	Course Code	Course Title	L	T	P	C	Category
		THEORY					
1		Program Elective – V	3	0	0	3	PE
2		Program Elective – VI	3	0	0	3	PE
		PRACTICAL					
3	22CS36801	Project Work	0	0	12	6	EEC
		TOTAL	6	0	12	12	

BoS Chairman

MAHENDRA ENGINEERING COLLEGE
(Autonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Regulation 2022
Program Electives

Sl. No.	Course Code	Course Title	L	T	P	C	Category
1.	22CS15501	Data Visualization	3	0	0	3	PE
2.	22CS15502	Information Storage Management	3	0	0	3	PE
3.	22CS15503	Big Data Technologies and Business Intelligence	3	0	0	3	PE
4.	22CS15504	Information Retrieval	3	0	0	3	PE
5.	22CS15505	Web Mining	3	0	0	3	PE
6.	22CS15506	Medical Image Processing	3	0	0	3	PE
7.	22CS15507	Soft Computing	3	0	0	3	PE
8.	22CS15508	PL/SQL Programming	2	0	2	3	PE
9.	22CS15509	Advanced Java Programming	3	0	0	3	PE
10.	22CS15510	R Programming	2	0	2	3	PE
11.	22CS15511	Data Warehousing and Data Mining	3	0	0	3	PE
12.	22CS15512	Embedded Systems	3	0	0	3	PE
13.	22CS15513	UI and UX Design	3	0	0	3	PE
14.	22CS15514	Robotics and Process Automation	3	0	0	3	PE
15.	22CS15515	Distributed Databases	3	0	0	3	PE
16.	22CS15516	Cloud Computing Techniques	3	0	0	3	PE
17.	22CS15517	Grid Computing	3	0	0	3	PE
18.	22CS15518	Service Oriented Architecture	3	0	0	3	PE
19.	22CS15519	Real Time Systems	3	0	0	3	PE
20.	22CS15520	Virtualization Techniques	3	0	0	3	PE
21.	22CS15521	Cyber Physical Systems	3	0	0	3	PE
22.	22CS15522	Cyber Security	3	0	0	3	PE
23.	22CS15523	Ethical Hacking	3	0	0	3	PE

MAHENDRA ENGINEERING COLLEGE
(Autonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Regulation 2022

Program Electives

24.	22CS15524	Social Network Analysis	3	0	0	3	PE
25.	22CS15525	Digital Marketing	3	0	0	3	PE
26.	22CS15526	Augmented Reality and Virtual Reality	3	0	0	3	PE
27.	22CS15527	Intellectual Property Rights	3	0	0	3	PE
28.	22CS15528	Internet of Things	3	0	0	3	PE
29.	22CS15529	Game Development	3	0	0	3	PE
30.	22CS15530	Block chain Technology	3	0	0	3	PE
31.	22CS15531	Multi-core Architectures and Programming	3	0	0	3	PE
32.	22CS15532	Mobile and pervasive computing	3	0	0	3	PE
33.	22CS15533	Quantum Computing	3	0	0	3	PE
34.	22CS15534	Artificial Intelligence	3	0	0	3	PE
35.	22CS15535	Artificial Intelligence and Machine Learning	3	0	0	3	PE
36.	22CS15536	NoSQL Databases	2	0	2	3	PE

BoS Chairman

Open Electives

1	Java Programming	3	0	0	3	OE
2	Advanced Java Programming	3	0	0	3	OE
3	Web Technologies	3	0	0	3	OE
4	R Programming	3	0	0	3	OE
5	Artificial Intelligence and Machine Learning	3	0	0	3	OE
6	Big Data Technologies and Business Intelligence	3	0	0	3	OE
7	Service Oriented Architecture	3	0	0	3	OE
8	Intellectual Property Rights	3	0	0	3	OE
9	Web Mining	3	0	0	3	OE
10	Internet of Things	3	0	0	3	OE
11	Digital Marketing	3	0	0	3	OE
12	Software Engineering	3	0	0	3	OE
13	Social Media Marketing	3	0	0	3	OE
14	Data Analytics	3	0	0	3	OE
15	Python Programming	3	0	0	3	OE

BoS Chairman

Vertical I Data Science	Vertical II Cloud Computing and Data Center Technologies	Vertical III Cyber Security and Data Privacy	Vertical IV Artificial Intelligence and Emerging Technologies
Data Warehousing and Data Mining	Virtualization Techniques	Cyber Physical Systems	Artificial Intelligence
Information Storage Management	Cloud Computing Techniques	Cyber Security	Artificial Intelligence and Machine Learning
Big Data Technologies and Business Intelligence	Grid Computing	Ethical Hacking	Natural Language Processing
Data Visualization	Service Oriented Architecture	Block chain Technology	Soft Computing
Medical Image Processing	Real Time System	Social Network Analysis	R Programming
Intellectual Property Rights	Distributed Databases	Digital Marketing	Web Mining
Social Network Analysis	Data Warehousing and Data Mining	Intellectual Property Rights	Information Retrieval
Digital Marketing	Multi-core Architectures and Programming	Information Storage Management	Quantum Computing
Natural Language Processing	Mobile and pervasive computing	Data Visualization	Block chain Technology
Distributed Databases	Quantum Computing	Information Retrieval	Robotics and Process Automation
R Programming	Internet of Things	Web Mining	Augmented Reality/Virtual Reality
PL/SQL Programming	NoSQL Databases	Cloud Computing Techniques	Game Development
NoSQL Databases	PL/SQL Programming	Real Time System	UI and UX Design

BoS Chairman

SEMESTER WISE SUMMARY

Sl. No	Course Area	Credits as Per Semester								Credits Total	Credits %
		I	II	III	IV	V	VI	VII	VIII		
1	HS	1	5		3	2	3			14	11.71
2	BS	10	8.5	4						22.5	7.29
3	ES	9	9.5	3						21.5	7.63
4	PC			9	12	12	11.5	10.5		55	2.98
5	PE				3	3	3	3	6	18	9.11
6	OE			3	3	6	3	3		18	9.11
7	EEC				2		3	4	6	15	10.93
	Total	20	23	19	23	23	23.5	20.5	12	164	-

Mandatory Non Credit Courses (MC)

S.NO	SEMESTER	COURSE NAME
1	I	Induction Program
2	III	Environmental Science
3	V	Constitution of India

BoS Chairman

CREDIT WISE SUMMARY

S.NO	Category	No. of credits suggested (by AICTE)	Credits	Difference
1	Humanities and Social Sciences including Management Courses (HS)	12	14	2
2	Basic Science Courses (BS)	24	22.5	-1.5
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical, Mechanical or Computers, etc (ES)	29	21.5	-7.5
4	Professional Core Courses (PC)	49	55	6
5	Professional Elective Courses relevant to chosen Specialization/Branch (PE)	18	18	-
6	Open subjects – Electives from other technical and / or emerging subjects (OE)	12	18	6
7	Project Work, Seminar, Internship in Industry or elsewhere, etc (EEC)	15	15	-
8	Mandatory Courses (MC)	Non credit		
	Total	159	164	05

BoS Chairman