SCHEME OF INSTRUCTION
M.TECH (COMPUTER SCIENCE AND ENGINEERING)
Proposed from the Academic year 2019-20
SEMESTER - I

S.No	Course Code	Course Title	Scheme of Instruction		Contact Hrs/Wk	Scheme of Examination		Credits
			L/T	P		CIE	SEE	
1.	PC 101 CS	Program Core I-Mathematical foundations of Computer Science	3	--	3	30	70	3
2.	PC 102 CS	Program Core II-Advanced Data Structures	3	--	3	30	70	3
3.	PE 121 CS	Program Elective I-Cloud Computing	3	--	3	30	70	3
4.	PE 125 CS	Program Elective II-Image Processing	3	--	3	30	70	3
5.	MC 101 CS	Research Methodology in Computer Science	3	--	3	30	70	3
6.	AC 101 HS	Audit Course I	2	--	2	30	70	0
7.	PC 151 CS	Laboratory I (Advanced Data Structures Lab)	--	3	3	50	-	1.5
8.	PC 152 CS	Laboratory II (Cloud Computing Lab)	--	3	3	50	-	1.5
Total			**17**	**6**	**23**	**280**	**420**	**18**

SEMESTER - II

S.No	Course Code	Course Title	Scheme of Instruction		Contact Hrs/Wk	Scheme of Examination		Credits
			L/T	P		CIE	SEE	
1.	PC 103 CS	Program Core III-Advanced Algorithms	3	--	3	30	70	3
2.	PC 104 CS	Program Core IV-Artificial Intelligence	3	--	3	30	70	3
3.	Elective III	Elective III	3	--	3	30	70	3
4.	Elective IV	Elective IV	3	--	3	30	70	3
5.	AC 102 HS	Audit Course II	2	--	2	30	70	0
6.	PW 101 CS	Mini Project with Seminar		6	6	50 *	-	3
7.	PC 153 CS	Laboratory III - Advanced Algorithms Lab	--	3	3	50	-	1.5
8.	PC 154 CS	Laboratory IV	--	3	3	50	-	1.5
Total			**14**	**12**	**26**	**300**	**350**	**18**

*__*Mini Project with Seminar Evaluation:__ 25 marks to be awarded by Supervisor and 25 marks to be awarded by Viva-Voce committee comprising Head, Supervisor and an Examiner.*

SCHEME OF INSTRUCTION
M.TECH (COMPUTER SCIENCE AND ENGINEERING)
Proposed from the Academic year 2019-20

SEMESTER III

S.No	Course Code	Course Title	Scheme of Instruction		Contact Hrs/Wk	Scheme of Examination		Credits
			L/T	P		CIE	SEE	
1.	Elective V	Elective V	3	-	3	30	70	3
2.	Open Elective	Open Elective	3	-	3	30	70	3
3.	PW 102 CS	Major Project Phase I	--	20	20	100 **		10
		Total	**6**	**20**	**26**	**160**	**140**	**16**

*** Major Project Phase I Evaluation:* *50 marks to be awarded by Supervisor and 50 marks to*

be awarded by Viva-Voce committee comprising Head, Supervisor and an Examiner.

SEMESTER – IV

S.No	Course Code	Course Title	Scheme of Instruction		Contact Hrs/Wk	Scheme of Examination		Credits
			L/T	P		CIE	SEE	
1.	PW 103 CS	Major Project Phase II	--	32	32	---	200	16
		Total	**--**	**32**	**32**	**---**	**200**	**16**

Audit course 1 & 2

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills.

Open Elective

1. Business Analytics

2. Industrial Safety

3. Operations Research

4. Cost Management of Engineering Projects

5. Composite Materials

6. Waste to Energy

List of Core Subjects:

S.No	Course Code	Course Title
1	PC 101 CS	Mathematical Foundation of Computer Science
2	PC 102 CS	Advanced Data Structures
3	PC 103 CS	Advanced Algorithms
4	PC 104 CS	Artificial Intelligence

Mandatory Course :

S.No	Course Code	Course Title
1	MC 101 CS	Research Methodology in Computer Science

List of Labs:

S.No	Course Code	Course Title
1	PC 151 CS	Advanced Data Structures Lab
2	PC 152 CS	Cloud Computing Lab
3	PC 153 CS	Advanced Algorithms Lab
4	PC 154 CS	Laboratory IV

List of Elective Subjects:

S.No	Course Code	Course Title
1	PE 111 CS	Mobile Computing
2	PE 112 CS	Real Time Systems
3	PE 113 CS	Web Engineering
4	PE 114 CS	Multimedia Technologies
5	PE 115 CS	Data Mining
6	PE 116 CS	Network Security
7	PE 117 CS	Machine Learning
8	PE 118 CS	Information Retrieval System
9	PE 119 CS	Natural Language processing
10	PE 120 CS	Software Quality and Testing
11	PE 121 CS	Cloud Computing
12	PE 122 CS	Soft Computing
13	PE 123 CS	Artificial Neural Networks
14	PE 124 CS	Software Project Management
15	PE 125 CS	Image Processing
16	PE 126 CS	Software Reuse Techniques
17	PE 127 CS	Reliability and Fault Tolerance
18	PE 128 CS	Web Mining
19	PE 129 CS	Human Computer Interaction
20	PE 130 CS	Advanced Computer Graphics
21	PE 131 CS	Software Engineering for RTS
22	PE 132 CS	Simulation and Modelling
23	PE 133 CS	Advanced Operating Systems
24	PE 134 CS	Object Oriented Software Engineering
25	PE 135 CS	Distributed Computing
26	PE 136 CS	Advanced Databases

27	PE 111 PD	Parallel Algorithms
28	PE 112 PD	Grid Computing
29	PE 113 PD	Real Time Operating Systems
30	PE 114 PD	Scripting Languages For Design Automation
31	PE 115 PD	Storage Management
32	PE 116 PD	Performance Evaluation of Computing
33	PE 117 PD	Parallel and Distributed Databases
34	PC 101 PD	Parallel Computer Architecture
35	PC 102 PD	Parallel Programming
36	PC 101 ES	Embedded System Design
37	PC 102 ES	Hardware and Software Co-design

SCHEME OF INSTRUCTION
M.TECH (PARALLEL AND DISTRIBUTED SYSTEMS)
Proposed from the Academic year 2019-20
SEMESTER - I

S.No	Course Code	Course Title	Scheme of Instruction L/T	Scheme of Instruction P	Contact Hrs/Wk	Scheme of Examination CIE	Scheme of Examination SEE	Credits
1.	PC 101 CS	Program Core I- Mathematical foundations of Computer Science	3	--	3	30	70	3
2.	PC 102 CS	Program Core II-Advanced Data Structures	3	--	3	30	70	3
3.	PC 101 PD	Program Core III- Parallel Computer Architecture	3	--	3	30	70	3
4.	PE 114 PD	Program Elective I- Scripting Languages for Design Automation	3	--	3	30	70	3
5.	MC 101 CS	Research Methodology in Computer Science	3	--	3	30	70	3
6.	AC 101 HS	Audit Course I	2	--	2	30	70	0
7.	PC 151 CS	Lab – I Advanced Data Structures Lab	--	3	3	50	-	1.5
8.	PC 151 PD	Lab – II Scripting Languages for Design Automation Lab	--	3	3	50	-	1.5
Total			**17**	**6**	**23**	**280**	**420**	**18**

SEMESTER - II

S.No	Course Code	Course Title	Scheme of Instruction L/T	Scheme of Instruction P	Contact Hrs/Wk	Scheme of Examination CIE	Scheme of Examination SEE	Credits
1.	PC 102 PD	Core IV- Parallel Programming	3	--	3	30	70	3
2.	Elective II	Elective II	3	--	3	30	70	3
3.	Elective III	Elective III	3	--	3	30	70	3
4.	Elective IV	Elective IV	3	--	3	30	70	3
5.	AC 102 HS	Audit Course II	2	--	2	30	70	0
6.	PW 101 PD	Mini Project with Seminar		6	6	50*	-	3
7.	PC 152 PD	Laboratory III – Parallel Programming Lab	--	3	3	50	-	1.5
8.	Laboratory IV	Laboratory IV	--	3	3	50	-	1.5
Total			**14**	**12**	**26**	**300**	**350**	**18**

*Mini Project with Seminar Evaluation: **25 marks to be awarded by Supervisor and 25 marks to be awarded by Viva-Voce committee comprising Head, Supervisor and an Examiner**

SCHEME OF INSTRUCTION
M.TECH (COMPUTER SCIENCE AND ENGINEERING)
Proposed from the Academic year 2019-20

SEMESTER III

S.No	Course Code	Course Title	Scheme of Instruction L/T	P	Contact Hrs/Wk	Scheme of Examination CIE	SEE	Credits
1.	Elective V	Elective V	3	-	3	30	70	3
2.	Open Elective	Open Elective	3	-	3	30	70	3
3.	PW 102 PD	Major Project Phase I	--	20	20	100**		10
		Total	**6**	**20**	**26**	**160**	**140**	**16**

*** **Major Project Phase I Evaluation:** 50 marks to be awarded by Supervisor and 50 marks to be awarded by Viva-Voce committee comprising Head, Supervisor and an Examiner.*

SEMESTER – IV

S.No	Course Code	Course Title	Scheme of Instruction L/T	P	Contact Hrs/Wk	Scheme of Examination CIE	SEE	Credits
1.	PW 103 PD	Major Project Phase II	--	32	32	---	200	16
		Total	**--**	**32**	**32**	**---**	**200**	**16**

Audit course 1 & 2

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills.

Open Elective

1. Business Analytics

2. Industrial Safety

3. Operations Research

4. Cost Management of Engineering Projects

5. Composite Materials

6. Waste to Energy

List of Core Subjects:

S.No	Course Code	Course Title
1	PC 101 CS	Mathematical Foundation of Computer Science
2	PC 102 CS	Advanced Data Structures
3	PC 101 PD	Parallel Computer Architecture
4	PC 102 PD	Parallel Programming

Mandatory Course :

S.No	Course Code	Course Title
1	MC 101 CS	Research Methodology in Computer Science

List of Labs:

S.No	Course Code	Course Title
1	PC 151 CS	Advanced Data Structures Lab
2	PC 151 PD	Scripting Languages for Design Automation Lab
3	PC 152 PD	Parallel Programming Lab
4	Laboratory IV	Laboratory IV

List of Elective Subjects:

S.No	Course Code	Course Title
1	PE 111 PD	Parallel Algorithms
2	PE 112 PD	Grid Computing
3	PE 113 PD	Real Time Operating Systems
4	PE 114 PD	Scripting Languages For Design Automation
5	PE 115 PD	Storage Management
6	PE 116 PD	Performance Evaluation of Computing
7	PE 117 PD	Parallel and Distributed Databases
8	PE 111 CS	Mobile Computing
9	PE 112 CS	Real Time Systems
10	PE 113 CS	Web Engineering
11	PE 114 CS	Multimedia Technologies
12	PE 115 CS	Data Mining
13	PE 116 CS	Network Security
14	PE 117 CS	Machine Learning
15	PE 118 CS	Information Retrieval System
16	PE 119 CS	Natural Language processing
17	PE 120 CS	Software Quality and Testing
18	PE 121 CS	Cloud Computing
19	PE 122 CS	Soft Computing
20	PE 123 CS	Artificial Neural Networks
21	PE 124 CS	Software Project Management
22	PE 125 CS	Image Processing
23	PE 126 CS	Software Reuse Techniques
24	PE 127 CS	Reliability and Fault Tolerance
25	PE 128 CS	Web Mining
26	PE 129 CS	Human Computer Interaction
27	PE 130 CS	Advanced Computer Graphics

28	PE 131 CS	Software Engineering for RTS
29	PE 132 CS	Simulation and Modelling
30	PE 133 CS	Advanced Operating Systems
31	PE 134 CS	Object Oriented Software Engineering
32	PE 135 CS	Distributed Computing
33	PE 136 CS	Advanced Databases
34	PC 101 ES	Embedded System Design
35	PC 102 ES	Hardware and Software Co-design
36	PC 103 CS	Advance Algorithms
37	PC 104 CS	Artificial Intelligence

SCHEME OF INSTRUCTION
M.TECH (EMBEDDED SYSTEMS AND COMPUTING)
Proposed from the Academic year 2019-20
SEMESTER - I

S.No	Course Code	Course Title	Scheme of Instruction L/T	P	Contact Hrs/Wk	CIE	SEE	Credits
1.	PC 101 CS	Program Core I- Mathematical foundations of Computer Science	3	--	3	30	70	3
2.	PC 102 CS	Program Core II- Advanced Data Structures	3	--	3	30	70	3
3.	PC 101 ES	Program Core III- Embedded System Design	3	--	3	30	70	3
4.	PE 114 PD	Program Elective I- Scripting Languages for design automation	3	--	3	30	70	3
5.	MC 101 CS	Research Methodology in Computer Science	3	--	3	30	70	3
6.	AC 101 HS	Audit Course I	2	--	2	30	70	0
7.	PC 151 CS	Laboratory – I Advanced Data Structures Lab	--	3	3	50	-	1.5
8.	PC 151 PD	Laboratory – II Scripting Languages for Design Automation Lab	--	3	3	50	-	1.5
Total			**17**	**6**	**23**	**280**	**420**	**18**

SEMESTER - II

S.No	Course Code	Course Title	Scheme of Instruction L/T	P	Contact Hrs/Wk	CIE	SEE	Credits
1.	PC 102 ES	Program Core IV- Hardware and Software Co-design	3	--	3	30	70	3
2.	Elective II	Elective II	3	--	3	30	70	3
3.	Elective III	Elective III	3	--	3	30	70	3
4.	Elective IV	Elective IV	3	--	3	30	70	3
5.	AC 102 HS	Audit Course II	2	--	2	30	70	0
6.	PW 101 ES	Mini Project with Seminar		6	6	50*	-	3
7.	PC 151 ES	Laboratory III Hardware and Software Co-design	--	3	3	50	-	1.5
8.	Laboratory IV	Laboratory IV	--	3	3	50	-	1.5
Total			**14**	**12**	**26**	**300**	**350**	**18**

***Mini Project with Seminar Evaluation:** 25 marks to be awarded by Supervisor and 25 marks to be awarded by Viva-Voce committee comprising Head, Supervisor and an Examiner.*

SCHEME OF INSTRUCTION
M.TECH (EMBEDDED SYSTEMS AND COMPUTING)
Proposed from the Academic year 2019-20

SEMESTER III

S.No	Course Code	Course Title	Scheme of Instruction		Contact Hrs/Wk	Scheme of Examination		Credits
			L/T	P		CIE	SEE	
1.	Elective V	Elective V	3	-	3	30	70	3
2.	Open Elective	Open Elective	3	-	3	30	70	3
3.	PW 102 ES	Major Project Phase I	--	20	20	100**		10
		Total	**6**	**20**	**26**	**160**	**140**	**16**

*** **Major Project Phase I Evaluation:** 50 marks to be awarded by Supervisor and 50 marks to be awarded by Viva-Voce committee comprising Head, Supervisor and an Examiner.*

SEMESTER – IV

S.No	Course Code	Course Title	Scheme of Instruction		Contact Hrs/Wk	Scheme of Examination		Credits
			L/T	P		CIE	SEE	
1.	PW 103 ES	Major Project Phase II	--	32	32	---	200	16
		Total	**--**	**32**	**32**	**---**	**200**	**16**

L: Lecture T: Tutorial P: Practical
CIE: Continuous Internal Evaluation SEE: Semester End Examination

Audit course 1 & 2

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development through Life Enlightenment Skills.

Open Elective

1. Business Analytics

2. Industrial Safety

3. Operations Research

4. Cost Management of Engineering Projects

5. Composite Materials

6. Waste to Energy

List of Core Subjects:

S.No	Course Code	Course Title
1	PC 101 CS	Mathematical Foundation of Computer Science
2	PC 102 CS	Advanced Data Structures
3	PC 101 ES	Embedded System Design
4	PC 102 ES	Hardware and Software Co-design

Mandatory Course :

S.No	Course Code	Course Title
1	MC 101 CS	Research Methodology in Computer Science

List of Labs:

S.No	Course Code	Course Title
1	PC 151 CS	Advanced Data Structures Lab
2	PC 151 PD	Scripting Languages for Design Automation Lab
3	PC 151 ES	Hardware and Software Co-design Lab
4	Laboratory IV	Laboratory IV

List of Elective Subjects:

S.No	Course Code	Course Title
1	PE 111 ES	Digital System Design
2	PE 112 ES	Microcontrollers for Embedded Systems
3	PE 113 ES	Advanced Computer Architecture
4	PE 114 ES	Embedded Programming
5	PE 115 ES	Field Programmable Gate Arrays
6	PE 116 ES	System On Chip Architecture
7	PE 117 ES	Optimization Techniques
8	PE 118 ES	Product Design and Quality Management
9	PE 119 ES	Design for Testability
10	PE 120 ES	DSP Architecture
11	PE 121 ES	Graph Theory and its Applications
12	PE 111 CS	Mobile Computing
13	PE 112 CS	Real Time Systems
14	PE 114 CS	Multimedia Technologies
15	PE 115 CS	Data Mining
16	PE 116 CS	Network Security
17	PE 117 CS	Machine Learning
18	PE 121 CS	Cloud Computing
19	PE 122 CS	Soft Computing
20	PE 123 CS	Artificial Neural Networks
21	PE 124 CS	Software Project Management
22	PE 127 CS	Reliability and Fault Tolerance
23	PE 131 CS	Software Engineering for RTS
24	PE 132 CS	Simulation and Modelling
25	PE 133 CS	Advanced Operating Systems
26	PE 134 CS	Object Oriented Software Engineering

27	PE 135 CS	Distributed Computing
28	PE 136 CS	Advanced Databases
29	PE 111 PD	Parallel Algorithms
30	PE 112 PD	Grid Computing
31	PE 113 PD	Real Time Operating Systems
32	PE 114 PD	Scripting Languages For Design Automation
33	PC 101 PD	Parallel Computer Architecture
34	PC 102 PD	Parallel Programming
35	PC 103 CS	Advance Algorithms
36	PC 104 CS	Artificial Intelligence