

15th Board of Studies Meeting (A.Y:2023-24) (MR22 Regulations)



Department of Information Technology Malla Reddy Engineering College

(UGC Autonomous Institution, Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad).

Accredited 3rd time by NAAC with 'A++' Grade, Maisammaguda (H), Medchal-
Malkajgiri District, Secunderabad, Telangana- 500100, www.mrec.ac.in

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Maisammaguda(H), Medchal - Malkajgiri District, Secunderabad, Telangana State - 500100, www.mrec.ac.in



Department of Information Technology

09.12.2023

15th BOS Meeting

Action Taken Report (ATR) on previous BoS Meeting (14th) in AY 2022-23

The previous Board of Studies meeting to the A.Y 2022-23 was held on 18/03/2023. The following resolutions and corresponding actions are taken as follows:

Resolution-1:	BOS Members suggested using interactive lessons as part of innovative teaching through interactive class room activities.
Action Taken	We are using Interactive Lessons as part of innovative teaching through Interactive Class Room Activities as per suggestions of JNTUH in Viva-voce, and for theory subjects PPT/Poster/Case-Study presentations are using for MR22 regulations .
Resolution-2	BOS Members suggested counselling the readmitted students about the valid period of study for his/her, before readmitting into concern year.
Action Taken	Yes, department Counselling the Readmitted Students about the valid period of study for his/her, before readmitting into concern year.


(Dr. Deena Babu Mandru)
HOD & Chairman
UG-B.Tech-IT-BOS

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Department of Information Technology

Date: 09/12/2023

15th Board of Studies Meeting

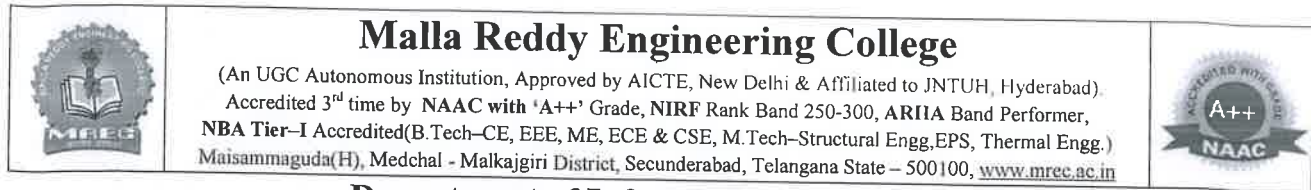
The 15th UG-B.Tech Board of Studies meeting for Department of Information Technology is conducted on 09-12-2023 at 2:30 PM in the ZOOM Meeting (Online Mode).

AGENDA

The agenda of the meeting is as follows:

- 15.1 Action Taken Report (ATR) on previous BoS Meeting in A.Y 2022-23 on 18-03-2023.
- 15.2 Review of implementation of JNTUH R22 UG (B.Tech.) Regulations as MR22 UG (B.Tech.) Regulations.
- 15.3 Discussion and Review of B.Tech. IT MR22 Regulations I and II Years Course Structure and Syllabus and approval of MR22 Regulations 3rd and 4th years Course Structure.
- 15.4 Discussion and approval of Course Structures / Substitute Subjects for re-admitted students (MR20 students in to III Year I Semester) admitted in Academic Year 2023-24.
- 15.5 Discussion and approval for offering certain MOOCs courses through SWAYAM platform of Government of India for the benefit of the students which are considered to be an equivalent to the ones offered under PEC/OEC category in MR22 and MR21 regulation.
- 15.6 Approval for Professional Electives and Open Elective Courses as Credit Transfer Courses through MOOCs.
- 15.7 Discussion and approval regarding list and guidelines of MR22 IT courses related to Minor Degree as per JNTUH R22 Regulations.
- 15.8 Discussion and approval of Rubrics under MR22 regulations Theory, Laboratory and Skill Development Courses presentation regarding:
Viva-voce in the subject: PPT/Poster/Case-Study presentation
Laboratory project
- 15.9 Approval for Innovation Business Models and Entrepreneurship, Human Values and Professional Ethics courses as open electives.
- 15.10 Introduction of new courses: Core courses, Professional Electives and Mandatory Courses.
- 15.11 Change of syllabus in Core courses, Professional Electives and Open Electives.
- 15.12 Approval of list of open electives courses & syllabus offering for other departments.
- 15.13 Suggestion and approval of panel of names for Paper setters, and examiners for both theory, practical, seminar and project examinations that will be submit for Academic council for approval.
- 15.14 Delegation of power to the chairman-BOS based on the recommendation of the committee on circulation, for inclusion and exclusion of any item as per the requirements.

H. Nagar
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(Dr. Deena Babu Mandru)
HOD & Chairman
UG-B.Tech-IT-BOS



Department of Information Technology

Date: 09/12/2023

15th BOS-Attendance

The 15th Board of Studies meeting for B.Tech-IT (UG) was held on 09/12/2023 at 02:30 P.M in Online Mode (ZOOM Meeting). The following members have attended to Discussion and Review of 1st and 2nd Year Course Structure and Syllabus and Approval of 3rd and 4th Years Course Structure for MR22 Regulations and other points of agenda.

Sl. No	Name of the Member	Designation & Official Address	Category	Signature
1	Dr. Deena Babu Mandru	Professor & HOD	Chairman	
2.	Dr. D. Ramesh	Principal, JNTUHUCE Palair, Khammam Dist.	University Nominee	online
3	Dr. M. Swami Das	Professor, Joint Director-Academics (Informatics), Dept. of CSE, CBIT, Hyd.	Subject Expert Member	
4	Dr. M. Suresh Babu	Professor & Principal, Y.V.Siva Reddy College of Engineering & Technology, Vadiyampeta.	Subject Expert Member	online
5	Mr. Navin Kumar Kurapati	Associate Architect, Virtusa Consulting Services Private Limited, Hyderabad	Industry	
6	Dr.M.Ganesh	Professor	Faculty Member	
7	Ms.P.Swapna	Assistant Professor	Faculty Member	
8	Mrs.M.Sandya Vani	Assistant Professor	Faculty Member	
9	Mr.N.Sathish Kumar	Assistant Professor	Faculty Member	
10	Mr.P.Saidulu	Assistant Professor	Faculty Member	
11	Mr.P.Vinay Kumar	Assistant Professor	Faculty Member	
12	Ramagiri Tharun	S/W Engg,DBS Bank, Hyd	Alumni	online

(Dr. Deena Babu Mandru)
 HOD & Chairman
 UG-B.Tech-IT-BOS



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Department of Information Technology

15th IT (UG) BOS-Minutes of Meeting

Date: 09/12/2023.

The 15th Board of Studies meeting of B.Tech-IT (UG) for the academic year 2023-24 is conducted on 09/12/2023 at 02:30 P.M in ZOOM Meeting (Online mode). The following BOS Members have attended the Meeting:

a. BOS Members

Sl.No	Name of the Member	Designation	Position
1	Dr. Deena Babu Mandru	Professor & HOD	Chairman
2.	Dr. D. Ramesh	Principal, JNTUHUCE Palair, Khammam Dist.	University Nominee
3	Dr. M. Swami Das	Professor & Joint Director-Academics (Informatics), Dept. of CSE, CBIT, Hyd.	Subject Expert Member
4	Dr. M. Suresh Babu	Professor & Principal, Y.V.Siva Reddy College of Engineering & Technology, Vadiyampeta.	Subject Expert Member
5	Mr. Navin Kumar Kurapati	Associate Architect, Virtusa Consulting Services Private Limited, Hyderabad	Industry
6	Dr.M.Ganesh	Professor	Faculty Member
7	Ms.P.Swapna	Assistant Professor	Faculty Member
8	Mrs.M.Sandhya Vani	Assistant Professor	Faculty Member
9	Mr.N.Sathish Kumar	Assistant Professor	Faculty Member
10	Mr.P.Saidulu	Assistant Professor	Faculty Member
11	Mr.P.Vinay Kumar	Assistant Professor	Faculty Member
12	Ramagiri Tharun	S/W Engg,DBS Bank, Hyd	Alumni

Agenda of the Meeting

- 15.1 Action Taken Report (ATR) on previous BoS Meeting in A.Y 2022-23 on 18-03-2023.
- 15.2 Review of implementation of JNTUH R22 UG (B.Tech.) Regulations as MR22 UG (B.Tech.) Regulations.
- 15.3 Discussion and Review of B.Tech. IT MR22 Regulations I and II Years Course Structure and Syllabus and approval of MR22 Regulations 3rd and 4th years Course Structure.
- 15.4 Discussion and approval of Course Structures / Substitute Subjects for re-admitted students (MR20 students in to III Year I Semester) admitted in Academic Year 2023-24.


M. J. H. D. S. P. H. A. C.

- 15.5 Discussion and approval for offering certain MOOCs courses through SWAYAM platform of Government of India for the benefit of the students which are considered to be an equivalent to the ones offered under PEC/OEC category in MR22 and MR21 regulation.
- 15.6 Approval for Professional Electives and Open Elective Courses as Credit Transfer Courses through MOOCs.
- 15.7 Discussion and approval regarding list and guidelines of MR22 IT courses related to Minor Degree as per JNTUH R22 Regulations.
- 15.8 Discussion and approval of Rubrics under MR22 regulations Theory, Laboratory and Skill Development Courses presentation regarding:
Viva-voce in the subject: PPT/Poster/Case-Study presentation
Laboratory project
- 15.9 Approval for Innovation Business Models and Entrepreneurship, Human Values and Professional Ethics courses as open electives.
- 15.10 Introduction of new courses: Core courses, Professional Electives and Mandatory Courses.
- 15.11 Change of syllabus in Core courses, Professional Electives and Open Electives.
- 15.12 Approval of list of open electives courses & syllabus offering for other departments.
- 15.13 Suggestion and approval of panel of names for Paper setters, and examiners for both theory, practical, seminar and project examinations that will be submit for Academic council for approval.
- 15.14 Delegation of power to the chairman-BOS based on the recommendation of the committee on circulation, for inclusion and exclusion of any item as per the requirements.

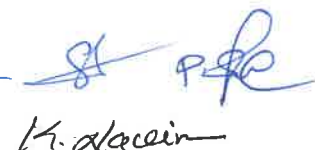
At the outset, Chairman of the IT (UG)-Board of Studies, welcomed the members of the BoS and appraised the purpose of the meeting. He also briefed about the previous BoS meeting resolutions and actions taken. Later, BoS members have discussed in detail about each item of the proposed agenda and finally the following items have been resolved unanimously by all the members of BoS for their implementation from the academic year 2023-24 onwards (for 2022-2023 admitted batch).

The following resolutions are approved after careful discussion and observations.

1. Action Taken Report (ATR) on 14th BoS held on 18-03-2023.
2. Review & implementation of JNTUH R22 Regulations as MREC MR22 Regulations.
3. **Discussion and Review** of 1st and 2nd Year Course Structures and Syllabus and **Approval of 3rd and 4th years** Course Structure for MR22 Regulations.
4. Approval of course structures/substitute subjects for **Re-admitted Students** admitted in Academic Year 2023-24.
5. Approval for **MOOCs courses** through SWAYAM for the benefit of the students which are considered to be equivalent courses offered under **PEC/OEC category** in MR22 and MR21 regulation.
6. Approval of Professional and Open Elective Courses for **Credit Transfer** through MOOC Courses.








K. Alaccin

7. Approval of **Rubrics for MR22** Regulations for Theory, Laboratory and Skill Development Course presentation regarding Viva-voce in : PPT/Poster/Case-Study presentation & Laboratory project
8. Approval for Innovation Business Models and Entrepreneurship, Human Values and Professional Ethics courses as **Open Electives**.
9. **Introduction of New Courses** in Core courses, Professional Electives, Open Electives and Mandatory Courses.

Course Code	Course Category	Course Name
C0514	PCC	Data visualization-R Programming/Power BI lab
C0521	PCC	Real-time Research Project/Societal Related Project
C0522	PCC	Node JS/ React JS/ Django Lab
C0H09	HSMC	Business Economics & Financial Analysis
C0524	PEC-I	Quantum Computing
C0526	PEC-I	Data Analytics
C0530	PEC-II	Embedded Systems
C0531	PEC-II	Information Retrieval Systems
C0532	PEC-II	Distributed Databases
C0534	PCC	Artificial Intelligence Laboratory
C0535	PCC	UI Design- Flutter
C00M	MC	Intellectual Property Rights
C0537	PEC-III	Full Stack Development
C0543	PEC-III	Full Stack Development Lab
C0544	PEC-III	Internet of Things Lab
C0545	PEC-III	Scripting Languages Lab
C0546	PEC-III	Mobile Application Development Lab
C0547	PEC-III	Software Testing Methodologies Lab
B00P1	PROJ	Industrial Oriented Mini Project/ Internship/ Skill Development Course (Big Data-Spark)
C00M5	MC	Constitution of India
C0549	PEC-IV	Graph Theory
C0550	PEC-IV	Advanced Operating Systems
C0551	PEC-IV	Soft Computing
C0558	PEC-V	Advanced Algorithms
C0561	PEC-V	Robotic Process Automation
C0562	PEC-V	Software Process & Project Management
C6204	PCC	Cryptography and Network Security Lab
COH	HSMC	Organizational Behaviour
C0564	PEC-VI	Computational Complexity
C0568	PEC-VI	Cyber Forensics



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10. The BoS Members have thoroughly reviewed and approved the following syllabus Changes in the respective subjects as given below.

Course Code	Course Category	Name of the Course	Changes made in the Syllabus
C1201	ESC	Engineering and IT Workshop	Shifted from II Sem and merging with Engineering Workshop and IT Workshop and the following Experiments were added: Engineering Workshop: Problem 1: Trades for Exercises At least two exercises from each trade 1. House-wiring 2. Soldering Problem 2: Trades for Demonstration & Exposure 1. Carpentry 2. Wood working lathe
C0504	PCC	Python Programming	Module-III (shifted Regular Expression to module-V), Module-V (Removed Web Programming topic)
C0506	PCC	Python Programming Lab	Replace exp 10 in MR21 with exp 12 in MR22
C0510	PCC	Data Structures	Module -III, IV and V,
C0512	PCC	Data Structures Lab	Module related Programmes
C0511	PCC	Object Oriented Programming through Java	Module I, II, IV and V
C0513	PCC	Object Oriented Programming through Java Lab	Module related Programmes
C0519	PCC	Database Management Systems Lab	Changes in list of experiments representations.
C0520	PCC	Operating Systems Lab	Changes in list of experiments representations.
HSMC	C0H03	Advanced English Communication Skills Lab	Changes in list of experiments representations.

11. The BoS Members have thoroughly reviewed and approved list of open electives courses & syllabus offering for other departments.

12. Suggestion and approval of **Panels** for paper setting, **Examiners** for Theory, Practical, Seminar and Project examinations that will be submitted for Academic council for approval.

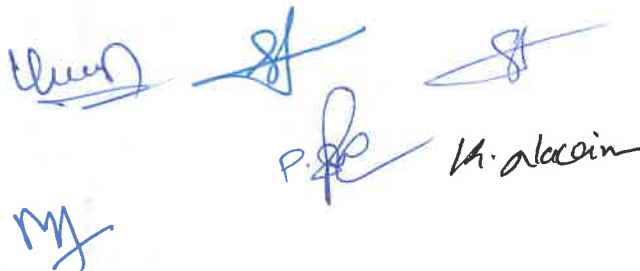
13. **Delegation of Power** to the chairman, BOS based on the recommendation of the committee on circulation, for inclusion and exclusion of any item as per the requirements.

K. Naveen

The following are the suggestions made by the BoS members

- Bos members suggested adding few practical experiments (Network with physical components & Fire Walls) for Computer Networks Lab for MR22 Regulation.
- BoS Members suggested counselling the readmitted students about the valid period of study for his/her, before readmitting into concern year.
- BoS Members Suggested to combine TOA and Compiler Design and replace Cloud Computing in place of Compiler Design for MR22 Regulation.
- BoS Members Suggested to add IT Infrastructure Management in PECs for MR22.
- BOS Members suggested use interactive lessons as part of innovative teaching through interactive class room activities.

Finally, Dr.Deena Babu Mandru, Prof.& HOD and Chairman of the IT (UG)-Board of Studies, expressed his sincere thanks to all the members of the BoS for their active participation and contribution.

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(Dr.Deena Babu Mandru)
HOD & Chairman
UG-B.Tech-IT-BOS



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Department of Information Technology

Course Structure for MR22 Regulations

(Effective from the Academic Year 2022-23 onwards)

I YEAR I SEMESTER

S. No	Course Category	Course Code	Name of the Course	Contact Hours/Week			Credits
				L	T	P	
1.	HSMC	C0H01	English	3	-	-	3
2.	BSC	C0B01	Linear Algebra and Numerical Methods	3	1	-	4
3.	ESC	C0501	Programming for Problem Solving	3	-	-	3
4.	ESC	C0201	Basic Electrical and Electronics Engineering	3	-	-	3
5.	ESC	C0502	Programming for Problem Solving Lab	-	-	2	1
6.	HSMC	C0H02	English Language and Communication Skills Lab	-	-	2	1
7.	ESC	C1201	Engineering and IT Workshop	-	1	2	2
8.	ESC	C0202	Basic Electrical and Electronics Engineering Lab	-	-	2	1
Total				12	2	8	18
Total Contact Hours				22			

I YEAR II SEMESTER

S. No	Course Category	Course Code	Name of the Course	Contact Hours/Week			Credits
				L	T	P	
1.	BSC	C0B17	Engineering Chemistry	3	1	-	4
2.	ESC	C0305	Engineering Drawing	2	-	2	3
3.	BSC	C0B09	Semiconductor Physics	3	1	-	4
4.	BSC	C0B02	Probability and Statistics	3	-	-	3
5.	ESC	C0504	Python Programming	3	1	-	4
6.	BSC	C0B11	Applied Physics Lab	-	-	2	1
7.	BSC	C0B18	Engineering Chemistry Lab	-	-	2	1
8.	ESC	C0506	Python Programming Lab	-	1	2	2
Total				14	4	8	22
Total Contact Hours				26			

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K. Naveen

II Year I Semester							
S.No	Course Category	Course Code	Name of the Course	Contact Hours /Week			Credits
				L	T	P	
1	PCC	C0507	Discrete Mathematics	3	-	-	3
2	PCC	C0509	Computer Organization and Architecture	3	-	-	3
3	PCC	C0510	Data Structures	3	-	-	3
4	PCC	C0511	Object Oriented Programming through Java	3	-	-	3
5	PCC	C1201	Introduction to IOT	3	-	-	3
6	PCC	C0512	Data Structures Lab	-	-	3	1.5
7	PCC	C0513	Object Oriented Programming through Java Lab	-	-	3	1.5
8	PCC	C1202	Skill Development Course (Data Visualization-R Programming/Power BI)	-	1	2	2
9	MC	C00M1	Gender Sensitization	-	-	2	-
Total				14	1	12	20
Total Contact Hours				27			

II Year II Semester							
S.No	Course Category	Course Code	Name of the Course	Contact Hours/Week			Credits
				L	T	P	
1	BSC	C0B07	Applied Statistics and Optimization Techniques	4	-	-	4
2	PCC	C0515	Database Management Systems	3	-	-	3
3	PCC	C0516	Operating Systems	3	-	-	3
4	PCC	C0517	Design & Analysis of Algorithms	3	-	-	3
5	PCC	C1203	React JS Foundations	2	-	-	2
6	PCC	C0519	Database Management Systems Lab	-	-	2	1
7	PCC	C0520	Operating Systems Lab			2	1
8	PCC	C1204	Real Time Research Project /Field Based Research Project	-	-	4	2
9	PCC	C1205	Skill Development Course (Node JS /React JS / Django)	-	-	2	1
10	MC	C00M2	Environmental Science	2	-	-	-
Total				17	-	10	20
Total Contact Hours				27			

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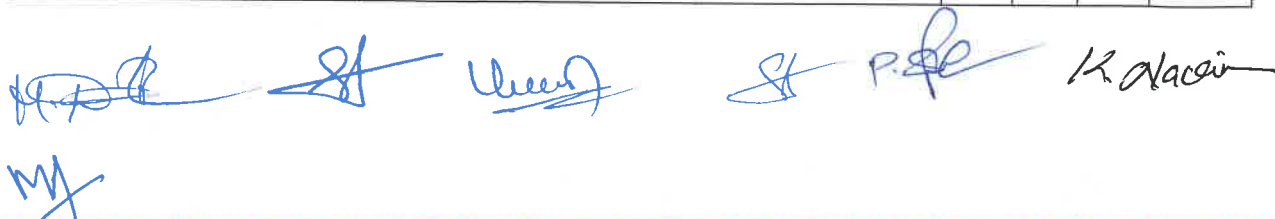
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III Year I Semester							
S.No	Course Category	Course Code	Name of the Course	Contact Hours/Week			Credits
				L	T	P	
1	HSMC	C0H08	Business Economics & Financial Analysis	3	-	-	3
2	PCC	C6618	Artificial Intelligence	3	-	-	3
3	PCC	C1206	Software Engineering	3	-	-	3
4	PCC	C6201	Computer Networks	3	-	-	3
Professional Elective-I							
5	PEC-I	C0525	Computer Graphics	3	-	-	3
		C0532	Full Stack Development				
		C1207	Information Retrieval				
		C1208	Distributed Databases				
		C1209	Pattern Recognition				
6	PCC	C1210	Software Engineering & Computer Networks Lab	-	1	2	2
7	PCC	C1211	Artificial Intelligence Lab	-	-	4	2
8	PCC	C1212	Skill Development Course (UI Design-Flutter)	-	-	2	1
9	MC	C00M3	Intellectual Property Rights	2	-	-	-
10	MC	C00M4	Quantitative Aptitude And Verbal Reasoning-I	2	-	-	-
11				19	-	10	20
Total Contact Hours				29			

III Year II Semester							
S.No	Course Category	Course Code	Name of the Course	Contact Hours/Week			Credits
				L	T	P	
1	HSMC	C0H08	Business Economics & Financial Analysis	3	-	-	3
2	PCC	C1213	Automata Theory and Compiler Design	3	-	-	3
3	PCC	C6620	Machine Learning	3	-	-	3
Professional Elective-II							
4	PEC-II	C1214	Biometrics				
		C0528	Embedded Systems				
		C0527	Image Processing				
		C0524	Advance Computer Architecture				
		C7308	Introduction to Data Science				
Professional Elective-III							
5	PEC-III	C0523	Quantum Computing	3	-	-	3
		C6711	Data Analytics				
		C0533	Scripting Languages				
		C0534	Mobile Application Development				
		C0548	Blockchain Technology				
6	OEC-I	Open Elective-I		3	-	-	3
7	HSMC	C0H03	Advance Communication Skills Lab	-	-	2	1
8	PCC	C6621	Machine Learning Lab	-	-	2	1
9	PCC	C7314	Professional Elective -III Lab	-	-	2	1
10	PROJ	C0P01	Industrial Oriented Mini Project / Internship/	-	-	4	2



Skill Development Course (Big Data-Spark)							
11	PCC	C00M5	Constitution Of India	2	-	-	-
12	PCC	C00M6	Quantitative Aptitude & Verbal Reasoning-II	2	-	-	-
Total				19	0	10	20
Total Contact Hours				29			

IV Year I Semester							
S.No	Course Category	Course Code	Name of the Course	Contact Hours/Week			Credits
				L	T	P	
1	HSMC	C0H09	Organizational Behavior	3	-	-	3
2	PCC	C1215	Information Security	3	-	-	3
3	PCC	C0544	Cloud Computing	3	-	-	3
Professional Elective-IV							
4	PEC-IV	C7320	Semantic Web	3	-	-	3
		C1216	High Performance Computing				
		C0535	Software Testing Methodologies				
		C0542	Advanced Operating Systems				
		C0545	Ad-hoc & Sensor Networks				
Professional Elective-V							
5	PEC-V	C1217	Intrusion Detection Systems	3	-	-	3
		C1218	Real Time Systems				
		C6610	Deep Learning				
		C0558	Human Computer Interaction				
		C0550	Software Process Project Management				
6	PCC	C1219	Information Security Lab	-	-	2	1
7	PCC	C0560	Cloud Computing Lab	-	-	2	1
8	PROJ	C0P02	Project Stage-I	-	-	6	3
Total				15	0	10	20
Total Contact Hours				25			

IV Year II Semester							
S.No	Course Category	Course Code	Name of the Course	Contact Hours /Week			Credits
				L	T	P	
Professional Elective-VI							
1	PEC-VI	C6608	Natural Language Processing	3	-	-	3
		C0557	Distributed Systems				
		C1220	Augmented Reality & Virtual Reality				
		C1221	Web Security				
		C6917	Internet of Things				
2	OEC-II		Open Elective-II	3	-	-	3
3	OEC-III		Open Elective-III	3	-	-	3
4	PROJ	C0P03	Project Stage-II including Seminar	-	-	22	9+2
Total				9	0	22	20
Total Contact Hours				31			

Malla Reddy Engineering College (Autonomous)

Department of Information Technology

Course Structure with Substitute / Additional Subjects for III Year Readmitted Students
(Readmitted from MR20 Regulations to MR21 Regulations-during the A.Y: 2023-24)

III Year I Semester							
Sl.No	Category	Course Code	Name of the Course	Contact Hours /Week			Credits
				L	T	P	
1	PCC	B7301	Artificial Intelligence-I	3	-	-	3
1	PCC	B1207	Theory of Automata	3	1	-	4
2	PCC	B0525	Software Engineering and Modeling	3	-	-	3
3	PCC	B6201	Computer Networks	3	-	-	3
Professional Elective –II							
4	PEC-II	B7307	Optimization Techniques	3	-	-	3
		B1208	Information Retrieval				
		B6706	R Programming				
		B0535	Multimedia and Rich Internet Applications				
		B1209	Data Analysis and Visualization				
5	OEC-II	Open Elective-I		3	-	-	3
6	PCC	B0530	Software Engineering and Modeling Lab	-	-	3	1.5
7	PCC	B6202	Computer Networks Lab	-	-	3	1.5
8	MC	B00M3	Quantitative Aptitude & Verbal Reasoning-I	2	-	-	-
Total				20	1	6	22
Total Contact Hours				27			

III Year II Semester							
S.No	Category	Course Code	Name of the Course	Contact Hours / Week			Credits
				L	T	P	
1	PCC	B1210	Machine Learning	4	-	-	4
2	PCC	B0532	Compiler Design	3	-	-	3
3	HMSC	B0H08	Engineering Economics and Accountancy	3	-	-	3
Professional Elective –III							
4	PEC-III	B0533	Distributed Systems	3	-	-	3
		B6217	Cyber Security				
		B6203	Cryptography and Network Security				
		B1211	Soft Computing				
		B6705	Advanced Python Programming				
5	OEC-II	Open Elective-II		3	-	-	3
6	HSMC	B0H03	English Communication and Presentation Skills Lab	-	-	2	1
7	PCC	B1212	Machine Learning Lab	-	1	2	1
8	PCC	B0543	Compiler Design Lab	-	1	2	2
9	MC	B00M4	Quantitative Aptitude & Verbal Reasoning-II	2	-	-	-
Total				18	2	6	20
Total Contact Hours				26			

