GMR Institute of Technology
An Autonomous Institute Affiliated to JNTU-GV

GMRIT Training Tomorrow's Engineers Today

1.1.3(B) Minutes of the Boards of Studies/ Academic Council meetings with approval for the courses mentioned in 1.1.3 (A)

Department of CSE-AI &DS

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GMR Institute of Technology
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Department of CSE-AI&DS

Minimum Credits to be earned: 160 (for Regular Students) 123 (for Lateral Entry Students)

Fourth Semester							
1	21IT304	Database Management Systems	1,4,12	3	-	-	3
2	21IT403	Operating Systems	1,12	3	-	-	3
3	21CS403	Computer Organization and Architecture	1,12	3	-	-	3
4	21CS404	Design and Analysis of Algorithms	2,3	3	-	2	4
5	21DS405	Foundations of Data Science	2, 3, PSO1, PSO2	3	-	-	3
6	21IT308	Database Management Systems Lab	4	-	-	3	1.5
7	21DS407	Foundations of Data Science Lab	4,5,8	-	-	3	1.5
8	21ESX01	Employability Skills I	1,2,5,8,10, 12	0	-	2	2
9	21HSX11	CC & EC Activities I	6,7, 9,10	-	-	1	1
			Total	**15**	**-**	**11**	**22**
Fifth Semester							
1	21IT405	Web Technologies (Integrated)	3,5,PSO1	3	-	2	4
2	21DS502	Deep Learning for Data Science	1,2,4,5,12	3	-	-	3
3	21DS503	Data Analytics &Visualization Techniques (Integrated)	1,4,PSO1	3	-	2	4
4	21ML504	Computer Networks	1, 2,3	3	-	-	3
5		Elective I (Professional Elective)		3	-	-	3
6		Elective II (Open Elective I)		3	-	-	3
7	21DS507	Deep Learning Lab		-	-	3	1.5
8	21TPX01	Term Paper	1,4,10,12	-	-	3	1.5
9	21ESX02	Employability Skills II	1,2,5,8,10,12	0	-	2	-
10	21HSX12	CC & EC Activities II	6,7, 9,10	-	-	1	-
11	21SIX01	Summer Internship I	1,2,8,10,12	-	-	-	1
			Total	**18**	**-**	**12**	**24**
Six Semester							
1	21DS601	Optimization Techniques for ML	2,3,PSO1,PSO2	3	-	-	3
2	21ML602	Automata Theory and Language Processors	1,2,3	3	-	-	3
3	21CS603	Software Engineering	4,5,8,11, PSO1	3	-	-	3
4		Elective III (Professional Elective)		3	-	2	4
5		Elective IV (Open Elective II)		3	-	-	3
6	21DS606	Optimization Techniques for ML Lab	4, 5	-	-	3	1.5
7	21MPX01	Mini Project	4, 5,08	-	-	3	1.5
8	21ESX02	Employability Skills II	All Pos & PSOs	0	-	2	2
9	21HSX12	CC & EC Activities II	1,2,3,5,6,8,10,12	-	-	1	1
10	21ATX01	Environmental Studies	6,7,9,10	-	-	-	-
11	21ATX02	Professional Ethics and Human Values	1,7	-	-	-	-
12	21ATX---	Audit Course	**----**	-	-	-	-
			12	**15**	**-**	**8**	**22**
Seventh Semester							
1		Elective V (Professional Elective)		3	-	-	3
2		Elective VI (Professional Elective)		3	-	-	3
3		Elective VII (Open Elective III)		3	-	-	3
4	21SIX02	Summer Internship II	1,2,5,6,10,12	-	-	-	1
5	21PWX01	Project Work	All POs& PSOs	-	-	16	8
			Total	**9**	**-**	**16**	**18**

Comment [A1]: Approved in 2nd BOS

Comment [A2]: Approved in 2nd BOS

Comment [A3]: Approved in 3rd BOS

Eighth Semester							
1		Elective VIII (Professional Elective)		-	-	-	3
2		Elective IX (Open Elective IV)		-	-	-	3
3	21FIX01	Full Semester Internship (FSI)	1,2,5,8,9,10, PSO1,PSO2	-	-	-	8
			Total	**6**	**-**	**-**	**14**

List of Electives

Language Electives							
No.	**Course Code**	**Course**	**POs**	**Contact Hours**			
				L	**T**	**P**	**C**
1	21HSX03	Advanced Communicative English	10,12	2	-	-	2
2	21HSX04	Communicative German		2	-	-	2
3	21HSX05	Communicative French		2	-	-	2
4	21HSX06	Communicative Japanese		2	-	-	2
5	21HSX07	Communicative Spanish		2	-	-	2
6	21HSX08	Communicative Korean		2	-	-	2
7	21HSX09	Communicative Hindi		2	-	-	2
Elective I							
Career Path I, II, III							
1	**21MLC11**	**Computer Vision & Pattern Recognition**	1,3,PSO1,PSO2	3	-	-	3
2	**21CSC21**	**Web Programming Languages (Full Stack Development)**	1,2,7,12	3	-	-	3
3	**21MLC31**	**Fundamentals of Cloud Computing**	2,6,7,8	3	-	-	3
Non-Career Path (Core Electives)							
4	21CS004	Principles of Programming Languages	1, 2, 3, 4	3	-	-	3
5	21CS005	Mobile Computing	3, 8	3	-	-	3
6	21CS006	Distributed Operating Systems	1,2	3	-	-	3
7		MOOCs/Honors		3	-	-	3
Elective II: Open Elective I							
1	21CE001	Disaster Management	2, 7	3	-	-	3
2	21EE001	Electrical Installation and Safety Measures	2,3,6,8	3	-	-	3
3	21DS001	Fundamentals of Data Science	1,2	3	-	-	3
4	21ME001	Fundamentals of Optimization Techniques	1, 2	3	-	-	3
5	21EC001	Sensors for Engineering Applications	1, 2	3	-	-	3
6	21CS001	Fundamentals of Artificial Intelligence **(Except CSE & IT)**	1, 2, 3	3	-	-	3
7	21IT001	Fundamentals of Multimedia	1, 5, 7	3	-	-	3
Elective III							
Career Path I, II, III							
1	**21MLC12**	**Machine Learning for Business Intelligence**	2,3,PSO1,PSO2	3	-	2	4
2	**21CSC22**	**Web Application Developments Framework (Full Stack Development)**	1, 3,4	3	-	2	4
3	**21MLC32**	**Cloud Services using AWS**		3	-	2	4
Non-Career Path (Core Electives)							
4	21CS007	Cloud Computing Essentials	2,5,6,7,8	3	-	2	4
5	21CS008	Cryptography and Network Security	3, 6,8	3	-	2	4
Elective IV: Open Elective II							
1	21CE002	Air Pollution and Environmental Impact Assessment	6, 7,12				
2	21EE002	Renewable Energy Sources	2, 7	3	-	-	3
3	21ME002	Principles of Entrepreneurship	1,11	3	-	-	3
4	21EC002	Electronics for Agriculture	1, 2	3	-	-	3

Comment [A4]: Approved in 3rd BO

Comment [A5]: Approved in 3rd BOS

Comment [A6]: Approved in 3rd BOS

Comment [A7]: Approved in 3rd BOS

Comment [A8]: Approved in 3rd BOS

5	21CS002	Fundamentals of Machine Learning	2, 3	3	-	-	3
6	21CH002	Industrial Safety and Hazard Management	2, 6, 7,8	3	-	-	3
7	21IT002	Fundamentals of Cloud Computing	1, 7	3	-	-	3
8	21BS002	Advanced Numerical Techniques	1, 2	3	-	-	3
9	21BS003	Functional Materials and Applications	1, 2	3	-	-	3
Elective V							
Career Path I, II, III							
1	**21MLC13**	**Conversational AI**	1,2,4,12,PSO1	3	-	-	3
2	**21CSC23**	**Web Application Databases (Full Stack Development)**	2,3	3	-	-	3
3	**21MLC33**	**Cloud Security Essentials**	2,3	3	-	-	3
Non-Career Path (Core Electives)							
4	21IT010	Social Network Analysis	2, 4, 5	3	-	-	3
5	21ML001	Human Computer Interaction	2, 3	3	-	-	3
6	21CS012	Wireless Adhoc Networks	2, 3	3	-	-	3
7		MOOCs/Honors		3	-	-	3
Elective VI							
1	21DS002	Data Visualization with Power BI	2,3,5,6	3	-	-	3
2	21CS015	Software Project Management	3,6	3	-	-	3
3	21ML003	Reinforcement Learning	6,7	3	-	-	3
4		MOOCs/Honors		3	-	-	3
Elective VII: Open Elective III							
1	21CE003	Solid Waste Management	2,3,12	3	-	-	3
2	21EE003	Fundamentals of Electrical Vehicle Technology	2,3,12	3	-	-	3
3	21ME003	Industrial Engineering and Management	1,11	3	-	-	3
4	21EC003	Interfacing and Programming with Arduino	1,2	3	-	-	3
5	21CS003	Data Science for Engineering Applications	2,3,4	3	-	-	3
6	21CH003	Industrial Ecology for Sustainable Development	2,6,7	3	-	-	3
7	21IT003	Fundamentals of Mobile Computing	1,7	3	-	-	3
8	21BS004	Advanced Materials of Renewable Energy	1,7	3	-	-	3
9	21BS005	Applied Linear Algebra for Engineers	1,12	3	-	-	3
Elective VIII: Professional Elective							
1	21CS018	Information Retrieval Systems	1,2,3,4	-	-	-	3
2	21CS019	Fundamentals of Devops	1,3, 5,8,10	-	-	-	3
3	21DS003	Cyber Security	1,3,4,5,PSO1				3
4		MOOCs/Honors		-	-	-	3
Elective IX: Open Elective IV							
1	21CE019	Green Buildings	2,3,4,5,7	-	-	-	3
2	21EE017	Sustainable Energy	1,2,12	-	-	-	3
3	21ME004	Total Quality Management	1,11	-	-	-	3
4	21EC011	Communication Technologies	1,2	-	-	-	3
5	21CS020	Applications of Artificial Intelligence	2,3,6,7	-	-	-	3
6	21CH016	Green Technologies	1,6,7	-	-	-	3
7	21IT015	Human Computer Interaction	1,7	-	-	-	3
8	21BS006	Handling of Industrial Waste and Wastewater	1,7	-	-	-	3

Comment [A9]: Approved in 3rd BOS

Comment [A10]: Approved in 3rd BOS

Comment [A11]: Approved in 3rd BOS

Comment [A12]: Approved in 3rd BOS

Comment [A13]: Approved in 3rd BOS

Audit Course							
1	21AT001	Communication Etiquette in Workplaces	-	-	-	-	-
2	21AT002	Contemporary India: Economy, Policy and Society	-	-	-	-	-
3	21AT003	Design The Thinking	-	-	-	-	-
4	21AT004	Ethics and Integrity	-	-	-	-	-
5	21AT005	Indian Heritage and Culture	-	-	-	-	-
6	21AT007	Intellectual Property Rights and Patents	-	-	-	-	-
7	21AT008	Introduction to Journalism	-	-	-	-	-
8	21AT009	Mass Media Communication	-	-	-	-	-
9	21AT010	Science, Technology and Development	-	-	-	-	-
10	21AT011	Social Responsibility	-	-	-	-	-
11	21AT012	The Art of Photography and Film Making	-	-	-	-	-
12	21AT013	Gender Equality for Sustainability	-	-	-	-	-
13	21AT014	Women in Leadership	-	-	-	-	-
14	21AT015	Introduction to Research Methodology	-	-	-	-	-
15	21AT016	Climate Change and Circular Economy	-	-	-	-	-

Comment [A14]: Approved in 3rd BOS

B. Tech. (Honors)							
Domain I (Data Engineering)							
01	21CSH11	Advanced Data Structures	2,3,4	4	-	-	4
02	21CSH12	Advanced Databases	2,3,4	4	-	-	4
03	21CSH13	Programming, Data Structures and Algorithms Using Python	2,3,4,5	4	-	-	4
04	21CSH14	Bioinformatics	2,3	4	-	-	4
Domain II (Modern Software Engineering)							
01	21CSH21	DevOps	1,3,5,8,10	4	-	-	4
02	21CSH22	Design Patterns	2,3	4	-	-	4
03	21CSH23	Advanced Software Engineering	1,3,4, PSO1	4	-	-	4
04	21CSH24	Robotic Process Automation	3,5, 8, PSO2	4	-	-	4
Domain III (Security)							
01	21CSH31	Computer Systems Security	1,2	4	-	-	4
02	21CSH32	Python Programming for Security	2,3,4	4	-	-	4
03	21CSH33	Management of Information Security	3,6,7	4	-	-	4
04	21CSH34	Computer Forensics	2,3	4	-	-	4
Domain IV (User Interface Design)							
01	21CSH41	Computer Graphics	1,2,3,4	4	-	-	4
02	21CSH42	Multimedia Systems	3,4	4	-	-	4
03	21CSH43	Human Computer Interaction	2,3	4	-	-	4
04	21CSH44	Mobile Programming	3,4	4	-	-	4

Comment [A15]: Approved in 3rd BOS

B. Tech. (Minors)							
Energy Science & Technology							
01	21CHM11	Foundation of Energy Science and Technology	1,2,3,5,7,12	4	-	-	4
02	21CHM12	Energy Generation from Waste	1,2,3,4,5	4	-	-	4
03	21CHM13	Energy Storage Systems	1,2,3,6,7	4	-	-	4
04	21CHM14	Hydrogen Energy and Fuel Cells	1,2,3,7	4	-	-	4
Nano Science & Technology							
01	21CHM21	Introduction and Characterization of Nano Materials	1,2,3,7	4	-	-	4
02	21CHM22	Carbon Nanostructures and Applications	1,3,4,5	4	-	-	4
03	21CHM23	Energy, Environment & Biomedical Nanotechnology	1,2,3,7	4	-	-	4
04	21CHM24	Industrial Applications of Nano Technology	2,3,5,,7	4	-	-	4

Comment [A16]: Approved in 3rd BOS

Environmental Engineering							
01	21CEM11	Watershed Management	6,7	4	-	-	4
02	21CEM12	Industrial Pollution Control and Engineering	3,6,7,12	4	-	-	4
03	21CEM13	Solid and Hazardous Waste Management	1,3,6,7	4	-	-	4
04	21CEM14	Ecology and Environmental Assessment	1,3,6,7	4	-	-	4
Artificial Intelligence & Machine Learning							
01	21CSM11	Fundamentals of AI & Machine Learning	1,12	4	-	-	4
02	21CSM12	Feature Engineering for Machine Learning	1,2,3	4	-	-	4
03	21CSM13	Exploratory Data Analytics	1,4	4	-	-	4
04	21CSM14	Foundations of Deep Learning	1,2, 4	4	-	-	4
Cyber Security							
01	21CSM21	Fundamentals of Security	1,2	4	-	-	4
02	21CSM22	Management of Information Security					
03	21CSM23	Cyber Security	1,3,4	4	-	-	4
04	21CSM24	Fundamentals of Cloud Security	2,3	4	-	-	4
Data Science & Analytics							
01	21CSM31	Data Cleaning	2,3,4	4	-	-	4
02	21CSM32	Data Engineering	1,2,3,4	4	-	-	4
03	21CSM33	Text Analytics	1,2,4	4	-	-	4
04	21CSM34	Social Network and Semantic Analysis	2, 4	4	-	-	4
Computer Systems Programming							
01	21CSM41	Programming Fundamentals	1,2,3	4	-	-	4
02	21CSM41	Data Structures & Algorithms	1,2,3,4	4	-	-	4
03	21CSM41	Fundamentals of Databases	1,4	4	-	-	4
04	21CSM41	Fundamentals of Computer Networks & Operating Systems	1,2,3	4	-	-	4
Digital IC Design							
01	21ECM11	Fundamentals of VLSI Design	1,2,3	4	-	-	4
02	21ECM12	Digital Design using HDL	1,2,3	4	-	-	4
03	21ECM13	FPGA Technology	1,2	4	-	-	4
04	21ECM14	Analog and Mixed Signal Design	1,2	4	-	-	4
Industrial Automation							
01	21ECM21	Microcontrollers and Interfacing	1,2,3	4	-	-	4
02	21ECM22	Sensors and Data Acquisition System	1,2	4	-	-	4
03	21ECM23	Fundamentals of Labview	1,2	4	-	-	4
04	21ECM24	Medical Robotics	1,2,3	4	-	-	4
Communications and Networking							
01	21ECM31	Principles of Communications	1,2	4	-	-	4
02	21ECM32	Coding Theory and Practice	1,2	4	-	-	4
03	21ECM33	Ad-hoc and Wireless Sensor Networks	1,2,3	4	-	-	4
04	21ECM34	Fundamentals of Multimedia Networking	1,2,3	4	-	-	4
Avionics							
01	21ECM41	Principles of Aerodynamics	1,2	4	-	-	4
02	21ECM42	Aircraft Electrical Systems	1,2	4	-	-	4
03	21ECM43	Aircraft Instrument Systems	1,2	4	-	-	4
04	21ECM44	Aircraft Communication and Navigational Systems	1,2	4	-	-	4
Geographic Information System							
01	21ECM51	Sensors and Sensing Technology	1,2	4	-	-	4
02	21ECM52	Geographic Information Systems	1,2	4	-	-	4
03	21ECM53	Digital Image Processing	1,2	4	-	-	4
04	21ECM54	Lidar Systems	1,2	4	-	-	4

Electric Vehicles Technology							
01	21EEM11	Introduction to Electric Vehicles Technologies	2,3	4	-	-	4
02	21EEM12	Electrical Drives and Controllers for Electric Vehicles	2,3	4	-	-	4
03	21EEM13	Charging Technology in Electric Vehicles	2,3	4	-	-	4
04	21EEM14	Computer Vision in Electric Vehicles	2,3	4	-	-	4
Electric Vehicles Technology							
01	21EEM21	Fundamentals of Smart City	2,3	4	-	-	4
02	21EEM22	Smart City Infrastructure	2,3	4	-	-	4
03	21EEM23	Computational Methods for Smart City Management	2,3	4	-	-	4
04	21EEM24	Communication Technologies and Mobility for Smart City	2,3	4	-	-	4
Electric Vehicles Technology							
01	21EEM31	Modelling and Simulations of Industrial Applications	2,3	4	-	-	4
02	21EEM32	Industrial Sensors and Actuators	2,3	4	-	-	4
03	21EEM33	Programmable Logic Controllers	2,3	4	-	-	4
04	21EEM34	Control Design for Industrial Applications	2,3	4	-	-	4
Cloud Application Development							
01	21ITM11	Introduction to Cloud Computing	6, 7, 12	4	-	-	4
02	21ITM12	Introduction to Web Development with HTML, CSS, JavaScript	1, 2, 3, 9, 12	4	-	-	4
03	21ITM13	Developing Cloud Native Applications	5, 8, 10	4	-	-	4
04	21ITM14	Developing Cloud Apps with Node.js and React	5, 8, 10	4	-	-	4
Robotics and Automation							
01	21MEM11	Introduction to Robotics	1,2,3	4	-	-	4
02	21MEM12	Drives and Sensors	1,2,3,4	4	-	-	4
03	21MEM13	Control Systems for Robotics	1,2,3,4	4	-	-	4
04	21MEM14	Machine Learning for Robotics	2,5	4	-	-	4
Industrial Systems Engineering							
01	21MEM21	Industrial Management	1,10,11,12	4	-	-	4
02	21MEM22	Fundamentals of Operations Research	1,2,3,5	4	-	-	4
03	21MEM23	Enterprise Resource Planning	1,2,3,5,11,12	4	-	-	4
04	21MEM24	Production Planning and Control	1,2,3,5,11,12	4	-	-	4

Department of CSE-AI&DS

Minimum Credits to be earned: 160 (for Regular Students)
120 for Lateral Entry Students

S.no.	Course Code	Course Name	POs	L	T	P	C
First Semester							
1	23PYX01 23CYX01	Engineering Physics/Chemistry	3/3	3	0	0	3/3
2	23MAX01 23MAX02	Linear Algebra& Calculus/Differential Equations and Vector calculus	3/3	3	0	0	3/3
3	23BEX01/ 23BEX02	Basic Electrical and Electronics Engineering/ Basic Civil & Mechanical Engineering	3/3	3	0	0	3/3
4	23BEX03	Introduction to Programming	3	3	0	0	3
5	23BEX04/ 23HSX01	Engineering Graphics/Communicative English	2/2	2	0	2/0	3/2
6	23PYX02/ 23CYX03/	Engineering Physics Lab/Chemistry Lab	4		0	2/2	1/1
7	23BEX05/ 23BEX06	Electrical & Electronics Engineering workshop/Engineering Workshop	1,9,10/1,5,10		0	3/3	1.5/1.5
8	23BEX07	Computer Programming Lab	4	-	0	3	1.5
9	23HSX11	-/ECA (Yoga / Sports)	-	-	0	-/1	-/0.5
10	23HSX12	-/CCA (NSS/NCC/Community Service)	-	-	0	-/1	-/0.5
11	23BEX08	IT Workshop/-		0	0	2/-	1/-
12	23HSX02	- /Communicative English Lab		0	0	-/2	-/1
			Total	14/14	00	12/12	20/20
Second Semester							
1	23HSX01/ 23BEX04	Communicative English/ Engineering Graphics	10,12	2/2	0	0/2	2/3
2	23MAX02/ 23MAX01	Differential Equations and Vector calculus/Linear Algebra& Calculus	1	3/3	0	0	3/3
3	23CYX01/ 23PYX01	Chemistry /Engineering Physics	1/1	3/3	0	0	3/3
4	23BEX02/ 23BEX01	Basic Civil & Mechanical Engineering/ Basic Electrical and Electronics Engineering	1,12/1,12	3/3	0	0	3/3
5	23CS201	Data Structures(CSE,CSE-AI&DS,CSE-AI&ML, IT)	1,12	3/3	0	0	3/3
6	23CYX03/ 23PYX02	Chemistry Lab / Engineering Physics Lab	4	0	0	2/2	1/1
7	23BEX06/ 23BEX05	Engineering Workshop/Electrical & Electronics Engineering workshop	1,9,10/1,5,10	0	0	3/3	1.5/1.5
8	23BEX08	IT Workshop/-	4/4	0	0	2/-	1/-
9	23HSX02	Communicative English Lab/-	-/10,12	0	0	2/-	1/-
10	23CS202	Data Structures Lab (CSE, CSE-AI&DS, CSE-AI&ML, IT)	2,3,4,5	0	0	3/3	1.5/1.5
11	23HSX11	-/ECA (Yoga/ Sports)		-	-	-/1	-/0.5
12	23HSX12	-/CCA (NSS/NCC/Community Service)		-	-	-/1	-/0.5
			Total	14/14	0	12/12	20/20
Third Semester							
1	23CS301	Problem Solving using Python	1,2,3,5,12	3	-	2	4
2	23ML302	Artificial Intelligence	1,2,3,PSO1,PSO2	3	-	-	3
3	23CS303	Design and Analysis of Algorithms	1,2,12, PSO1	3	-	-	3
4	23CS304	Digital Logic Design	1, 2,3,4,5,PSO1	3	-	2	4
5	23DS305	Mathematical Foundation for Data Science	1,2,3,4,12	3	-	-	3
6	23CS306	Object Oriented Programming with JAVA	1,2,3,12,PSO2	3	-	-	3
7	23CS307	Design and Analysis of Algorithms Lab	1,2,3,4,10,12,PSO1	-	-	3	1.5
8	23CS308	JAVA Lab	1,2,3,4,10,12,PSO2	-	-	3	1.5

Comment [A17]: Approved in 3rd BOS

9	23BEA01	Environmental Studies	1,7	-	-	-	-
10	23ESX01	Employability Skills I	1,2,3,4,5,9,10,11,12	0	-	2	-
			Total	**18**	**-**	**12**	**23**

Fourth Semester

1	23IT304	Database Management Systems	1,2,3,4,12,PSO2	3	-	-	3
2	23IT403	Operating Systems	1,2,3,4,7,12	3	-	-	3
3	23CS403	Computer Organization and Architecture	1,2,3,12,PSO1	3	-	-	3
4	23MA404	Probability and Statistics using python	1,2,4,10,12	3	-	2	4
5	23DS405	Foundations of Data Science	1,2, 4, PSO1,PSO2	3	-	-	3
6	23IT308	Database Management Systems Lab	1,2,3,4,5,9,PSO2	-	-	3	1.5
7	23DS407	Foundations of Data Science Lab	1,2,3,4,5,PSO1,PSO2	-	-	3	1.5
8	23ESX01	Employability Skills I	1,2,3,4,5,9,10,11,12	0	-	2	2
			Total	**15**	**-**	**10**	**21**

Fifth Semester

1	23IT405	Web Technologies	1,2,3,5,PSO1,PSO2	3	-	2	4
2	23DS502	Deep Learning for Data Science	1,2,3,4,5,PSO1	3	-	-	3
3	23DS503	Data Analytics &Visualization Techniques	1,2,3,4,5,12,PSO1,PSO2	3	-	2	4
4	23ML504	Computer Networks	1, 2,4,5,7,12,PSO1	3	-	-	3
5		Elective I (Professional Elective)		3	-	-	3
6		Elective II (Open Elective I)		3	-	-	3
7	23DS507	Deep Learning Lab	1,2,4,5,8,PSO1,PSO2	-	-	3	1.5
8	23TPX01	Term Paper	1,2,4,5,6,8,9,10,12,PSO1,PSO2	-	-	3	1.5
9	23ESX02	Employability Skills II	1,2,3,4,5,9,10,11,12	0	-	2	-
11	23SIX01	Summer Internship I	All PO's & PSO's	-	-	-	1
			Total	**18**	-	**12**	**24**

Six Semester

1	23DS601	Optimization Techniques for ML	1,2,4,PSO1,PSO2	3	-	-	3
2	23ML602	Automata Theory and Language Processors	1,2,3,5,12	3	-	-	3
3	23CS603	Software Engineering	1,2,3,5,8,11, PSO1	3	-	-	3
4		Elective III (Professional Elective)		3	-	2	4
5		Elective IV (Open Elective II)		3	-	-	3
6	23DS606	Optimization Techniques for ML Lab	1,2,3,4,5,PSO1,PSO2	-	-	3	1.5
7	23MPX01	Mini Project	All POs & PSOs	-	-	3	1.5
8	23ESX02	Employability Skills II	1,2,3,5,6,8,10,12	0	-	2	2
9	23ATX01	Environmental Studies	1,7	-	-	-	-
10	23ATX02	Professional Ethics and Human Values	**----**	-	-	-	-
11	23ATX---	Audit Course	6,7,8,9,10,12	-	-	-	-
			12	**15**	-	**10**	**21**

Seventh Semester

1		Elective V (Professional Elective)		3	-	-	3
2		Elective VI (Professional Elective)		3	-	-	3
3		Elective VII (Open Elective III)		3	-	-	3
4	23SIX02	Summer Internship II	All PO's & PSO's	-	-	-	1
5	23PWX01	Project Work	All PO's & PSO's	-	-	16	8
			Total	**9**	**-**	**16**	**18**

Eighth Semester

1		Elective VIII (Professional Elective)		-	-	-	3
2		Elective IX (Open Elective IV)		-	-	-	2
3	23FIX01	Full Semester Internship (FSI)	All PO's & PSO's	-	-	-	8
			Total	**6**	**-**	**-**	**13**

Comment [A18]: Approved in 3rd BOS

Department of CSE-Artificial Intelligence & Data Science

2nd BOS - MINUTES OF MEET

Person in Chair: Dr. K. Srividya, HOD CSE-AI&DS, GMRIT **Dated:** 25.02.2023 (Saturday)

Venue: Online Teams **Time(s):** 2.30 PM TO 5.00PM

S.No	Points Discussed	Remarks
1	**Agenda:** • Review of the Curriculum and Course Titles of AR21 Academic Regulation for CSE in AIDS Specialization • Review of Titles and Syllabus of 5th and 6th Semesters under AR21 for CSE in AIDS Specialization • Review of B.Tech Career Paths Tracks and the course titles with syllabus for AIDS Specialization • Finalization of Course Titles of Electives under Academic Regulations 2021 for AIDS Specialization • Review of syllabus changes in 3rd and 4th semesters of AR21 for CSE in AIDS Specialization • Approval regarding the Readmitted students from AR19 & AR20 to AR21 Regulation to study an additional subject titled: Fundamentals of Python Programming and its Applications (20CS408) • Any other Items with the permission of the chair	
2	**Curriculum and Course Titles of AR21 Academic Regulation for CSE in AIML & AIDS Specializations** Curriculum and Course Titles of the CSE-AIDS Specialization for the AR21 Academic Regulation is presented to the BoS members. The curriculums were approved by the members of the BoS after a thorough discussion, with the following suggestions. It has been confirmed that CSE-AIDS syllabus covers the subjects required for GATE-CSE examination. The subjects which are in lined with the CSE curriculum have already been approved by BoS members at the previous BOS meeting. The new courses introduced for CSE-AIDS are discussed for approval. Dr. M.H.M. Krishna Prasad, Professor/CSE at JNTUK, appreciated the incorporation of integrated courses into the curriculum. In an integrated course, students must complete both theory and lab simultaneously, allowing them to develop both theoretical and practical competencies simultaneously. It was suggested that during summer internships, students should engage in community service projects to	

	broaden their perspectives and encourage social responsibility. Dr. M.H.M. Krishna Prasad has made a point that the B.Tech curriculum must include a course "Universal Human Values -2" under the humanity stream with a credit value of 3, in accordance with AICTE guidelines. It is recommended that the course "Professional Ethics and Human Values," which is currently offered as an audit course, be replaced with the standard course "Universal Human Values -2." It is also suggested that a course with explicit tutorial hours be given extra credit to recognise the students' extra effort and time. It was confirmed that the "Computer Vision and Pattern Recognition" elective course in the "ML Ops" career path does not overlap with the machine learning and deep learning subjects. The members expressed their satisfaction with the presented curriculum and course titles and approved the AR21 Academic Regulation Curriculum and Course titles for CSE-AIML Specialization.	
2.	**CSE-AIDS** Neural Networks – suggested to prescribe latest edition textbooks Neural Networks Lab – suggested to add experiments on activation functions, Loss functions and optimization in week 4. -Week 11 and Week 12 experiments need to be modified. Data Analytics &Visualization Techniques (Integrated) – Suggested to include Kafka concepts for data ingestion	
3.	**Review of B.Tech Career Paths Tracks and the course titles with syllabus for AIML & AIDS Specializations** The subjects offered under Full Stack Developer career path have already been approved by BoS members at the previous BOS meeting. **Cloud Computing:** 1) Fundamentals of Cloud Computing –suggested to include CERT-IN in unit 4 2) Cloud Services using AWS (VI-Sem) Suggested to include SSH(secure shell) concepts in unit 1 3) Cloud Security Essentials (VII-Sem) Suggested to include topics from AWS Sagemaker related to Data science and Artificial intelligence. **ML Ops:** 1) Computer Vision & Pattern Recognition (V-Sem) 2) ML for Business Intelligence (VI-Sem) 3) Conversational AI (VII-Sem)	

	Proposed Courses for ML Ops are approved. The detail syllabus could be mailed for BOS members for their thorough suggestions as discussed.	
4	Fundamentals of Python Programming and its Applications (20CS408) the restructured syllabus is approved.	

Prepared By: Dr.S.Akila Agnes

(Dr. V. Vallikumari) **(Dr.M.H.M.Krishna Prasad)**

Board Chairman- HOD

GMR Institute of Technology
An Autonomous Institute Affiliated to JNTU-GV | GMRIT

Department of CSE-Artificial Intelligence and Machine Learning/ CSE-Artificial Intelligence and Data Science

3rd Board of Studies

Agenda

Virtual Meeting through MS Teams
Dated: 16.03.2024 (Saturday)
Time(s): 11.30 AM TO 1.00PM

Agenda:

- Review of Titles and Syllabus of 7th & 8th Semesters under AR21 for CSE-AI&ML / AI &DS.
- Finalization of Course structure and syllabus for AR-23 3rd and 4th semesters.
- Review of syllabus changes in 2nd and 3rd year courses if any!!
- Any other Items with the permission of the chair person and BOS members.

External Members : Members of BoS (Industry, Academia, Alumni)

S. No	Representatives from Industry	Representatives from Academia	Representatives from Alumni
1	**Mrs.Vasantha Khambampati** Vice President , Cap Gemini, Bangalore. Mobile: 9535859646 sailu.kham@gmail.com	**Prof.Vallikumari** Dept.of CS&SE, AU college of Engineering, Visakhapatnam vallikumari@gmail.com (University Nominee for AIML)	**Mr.Reddi Harsha Vardhan** Senior Associate PWC,Hyderabad Harsha.r.reddi@pwc.com
2		**Dr.P.Arunakumari** HoD- CSE, JNTUGV, Vizianagaram Mobile: 9440520606 arunakumarip.cse@jntugvcev.edu.in (University Nominee for CSE-AI&ML)	**Mr.G. Ashok** Systems Engineer TCS, Hyderabad, Ashok.gunturu@tcs.com

Prepared By
Dr. T. Daniya

HOD
Dr. K. Srividya

Minutes of the Meeting

Person in Chair : Dr. K.Srividya, Associate Professor & HOD(AI&ML/AI&DS), GMRIT

- **Review of Titles and Syllabus of 7th and 8th Semesters under AR21 for CSE in AIML & AIDS Specializations**

AI&ML

• **Elective V**							
Career Path I, II, III							
1	**21MLC13**	**Conversational AI**	1,2,4,12,PSO1	3	-	-	3
2	**21CSC23**	**Web Application Databases (Full Stack Development)**	2,3	3	-	-	3
3	**21MLC33**	**Cloud Security Essentials**	2,3	3	-	-	3
4	21IT010	Social Network Analysis	2, 4, 5	3	-	-	3
5	21ML001	Human Computer Interaction	2, 3	3	-	-	3
6	21CS012	Wireless Adhoc Networks	2, 3	3	-	-	3
7		MOOCs/Honors		3	-	-	3
Elective VI							
1	21ML002	Large Language Models	2,3,5,6	3	-	-	3
2	21CS015	Software Project Management	3,6	3	-	-	3
3	21ML003	Reinforcement Learning	6,7	3	-	-	3
4		MOOCs/Honors		3	-	-	3
Elective VIII: Professional Elective							
1	21CS018	Information Retrieval Systems	1,2,3,4	-	-	-	3
2	21CS019	Fundamentals of Devops	1,3, 5,8,10	-	-	-	3
3	21DS003	Cyber Security	1,3,4,5,PSO1				3
4		MOOCs/Honors		-	-	-	3

AI&DS

Elective V							
Career Path I, II, III							
1	**21MLC13**	**Conversational AI**	1,2,4,12,PSO1	3	-	-	3
2	**21CSC23**	**Web Application Databases (Full Stack Development)**	2,3	3	-	-	3
3	**21MLC33**	**Cloud Security Essentials**	2,3	3	-	-	3
4	21IT010	Social Network Analysis	2, 4, 5	3	-	-	3
5	21ML001	Human Computer Interaction	2, 3	3	-	-	3
6	21CS012	Wireless Adhoc Networks	2, 3	3	-	-	3
7		MOOCs/Honors		3	-	-	3
Elective VI							
1	21DS002	Data Visualization with Power BI	2,3,5,6	3	-	-	3
2	21CS015	Software Project Management	3,6	3	-	-	3
3	21ML003	Reinforcement Learning	6,7	3	-	-	3
4		MOOCs/Honors		3	-	-	3

Elective VIII: Professional Elective

1	21CS018	Information Retrieval Systems	1,2,3,4	-	-	-	3
2	21CS019	Fundamentals of Devops	1,3, 5,8,10	-	-	-	3
3	21DS003	Cyber Security	1,3,4,5,PSO1				3
4		MOOCs/Honors		-	-	-	3

Course Titles and syllabus of the CSE-AI&ML / AI&DS Specialization for the AR21 Academic Regulation is presented in the meeting.

A thorough discussion was made and the syllabus was verified.

Prepared By:
Dr. T. Daniya

HOD
Dr. K.Srividya