

GMR Institute of Technology

An Autonomous Institute Affiliated to JNTU-GV Vizianagaram
All UG Courses are accredited by NBA
Institute Accredited by NAAC with "A" grade (3rd cycle)
Ranked 188th in NIRF-2022



GMR Nagar, RAJAM-532 127
Vizianagaram (Dist.)
Andhra Pradesh
T +91 (8941) 251 592/251 593/252 989
F +91 (8941) 251 591
W www.gmr.edu.in

1.2.1 Details of courses introduced across all programmes offered during the year

S. No	Name of the Course	Course Code	Activities/Content with a direct bearing on Employability/ Entrepreneurship/ Skill development
B.Tech (Civil Engineering)			
1	Building Materials and Concrete Technology	21CE302	The structural engineering courses are inculcating the knowledge of fundamentals and the advancements progress the field of structural engineering. The study of stresses, strains and bending behavior of the member may enable the students to select the reliable and right material for the construction members in the construction industry. The study of structural analysis and the design of reinforced concrete and steel structures may help the students to perform as good design engineer in the structural design firm. Based on the knowledge acquired from the concrete and construction technology, the student may execute the project in a smooth way and enable him/her to perform as a best site engineer in the construction industry. The both theoretical and the practical knowledge acquired from the structural engineering courses, the students can able to start the start-ups in the field of construction and in structural design.
2	Structural Analysis	21CE404	
3	Design and detailing of RC Structures	20CE501	
4	Principles of Building Architecture	20CEC11	
5	Design of Steel Structure	20CE602	
6	Building Services	20CEC12	
7	Repair and Rehabilitation of Structures	19CE016	
8	Building Information Modeling	19CEC13	
9	Basics of Dynamics and Earthquake Engineering	19CE013	
10	Prestressed Concrete Structures	19CE015	
11	Fluid Mechanics	21CE304	The courses involve the application of science and engineering in the area of air, water and soil. It focuses on providing wholesome water for the public, controlling air pollution and rehabilitating polluted soil. Furthermore, it focuses on providing the appropriate solution for pollution, providing solutions for improving water quality and quantity and
12	Solid Mechanics-I	21CE305	
13	Solid Mechanics Laboratory	21CE307	
14	Solid Mechanics-II	21CE403	
15	Hydraulics and Hydraulics Machinery	21CE401	
16	Fluid Mechanics and Hydraulic Machinery Laboratory	21CE406	

			enforces laws and regulations for controlling pollution. In recent years the world is facing many environmental-related problems and it had become a major challenge for society. It starts from local problems like groundwater depletion, water pollution and solid waste management to global problems like climate change. The major scope of environmental engineering is the management of natural resources, protecting biodiversity and controlling various pollutions. Nowadays the major opportunity that an environmental engineer can play an important role are industries where they need to comply with rules and regulations, consultancy, Research and Development, Academics, Green Marketing, Green Media, Green Advocacy and role in various international NGOs. In the mere future, career and opportunities in the area of environmental engineering will be very high.
17	Surveying	21CE306	India is a developing country in which big concentration has kept on the development of various roads which includes Expressways, National Highways to rural roads and urban streets. Further the development of railways, Airways and Water ways. The transportation engineering course helps the students have knowledge on selecting a new a alignment of Highway or Railway and complete its geometric design. The surveying subject helps the students to fix the traverse stations and complete picking up of preliminary to detailed survey of ground details using total station and Differential global positioning system instrument. The Geographical Information systems software helps the students in fixing the Highway alignment. The pavement engineering course helps the students to select type of the pavement with selection of suitable materials and complete its design in a sustainable manner. In the urban areas transportation planning is very much important from which students can know how better a
18	Surveying Laboratory	21CE308	
19	Transportation Engineering	21CE405	
20	Geometric Desing and Highway Materials	20CEC21	
21	Highway Design and Simulation	20CEC22	

22	Highway Project Formulation and Economics	19CEC23	transportation system can meet the demand of public. In decision making of a bypass and alternate routes, widening the existing roads by volume count surveys. Further help to improve the junctions for free flow of Traffic and provide better parking facilities. The traffic engineering and safety subjects makes the student to understand what are the measures to be taken on the road so that traffic can travel with high speeds without causing an accident providing necessary information, caution and warning signs. The pavement management system helps the students to manage the pavement condition without failure and saving the economy of the nation. Now a days in country the public travelling in airways has increased the course aviation and infrastructure planning helps the student to understand construct new airport with required facilities and pavement design.
23	Soil Mechanics	21CE402	Geotechnical Engineering courses helps the students to will learn the properties of soil and their applications in construction, and they will perform field investigations including collection of soil samples for testing and observation of soil behavior which helps them to prepare the soil investigation reports, design of foundations for various structures.
24	Soil Mechanics Laboratory	21CE407	
25	Foundation Engineering	20CE503	
26	Environmental Engineering	20CE502	Environmental Engineering courses helps the students to learn about the importance of environment and its relevance with the Civil Engineering. The students will get awareness about the sustainable development, pollution control, water resources management, climate change mitigation, environmental impact assessment and so on.
27	Environmental Engineering Laboratory	20CE505	
28	Employability Skills-I	21ESX01	Students will be trained with soft skills and technical skills and shall engage themselves in activities societal enrichment and skill enrichment
29	Employability Skills-II	20ESX02	
30	CC & EC Activities-I	21HSX11	
31	CC & EC Activities-II	21HSX12	
32	Term paper	20TPX01	Students will have an exhaustive literature review choosing any engineering concept with reference to standard and based
33	Mini Project	20MPX01	

34	Project	19CE701	on literature review students will take up a specific problem for which they conduct experiments, use analytical tools
35	Summer Internship	19CE702	Students will undergo training in an organization in order to get experience for their chosen field of career, Demonstrate the quality and suitability of construction materials and apply the practical aspect of analysis, design and safe construction
36	Full Semester Internship	19CE801	
B.Tech (Electrical & Electronics Engineering)			
1	DC Machines and Transformers	21EE302	Employability Skills: These Courses are to prepare students for employability in job market and survive in cut throat competition among Professionals. Technical Skills: These Courses are to prepare students for various fundamentals related to DC and AC machines including design and testing aspects.
2	AC Machines	21EE401	
3	DC Machines Lab	21EE307	
4	AC Machines Lab	21EE406	
5	Electrical Vehicle Technologies	20EEC11	
6	Electrical Machine Design	20EE004	
7	Special Electrical Machines	20EE006	
8	Electrical Drives	20EE503	
9	Machine Modelling and Steady State Analysis	20EE009	
10	Power Generation, Transmission and Distribution	21EE404	Employability Skills: These Courses are to prepare students for employability in job market and survive in cut throat competition among Professionals. Technical Skills: These Courses are to prepare students for various fundamentals in Power Systems generation, transmission, distribution, utility, protection, analysis and control including DC transmission.
11	Power System Analysis & Control	20EE602	
12	Renewable Energy Sources	20EE002	
13	Power Quality	19EEH24	
14	Power System Lab	20EE606	
15	Green Energy Technologies	20EEC21	
16	Power System Protection	20EE504	
17	Control and Instrumentation of Smart Grid Systems	20EEC32	
18	Control Systems	20EE502	
19	Advanced Control Systems	20EE007	
20	Electrical Installation, Safety and Auditing	20EE001	
21	Energy Audit, Conservation & Management	19EE015	
22	Electrical Installation, Design & Estimation	20EE001	
23	Hybrid Renewable Energy Systems Design	19EEC23	
24	Power System Deregulation	19EE014	
25	Battery Management Systems	19EEC13	

26	Communication and Security in Smart Grid	19EEC33	
27	Power Systems Lab	20EE606	
28	Electrical Distribution Systems	19EE010	
29	High Voltage Engineering	19EE016	
30	High Voltage DC Transmission	20EE005	
31	Programmable Logic Controllers	19EE013	
32	Sustainable Energy	19EE017	
33	Renewable Energy Sources	20EE002	
34	Micro and Smart Grid Technologies	20EEC31	
35	Power Electronics	21EE403	
36	Power Electronics and Drives Lab	20EE507	
37	Electric Vehicle Drive Train systems	20EEC12	
38	Power Electronic Applications to Green Energy Systems	20EEC22	
39	Fundamentals of Electrical Vehicle Technology	19EE003	
40	Utilization of Electrical Energy	19EE011	Skill development: JavaScript and Java continue to top the list of most in-demand programming languages. Java and JavaScript are predicted to be the most in-demand IT skills.
41	Utilization of Electrical Energy	20EE603	
42	Microprocessors and Microcontroller interfacing	19EE012	
43	Fundamentals of Object Oriented Programming	20IT306	
44	Database Management Systems	19IT304	
45	Semiconductor Devices and Circuits	21EE306	
46	Analog and Digital Communications	19EC401	
47	Linear and Digital Integrated Circuits	21EE402	
48	Signal and Systems Theory	21EE405	
49	Discrete Signal Processing	20EE008	
50	Electrical Circuit Analysis	21EE303	Employability Skills: These Courses are to prepare students for employability in job market and survive in cut throat competition among Professionals. Technical Skills: These Courses are to prepare students for various fundamentals related to semi conductor devices, Linear and Digital Integrated circuits, Discrete Signal Processing, digital filter design, Random signal process, power spectral density, auto and cross correlations.
51	Electro Magnetic Field Theory	21EE304	
52	Measurements and Instrumentation	21EE305	
53	Electrical Circuits and Simulation Lab	21EE308	
54	Measurements and Instrumentation Lab	21EE407	

			parameters, Network theorem, MI & MC Instruments, Power and Energy measurements, AC & DC bridges.
55	Summer Internship II	19EE701	Skill development: This course enables the student to get in the industrial environmental exposure of day to day industrial work and how it is carried out.
56	Project	19EE702	Skill development: The main objective of this course is student work in teams to demonstrate their acquired skills, solve challenging problems that are realistic, curriculum based and often interdisciplinary in the process they acquire the skills required for their career.
57	Mini-Project	20MPX01	
58	Employability Skills II	20ESX02	Employability Skills: It helps the student to develop aptitude skills, quantitative skills, soft skills for personality development and career growth. I also help in developing design and simulation skills for the student to be industry ready.
59	Employability Skills I	20ESX01	
60	Summer Internship I	20SIX01	
61	Employability Skills I	21ESX01	
62	Employability Skills I	21ESX01	
B.Tech (Mechanical Engineering)			
1	Finite Element Method	19ME701	Employability Skills: This course applies to engineering or related applications across all forms of manufacturing and engineering. It is suitable for people with structural, plant or equipment design or maintenance responsibilities, and those pursuing engineering or related qualifications and careers.
2	Computer Aided Analysis and Simulation lab	19ME706	Skill development: This course applies to engineering or related applications across all forms of manufacturing and engineering. It is suitable for people with structural, plant or equipment design or maintenance responsibilities, and those pursuing engineering or related qualifications and careers.
3	Computer Aided Design and Manufacturing	20ME501	Skill development: This course gives an understanding about coding used in design aspects along with strengthening the programming skillset on both design and CNC software.
4	Design of Machine Members I	20ME502	Technical Skills: The course focuses on the fundamentals and principles of basic mechanical elements, failure theories and design criteria, and structures of basic mechanical systems.

			The goal of the course is to learn how to design simple mechanical elements and systems.
5	Design of Machine Members II	20ME601	Technical Skills: The course focuses on the design of bearings, IC engines, power transmission systems, springs. The goal of the course is to learn how to design mechanical elements and systems.
6	Sensors and Actuators for Automotive Electronics	19MEC22	Technical Skills: This is subject comprises the vehicle sensors, actuators, automotive safety, control and intelligent vehicle system. The course gives the knowledge about the vehicle sensors, different types of intelligent sensors, working principle of circuits in vehicle and automotive safety. The objective this course is to learn how to develop the modern vehicle parts.
7	Computer Aided Machine Drawing	21ME302	Skill development: The machine drawing course aided by computer addresses the contemporary requirements of the industry. This makes the student industry-ready along with the scope of production-drawing details for the part drawings thus generated.
8	Kinematics of Machinery	21ME305	Technical Skills: Kinematics of machines deals with the study of the relative motion of machine parts. It involves the study of position, displacement, velocity and acceleration of machine parts. The student understands the basic terminology about the cams and gears.
9	Dynamics of Machinery	21ME402	Technical Skills: It deals with the study of relative motion between various elements of a machine and the forces which act on them that enhances the skill set of students
10	Mechanics of Solids	21ME404	Technical skills: Mechanics of solid is the course refers to understand the knowledge about mechanical and thermal stress developed in the bars. Students acquired the basic concept about shear force and bending moment in the beams and torsion of the shaft. The objective of the present course is to understand the strength of the given member when it is subjected to different types of loads and moments

11	Mechanics of Solids Lab	21ME406	Skill development: The objective of the strength of materials lab is to demonstrate the basic principles in the area of strength and mechanics of materials and structural analysis to the undergraduate students through a series of experiments. In this lab the experiments are performed to measure the properties of the materials such as impact strength, tensile strength, compressive strength, hardness, ductility etc.
12	Fundamentals of Optimization Techniques (Open Elective)	19ME001	Employability Skills: Optimization methods are used in many areas of study to find solutions that maximize or minimize some study parameters, such as minimize costs in the production of a good or service, maximize profits, minimize raw material in the development of a good, or maximize production. This course gives the knowledge about the different optimizing techniques.
13	Industrial Robotics & applications	20ME005	Technical Skills: This subject provides the basics of fuzzy logic and neural networks and to Demonstrate and Illustrate about functionalities of Robots and Robotics. Student able to acquire the fundamentals about the Artificial Intelligence, various game planning strategies and the anatomy of robotics.
14	Data Analytics and Operations Management	19MEC41	Technical Skills: The course focuses on the fundamental and principles of descriptive, inferential statistics, regression, ANOVA analysis, machine learning fundamentals, project planning and project implementation. The goal of this course is to optimize the given data by using various optimization techniques.
15	Smart Supply Chain Analytics	19MEC42	Technical Skills: The course gives the basic knowledge about the Business Analytics, descriptive analytics and Cognitive Analytics for different applications. This course also gives the prediction techniques to assess the demand requirements and criteria for optimizing. The main objectives of supply chain management are to reduce cost, improve the overall organization performance and customer satisfaction by improving product or service delivery to the consumer

16	Additive Manufacturing & Mechatronics Lab	19ME705	Skill development: The Future of Additive Manufacturing in Engineering Will Include New Materials and Systems. Many additive manufacturing systems are not versatile enough to use any material, creating an obstacle to scaling.
17	Mechanical Measurements and Metrology	20ME504	Employability Skills: The course helps in understanding the different types of measurements and instruments used to measure them which is very much useful for getting jobs in industries.
18	Metal Cutting and Machine Tools Lab	20ME507	Skill development: This Lab is closely associated for imparting the practical knowledge to the students and gives them hand-on-experience which makes them ready for the shop floor work right from the day-one of their works in the industry
19	Fundamentals of Digital Manufacturing Science	20MEC31	Technical Skills: Digital manufacturing science is a course that it refers to concepts of Digital Manufacturing, Information of Computing Manufacturing, and Information about security technology manufacturing and Concept of Intelligent Manufacturing. With this course students can able to familiarize the basic concepts of digital manufacturing systems and, the technical knowledge in virtual prototyping and reverse engineering.
20	Engineering Materials & Manufacturing Technology	21ME301	Technical skills: The objective of this course is to demonstrates the different manufacturing process such as casing, welding and forming to develop the machine element as per the industrial requirement.
21	Object Oriented Programming through Java	21IT306	Skill development: JavaScript and Java continue to top the list of most in-demand programming languages. Java and JavaScript are predicted to be the most in-demand IT skills
22	Computational Mathematics using Python	21MA305	Employability Skills: Python is a high-level, interpreted, interactive and object-oriented scripting language. Computational mathematics, the blending of computer science with applied mathematics, provides the computational and mathematical models that record and evaluate data and make predictions. This is course gives the knowledge about the program skills for writing the different mathematical schemes

			such as Newton-Raphson method, Gauss elimination method, Newton's-Gregory Forward Interpolation, integral value of a function, Simpson rule and Partial Differential Equations.
23	Python Programming	21BEX07	Technical Skills: The course is designed to provide Basic knowledge of Python. Python is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable. When students complete Introduction to Programming with Python, they will be able to: Build basic programs using fundamental programming constructs like variables, conditional logic, looping, and functions.
24	Python Programming Lab	21BEX08	Skill development: This course introduced to students for acquiring programming skills in core Python and also to develop the skill of designing graphical-user interfaces (GUI) in Python.
25	Power Plant Engineering	19ME011	Employability Skills: This course develops the high technical skills needed in a power plant. The ways Power plant operators, distributors, and dispatchers must be careful, attentive, and persistent. Detail oriented, Dexterity and Problem-solving skills.
26	Alternative source of Energy	19ME014	Employability Skills: This course develops various ideas of using different sources of energy forms into most useful ways. Reducing energy related emissions is central to this, as energy supply accounts for 25.9 per cent of carbon emissions. One of the keys to cutting energy-related emissions is to cut the carbon intensiveness of energy production by adopting renewable energy technologies.
27	Fluid Mechanics and Hydraulic Machines	21ME304	Technical Skills: The course comprises the fundamentals of fluid properties, fluid flows, fluid statics, fluid dynamics and hydraulic machines. With this course, the student able to understand the basic concepts of pressure measurement, buoyancy, fluid velocity, fluid acceleration and performance parameters for hydraulic machinery

28	Heat Transfer	20ME603	Technical Skills: The course comprises the fundamentals of heat transfer, and different modes of heat transfer like conduction, convection and radiation. It will be useful to design real time industrial components like heat exchangers, super heaters etc.
29	Fluid Mechanics and Hydraulic Machines Lab	21ME307	Skill development: Fluids are a key element of study for many engineering disciplines. Fluid Mechanics is of vital importance in energy conversion systems (hydro power, gas turbines, combustion etc.), in process industry (paper, metals, polymers etc.) and for transports (airplanes, ships etc.). The Fluid Mechanics & Hydraulic Machine laboratory is actively engaged to reinforce and enhance understanding of the fundamentals of Fluid Mechanics. The experiments here are designed to demonstrate the applications of the basic fluid engineering principles and to provide a more intuitive and physical Understanding of the theory.
30	Heat Transfer Lab	20ME606	Skill development: Heat Transfer laboratory provides fundamental and industrial knowledge about modes of heat transfer, like conduction, convection and radiation, and their application. Heat Transfer Lab consists of the following equipment's. Composite Slab Apparatus, convection apparatus heat exchanger, Emissivity apparatus, Stefan-Boltzmann Apparatus, drop and film wise condensation and pin fin apparatus. With this student can able to find the thermal conductivity, heat transfer coefficient, emissivity and heat transfer rate for given any material.
31	Thermodynamics	21ME306	Technical Skills: Topics include basic fundamentals of different kinds thermodynamic systems, different processes, cycles, zeroth, first and second law of thermodynamics, air standard cycles, properties of steam. With this student can able to find the properties of steam for any given conditions, find thermal efficiency of a given engine.

32	Applied Thermodynamics	21ME401	Technical Skills: Topics include construction and working of SI and CI engines, combustion, and fuel properties with reference to engine power, efficiency, and emissions. Also, it focuses on air compressors. The students examine the working and performance of different types of internal combustion engines: spark-ignition, diesel engines and air compressors.
33	Thermal Engineering Lab	21ME405	Skill development: The objective is to demonstrate the working principle of Refrigeration and air conditioning. Also, it aims at the performance evolution of heat engines and air compressors.
34	Full Semester Internship	19ME707	Skill development: Practical skills
35	Project	19ME803	Skill development: Demonstration of Learning Outcomes
36	Mini Project	20ME607	Skill development: Demonstration of Learning Outcomes
37	Employability Skills I	21ESX01	Employability Skills: It helps the student to develop aptitude skills, quantitative skills, soft skills for personality development and career growth. I also help in developing design and simulation skills for the student to be industry ready.
38	Employability Skills III	20ME509	Employability Skills: It helps the student to develop aptitude skills, quantitative skills, soft skills for personality development and career growth. I also help in developing design and simulation skills for the student to be industry ready.
39	Employability Skills IV	20ME608	Employability Skills: It helps the student to develop aptitude skills, quantitative skills, soft skills for personality development and career growth. I also help in developing design and simulation skills for the student to be industry ready.
B.Tech (Electronics & Communication Engineering)			
1	Analog and mixed signal VLSI design	19ECC13	Technical skills: The Design courses gives a detailed knowledge from the basics of digital systems and Students can demonstrate the design and implementation of digital systems with hardware description language. Students will learn gate
2	ASIC verification using system verilog	20ECC12	
3	RTL coding techniques	20ECC11	
4	VLSI Design	20EC503	

			level design and FPGA design flow to offer optimal solutions for product implementation. Very Large-Scale Integration (VLSI) is a solid career choice and offers job opportunities in core employment.
5	Multimedia Communications	19ECC33	Technical skills: Students will learn soft computing techniques and artificial neural networks to apply for various engineering problems. Students will apply image processing concepts in analyzing and interpreting the images obtained through machine vision. signal processing is becoming ever more important because it provides the 'flexibility' of using the same digital hardware for many different applications.
6	Information Theory and Coding Techniques	20ECC31	
7	IMAGE PROCESSING	20ECC32	
8	Digital signal Processing	20EC602	
9	Wireless sensor networks	19EC006	Employability skills: Embedded Systems will make students extremely attractive to companies doing work in Internet of Things (IoT). Students can demonstrate the design concepts of sensor networks and their communication for a real time application. Students can demonstrate the design and controlling aspects of a product/application through assembly language programming. Students will explore the fundamental and implementation concepts of IoT to nurture business applications. Students will learn to develop systems based on hardware and software co-design. Students will learn design aspects of logic circuits which leverage digital system design skills. Students will demonstrate design aspects of logic circuits which leverage digital system design skills.
10	data acquisition system	20ECC21	
11	Embedded system design and IoT	20ECC22	
12	Microprocessors and Microcontrollers	20EC502	
13	Real time operating Systems	19ECC23	
14	Logic Circuit Design	21EC303	
15	Logic Circuit Design Lab	21EC307	
16	Object Oriented Programming	21CSE01	Programming skills: Computer programmers need to have a wide range of skills to perform the many responsibilities of the position at the highest level of professionalism. The most effective programmers combine knowledge, aptitude and technical capability with soft skills such as the ability to work as part of a team and to communicate well with others. Aspiring computer programmers need to be able to demonstrate both types of skills. Students can demonstrate programming through OOPs concepts to offer cost effective and efficient code for applications.
17	Object Oriented Programming Lab	21CSE02	
18	Employability Skills-I	21ESX01	Students will demonstrate soft skills and specific domain skills.

19	Employability Skills-II	20ESX02	Students will demonstrate soft skills and specific domain skills.
20	Engineering Economics and Project Management	20HSX10	Employability skills: Students will learn project schedule using PERT/CPM, construct a resource usage profile for any schedule in a project
21	Human values and Professional Ethics	21ATX02	Employability Skills: Students will learn importance of ethics, etiquettes in work places and standards to be maintained while designing the products for a sustainable society.
22	Project work	19EC701	Employability skills: Demonstrate problem identification, analysis and design solutions or applications in electronics & communication domain to address the societal needs.
23	Term Paper	20TPX01	
24	Summer Internship-1	20SIX01	
25	Summer Internship-Ii	19EC702	
26	Full Semester Internship	19EC801	
27	Mini Project	20MPX01	Employability skills: Based on literature review of Term paper students will take up a specific problem for which they conduct experiments, use analytical tools to bring out the best output
B.Tech (Computer Science and Engineering)			
28	Mini Project	20MPX01	The subjects in this domain useful for students to establish team work, think about societal problems, and their solution using appropriate solution. These technologies also enhance the skills related to design and development of software applications. In addition to this, students are able to design and develop an application by integrating software into hardware to enable the layman to operate hardware devices to accomplish required task.
29	Summer Internship#1	20SIX01	
30	Term Paper	20TPX01	
31	Summer Internship#2	19SIX02	
32	Web Programming Languages (Full Stack Developer)	20CSC21	
33	Web Application Developments Framework (Full Stack Developer)	20CSC22	
34	Web Application Databases (Full Stack Developer)	19CSC23	
35	Full Semester Internship	19CS803	
36	Project	19CS705	
37	Internet of Things	20CS602	
38	Software Engineering	20CS603	
39	Software Project Management	19CS015	
40	Advanced Software Engineering	19CSH23	

41	Case Tools Lab	20CS606	
42	Human Computer Interaction	19CSH43	
43	Digital Logic Design	21CS304	
44	Microprocessors and Microcontroller Programming	20ECE02	
45	Theory of Computation	20CS504	
46	Compiler Design	20CS601	
47	Computer Organization and Architecture	21CS403	
48	Computer Graphics	21CSH41	
49	DevOps	21CSH21	
50	Employability Skills I	21ESX01	These Courses Depicts to explore careers in software development, web development, data science, or machine learning must learn this most-often used programming language and have a good chance of landing a job. Students are given training on various skills that makes to students improve the communication related skills. Students will learn the basic concepts of management and organization structure of an industry, concept of Entrepreneurship, Material management cost analysis.
51	CC & EC Activities I	21HSX11	
52	Employability Skills II	20CS609	
53	CC & EC Activity II	20HSX12	
54	Mass Media Communication	21AT009	
55	Introduction to Journalism (CSE)	21AT008	
56	Engineering Economics and Project Management	21HSX10	
57	Environmental Studies	21ATX01	
58	Probability and Statistics using Python	21MA304	
59	Data Structures	21CS303	
60	Programming, Data Structures and Algorithms Using Python	19CSH13	Programming will make the students to provide insight into how products are created, and they can work more efficiently with the technical side of the house and accurately set timelines. It also helps to increase the logic capability, creativity, resilience, imagination, lateral thinking and determination. Problem-Solving skills make the students cognitively equipped to handle anything their jobs throw at them. Problem solvers can observe, judge, and act quickly when difficulties arise when they inevitably do. Programming for problem solving will be help the students to enhance their employability / entrepreneurship / skill development by making them to understand the business perspective, strengthen user experience expertise, learning multiple skills and writing efficient code to solve complex problems.
61	Advanced Data Structures	21CSH11	
62	Principles of Programming Languages	20CS004	
63	Fundamentals of Computer Networks & Operating Systems	19CSM44	
64	Operating Systems	21IT403	
65	Discrete Mathematical Structures	21CS305	
66	Object Oriented Programming With java	21CS306	
67	Data Structures Lab	21CS307	
68	JAVA Lab	21CS308	
69	Design and Analysis of Algorithms	21CS404	
70	Web Coding and Development	21CS405	
71	Web Coding and Development Lab	21CS407	

72	Web Application Databases	19CSC23	These courses are designed to focus on learnings about technologies including complex networks, knowledge representation, web-based applications, computer vision, and intelligent systems that are used to build high computational systems. The outcomes will highly develop the ability of critical thinking and provides knowledgeable insights to finding solutions. These learnings demonstrate skills in modelling and managing complex data to broaden their knowledge in the specific domain as a result of their work.
73	Programming Fundamentals	21CSM41	
74	Fundamentals of Cloud Security	19CSM24	
75	Cloud Security	19ITC33	
76	Mobile Computing	20CS005	
77	Fundamentals of Systems Security	21CSH31	
78	Computer Networks	20CS503	
79	Distributed Operating Systems	19CS006	
80	Social Network and Semantic Analysis	19CSM34	
81	Mobile Programming	19CSH44	
82	Computer Forensics	19CSH34	
83	Fundamentals of Security (Cyber Security)	20ITC31	
84	Cybernet Security (Cyber Security)	20ITC32	
85	Cryptography and Network Security	20CS008	
86	Wireless Adhoc Networks	19CS012	
87	Management of Information Security	19CSH33	
88	Cloud Computing	19IT503	
89	Soft Computing	19CS016	
90	Cloud Computing Essentials	20CS007	
91	Artificial Intelligence and Machine Learning	20CS502	These courses focus on the technologies used to construct very large information systems, such as social network analysis, information retrieval, web search, machine learning, NLP and image processing. From this domain, students will be able to formulate and design data analytical solutions, show skills in modelling and managing large scale and complex data, recognize and evaluate the opportunities and needs of data, broaden the knowledge of statistical research and machine learning.
92	Artificial Intelligence and Machine Learning Lab	20CS507	
93	Exploratory Data Analytics (AI&ML)	20CSC11	
94	Fundamentals of Artificial Intelligence	20CS001	
95	Deep Learning (AI&ML)	20CSC12	
96	Foundations of Deep Learning	19CSM14	
97	Applications of Artificial Intelligence	19CS020	
98	Bioinformatics	19CSH14	
99	Robotic Process Automation	19CSH24	
100	Social Network Analysis	19IT008	
101	Information Retrieval Systems	19CS018	

102	Optimization Techniques	19CS011	The objective of this domain is to navigate and host the database as a backend to deploy and furnish the dynamic usage of the objects or routines which helps the individual to develop and build models including forms, frames, functions and procedures to work on consistent data either in software or retail firms.
103	Data Cleaning	21CSM31	
104	Natural Language Processing	19CSC13	
105	Data Science for Engineering Applications	19CS003	
106	Fundamentals of AI & Machine Learning	21CSM11	
107	Database Management Systems	21IT304	
108	Database Management Systems Lab	21IT308	
109	Fundamentals of Databases	19CSM43	
B.Tech (Information Technology)			
1	Term Paper	20TPX01	The Software Design Courses Emphasizes on ability to work in one or more significant application domains, Work as an individual and as part of a multidisciplinary team to develop and deliver quality software. It helps to upgrade skills on current technologies. These provide a basis with concepts for the software application and ability to use the techniques and tools necessary for engineering practice.
2	Full Semester Internship	19IT801	
3	Mini Project	20MPX01	
4	Summer Internship#1	20SIX01	
5	Internet of Things	20IT007	
6	Software Engineering Principles	20IT504	
7	Project work	19IT701	
8	Human Computer Interaction	19IT015	
9	Automata and Compiler Design	20IT602	
10	Computer Organization and Architecture	21CS403	
11	Software Project Management	19CS015	
12	Digital Logic Design	21CS304	
13	Employability Skills I	21ESX01	These Courses Depicts explore careers in software development, web development, data science, or machine learning. One must learn these most-often used programming language and have a good chance of landing a job. Students are given training on various skills that makes to students improve the communication related skills. Students will learn the basic concepts of management and organization structure of an
14	CC & EC Activities I	21HSX11	
15	Employability Skills II	21ESX02	
16	Environmental Studies	21ATX01	
17	CC & EC Activity II	20HSX12	
18	Engineering Economics & Project Management	20HSX10	
19	Fundamentals of Multimedia	20IT001	

20	Professional Ethics	19IT016	industry, concept of Entrepreneurship, Material management cost analysis.
21	Data Structures	21CS303	Students will learn about fundamentals of computer and programming language, draw flow chart to solve given problem logically and develop algorithm to solve given program. Introduce techniques for developing solutions to business problems using programming as an IT resource/tool. These courses helps in applying problem solving concepts by analyzing problems and testing, and implementing real-time solutions using different programming languages.
22	Discrete Mathematical Structures	21CS305	
23	Object Oriented Programming through Java	21IT306	
24	Data Structures Lab	21CS307	
25	Operating Systems	21IT403	
26	Probability and Statistics	21MA405	
27	Design and Analysis of Algorithms	20CS404	
28	Real Time Operating Systems	19IT011	
29	Web Technologies	21IT405	
30	Operating Systems Laboratory	21IT407	
31	Data Communication Systems	21IT305	These courses enable seamless exchange of data between any two points in the world. Describe network architectures, classifications and different networking protocols. These courses enhance knowledge on wireless design concepts and various multiple access systems, describing various network applications, network security services, mechanisms and network security applications.
32	Computer Networking	21IT404	
33	Computer Networking lab	21IT406	
34	Cloud Computing	20IT503	
35	Cloud Computing Lab	20IT507	
36	Distributed Systems	19IT014	
37	Cryptography and Network Security	20CS008	
38	Wireless Ad hoc Networks	19CS012	
39	Fundamentals of Mobile Computing	19IT003	
40	Fundamentals of Cloud Computing	20IT002	
41	Artificial Intelligence	20IT502	Data Science Courses helps in applying mathematical principles to the analysis of data, analyze very large data sets in the context of real-world problems. Develop and implement data analysis strategies based on theoretical principles, ethical considerations, and detailed knowledge of the underlying data. Exhibit an ability to articulate, assess and apply appropriate theories and principles of information management. Exemplify knowledge of the underlying principles and evaluation methods for analyzing information for financial decision-making, investing capital, budgeting and forecasting.
42	Machine Learning	20IT603	
43	Machine Learning Lab using Python	20IT606	
44	Digital Signal Processing	20EC602	
45	Social Network Analysis	19IT010	
46	Digital Image Processing	19IT012	
47	Fundamentals of Machine Learning	20CS002	


			Illustration of appropriate research methods used to collect and analyze data for decision-making and communications; inclusive of traditional and digital forms of communication.
48	Database Management Systems	21IT304	Database courses depict the basic concepts and various data models used in database design. ER modelling concepts use and design queries using SQL and Extend normalization for the development of application software. These courses help in building effective Multimedia Database Systems, Text Types, Document Retrievals and Image DBs with Relations and R-Tree, Audio and video Databases.
49	Database Management Systems Lab	21IT308	
50	Women in Leadership	21AT013	Women in the workplace face unique challenges and opportunities. So, a unique curriculum was designed to help and develop their personal leadership style and strengthen their influence and impact within the organization
51	Exploratory Data Analysis	20CSC11	Career path elective subjects are introduced in the syllabus with a main motive that students can choose their area of interest related to their employment. If one chooses a career that matches their interest they are more likely to enjoy the work they do. When guiding students with their career it is thus important to identify these interests. This Provides students with an opportunity to connect their classroom learning with workplace relevance will result in many positive learning outcomes such as motivation, grit, and career goal setting. Generally speaking, career pathways help boost professional development. and also increases the skill sets of the students which then results to an increase in their confidence as well.
52	Web Programming Languages	20CSC21	
53	Fundamentals of Security	20ITC31	
54	Deep Learning	20CSC12	
55	Web Application Development Framework	20CSC22	
56	Cyber Security	20ITC32	
57	Natural Language Processing	19CSC13	
58	Web Application Databases	19CSC23	
59	Cloud Security	19ITC33	
B.Tech (Artificial Intelligence and Machine Learning)			
1	Digital Logic Design	21CS304	The subjects in this domain useful for students to establish team work, think about societal problems, and their solution using appropriate solution. These technologies also enhance the skills related to design and development of software applications. In addition to this, students are able to design and develop an applications by integrating software into hardware
2	Computer Organization and Architecture	21CS403	

			to enable the layman to operate hardware devices to accomplish required task.
3	Employability Skills I	21ESX01	These Courses Depicts to explore careers in software development, web development, data science, or machine learning must learn this most-often used programming language and have a good chance of landing a job. Students are given training on various skills that makes to students improve the communication related skills. Students will learn the basic concepts of management and organization structure of an industry, concept of Entrepreneurship, Material management cost analysis.
4	CC & EC Activities I	21HSX11	
5	Environmental Studies	21BEA01	
6	Probability and Statistics using Python	21MA304	Programming will make the students to provide insight into how products are created, and they can work more efficiently with the technical side of the house and accurately set timelines. It also helps to increase the logic capability, creativity, resilience, imagination, lateral thinking and determination. Problem-Solving skills make the students cognitively equipped to handle anything their jobs throw at them. Problem solvers can observe, judge, and act quickly when difficulties arise when they inevitably do. Programming for problem solving will be help the students to enhance their employability / entrepreneurship / skill development by making them to understand the business perspective, strengthen user experience expertise, learning multiple skills and writing efficient code to solve complex problems.
7	Data Structures	21CS303	
8	Operating Systems	21IT403	
9	Mathematical Foundation for Computer Science and Data Science	21DS305	
10	Object Oriented Programming With java	21CS306	
11	Data Structures Lab	21CS307	
12	JAVA Lab	21CS308	
13	Design and Analysis of Algorithms	21CS404	
14	Artificial Intelligence	21ML302	
15	Foundations of Machine Learning	21ML405	These courses focus on the technologies used to construct very large information systems, such as social network analysis, information retrieval, web search, machine learning, NLP and image processing. From this domain, students will be able to formulate and design data analytical solutions, show skills in modelling and managing large scale and complex data, recognize and evaluate the opportunities and needs of data, broaden the knowledge of statistical research and machine learning.
16	Foundations of Machine learning Lab	21ML407	

17	Database Management Systems	21IT304	The objective of this domain is to navigate and host the database as a backend to deploy and furnish the dynamic usage of the objects or routines which helps the individual to develop and build models including forms, frames, functions and procedures to work on consistent data either in software or retail firms.
18	Database Management Systems Lab	21IT308	
B.Tech (Artificial Intelligence and Data Science)			
19	Digital Logic Design	21CS304	The subjects in this domain useful for students to establish team work, think about societal problems, and their solution using appropriate solution. These technologies also enhance the skills related to design and development of software applications. In addition to this, students are able to design and develop an applications by integrating software into hardware to enable the layman to operate hardware devices to accomplish required task.
20	Computer Organization and Architecture	21CS403	
21	Employability Skills I	21ESX01	These Courses Depicts to explore careers in software development, web development, data science, or machine learning must learn this most-often used programming language and have a good chance of landing a job. Students are given training on various skills that makes to students improve the communication related skills. Students will learn the basic concepts of management and organization structure of an industry, concept of Entrepreneurship, Material management cost analysis.
22	CC & EC Activities I	21HSX11	
23	Environmental Studies	21BEA01	
24	Probability and Statistics using Python	21MA304	Programming will make the students to provide insight into how products are created, and they can work more efficiently with the technical side of the house and accurately set timelines. It also helps to increase the logic capability, creativity, resilience, imagination, lateral thinking and determination. Problem-Solving skills make the students cognitively equipped to handle anything their jobs throw at them. Problem solvers can observe, judge, and act quickly when difficulties arise when they inevitably do. Programming for problem solving will be help the students to enhance their employability / entrepreneurship / skill development by
25	Data Structures	21CS303	
26	Operating Systems	21IT403	
27	Mathematical Foundation for Computer Science and Data Science	21DS305	
28	Object Oriented Programming With java	21CS306	
29	Data Structures Lab	21CS307	
30	JAVA Lab	21CS308	
31	Design and Analysis of Algorithms	21CS404	

			making them to understand the business perspective, strengthen user experience expertise, learning multiple skills and writing efficient code to solve complex problems.
32	Artificial Intelligence	21ML302	These courses focus on the technologies used to construct very large information systems, such as social network analysis, information retrieval, web search, machine learning, NLP and image processing. From this domain, students will be able to formulate and design data analytical solutions, show skills in modelling and managing large scale and complex data, recognize and evaluate the opportunities and needs of data, broaden the knowledge of statistical research and machine learning.
33	Foundations of Data Science	21DS405	
34	Foundations of Data Science Lab	21DS407	
35	Database Management Systems	21IT304	The objective of this domain is to navigate and host the database as a backend to deploy and furnish the dynamic usage of the objects or routines which helps the individual to develop and build models including forms, frames, functions and procedures to work on consistent data either in software or retail firms.
36	Database Management Systems Lab	21IT308	




Principal
Dr. CLVRSV. Prasad
PRINCIPAL
GMR Institute of Technology
GMR Nagar Rajam 532127 AP