CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (Autonomous)

Gandipet, Hyderabad-75

Department of Artificial Intelligence & Mechine Learning

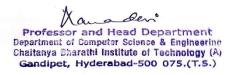
Course Outcomes Statement for BE-AIML R-22

S.No	Course		Course Outcomes Statements
	Code	Name	
			Determine the extreme values of functions of two variables.
			Apply the vector differential operator to scalar and
			vector functions
1	22MTC01	Linear Algebra & Calculus	Solve line, surface & volume integrals by Greens, Gauss
			and Stoke's theorems.
			Determine the basis and dimension of a vector space,
			compute linear transformation
			Apply the Matrix Methods to solve the system of linear equations
			Demonstrate the physical properties of light
			Explain characteristic properties of lasers and fiber optics
2	22PYC01	Optics and	Find the applications of quantum mechanics
		Semiconductor Physics	Classify the solids depending upon electrical conductivity
			Identify different types of semiconductors
			Understand real world problems and develop computer
			solutions for those problems.
			Understand the basics of Python
3	22CSC01	Problem Solving And	Apply Python for solving basic programming solutions.
		Programming	Create algorithms/flowcharts for solving real-time problems.
			Build and manage dictionaries to manage data.
			Handle data using files.
			Illustrate the nature, process and types of
			communication and communicate effectively without
			barriers.
			Construct and compose coherent paragraphs, emails and
4	22EGC01	English	adhering to appropriate mobile etiquette.
			Apply techniques of precision to write a précis and
			formal letters by using acceptable grammar and
			appropriate vocabulary.
			Distinguish formal from informal reports and
			demonstrate advanced writing skills by drafting formal
			reports.
			Critique passages by applying effective reading
			techniques

			Interpret the errors in the results of an experiment
			Interpret the errors in the results of an experiment.
		Outra and	Demonstrate physical properties of light experimentally
	2257602	Optics and	Make use of lasers and optical fibers for engineering
_	22PYC03	Semiconductor Physics	applications
5		Lab	Explain the V-I characteristics of some optoelectronic
			and semiconductor devices
			Find the applications of thermistor
_			Define the speech sounds in English and understand the
			nuances of pronunciation in English
			Apply stress correctly and speak with the proper tone,
6	22EGC02	English lab	intonation and rhythm
			Analyze listening comprehension texts to enhance their
			listening skills.
			Determine the context and speak appropriately in
			various situations.
			Design and present effective posters while working in
			teams, and discuss and participate in Group discussions.
			Understand various Python program development
			Environments
			Demonstrate the concepts of Python
7	22CSC02	Problem Solving and	Implement algorithms/flowcharts using Python to solve
		Programming Lab	real-world problems.
			Build and manage dictionaries to manage data.
			Write Python functions to facilitate code reuse.
			Use Python to handle files and memory.
			Become conversant with appropriate use of CAD
			software for drafting.
			Recognize BIS, ISO Standards and conventions in
8	22MEC01	CAD AND DRAFTING	Engineering Drafting.
			Construct the projections of points, lines, planes, solids
			Analyse the internal details of solids through sectional
			views
			Create an isometric projections and views
			Understand safety measures to be followed in workshop
			to avoid accidents.
			Identify various tools used in carpentry, house wiring and
			plumbing.
9	22MEC38	Digital Fabrication Lab	Make a given model by using workshop trades like
			carpentry, plumbing, House wiring and 3d modeling
			using solid works software for Additive Manufacturing.
			Perform pre-processing operations on STL files for 3D
			printing, also understand reverse engineering process.
			Conceptualize and produce simple device/mechanism of
			their choice.

		<u> </u>	
			Calculate the solutions of first order linear differential
			equations.
		Differential Francis	Calculate the solutions of higher order linear differential
44	22047004	Differential Equations &	equations.
11	22MTC04	Numerical Methods	Solve the algebraic, transcendental and system of equations.
			Apply interpolation and numerical differentiation techniques
			for given data.
			Test the convergence and divergence of Infinite series.
			Identify the microscopic chemistry in terms of molecular
			orbitals, intermolecular forces and rate of chemical reactions.
			Discuss the properties and processes using thermodynamic
			functions, electrochemical cells and their role in batteries and
12	22CYC01	Chemistry	fuel cells.
			Illustrate the major chemical reactions that are used in the
			synthesis of organic molecules.
			Classify the various methods used in treatment of water for
			domestic and industrial use.
			Outline the synthesis of various Engineering materials &
			Drugs.
			Understand the concepts of Kirchhoff's laws and their
			application various theorems to get solution of simple dc
			circuits.
			Predict the steady state response of RLC circuits with AC single
4.5			phase/three phase supply.
13	22EEC01	Basic Electrical Engineering	Infer the basics of single phase transformer
			Describe the construction, working principle of DC machine
			and 3-phase Induction motor.
			Acquire the knowledge of electrical wires, cables, earthing,
			Electrical safety precautions to be followed in electrical
			installations and electric shock and its safety and energy
			calculations.
			Understand the concepts of Object-Oriented features.
		Object Oriented Programming	Apply OOPs concepts and different libraries to solve
1.1	226662		programming problems.
14	22CSC03		Understand the advanced concepts of Python.
			Develop programs to access databases and web data.
			Understand APIs and third-party libraries to be used with
			Python.
			Identify the basic chemical methods to analyse the substances
			quantitatively & qualitatively.
			Estimate the amount of chemical substances by volumetric
	220/222		analysis.
14	22CYC02	Chemistry Lab	Determine the rate constants of reactions from concentration
			of reactants/ products as a function of time.
			Calculate the concentration and amount of various substances
			using instrumental techniques.
			Develop the basic drug molecules and polymeric compounds.

			Gain an understanding of Rural life, Culture and Social
			realities.
			Develop a sense of empathy and bonds of mutuality with
			Local Communities.
15	22MBC02	Community Engagement	Appreciate significant contributions of Local communities to
			Indian Society and Economy.
			Exhibit the knowledge of Rural Institutions and contributing to
			Community's Socio-Economic improvements.
			Utilise the opportunities provided by Rural Development
			Programmes.
			Demonstrate the features of Object-Oriented Programming.
			Understand APIs and third-party libraries to be used with
			Python.
			Use Python libraries to solve real-world problems.
16	22CSC04	Object-Oriented	Write scripts to solve data science/machine leaning problems
		Programming Lab	using NumPy and Pandas.
			Develop applications by accessing web data and databases.
			Demonstrate knowledge of the relationship between
			mechanical structures of robotics and their operational
			workspace characteristics
			Understand mechanical components, motors, sensors and
17	22MEC37	Robotics & Drones Lab	electronic circuits of robots and build robots.
			Demonstrate knowledge of robot controllers.
			Use Linux environment for robotic programming.
			Write Python scripts to control robots using Python and Open
			CV.
			Comprehend the circuit analysis techniques using various
			circuital laws and theorems
			Analyse the parameters of the given coil and measurement of
			power and energy in AC circuits
18	22EEC02	Basic Electrical Engineering	Determine the turns ration/performance parameters of
		Lab	single-phase transformer
			Infer the characteristics of DC shunt motor different tests.
			Illustrate different parts and their function of electrical
			components, equipment and machines.







R20

Department Vision

To be in the frontiers of Computer Science and Engineering with academic excellence and Research.

Department Mission

The mission of the Computer Science and Engineering Department is to:

- 1. Educate students with the best practices of Computer Science by integrating the latest research into the curriculum
- 2. Develop professionals with sound knowledge in theory and practice of Computer Science and Engineering
- 3. Facilitate the development of academia-industry collaboration and societal outreach programs
- 4. Prepare students for full and ethical participation in a diverse society and encourage lifelong learning

B.E. Program Outcomes (PO's)

Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization for the solution of complex engineering problems.

Problem analysis: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.

Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling to complex engineering activities, with an understanding

Professor and Head Department

Department of Computer Science & Engineering

Chaitanya Bharathi Institute of Technology (A)

Gandipet, Hyderabad-500 075.(T.S.)

of the limitations.

The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

Communication: Communicate effectively on complex engineering activities with the engineering community and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

Life-long learning: Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM EDUCATION OBJECTIVES (PEOs): After the completion of the program, our:

- 1. Graduates will apply their knowledge and skills to succeed in their careers and/or obtain advanced degrees, provide solutions as entrepreneurs
- 2. Graduates will creatively solve problems, communicate effectively, and successfully function in multidisciplinary teams with superior work ethics and values
- 3. Graduates will apply principles and practices of Computer Science, mathematics and Science to successfully complete hardware and/or software-related engineering projects to meet customer business objectives and/or productively engage in research

PROGRAM SPECIFIC OUTCOMES (PSOs): At the end of the program

- 1. Graduates will acquire the practical competency in Computer Science and Engineering through emerging technologies and open-source platforms related to the domains

2. Graduates will design and develop innovative products by applying principles of computer science

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A professor and Head Department of Computer Science & Engineering Chalfaulia Bustathi justifute of Lechuology (V) nananya unaram mamuro ur reumunga in Gandipet, Hyderabad-500 075.(T.S.)

- and engineering
- 3. Graduates will be able to successfully pursue higher education in reputed institutions and provide solutions as entrepreneurs.
- 4. Graduates will be able to work in multidisciplinary teams for career growth by exhibiting work ethics and values

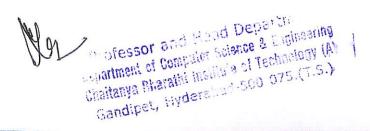
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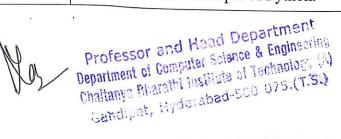
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Department of Computer Science and Engineering Course Outcomes Statements for BE(AI&ML)-R20

CN	Course		Commence Contraction Statements
S.No	Code	Name	Course Outcomes Statements
			Apply the Matrix Methods to solve the system of
			linear equations.
			Test the convergence and divergence of the infinite
			Series.
1.	20MTC01	LINEAR ALGEBRA	Determine the extreme values of functions of two
1.	201111101	& CALCULUS (M-I)	variables.
			Apply the vector differential operator to scalar and vector functions.
			Solve line, surface & volume integrals by Greens,
			Gauss and Stoke's theorems.
			Demonstrate the physical properties of light.
		OPTICS AND SEMICONDUCTOR PHYSICS	Explain characteristic properties of lasers and fiber
			optics.
2.	20PY C01		Find the applications of quantum mechanics.
			Classify the solids depending upon electrical
			conductivity
		ÿ	Identify different types of semiconductors
			Understand real world problems and develop
			computer solutions for those problems.
			Understand the basics of Python
200		PROBLEM SOLVING	Apply Python for solving basic programming
3.	20CSC01	AND	solutions
		PROGRAMMING	Create algorithms/flowcharts for solving real-time
			problems.
			Build and manage dictionaries to manage data.
			Handle data using files
			Illustrate the nature, process and types of
4.	20EGC 01	ENGLISH	communication and communicate effectively without barriers
4.		ENGLISH .	50° 187 PD 1800 PM
		William June	Construct and compose coherent paragraphs, emails
			and adhering to appropriate mobile etiquette.



] 1		1	Apply techniques of precision to write a précis and
			formal letters by using acceptable grammar and
			appropriate vocabulary.
			Distinguish formal from informal reports and
		·	demonstrate advanced writing skills by drafting formal
			reports.
			Critique passages by applying effective reading
			techniques
			Apply the Matrix operations in executing various
			programmes.
			Test the convergence and divergence of the infinite
			Series.
5.	20MT C02	LINEAR ALGEBRA	Explore the extreme values of functions of two
J.	20111 002	& CALCULUS LAB	variables.
			Determine the gradient, divergent and curl of scalar
			and vector point functions
			Solve line, surface & volume integrals by Greens,
			Gauss and Stoke's theorems
			Define the speech sounds in English and understand
			the nuances of pronunciation in English
			Apply stress correctly and speak with the proper tone,
			intonation and rhythm.
			Analyze IELTS and TOEFL listening comprehension
6.	20EGC 02	ENGLISH LAB	texts to enhance their listening skills.
			Determine the context and speak appropriately in
			various situations.
			Design and present effective posters while working in
			teams, and discuss and participate in Group
			'discussions.
			Interpret the errors in the results of an experiment.
			Demonstrate physical properties of light
			experimentally
		OPTICS AND	Make use of lasers and optical fibers for engineering
7.	20PY C03	SEMICONDUCTOR	applications
		PHYSICS LAB	Explain the V-I characteristics of some optoelectronic
			and semiconductor devices
			Find the applications thermistor
	20CS C02	PROGRAMMING LAB - I	Understand various Python program development Environments.
8.			
2005015			Demonstrate the concepts of Python.



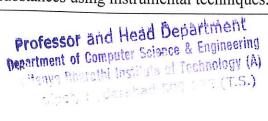
1	ĺ	Ì	Implement algorithms/flowcharts using Python to
			solve real-world problems.
			Build and manage dictionaries to manage data.
			Write Python functions to facilitate code reuse.
			Use Python to handle files and memory.
			200
			Become conversant with appropriate use of CAD
		,	software for drafting.
			Recognize BIS, ISO Standards and conventions in
	201 (E.C.)	CAD AND	Engineering Drafting.
9.	20MEC01	DRAFTING	Construct the projections of points, lines, planes,
			solids
			Analyse the internal details of solids through sectional
			views
			Create an isometric projections and views
			Gain an understanding of Rural life, Culture and
			Social realities.
		COMMUNITY ENGAGEMENT	Develop a sense of empathy and bonds of mutuality
			with Local Communities.
	20MB C02		Appreciate significant contributions of Local
10.			communities to Indian Society and Economy.
		LIVGIGENIEIVI	Exhibit the knowledge of Rural Institutions and
			contributing to Community's Socio-Economic
			improvements.
			Utilise the opportunities provided by Rural
			Development Programmes.
			Calculate the solutions of first order linear differential
			equations.
		DIFFERENTIAL	Calculate the solutions of higher order linear
11	20MT C03	EQUATIONS &	differential equations.
11.		TRANSFORM	Examine the series solutions for higher order
		THEORY	differential equations.
		,	Evaluate the Improper integrals by Fourier Transform.
			Solve the difference equations byZ-transforms.
			Identify the microscopic chemistry in terms of
			molecular orbitals, intermolecular forces and rate of
			chemical reactions.
12.	20CYC01	CHEMISTRY	Discuss the properties and processes using
			thermodynamic functions, electrochemical cells and
			their role in batteries and fuel cells.
			Illustrate the major chemical reactions that are used in
			inagor chemical reactions that are used in



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			the synthesis of organic molecules.
			Classify the various methods used in treatment of
			water for domestic and industrial use.
			Outline the synthesis of various Engineering materials
			& Drugs.
			Identify the key drivers and enablers of Industry4.0
			Describe the smartness in smart factories, smart cities,
			smart products, ad smart services
			Determine various systems used in manufacturing
13.	20CS C05	INDUSTRY 4.0	plants, and their role in an Industry 4.0world
15.	2003 003	INDOSTRT 4.0	Illustrate the power of Cloud Computing in a
			networked economy
			Understand the opportunities, challenges, brought
			about by Industry 4.0 and how organizations and
			individuals should prepare to reap the benefits
			Understand the concepts of Object-Oriented features.
			Apply OOPs concepts and different libraries to solve
		ODJECT ODJENITED	programming problems.
14.	20CSC03	OBJECT ORIENTED PROGRAMMING	Understand the advanced concepts of Python.
			Develop programs to access databases and web data.
			Understand APIs and third-party libraries to be used
			with Python.
	20MT C03	DIFFERENTIAL EQUATIONS & TRANSFORM THEORY LAB	Explore all the possible solutions of first order
			differential equation.
			Analyse the solutions of higher order linear
			differential equations.
15.			Examine the series solutions for higher order
			differential equations.
			Evaluate the Improper integrals by Fourier Transform.
			Apply the Z-transform to solve the difference
			equations.
			Identify the basic chemical methods to analyse the
			substances quantitatively & qualitatively.
			Estimate the amount of chemical substances by
		,	volumetric analysis.
16.	20CYC02	CHEMISTRY LAB	Determine the rate constants of reactions from
			concentration of reactants/ products as a function of
			time.
			Calculate the concentration and amount of various
		8.8	substances using instrumental techniques.





			Develop the basic drug molecules and polymeric
		57	compounds.
			Demonstrate the features of Object-Oriented
			Programming.
			Understand APIs and third-party libraries to be used
		ODJECT ODJENTED	with Python.
	2000001	OBJECT-ORIENTED	Use Python libraries to solve real-world problems.
17.	20CSC04	PROGRAMMING	Write scripts to solve data science/machine leaning
		LAB	problems using NumPy and Pandas.
			Develop applications by accessing web data and
			databases.
			Understand safety measures to be followed in
			workshop to avoid accidents.
			Identify various tools used in fitting, carpentry, tin
			smithy, house wiring, welding, casting and machining
		WORKSHOP /	processes.
18.	20ME C02	MANUFACTURING	Make a given model by using workshop trades
10.	201112 002	PRACTICE	including fitting, carpentry, tinsmithy and House
			wiring.
			Perform various operations in welding, machining and
			casting processes.
			Conceptualize and produce simple device/mechanism
			of their choice.
			Understand the role of an engineer as a problem
			solver.
			Identify multi-disciplinary approaches in solving an
			engineering problem
19.	20ME C03	ENGINEERING	Build simple systems using engineering design
19.		EXPLORATION	process.
			Analyze engineering solutions from ethical and
			sustainability perspectives.
			Use basics of engineering project management skills
			in doing projects.
			Understand the different types of data structure to be
			implemented using any programming language.
		INTRODUCTION TO	Choose the data structures that effectively model the
20	20AMC01	ALGORITHMS AND	information in a problem and analyses the efficiency
20.		DATA	trade-offs (run time and memory usage) among
		STRUCTURES	alternative data structure implementations or
			combinations.
			Design, implement, test, and debug programs using a



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			variety of data structures including stacks, queues,
			hash tables, binary and general tree structures, search
			trees, and graphs.
			Apply efficient data structure (linked lists, stacks and
		¥	queues) to solve a particular problem.
			Evaluate various searching and sorting algorithms.
			Understand the basics of various discrete structures.
			Write short proofs, and disprove algebraic statements
			by finding counter examples.
		DISCRETE	Apply discrete structures in the applications of
21	20AMC02	MATHEMATICAL	Computer Science and Engineering.
21.	ZUAIVICUZ	STRUCTURES	Represent data using trees and graphs.
		STRUCTURES	Gain skills to apply basic properties of rings and
			fields.
			State the characteristics of an integral domain, and the
			field of quotients.
		,	Understand the need of Group Theory and basic
			concepts related to Group Theory
	20AMC03	GROUP THEORY	Recognize the real-world applications that use group
			theory
			Apply group theory for identifying symmetric and
22.		AND ITS	non-symmetric y patterns in real-time images and
22.		APPLICATIONS	structures
			Evaluate various symmetry detection algorithms
			Formulate solutions using group theory for real
			problems involving different patterns in the domains
			of Robotics, Computer Vision and Computer Graphi
			Demonstrate the number system conversions and
			simplify Boolean functions.
			Recall basic theorems and properties of Boolean
			algebra to represent logical functions in canonical ar
			standard forms.
			Analyze and simplify Boolean expressions using
		DIGITAL LOGIC	karnaugh-maps and tabulation method.
23.	20AMC04	DESIGN	Analyze and Design various combinational circuits
			and Sequential circuits used in Computer Hardware.
			Understand the designs of Combinational and
			Sequential circuits using Verilog HDL.
			Develop different applications by configuring
			registers, counters and memories.
24.	20BTO05	COGNITIVE	Gain familiarity and basic knowledge about brain



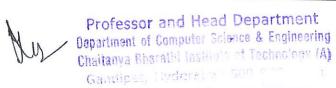
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		NEUROSCIENCE	systems and functions.
			Understand brain's neuro-transimitter system.
			Understanding the brain's methods gives rise to
			behaviour whether we engage in any activity (e.g.,
			walking, talking, etc.).
			Identify the patterns of varied activities in neurons that
			correspond to a person's attempts to move in
		*	particular ways.
			Students are expected to become more aware of
			themselves, and their surroundings (family, society,
			nature)
			They would become more responsible in life, and in
			handling problems with sustainable solutions, while
		IDIIVEDGAI	keeping human relationships and human nature in
		UNIVERSAL	mind
25.	20EGM03	HUMAN VALUESII:	They would have better critical ability
		UNDERSTANDING HARMONY	They would also become sensitive to their
			commitment towards what they have understood
			(human values, human relationship and human
			society).
			It is hoped that they would be able to apply what they
			have learnt to their own self in different day-to-day
			settings in real life, at least a beginning would be
			made in this direction.
			Derive abstract data types for linear and non-linear
			data structures.
			Implement different types of data structures using any
			programming language.
	20AMC05		Choose and Implement the data structures that
		ALGORITHMS LAB-	effectively model the information in a problem and
			analyses the efficiency trade-offs (run time and
26.			memory usage) among alternative data structure
		1	implementations or combinations.
			Test and debug programs using a variety of data
			structures including stacks, queues, hash tables, binary
			and general tree structures, search trees, and graphs.
			Apply efficient data structure (linked lists, stacks and
			queues) to solve a particular problem
			Evaluate various searching and sorting algorithms
		INTRODUCTION TO	Develop awareness of causal thinking and understand
27.	20AMC06	INFERENCE AND	selection bias.
		INTERESTOE AND	SCIECTION DIAS.



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		INTERPRETATION	Understand counterfactual vital ideas and assumptions
		INTERCRETATION	of causal inference methods.
			Apply causal inference methods to assess whether
			these assumptions are reasonable, and finally, the
			ways to interpret the quantity being estimated.
			Use R to work on data science related projects.
			5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
			Develop scripts for data visualization, analytics and dashboards.
			Understand the organization of the Control, arithmetic,
		MODERN .	logic unit, and memory unit and the I/O.
28.	20AMC07	COMPUTER	Analyze different computer architectures and their
		ARCHITECTURE	applications.
		THEOMETER STATE	Understand distributed computing architecture and
			high-performance computing.
			Understand the basics of databases and data
			management
		DATADACE	Understand various theoretical and practical principles
29.	20AMC08	DATABASE SYSTEMS	involved in the design and use of database systems
			with the help of a database
			Design and implement databases for various scenarios
			Design a database scenario for handling big data
			Obtain, clean, process, and transform data using data
	20AMC09	LINEAR	management techniques
		REGRESSION	Analyze and interpret data to derive insights
30.		MODLEING FOR	Apply computing algorithms, mathematical and
		DATA ANALYSIS	statistical models, and optimization methods to solve
			underlying problems
			Use innovative skills to generate ideas for new
			products and services.
			Evaluate the feasibility of ideas, and develop a
			strategy from commercialization.
		STRATEGIC	Use technology to select target markets, profile target
31.	20MBC03	ENTREPRENEURSH	customers, define venture's mission, and create
		IP	business plans.
			Take initial steps to establish a business
			Calculate and forecast costs, breakeven, and sales
			Establish brand, setting prices, promoting products,
			and managing customer relationships.
		SIGNAL	Represents the signals and systems and Fourier series.
32.	20EEC38		Evaluate signal characteristics and systems using
		PROCESSING	Fourier Transform.



			Assess the characteristics of systems using Laplace
			Transform.
			Assess the characteristics the DT Signal using DTF
			and Z-Transform.
			Apply the Convolution and correlation for analysis of
			Signal.
			Perform kinematic and dynamitic analysis with
33.	20MEC39	ROBOTICS AND AUTOMATION	simulation.
			Design control laws for a simple robot.
			Integrate mechanical and electrical hardware for a real
			prototype of robotic device.
			Select a robotic system for a given industrial
			application.
34.	20MEC40	ROBOTICS AND AUTOMATION LAB	Demonstrate the understanding of assembly and working of
			a robot
			Analyze the robot kinematics with the help of suitable
			software
			Program a robot for a specific requirement
			Apply the computer vision to the robot for a given
			application
			Apply AI Technologies to the robot
35.	20AMC10	DATABASE SYSTEMS LAB BUILDING LARGE, RELIABLE SOFTWARE SYSTEMS	Implementation of normal forms in databases.
			Implementation of basic SQL commands on a database Implementation of information and ranking using any
			language
			Implement document retrieval and ranking using any
			algorithm
			Implement Map-Reduce algorithm on any big data task
			Apply software construction and maintenance
			heuristics to build code, such as ways to eliminate
			global variables and methods to test complex code.
			Execute software modernization techniques such as
			reverse engineering, reengineering, salvaging, and
			restructuring.
			Organize software user documentation that enhances
			long-term software sustainability.
			Construct software to meet clients' expectations.
			Describe the ways configuration management is used
			in production systems.

