

Course Outcomes: Session 2022-23

Program wise: B. Tech 1st year

Department of Applied Sciences and Humanities

S.NO.	Subject Name	Subject Code	Course Outcome
1.	Engineering Physics	BAS101/BAS201	<p>CO1. To explain the distribution of energy in black body radiation and to understand the difference in particle and wave nature with explanation of Compton effect and Schrodinger wave equation.</p> <p>CO2. To understand the concept of displacement current and consistency of Ampere's law and also the properties of electromagnetic waves in different medium with the use of Maxwell's equations.</p> <p>CO3. To understand the behavior of waves through various examples/applications of interference and diffraction phenomenon and the concept of grating and resolving power.</p> <p>CO4. To know the functioning of optical fiber and its properties and applications. To understand the concept, properties and applications of Laser</p> <p>CO5. To know the properties and applications of superconducting materials and nano materials.</p>
2.	Engineering Chemistry	BAS102/ BAS202	<p>CO1. Get an understanding of the theoretical principles of chemistry of molecular structure, bonding and properties, Chemistry of advanced materials (liquid crystals, Nanomaterials, Graphite & Fullerene) as well as the Principles of Green Chemistry.</p> <p>CO2. Apply the fundamental concepts of determination of structure with various spectral techniques and stereochemistry.</p> <p>CO3. Utilize the theory of construction of electrodes, batteries and fuel cells in redesigning new engineering products and categorize the reasons for corrosion and study methods to control corrosion and develop understanding of Chemistry of Engineering materials (Cement)</p> <p>CO 4. Develop understanding of the sources, impurities and hardness of water, apply the concepts of determination of calorific values and analyze the coal</p> <p>CO5. Develop the understanding of</p>

Handwritten signature
Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



Handwritten signature

			Chemical structure of polymers and its effect on their various properties when used as engineering materials. Understanding the applications of specific polymers and Chemistry applicable in industrial process.
3.	ENGINEERING MATHMATICS-I	BAS103	<p>CO1. Understand the concept of complex matrices, Eigen values, Eigen vectors and apply the concept of rank to evaluate linear simultaneous equations</p> <p>CO2. Remember the concept of differentiation to find successive differentiation, Leibnitz Theorem, and create curve tracing, and find partial and total derivatives</p> <p>CO3. Applying the concept of partial differentiation to evaluate extrema, series expansion, error approximation of functions and Jacobians</p> <p>CO4. Remember the concept of Beta and Gamma function; analyze area and volume and Dirichlet's theorem in multiple integral</p> <p>CO5. Apply the concept of Vector Calculus to analyze and evaluate directional derivative, line, surface and volume integrals.</p>
4.	ENGINEERING MATHMATICS-II	BAS203	<p>CO1. Remember the concept differentiation to evaluate LDE of nth order with constant coefficient and LDE with variable coefficient of 2nd order.</p> <p>CO2. Understand and apply the concept of Laplace Transform to evaluate differential equations</p> <p>CO3. Understand the concept of convergence to analyze the convergence of series and expansion of the function for Fourier series.</p> <p>CO4. Apply the concept of analyticity, Harmonic function and create the image of function applying conformal transformation</p> <p>CO5. Apply the concept of Cauchy Integral theorem, Cauchy Integral formula, singularity and calculus of residue to evaluate integrals.</p>
5.	Soft Skills	BAS 105/ BAS 205	<p>CO1. Write professionally in simple and correct English.</p> <p>CO2. Demonstrate active listening with comprehension, and the ability to write clear and wellstructured emails and</p>

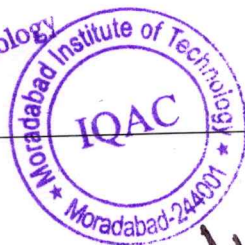
Handwritten signature
 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



Handwritten signature

			<p>proposals.</p> <p>CO3. Learn the use of correct body language and tone of voice to enhance communication</p> <p>CO4. Acquire the skills necessary to communicate effectively and deliver presentations with clarity and impact.</p> <p>CO5. Understand and apply some important aspects of core skills, like Leadership and stress management.</p>
6.	Universal Human values	KVE301/KVE401	<p>CO1. Understand the significance of value inputs in a classroom and start applying in their life and profession.</p> <p>CO2. Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual etc.</p> <p>CO3. Understand the value of harmonious relationship based on trust and respect in their life and profession.</p> <p>CO4. Understand the role of human being in ensuring harmony in society and nature.</p> <p>CO5. Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.</p>
7.	KAS302/KAS402	MATHEMATICS-IV	<p>CO1. Remember the concept of partial differential equation and to solve partial differential equations</p> <p>CO2. Analyze the concept of partial differential equations to evaluate the problems concerned with partial differential equations</p> <p>CO3. Understand the concept of correlation, moments, skewness and kurtosis and curve fitting</p> <p>CO4. Remember the concept of probability to evaluate probability distributions</p> <p>CO5. Apply the concept of hypothesis testing and statistical quality control to create control charts</p>
8.	KAS301/KAS401	Technical Communication	<p>CO1. Students will be enabled to understand the nature and objective of Technical Communication relevant for the work place as Engineers</p> <p>CO2. Students will utilize the technical writing for the purposes of Technical Communication and its exposure in various dimensions.</p>


 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad





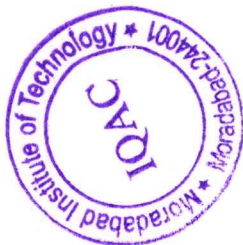
			<p>CO3. Students would imbibe inputs by presentation skills to enhance confidence in face of diverse audience</p> <p>CO4. Technical communication skills will create a vast know-how of the application of the learning to promote their technical competence</p> <p>CO5. It would enable them to evaluate their efficacy as fluent & efficient communicators by learning the voice-dynamics.</p>
9.	KNC501/KNC601	CONSTITUTION OF INDIA, LAW AND ENGINEERING	<p>CO1. To acquaint the students with legacies of constitutional development in India and help them to understand the most diversified legal document of India and philosophy behind it</p> <p>CO2. To make students aware of the theoretical and functional aspects of the Indian Parliamentary System</p> <p>CO3. To channelize students' thinking towards basic understanding of the legal concepts and its implications for engineers.</p> <p>CO4. To acquaint students with latest intellectual property rights and innovation environment with related regulatory framework.</p> <p>CO5. To make students learn about role of engineering in business organizations and e-governance.</p>
10.	KNC502/KNC602	INDIAN TRADITION, CULTURE AND SOCIETY	<p>CO1. Understand basic principles of thought process, reasoning and inference to identify the roots and details of some of the contemporary issues faced by our nation and try to locate possible solutions to these challenges by digging deep into our past.</p> <p>CO2. Understand the importance of our surroundings and encourage the students to contribute towards sustainable development.</p> <p>CO3. Explain the issues related to 'Indian' culture, tradition and its composite character.</p> <p>CO4. Explain holistic life styles of Yogic-science and wisdom capsules in Sanskrit literature that are important in modern society with rapid technological advancements and societal disruptions.</p> <p>CO5. Understand students with Indian Knowledge System, Indian perspective of modern scientific world-view and basic</p>


 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad





			principles of Yoga and holistic health care system.
11.	KHU701/KHU801	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	CO1. Understand the definitions, concepts and components of Rural Development. CO2. Understand about the area development programmes and its impact. CO3. Understand the importance, structure, significance, resources of Indian rural economy. CO4. Understand about the using of different methods for human resource planning. CO5. Apply the acquired knowledge about rural entrepreneurship.
12.	KHU702/ KHU802	PROJECT MANAGEMENT & ENTREPRENEURSHIP	CO1. Understand the definition need and scope of Entrepreneurship. CO2. Understand the concept of Innovation and Identifying Business opportunities. CO3. Understand the meaning, scope, and importance of project management. CO4. Understand about project financing and preparation of financial statement. CO5. Understand about social entrepreneurship opportunities and social innovations and sustainability.
13.	KOE069	UNDERSTANDING THE HUMAN BEING COMPREHENSIVELY HUMAN ASPIRATIONS AND ITS FULFILLMENT	CO1. To Understand the basic human aspirations and its fulfilment through resolution. CO2. To have insight of definite human conduct and apply in living. CO3. To understand harmony in self to live in harmony. CO4. To understand its participation in larger order i.e., in nature. CO5. To understand the participation in harmony of entire existence.



ASH
Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad

ASH

ASH
HOD, ASH

Department of Computer Science & Engineering

S.NO.	Subject Name	Subject Code	Course Outcome
1.	Programming for Problem Solving	KCS101/ KCS201	<p>CO1: To develop simple algorithms for arithmetic and logical problems.</p> <p>CO2: To translate the algorithms to programs & execution in C Language.</p> <p>CO3: To implement conditional branching, iteration and recursion.</p> <p>CO4: To decompose a problem into function and synthesize a complete program using divide and conquer approach.</p> <p>CO5: To use arrays, pointers and structures to develop algorithms and programs.</p>
2.	Data Structure	KCS301	<p>CO1. Implement and explain how arrays and linked lists are represented in memory, used by the algorithms and their common applications.</p> <p>CO2. Implement and explain how stacks, queues and priority queues are represented in memory, used by the algorithms and their common applications.</p> <p>CO3. Implement and explain the concept of recursion, application of recursion and removal of recursion.</p> <p>CO4. Analyse and explain the computational efficiency of the sorting and searching algorithms.</p> <p>CO5. Explain various operations on Trees and Graphs and their applications.</p>
3.	Computer Organization and Architecture	KCS-302	<p>CO1. Study of the basic structure and operation of a digital computer system</p> <p>CO2. Analysis of the design of arithmetic & logic unit and understanding of the fixed point and floating-point arithmetic operations.</p> <p>CO3. Implementation of control unit techniques and the concept of Pipelining</p> <p>CO4. Understanding the hierarchical memory system, cache memories, and virtual memory</p> <p>CO5. Understanding the different ways of communicating with I/O devices and standard I/O interfaces</p>
4.	Discrete Structures & Theory of Logic	KCS-303	<p>CO1. Perform operations on Set and build relations among elements of Set.</p> <p>CO2. To prove whether a proposition is true for all-natural numbers using principle of mathematical induction.</p> <p>CO3. Classify an algebraic structure, i.e., set and binary operation on that set as semi group, monoid and group.</p> <p>CO4. Identify a partially ordered set as Lattice, bounded lattice, complemented lattice, distributed lattice, and lattice as Boolean Algebra.</p> <p>CO5. Convert a Boolean expression to simplified Boolean expression, Sum-of-products/Product-of-sums form or its equivalent expression using Boolean algebra.</p>


44

Director
Moradabad Institute of Technology
Ram Ganga Vihar, Phase-2
Moradabad



Aly

			<p>CO6. Check the validity of given argument/s using propositional logic and predicate logic.</p> <p>CO7. Use Graph theory to Identify graph as simple graph, planar graph, connected graph, complete graph, bipartite graph and to graph colouring.</p>
5.	Computer System Security	KNC301	<p>CO1. To discover software bugs that pose cyber security threats and to explain how to fix the bugs to mitigate such threats.</p> <p>CO2. To discover cyber-attack scenarios to web browsers and web servers and to explain how to mitigate such threats.</p> <p>CO3. To discover and explain mobile software bugs posing cyber security threats, explain and recreate exploits, and to explain mitigation techniques.</p> <p>CO4. To articulate the urgent need for cyber security in critical computer systems, networks, and world wide web, and to explain various threat scenarios.</p> <p>CO5. To articulate the well-known cyber-attack incidents, explain the attack scenarios, and explain mitigation techniques.</p>
6.	Digital Electronics	KOE039	<p>CO1 Apply concepts of Digital Binary System and implementation of Gates.</p> <p>CO2 Analyze and design of Combinational logic circuits.</p> <p>CO3 Implement the Design procedure of Synchronous & Asynchronous Sequential Circuits</p> <p>CO4 Analyze and design of Sequential logic circuits with their applications.</p> <p>CO5 Apply the concept of Digital Logic Families with circuit implementation.</p>
7.	Operating System	KCS401	<p>CO1. Understand the structure and functions of OS</p> <p>CO2. Learn about Processes, Threads and Scheduling algorithms.</p> <p>CO3. Understand the principles of concurrency and Deadlocks</p> <p>CO4. Learn various memory management scheme</p> <p>CO5. Study I/O management and File systems.</p>
8.	Theory of automata	KCS402	<p>CO1. Design Finite Automata (NFA, DFA, ϵ-NFA, Minimized DFA) from given Language/ equivalent FA.</p> <p>CO2. Obtain Regular Expression from FA using Arden's Theorem and FA from regular expression using Kleene's Theorem.</p> <p>CO3. Construct Context free Grammar (CFG, Unambiguous CFG, Simplified CFG, CFG in Normal Form) from Equivalent CFG/ given language/FA.</p> <p>CO4. Design Pushdown Automata (NPDA, DPDA) for given language/CFG/FA.</p> <p>CO5. Design Turing Machine for given language/computation function and Test decidability</p>


 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2



Handwritten signature in black ink

			using Turing Machine.
9.	Microprocessor	KCS403	CO1.To discuss the basic fundamental concept of microprocessors and their types CO2. Analyze a detailed s/w/and h/w structure of the 8085 microprocessor along with its properties CO3. Analyze a detailed s/w/and h/w structure of the 8086 microprocessor along with its properties CO4. To understand 8085/8086 microprocessor-based assembly programming techniques. CO5. To understand different peripheral devices and illustrate how the different peripherals are interfaced with 885/8086 Microprocessor.
10.	Python Programming	KNC-402	CO1. To discover software bugs that pose cyber security threats and to explain how to fix the bugs to mitigate such threats. CO2. To discover cyber-attack scenarios to web browsers and web servers and to explain how to mitigate such threats. CO3. To discover and explain mobile software bugs posing cyber security threats, explain and recreate exploits, and to explain mitigation techniques. CO4. To articulate the urgent need for cyber security in critical computer systems, networks, and world wide web, and to explain various threat scenarios. CO5. To articulate the well-known cyber-attack incidents, explain the attack scenarios, and explain mitigation techniques.
11.	Database Management System	KCS501	CO1: Understand Relational Data Model, Network Data Model and Hierarchical Data Model and Design new relational schema using Entity relationship diagrams to create normalized relations to manage information of company database. CO2: Construct queries in relational algebra, tuple, domain calculus and SQL construct, and by applying integrity, key and referential integrity key constraints to manage information of company database. CO3: Design database's schema to solve the problem of null values, redundancy and anomaly by applying process of normalization. CO4: Understand the dirty read, incorrect summary and lost update problem in transactions and examine serializability and recoverability of schedule for concurrent execution of transactions and apply in central and distributed database environment. CO5: Understand 2-phase Locking, Time Stamp Ordering, Validation based and multi-version protocol to control concurrency.
12.	Compiler Design	KCS 502	CO1. Acquire knowledge of different phases and passes of




 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



			<p>the compiler and also able to use the compiler tools like LEX, YACC, etc. Students will also be able to design different types of compiler tools to meet the requirements of the realistic constraints of compilers.</p> <p>CO2. Understand the parser and its types i.e. Top-Down and Bottom-up parsers and construction of LL, SLR, CLR, and LALR parsing table.</p> <p>CO3. Implement the compiler using syntax-directed translation method and get knowledge about the synthesized and inherited attributes.</p> <p>CO4. Acquire knowledge about run time data structure like symbol table organization and different techniques used in that.</p> <p>CO5. Understand the target machine's run time environment, its instruction set for code generation and techniques used for code optimization.</p>
13.	Design and Analysis of Algorithm	KCS503	<p>CO1. Solve recurrences equations and analyze a given algorithm on the basis of time and space Complexities. Also compare algorithms through estimating their best-case, worst-case and average-case behavior.</p> <p>CO2. Solve the different tree-based problems and also solve dictionary problems using TRIE data structure.</p> <p>CO3. Design algorithms using Divide and Conquer Strategy and also Solve Optimization problems using Greedy strategy.</p> <p>CO4. Design efficient algorithms using Back Tracking, dynamic programming and Branch Bound techniques for solving problems.</p> <p>CO5. Classify computational problems into P, NP, NP-Hard and NP-complete problems. Analyze benefits of using approximation and randomized algorithms. Also, able to select a proper pattern matching algorithm for a given problem.</p>
14.	Object Oriented System Design	KCS 054	<p>CO1. Understand the application development and analyze the insights of object-oriented programming to implement application.</p> <p>CO2. Understand, analyze and apply the role of overall modeling concept.</p> <p>CO3. Understand, analyze and apply oops concepts (i.e. abstraction, inheritance).</p> <p>CO4. Understand the basic concept of C++ to implement the object-oriented concepts.</p> <p>CO5. To understand the object-oriented approach to implement real world problem.</p>
15.	Machine Learning Techniques	KOE 055	<p>CO1. Gain knowledge about basic concepts of Machine Learning and able to differentiate supervised,</p>

Handwritten signature
 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



Handwritten signature

			<p>unsupervised or reinforcement learning</p> <p>CO2. Apply and Compare different prediction and classification techniques like linear & logistic regression, Bayesian and support Vector Machine.</p> <p>CO3. Solve the classification problems using Decision tree and Instance based approach</p> <p>CO4. Understand Artificial Neural Network techniques and illustrate its algorithms like Back propagation and convolution neural network concepts</p> <p>CO5. Demonstrate reinforcement learning concept using Q learning algorithm and understand the basics of genetic algorithm.</p>
16.	Software Engineering	KCS 601	<p>CO1. Explain various software characteristics and analyze different software Development Models.</p> <p>CO2. Demonstrate the contents of a SRS and apply basic software quality assurance practices to ensure that design, development meet or exceed applicable standards.</p> <p>CO3. Compare and contrast various methods for software design.</p> <p>CO4. Formulate testing strategy for software systems, employ techniques such as unit testing, Test driven development and functional testing.</p> <p>CO5. Manage software development process independently as well as in teams and make use of various software management tools for development, maintenance and analysis.</p>
17.	Web technology	KCS 602	<p>CO1. Understand the application development and analyze the insights of object-oriented programming to implement application.</p> <p>CO2. Understand, analyze and apply the role of overall modeling concept.</p> <p>CO3. Understand, analyze and apply oops concepts (i.e. abstraction, inheritance).</p> <p>CO4. Understand the basic concept of C++ to implement the object-oriented concepts.</p> <p>CO5. To understand the object-oriented approach to implement real world problem.</p>
18.	Computer networks	KCS 603	<p>CO1. Explain basic concepts, OSI reference model, services and role of each layer of OSI model and TCP/IP, networks devices and transmission media, Analog and digital data transmission.</p> <p>CO2. Apply channel allocation, framing, error and flow control techniques.</p> <p>CO3. Describe the functions of Network Layer i.e. Logical addressing, subnetting & Routing Mechanism.</p> <p>CO4. Explain the different Transport Layer function i.e. Port addressing, Connection Management, Error control</p>


Cup
 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



[Handwritten signature]

			and Flow control mechanism. CO5. Explain the functions offered by session and presentation layer and their Implementation. CO6. Explain the different protocols used at application layer i.e. HTTP, SNMP, SMTP, FTP, TELNET and VPN.
19.	Big data	KCS 061	CO1. Identify Big Data and its business implications. CO2. Use various techniques for mining data stream. CO3. List the components of Hadoop and Hadoop Eco-System. CO4. Apply Map Reduce programming model to access and process data on Distributed File System. CO5. Manage job execution in Hadoop environment and develop Big Data solutions by applying Hadoop Eco System components.
20.	IDEA TO BUSINESS MODEL	KOE-060	CO1. Enhance creative knowledge of students regarding selection of a business idea and it's implementation process. CO2. Acquire knowledge on entrepreneurship development, its Pro's and con's. CO3. Acquire basic knowledge on how to become an Entrepreneur. CO4. Develop knowledge on Production systems and it's sustainability through production, planning and control (PPC) CO5. Develop appropriate business model and apply in a better way.
21.	INDIAN TRADITION, CULTURE AND SOCIETY	KNC502	CO1. Identify and explore the basic features and modalities about Indian constitution. CO2. Differentiate and relate the functioning of Indian parliamentary system at the center and state level. CO3. Differentiate different aspects of Indian Legal System and its related bodies. CO4. Discover and apply different laws and regulations related to engineering practices. CO5. Correlate role of engineers with different organizations and governance models
22.	Artificial Intelligence	KCS-071	CO1. Understand the basics of the theory and practice of Artificial Intelligence as a discipline and about intelligent agents. CO2. Understand search techniques and gaming theory. CO3. The student will learn to apply knowledge representation techniques and problem-solving strategies to common AI applications. CO4. Student should be aware of techniques used for classification and clustering. CO5. Student should aware of basics of pattern recognition and steps required for it.




 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



23.	Cloud Computing	KCS-713	<p>CO1: Analyze the Cloud computing setup.</p> <p>CO2: Apply and design suitable Virtualization concept, Cloud Resource Management and design scheduling algorithms</p> <p>CO3: Analyze different Cloud services and deployment models</p> <p>CO4: Assess cloud Storage systems and Cloud security, the risks involved, its impact and develop cloud application</p> <p>CO5: Describe the key components of Amazon web Service Analyze the components of open stack & Google Cloud platform</p>
24.	Dataware housing & Data Mining	KOE093	<p>CO1. Distinguish multi-dimensional Data Models for generating Data warehouse.</p> <p>CO2 Plan and illustrate a data warehouse for industry perspective and understand various tools.</p> <p>CO3 Understand and apply statistical Techniques in data pre-processing.</p> <p>CO4 Compare and evaluate data mining techniques like classification, prediction, clustering ad association rule mining</p> <p>CO5 Identify different models used for OLAP in practical scenario with its overall perspective</p>
25.	Deep Learning	KCS078	<p>CO1 To present the mathematical, statistical and computational challenges of building neural networks K</p> <p>CO 2 To study the concepts of deep learning</p> <p>CO 3 To introduce dimensionality reduction techniques</p> <p>CO 4 To enable the students to know deep learning techniques to support real-time applications K</p> <p>CO 5 To examine the case studies of deep learning techniques</p>
26.	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	KHU701	<p>CO1. Students can understand the definitions, concepts and components of Rural Development</p> <p>CO2. Students will know the importance, structure, significance, resources of Indian rural economy.</p> <p>CO3. Students will have a clear idea about the area development programmes and its impact.</p> <p>CO4. Students will be able to acquire knowledge about rural entrepreneurship.</p> <p>CO5. Students will be able to understand about the using of different methods for human resource planning</p>

Signature
Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



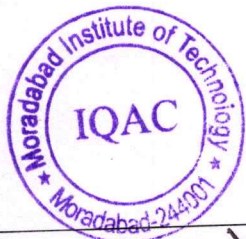
Signature

MORADABAD INSTITUTE OF TECHNOLOGY, MORADABAD
Department of Electronics & Communication Engineering

Subject's Course Outcomes:
Department of Electronics & Communication Engineering

S.N.	Subject Name	Sub Code	Course Outcomes
1	Electronic Devices	KEC-301	CO1. Understand the principles of semiconductor Physics. CO2. Understand and utilize the mathematical models of semiconductor junctions. CO3. Understand carrier transport in semiconductors and design resistors. CO4. Utilize the mathematical models of MOS transistors for circuits and systems. CO5. Analyse and find application of special purpose diodes.
2	Digital System Design	KEC-302	CO1. Design and analyze combinational logic circuits. CO2. Design and analyze modular combinational circuits with MUX/DEMUX, Decoder & Encoder CO3. Design & analyze synchronous sequential logic circuits CO4. Analyze various logic families. CO5. Design ADC and DAC and implement in amplifier, integrator, etc.
3	Network Analysis and Synthesis	KEC-303	CO1. Understand basics electrical circuits with nodal and mesh analysis. CO2. Appreciate electrical network theorems. CO3. Apply Laplace transform for steady state and transient analysis. CO4. Determine different network functions. CO5. Appreciate the frequency domain techniques.
4	Communication Engineering	KEC-401	CO1. Analyze and compare different analog modulation schemes for their efficiency and bandwidth. CO2. Analyze the behavior of a communication system in presence of noise. CO3. Investigate pulsed modulation system and analyze their system performance. CO4. Investigate various multiplexing techniques. CO5. Analyze different digital modulation schemes and compute the bit error performance.
5	Analog Circuits	KEC-402	CO1. Understand the characteristics of diodes and transistors. CO2. Design and analyze various rectifier and amplifier circuits. CO3. Design sinusoidal and non-sinusoidal oscillators. CO4. Understand the functioning of OP-AMP and design OP-AMP based circuits. CO5. Design I.PF, HPF, BPF, BSF.
6	Signals System	KEC-403	CO1. Analyze different types of signals. CO2. Analyze linear shift-invariant (LSI) systems. CO3. Represent continuous and discrete systems in time and frequency domain using Fourier series and transform. CO4. Analyze discrete time signals in z-domain. CO5. Study sampling and reconstruction of a signal.
7	Integrated Circuits	KEC-501	CO1. Explain complete internal analysis of Op-Amp 741-IC. CO2. Examine and design Op-Amp based circuits and basic components of ICs such as various types of filter. CO3. Implement the concept of Op-Amp to design Op-Amp based non-linear applications and wave-shaping circuits. CO4. Analyze and design basic digital IC circuits using CMOS technology. CO5. Describe the functioning of application specific ICs such as 555 timer ,VCO IC 566 and PLL.

Way
 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad-244001



Handwritten signature

8	Microprocessor & Microcontroller	KEC-502	<p>CO1. Demonstrate the basic architecture of 8085.</p> <p>CO2. Illustrate the programming model of microprocessors & write program using 8085 microprocessor.</p> <p>CO3. Demonstrate the basics of 8086 Microprocessor and interface different external Peripheral Devices like timer, USART etc. with Microprocessor (8085/8086).</p> <p>CO4. Compare Microprocessors & Microcontrollers, and comprehend the architecture of 8051 microcontroller</p> <p>CO5. Illustrate the programming model of 8051 and implement them to design projects on real time problems.</p>
9	Digital Signal Processing	KEC-503	<p>CO1. Design and describe different types of realizations of digital systems (IIR and FIR) and their utilities.</p> <p>CO2. Select design parameters of analog IIR digital filters (Butterworth and Chebyshev filters) and implement various methods such as impulse invariant transformation and bilinear transformation of conversion of analog to digital filters.</p> <p>CO3. Design FIR filter using various types of window functions.</p> <p>CO4. Define the principle of discrete Fourier transform & its various properties and concept of circular and linear convolution. Also, students will be able to define and implement FFT i.e. a fast computation method of DFT.</p> <p>CO5. Define the concept of decimation and interpolation. Also, they will be able to implement it in various practical applications.</p>
10	VLSI Technology	KEC-053	<p>CO1. Interpret the basics of crystal growth, wafer preparation and wafer cleaning.</p> <p>CO2. Evaluate the process of Epitaxy and oxidation.</p> <p>CO3. Differentiate the lithography, etching and deposition process.</p> <p>CO4. Analyze the process of diffusion and ion implantation</p> <p>CO5. Express the basic process involved in metallization and packaging.</p>
11	Electronic Switching	KEC-055	<p>CO1. Describe the fundamentals of circuit switching and distinguish complex telephone systems.</p> <p>CO2. Differentiate the fundamentals of Space division switching and time division switching.</p> <p>CO3. Design, develop and evaluate the telecom traffic to meet defined specifications and needs.</p> <p>CO4. Identify the control of switching networks and signalling concepts.</p> <p>CO5. Classify the engineering concepts of packet switching and routing which will help to design various switch architectures for future research work.</p>
12	Digital Communication	KEC-601	<p>CO1. To formulate basic statistics involved in communication theory.</p> <p>CO2. To demonstrate the concepts involved in digital communication.</p> <p>CO3. To explain the concepts of digital modulation schemes.</p> <p>CO4. To analyze the performance of digital communication systems.</p> <p>CO5. To apply the concept of information theory in digital systems.</p>



Crax
 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2

AG

13	Control System	KEC-602	<p>CO1. Describe the basics of control systems along with different types of feedback and its effect. Additionally they will also be able to explain the techniques such as block diagrams reduction, signal flow graph and modelling of various physical systems along with modelling of DC servomotor.</p> <p>CO2. Explain the concept of state variables for the representation of LTI system.</p> <p>CO3. Interpret the time domain response analysis for various types of inputs along with the time domain specifications.</p> <p>CO4. Distinguish the concepts of absolute and relative stability for continuous data systems along with different methods.</p> <p>CO5. Interpret the concept of frequency domain response analysis and their specifications.</p>
14	Antenna and Wave Propagation	KEC-603	<p>CO1. Identify different coordinate systems and their applications in electromagnetic field theory to establish a relation between any two systems using the vector calculus.</p> <p>CO2. Explain the concept of static electric field, current and properties of conductors.</p> <p>CO3. Express the basic concepts of ground, space, sky wave propagation mechanism.</p> <p>CO4. Demonstrate the knowledge of antenna fundamentals and radiation mechanism of the antenna.</p> <p>CO5. Analyze and design different types of basic antennas.</p>
15	Satellite Communication	KEC-062	<p>CO1. Define and list the benefits of satellite communication.</p> <p>CO2. Demonstrate orbital mechanics principles of satellite communication systems and solve problems related to it.</p> <p>CO3. Describe a satellite link and identify ways to improve the link performance.</p> <p>CO4. Classify new technologies of satellite communication systems as per given specifications.</p> <p>CO5. Examine advanced technologies of satellite launching and describe the Indian satellite system.</p>
16	VLSI Design	KEC-072	<p>CO1. Express the concept of VLSI design and CMOS circuits and delay study.</p> <p>CO2. Analyze mathematical methods and circuit analysis models in analysis of CMOS digital electronics circuits.</p> <p>CO3. Design and analyze various combinational & sequential circuits based on CMOS technology.</p> <p>CO4. Examine power logic circuits and different semiconductor memories used in present day technology.</p> <p>CO5. Interpret faults in digital circuits, Fault Models and various Testing Methodologies.</p>
17	Wireless & Mobile Communication	KEC-076	<p>CO1. Express the basic knowledge of mobile radio & cellular communication fundamentals and their application to propagation mechanisms, path loss models and multi-path phenomenon.</p> <p>CO2. Analyze the performance of various voice coding and diversity techniques.</p> <p>CO3. Apply the knowledge of wireless transmission basics to understand the concepts of equalization and multiple access techniques.</p> <p>CO4. Examine the performance of cellular systems being employed such as GSM, CDMA and LTE using various theoretical and mathematical aspects.</p> <p>CO5. Express basic knowledge of Mobile Adhoc networks and the existing & upcoming data communication networks in wireless and mobile communication domain.</p>

Director
Moradabad Institute of Technology
Ram Ganga Vihar, Phase-2
Moradabad



Handwritten signature or initials.

18	Fundamentals of Electronics Engineering	BEC-101/ BEC-201	CO1. Describe the concept of PN Junction and devices. CO2. Explain the concept of BJT, FET and MOFET. CO3. Apply the concept of Operational amplifier to design linear and non-linear applications. CO4. Perform number systems conversions, binary arithmetic and minimize logic functions. CO5. Describe the fundamentals of communication technologies.
----	-----------------------------------------	---------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Manas
Mr. Manas Singhal
Assistant Professor

Shinghal
Dr. Kshitij Shinghal
H.o.D.-ECE



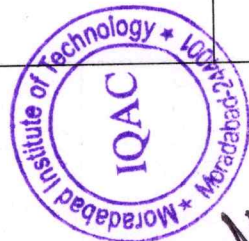
Ag

Director
Director
Moradabad Institute of Technology
Ram Ganga Vihar, Phase-2
Moradabad

MORADABAD INSTITUTE OF TECHNOLOGY, MORADABAD
Electrical Engineering Department
(Session 2022-23)
Course outcomes

S.N.	Subject Name	Subject Code	Course Outcomes
1.	FUNDAMENTALS OF ELECTRICAL ENGINEERING	BEE-101/201	<p>CO-1 Apply the concepts of KVL/KCL and network theorems in solving DC circuits.</p> <p>CO-2 Analyze the steady state behavior of single phase and three phase AC electrical circuits.</p> <p>CO-3 Identify the application areas of a single phase two winding transformer as well as an auto transformer and calculate their efficiency. Also identify the connections of a three phase transformer.</p> <p>CO-4 Illustrate the working principles of induction motor, synchronous machine as well as DC machine and employ them in different area of applications.</p> <p>CO-5 Describe the components of low voltage electrical installations and perform elementary calculations for energy consumption.</p>
2.	Electromagnetic Field Theory	KEE301	<p>CO-1 Apply different coordinate systems and their application in electromagnetic field theory, establish a relation between any two systems and also understand the vector calculus.</p> <p>CO-2 Understand the concept of static electric field. Understand the concept of current and properties of conductors. Establish boundary conditions and to calculate capacitances of different types of capacitors</p> <p>CO-3 Understand the concept of static magnetic field, magnetic scalar and vector potential</p> <p>CO-4 Understand the forces due to magnetic field, magnetization, magnetic boundary conditions and inductors.</p> <p>CO-5 Understand displacement current, time varying fields, propagation and reflection of EM waves and transmission lines.</p>
3.	Electrical Measurements & Instrumentation	KEE302	<p>CO-1 Evaluate errors in measurement as well as identify and use different types of instruments for the measurement of voltage, current, power and energy.</p> <p>CO-2 Display the knowledge of measurement of electrical quantities resistance, inductance and capacitance with the help of bridges.</p> <p>CO-3 Demonstrate the working of instrument transformers as well as calculate the errors in current and potential transformers.</p> <p>CO-4 Manifest the working of electronic instruments like voltmeter, multi-meter, frequency meter and CRO.</p> <p>CO-5 Display the knowledge of transducers, their classifications and their applications for the measurement of physical quantities like motion, force, pressure, temperature, flow and liquid level.</p>
4.	Basic Signals & Systems	KEE303	<p>CO-1 Represent the various types of signals & systems and can perform mathematical operations on them.</p> <p>CO-2 Analyze the response of LTI system to Fourier series and Fourier transform and to evaluate their applications to network analysis.</p> <p>CO-3 Analyze the properties of continuous time signals and system using Laplace transform and determine the response of linear system to known inputs.</p>

Director
Moradabad Institute of Technology,
Ram Ganga Vihar, Phase-2
Moradabad

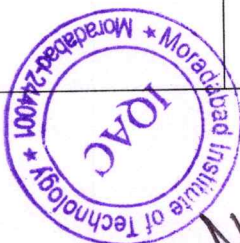


Handwritten signature

Handwritten mark

			<p>CO-4 Implement the concepts of Z transform to solve complex engineering problems using difference equations.</p> <p>CO-5 Develop and analyze the concept of state-space models for SISO & MIMO system.</p>
5.	Digital Electronics	KEE401	<p>CO-1 Apply concepts of Digital Binary System and implementation of Gates.</p> <p>CO-2 Analyze and design of Combinational logic circuits.</p> <p>CO-3 Analyze and design of Sequential logic circuits with their applications.</p> <p>CO-4 Implement the Design procedure of Synchronous & Asynchronous Sequential Circuits.</p> <p>CO-5 Apply the concept of Digital Logic Families with circuit implementation.</p>
6.	Electrical Machines-I	KEE402	<p>CO-1 Analyze the various principles & concepts involved in Electromechanical Energy conversion.</p> <p>CO-2 Demonstrate the constructional details of DC machines as well as transformers, and principle of operation of brushless DC motor, Stepper and DC Servo motors.</p> <p>CO-3 Evaluate the performance and characteristics of DC Machine as motor and as well as generator.</p> <p>CO-4 Evaluate the performance of transformers, individually and in parallel operation.</p> <p>CO-5 Demonstrate and perform various connections of three phase transformers.</p>
7.	Networks Analysis & Synthesis	KEE403	<p>CO-1 Apply the knowledge of basic circuit law, nodal and mesh methods of circuit analysis and simplify the network using Graph Theory approach.</p> <p>CO-2 Analyze the AC and DC circuits using Kirchhoff's law and Network simplification theorems.</p> <p>CO-3 Analyze steady-state responses and transient response of DC and AC circuits using classical and Laplace transform methods.</p> <p>CO-4 Demonstrate the concept of complex frequency and analyze the structure and function of one and two port network. Also evaluate and analysis two-port network parameters.</p> <p>CO-5 Synthesize one port network and analyze different filters.</p>
8.	Power System - I	KEE501	<p>CO-1 Describe the working principle and basic components of conventional power plants as well as the other aspects of power generation.</p> <p>CO-2 Recognize elements of power system and their functions, as well as compare the different types of supply systems. Illustrate different types of conductors, transmission lines and various performance parameters of transmission line for short, medium and long transmission line.</p> <p>CO-3 Calculate sag and tension in overhead lines with and without wind and ice loading. Classify different type of insulators, determine potential distribution over a string of insulator, string efficiency and its improvement.</p> <p>CO-4 Compute the inductance and capacitance of single phase, three phase lines with symmetrical and unsymmetrical spacing, Composite conductors-transposition, bundled conductors, and understand the effect of earth on capacitance of transmission lines.</p> <p>CO-5 Elucidate different types of cables and assess the Resistance and capacitance parameters of cables, grading of cables and compare overhead lines and cables.</p>

Director
Moradabad Institute of Technology
Ram Ganga Vihar, Phase-2
Moradabad



Handwritten signature in blue ink.

Handwritten signature in blue ink.

9.	Control System	KEE502	<p>CO-1 Obtain transfer functions to predict the correct operation of open loop and closed loop control systems and identify the basic elements, structures and the characteristics of feedback control systems.</p> <p>CO-2 Measure and evaluate the performance of basic control systems in time domain. Design specification for different control action.</p> <p>CO-3 Analyze the stability of linear time-invariant systems in time domain using Routh- Hurwitz criterion and root locus technique.</p> <p>CO-4 Determine the stability of linear time-invariant systems in frequency domain using Nyquist criterion and Bode plot.</p> <p>CO-5 Design different type of compensators to achieve the desired performance of control System by root locus and Bode plot method. Develop and analyze the intermediate states of the system using state space analysis.</p>
10.	Electrical Machines-II	KEE503	<p>CO-1 Demonstrate the constructional details and principle of operation of three phase Induction and Synchronous Machines.</p> <p>CO-2 Analyze the performance of the three phase Induction and Synchronous Machines using the phasor diagrams and equivalent circuits.</p> <p>CO-3 Select appropriate three phase AC machine for any application and appraise its significance.</p> <p>CO-4 Start and observe the various characteristics of three phase Induction & Synchronous Machines</p> <p>CO-5 Explain the principle of operation and performance of Single-Phase Induction Motor & Universal Motor.</p>
11.	SENSORS AND TRANSDUCERS	KEE-052	<p>CO-1 Understand the working of commonly used sensors in industry for measurement of displacement, force and pressure.</p> <p>CO-2 Recognize the working of commonly used sensors in industry for measurement of temperature, position, accelerometer, vibration sensor, flow and level.</p> <p>CO-3 Identify the application of machine vision.</p> <p>CO-4 Conceptualize signal conditioning and data acquisition methods.</p> <p>CO-5 Comprehend smart sensors and their applications in automation systems.</p>
12.	ANALOG & DIGITAL COMMUNICATION	KEE-058	<p>CO-1 Understand the Amplitude Modulation in communication system.</p> <p>CO-2 Comprehend the Frequency & Phase modulation.</p> <p>CO-3 Realize the Pulse Modulation Techniques.</p> <p>CO-4 Get the Digital Modulation Techniques and their use in communication system</p> <p>CO-5 Apply the concept of Information Theory in Communication Engineering.</p>
13.	Power System-II	KEE601	<p>CO-1 Identify power system components on one line diagram of power system and its representation including the behaviour of the constituent components and sub systems and Analyse a network under both balanced and unbalanced fault conditions and design the rating of circuit breakers.</p> <p>CO-2 Perform load flow analysis of an electrical power network and interpret the results of the analysis.</p> <p>CO-3 Describe the concept of travelling waves in transmission lines and use the travelling wave theory to determine the over voltage caused by surge propagation in transmission networks.</p> <p>CO-4 Assess the steady state and transient stability of the power</p>

Director
Moradabad Institute of Technology
Ram Ganga Vihar, Phase-2
Moradabad



Handwritten signature in blue ink.

Handwritten signature in blue ink.

			system under various conditions. CO-5 Describe Operating Principle of a relay and classify them according to applications. Explain working principle of Circuit breaker and phenomenon of arc production and quenching.
14.	Microprocessor and Microcontroller	KEE602	CO-1 Demonstrate the basic architecture of 8085 & 8086 microprocessors CO-2 Illustrate the programming model of microprocessors & write program using 8085 microprocessor CO-3 Interface different external peripheral devices with 8085 microprocessor CO-4 Comprehend the architecture of 8051 microcontroller CO-5 Compare advance level microprocessor & microcontroller for different applications
15.	Power Electronics	KEE603	CO-1 Demonstrate the characteristics as well as the operation of BJT, MOSFET, IGBT, SCR, TRIAC and GTO and identify their use in the power switching applications CO-2 Comprehend the non-isolated DC-DC converters and apply their use in different Power electronics applications. CO-3 Analyze the phase controlled rectifiers and evaluate their performance parameters. CO-4 Apprehend the working of single-phase ac voltage controllers, cyclo-converters and their various applications. CO-5 Explain the single-phase and three phase bridge inverters differentiate between CSI and VSI and apply PWM for harmonic reduction.
16.	SPECIAL ELECTRICAL MACHINES	KEE-061	CO-1 Describe the working principle, Constructional Features of different types of electrical machines including the fractional kilowatt machines. CO-2 Analyse torque- speed characteristics of different electrical machines and interpret their performance and identify the suitable machine for an operation. CO-3 Study different types of control techniques for a machine and identify the best control strategy based upon different constraints. CO-4 Illustrate the use of stepper, BLDCs, SRM, and other special machines in the area of the various industrial and domestic as well as commercial applications of various fractional kilowatt machines.
17.	Energy Conservation and Auditing	KEE-071	CO-1 Identify and assess the energy conservation/saving opportunities in different electric system and understand related legislations. CO-2 Identify and assess the energy saving behavior of utilities through implementation of DSM and EMIS. CO-3 Explain energy audit & management and to prepare energy audit report for different energy conservation instances. CO-4 Illustrate the energy audit for Mechanical Utilities. CO-5 Describe cost-effective measures towards improving energy efficiency and energy conservation by implementation of energy efficient technologies.
	Utilization of Electrical Energy and Electric Traction	KEE-079	CO-1 Describe the methods of electric heating and their advantages. CO-2 Explain the types of Electric welding and the principle of Electro-deposition, laws of electrolysis and its

Director
Moradabad Institute of Technology
Ram Ganga Vihar, Phase-2
Moradabad



Handwritten signature or initials.

Handwritten signature or initials.

			<p>applications</p> <p>CO-3 Explain the laws of illumination and explain the principle of refrigeration and air-conditioning.</p> <p>CO-4 Describe the different types of Electric traction, system of track electrification and its related mechanics</p> <p>CO-5 Describe the salient features of traction drive and concept of energy saving using power electronic control of AC and DC drives</p>
19.	Human Values in Buddha and Jain Darshan	KOE-098	<p>CO-1 Understand the basic concepts of Buddha and Jain Darshan</p> <p>CO-2 Understand the human being, the needs and activities of human being through Buddha and Jain Darshan</p> <p>CO-3 Understand the whole existence</p> <p>CO-4 Understand the role of human being in the entire existence, thus getting clarity about values at all levels of living and human conduct</p> <p>CO-5 Understand the foundation of human society and human tradition.</p>
20.	Entrepreneurship Development	KOE-083	<p>CO-1 Students will able to have the Identify the basic concepts in the area of entrepreneurship and to know the importance of various level of industries.</p> <p>CO-2 Developing personal creativity in the field of entrepreneurship and taking entrepreneurial initiative.</p> <p>CO-3 Adoption of the key steps in the elaboration of business idea.</p> <p>CO-4 Explain the stages of the entrepreneurial process and the resources needed for the successful development of entrepreneurial ventures.</p> <p>CO-5 Categorize the importance of various acts and laws of entrepreneurship for economic development.</p>
21.	Project Management & Entrepreneurship	KHU-802	<p>CO-1 Understand the definition, need and scope of Entrepreneurship.</p> <p>CO-2 Understand the concept of Innovation and Identifying Business Opportunities.</p> <p>CO-3 Understand the meaning, scope, and importance of project management.</p> <p>CO-4 Understand about project financing and preparation of financial statement.</p> <p>CO-5 Understand about social entrepreneurship opportunities and social innovations and sustainability.</p>

Saurabh Saxena
Saurabh Saxena
Department NAAC Incharge

Cup
Director
Moradabad Institute of Technology
Ram Ganga Vihar, Phase-2
Moradabad



AAJ

Dr. Rajul Misra
H.O.D.
Rajul Misra
Dr. Rajul Misra
H.O.D.
Electrical Engineering Department

Department of Civil Engineering

M.I.T., Moradabad

Course outcomes for session 2022-23

S.No.	Subject name and Code	Subject Code	Course outcomes
1.	RAILWAY, WATERWAY AND AIRWAY ENGINEERING	KCE070	<ol style="list-style-type: none">1. Explain the importance of railway infrastructure.2. Identify the factors governing design of railway infrastructures.3. Analysis and design the railway track system.4. Understand the concepts of airport engineering and design components of airport.5. Associate with the concepts of water transport system.
2.	DESIGN OF STEEL STRUCTURES	KCE075	<ol style="list-style-type: none">1. Understand properties of steel and types of loads acting on steel structures.2. Design welded and bolted type of connections for elementary steel structures.3. Design tension members for elementary steel structures.4. Design compression members such as simple columns, braced and latticed columns and column bases.5. Design flexural members such as beams, purlins and girders.
3.	GEOTECHNICAL ENGINEERING	KCE 501	<p>CO-1 Classify the soil and determine its Index properties.</p> <p>CO-2 Evaluate permeability and seepage properties of soil.</p> <p>CO-3 Interpret the compaction and consolidation characteristics & effective stress concept of soil.</p> <p>CO-4 Determine the vertical and shear stress under different loading conditions and explain the phenomenon of soil liquefaction.</p> <p>CO-5 Interpret the earth pressure and related slope failures.</p>
4.	QUANTITY ESTIMATION AND CONSTRUCTION MANAGEMENT	KCE 503	<p>CO-1 Understand the importance of units of measurement and preliminary estimate for administrative approval of projects.</p> <p>CO-2 Understand the contracts and tender documents in construction projects</p> <p>CO-3 Analyze and assess the quantity of materials required for civil engineering works as per specifications.</p> <p>CO 4 Evaluate and estimate the cost of expenditure and prepare a detailed rate analysis report.</p> <p>CO-5 Analyze and choose cost effective approach for civil engineering projects.</p>
5.	STRUCTURAL ANALYSIS	KCE502	<p>CO-1 Explain type of structures and method for their analysis.</p>

Cy
Director
Moradabad Institute of Technology,
Ram Ganga Vihar, Phase-2
Moradabad



Ag

Sept 23

			<p>CO-2 Analyze different types of trusses for member forces.</p> <p>CO-3 Compute slope and deflection in determinate structures using different methods.</p> <p>CO-4 Apply the concept of influence lines and moving loads to compute bending moment and shear force at different sections.</p> <p>CO-5 Analyze determinate arches for different loading conditions.</p>
6.	CONCRETE TECHNOLOGY	KCE 051	<p>CO-1 Understand the properties of constituent material of concrete.</p> <p>CO-2 Apply admixtures to enhance the properties of concrete.</p> <p>CO-3 Evaluate the strength and durability parameters of concrete.</p> <p>CO-4 Design the concrete mix for various strengths using difference methods.</p> <p>CO-5 Use advanced concrete types in construction industry.</p>
7.	AIR & NOISE POLLUTION CONTROL	KCE 057	<p>CO-1 Understand air pollutants and their impacts.</p> <p>CO-2 Explain air pollution chemistry and meteorological aspects of air pollutants.</p> <p>CO-3 Demonstrate methods for controlling particulate air pollutants.</p> <p>CO-4 Demonstrate methods for controlling gaseous air pollutants.</p> <p>CO-5 Understand automotive emission standards.</p> <p>CO-6 Apply methods for controlling noise pollution.</p>
8.	DESIGN OF CONCRETE STRUCTURE	KCE 601	<p>CO-1 Analyse and Design RCC beams for flexure by IS methods.</p> <p>CO-2 Analyse and Design RCC beams for shear by IS methods.</p> <p>CO-3 Analyse and Design RCC slabs and staircase by IS methods.</p> <p>CO-4 Design the RCC compression members by IS methods.</p> <p>CO-5 Design various types of footings and cantilever retaining wall.</p>
9.	TRANSPORTATION ENGINEERING	KCE 602	<p>CO-1 Understand the history of road development , their alignment & Survey.</p> <p>CO-2 Design the various geometric parameters of road.</p> <p>CO-3 Study the traffic characteristics & design of road intersections & signals.</p> <p>CO-4 Examine the properties of highway materials & their implementation in design of pavements.</p> <p>CO-5 Learn methods to construct various types of roads.</p>
	ENVIRONMENTAL ENGINEERING	KCE 603	<p>CO-1 Assess water demand and optimal size of water mains.</p> <p>CO-2 Layout the distribution system & assess the capacity of reservoir.</p>


 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



Handwritten signature in black ink.

Handwritten signature in blue ink.

			<p>CO-3 Investigate physical, chemical & biological parameter of water.</p> <p>CO-4 Design treatment units for water and waste water.</p> <p>CO-5 Apply emerging technologies for treatment of waste water.</p>
11.	FOUNDATION DESIGN	KCE 064	<p>CO-1 Understand various methods of Soil Exploration and its importance.</p> <p>CO-2 Analyze bearing capacity and settlement of soil for shallow foundation.</p> <p>CO-3 Design the various types of shallow foundation and understand the basics of deep foundation.</p> <p>CO-4 Understand the characteristics of well foundations and retaining wall.</p> <p>CO-5 Understand the concept of soil reinforcement.</p>
12.	GIS AND ADVANCE REMOTE SENSING	KCE 058	<p>CO-1 Understand the concepts of Photogrametry and compute the heights of objects</p> <p>CO-2 Understand the principles of aerial and satellite remote sensing, Able to comprehend the energy interactions with earth surface features, spectral properties of water bodies .</p> <p>CO-3 Understand the basic concept of GIS and its applications, know different types of data representation in GIS</p> <p>CO-4 Understand and Develop models for GIS spatial Analysis and will be able to know what the questions that GIS can answer are</p> <p>CO-5 Illustrate spatial and non-spatial data features in GIS and understand the map projections and coordinates systems</p> <p>CO-6 Apply knowledge of GIS and understand the integration of Remote Sensing and GIS</p>
13.	ENGINEERING MECHANICS	KCE301	<p>1. Use scalar and vector analytical techniques for analyzing forces in statically determinate structures</p> <p>2. Apply fundamental concepts of kinematics and kinetics of particles to the analysis of simple, practical problems.</p> <p>3. Apply basic knowledge of mathematics and physics to solve real-world problems.</p> <p>4. Understand basic dynamics concepts – force, momentum, work and energy;</p> <p>5. Understand and be able to apply Newton’s laws of motion;</p>
14.	SURVEYING & GEOMATICS	KCE302	<p>1. Describe the function of surveying and work with survey instruments, take observations, and prepare plan, profile, and cross-section and perform calculations.</p> <p>2. Calculate, design and layout horizontal and vertical curves.</p> <p>3. Operate a total station and GPS to measure distance, angles, and to calculate differences in</p>

Handwritten signature
 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



Handwritten signature

Handwritten signature

			<p>elevation. Reduce data for application in a geographic information system.</p> <p>4. Relate and apply principles of photogrammetry for surveying.</p> <p>5. Apply principles of Remote Sensing and Digital Image Processing for Civil Engineering problems.</p>
15.	FLUID MECHANICS	KCE303	<p>1. Understand the broad principles of fluid statics, kinematics and dynamics</p> <p>2. Understand definitions of the basic terms used in fluid mechanics</p> <p>3. Understand classifications of fluid flow</p> <p>4. Apply the continuity, momentum and energy principles</p> <p>5. Apply dimensional analysis.</p>
16.	Materials, Testing & Construction Practices	KCE401	<p>1. Identify various building materials and to understand their basic properties.</p> <p>2. Understand the use of non-conventional civil engineering materials.</p> <p>3. Study suitable type of flooring and roofing in the construction process.</p> <p>4. Characterize the concept of plastering, pointing and various other building services.</p> <p>5. Exemplify the various fire protection, sound and thermal insulation techniques, maintenance and repair of buildings.</p>
17.	INTRODUCTION TO SOLID MECHANICS	KCE402	<p>1. Describe the concepts and principles of stresses and strains</p> <p>2. Analyze solid mechanics problems using classical methods and energy methods</p> <p>3. Analyze structural members subjected to combined stresses</p> <p>4. Calculate the deflections at any point on a beam subjected to a combination of loads</p> <p>5. Understand the behavior of columns, springs and cylinders against loads.</p>
18.	HYDRAULIC ENGINEERING & MACHINES	KCE403	<p>1. Apply their knowledge of fluid mechanics in addressing problems in open channels.</p> <p>2. Solve problems in uniform, gradually and rapidly varied flows in steady state conditions.</p> <p>3. Have knowledge in hydraulic machineries like pumps and turbines.</p>

Cy
 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



My

[Signature]
 HOD, Civil Engineering

MORADABAD INSTITUTE OF TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

Engineering

Program Outcomes:

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization for the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. Conduct investigations of complex problems:** Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.
- 5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities, with an understanding of the limitations.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. 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.
- 11. 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.
- 12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.


Director
Moradabad Institute of Technology
Ram Ganga Vihar, Phase-2
Moradabad





Course Outcomes:

S. No	Subject Name	Subject Code	Course Outcome
1.	Universal Human Values	KVE-301	CO1: Understand the significance of value inputs in a classroom and start applying in their life and profession. CO2: Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual etc. CO3: Understand the value of harmonious relationship based on trust and respect in their life and profession. CO4: Understand the role of human being in ensuring harmony in society and nature. CO5: Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.
2.	Thermodynamics	KME-301	CO1: To Explain fundamental concepts of thermodynamics and apply the concept of first law of thermodynamics to open and closed systems CO2: To apply the concept of second law of thermodynamics and entropy CO3: To apply the concept of availability and irreversibility and thermodynamic relations CO4 To apply the properties of pure substance and air-water vapour mixture. CO5: To Analyze air and vapour compression refrigeration systems.
3.	Fluid Mechanics & Fluid Machines	KME-302	CO1: Introduce fundamental aspects of fluid flow behavior, properties and analyzing flow systems in venturimeter, orifice meter, pitot tube and notches CO2: Recognize different types of flows with relevant equations CO3: Calculate flow through pipes in different types of flow characteristics CO4: Study and analyze the forces, power and efficiency on vanes, hydraulic turbines with Performance characteristics CO5: Study and analyze the Work done & Efficiencies of different types of pumps with Performance characteristics
4.	Material Science	KME-303	CO1: Identify crystal structures for various materials and understand the defects in such structures. CO2: Quantify mechanical integrity and failure in materials. CO3: Provide a detailed interpretation of equilibrium phase diagrams. CO4: Learning about different phases and heat treatment methods to tailor the properties of Fe-C alloys.

Handwritten signature
Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



Handwritten signature

Handwritten signature
Dr. Munish Chhabra
 Professor & Head
 Deptt. of Mechanical Engg.
 Moradabad Institute of Techno
 Moradabad - 244001

			CO5: Understand how to tailor material properties of ferrous and non-ferrous alloys.
5.	Heat & Mass Transfer	KME-501	CO1: To be able and analyze the steady state conduction mode of heat transfer in one dimension flow through composite plane wall, cylinder and sphere for steady state heat conduction problem. CO2: To be able to learn, understand need, application and to analyze the performance of fins of uniform cross sections. CO3: To provide the knowledge on the principles of free and forced convection and analyze the Convection heat transfer coefficient in different convection environments. CO4: To learn and understand thermal radiation in black, grey and real surfaces. Planks distribution law, vein's law, Stephen', Boltzmann law, Kirchoff's law, radiations shield and shape factors and understand basic concept and types of heat exchanges and their recent applications. CO5: To learn about diffusion and convective mass transfer & to understand the construction, Working and performance of different heat exchangers
6.	Strength of Materials	KME-502	CO1: Understand the concept of stress - strain and theories for failure under various loading conditions and analyze principal stresses and strain in structural members. CO2: Analyze the stresses and deflection in the beam due to various loading conditions and understand the concept of torsion. CO3: Analyze the moment and stress developed in different types of spring and buckling in column and strut under different loading conditions. CO4: Understand the various stresses and design factors of thick and thin pressure vessels. CO5: Analyze the stresses developed in curved beams of different cross sections and determine the shear and deflection in unsymmetrical bending.
7.	Industrial Engineering	KME-503	CO1: Understand the concept of production system, productivity, facility and process planning in various industries. CO2: Apply the various forecasting and project management techniques. CO3: Apply the concept of break-even analysis, inventory control and resource utilization using queuing theory. CO4: Apply principles of work study and ergonomics for design of work systems. CO5: Formulate mathematical models for optimal solution of industrial problems using linear programming approach
8.	Computer Integrated Manufacturing	KME-051	CO1: Understand the basic concepts of automation, computer numeric control machining.

Chhabra
 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad



Chhabra

Chhabra
 Dr. Munish Chhabra
 Professor & Head
 Deptt. of Mechanical Engg.
 Moradabad Institute of Techno
 Moradabad - 244001

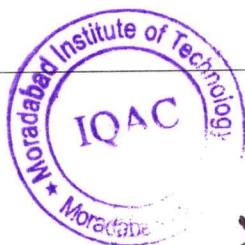
			<p>CO2: Develop CNC program for simple operations.</p> <p>CO3: Understand group technology, computer aided process planning, flexible manufacturing, Industry 4.0, robotics.</p> <p>CO4: Understand information system and material handling in CIM environment, rapid Prototyping.</p> <p>CO5: Understand and Apply the algorithms of line generation, circle generation, transformation, curve, surface modeling and solid modelling.</p>
9.	Advance Welding	KME-055	<p>CO1: Understanding the physics of arc welding process and various operating characteristics of welding power source.</p> <p>CO2: Analyse various welding processes and their applications.</p> <p>CO3: Apply the knowledge of welding for repair & maintenance along with the weldability of different materials.</p> <p>CO4: Apply the concept of quality control and testing of weldments in industrial environment.</p> <p>CO5: Evaluate heat flow in welding and physical metallurgy of weldments,</p>
10.	Mathematical modelling of manufacturing processes	KME-073	<p>CO1: Understand the fundamentals of manufacturing processes, mathematical models and their solutions</p> <p>CO2: Understand unconventional and conventional machining, their discrete-time linear, non-linear models and solutions</p> <p>CO3: Analyze the mechanism of forming and heat transfer in welding</p> <p>CO4: Apply the principles of casting, powder metallurgy, coating and additive Manufacturing</p> <p>CO5: Understand the fundamental of heat treatment, micro / nano manufacturing and processing of non-metallic materials</p>
11.	Vehicle body engineering and safety	KAU-073	<p>CO1: Understand the classification of the vehicle on the basis of body.</p> <p>CO2: Understand the importance of material selection in designing automotive bodies.</p> <p>CO3: Understand the concept of aerodynamics used in designing automobiles.</p> <p>CO4: Understand the importance of interior and exterior ergonomics while designing the vehicle.</p> <p>CO5: Identify various sources of noise and methods of noise separation and various safety aspects in a given vehicle.</p>
12.	Additive Manufacturing	KME-071	<p>CO1: Understand the basics of additive manufacturing/rapid prototyping and its advantages and disadvantages.</p> <p>CO2: Understand the role of additive manufacturing in the design process and the implications for design.</p> <p>CO3: Understand the processes used in additive manufacturing for a range of materials and applications</p>



Handwritten signature
Director
Moradabad Institute of Technology
Ram Ganga Vihar, Phase-2
Moradabad

Dr. Munish Chhabra
 Professor & Head
 Deptt. of Mechanical Engg.
 Moradabad Institute of Techno
 Moradabad - 244001

			<p>CO4: Understand the various software tools, processes and techniques that enable advanced/additive manufacturing and personal fabrication.</p> <p>CO5: Apply knowledge of additive manufacturing for various real-life applications</p>
13.	Hybrid Vehicle Propulsion	KAU-072	<p>CO1: Understand the basics of the hybrid electric vehicles and its types.</p> <p>CO2: Understand the types of drive trains used in hybrid vehicles.</p> <p>CO3: Understand the propulsion units used in Hybrid Vehicles and their efficiency.</p> <p>CO4: Understand the requirements and devices of energy storage used in hybrid vehicles.</p> <p>CO5: Understand the concept of downsizing of IC engines in case of hybrid vehicles AND the principles of energy management and issues related to these strategies.</p>
14.	Energy Science and Engineering	KOE-043	<p>CO1: Define the basic energy concepts through thermodynamics applications.</p> <p>CO2: Discuss the nuclear energy concepts and nuclear power plant.</p> <p>CO3: Describe the solar energy phenomena, basic concepts, principle and advancement in solar cells.</p> <p>CO4: Explain wind, ocean and geothermal energy basic concepts and power plants based on them.</p> <p>CO5: Justify the need of sustainable development and discuss various tools for environmental management.</p>
15.	Applied Thermodynamics	KME-401	<p>CO1: Understand the concept of fuels and their analysis and heat calculations, and analyze air standard cycles.</p> <p>CO2: Analyze the vapor power cycles and their method of improvement and learn the concept of combustion and various heats involved.</p> <p>CO3: Understand the working of boiler and its mounting and accessories and condenser and analyze their performance</p> <p>CO4: Analyze the dynamics of flow through nozzle and understand the principles of steam turbine and analyze the energy conversion in steam turbine.</p> <p>CO5: Understand the principles and operation of gas turbine and jet propulsion and analyze the performance parameters in reciprocating compressors.</p>
16.	Engineering Mechanics	KME-402	<p>CO1: Understand the concept of resultant & equilibrium of coplanar and non-coplanar forces and effect of friction on equilibrium.</p> <p>CO2: Apply the equation of static equilibrium in analysis of beam and trusses.</p> <p>CO3: Understand the concept of centroid and moment of inertia of various planar as well as solid bodies.</p> <p>CO4: Understand and apply the equations of general plane motion to analyze impact of elastic bodies on</p>



[Handwritten Signature]
Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad

[Handwritten Signature]

Dr. Munish Chhabra
 Professor & Head
 Deptt. of Mechanical Engg.
 Moradabad Institute of Technology
 Moradabad - 244001

			collision. CO5: Understand and apply the concepts of stress and strains at a point to calculate the stresses and strains in axially loaded members, circular torsion members and members subjected to flexural loadings.
17.	Manufacturing Processes	KME-403	CO1: Select suitable casting process for manufacturing of component and design mould tooling. CO2: Acquire fundamental knowledge of various metal forming processes and apply to select suitable process for manufacturing sheet metal products. CO3: Utilize fundamental knowledge of various welding processes and select suitable process and parameters for welding components of different thicknesses and materials. CO4: Apply fundamental knowledge of various cutting operations, tools and machines for machining and surface finishing of components. CO5: Understand the principles and applications of different unconventional machining processes and advance manufacturing techniques.
18.	Refrigeration and Air conditioning	KME-601	CO1: Familiarise you with the terminology associated with refrigeration and air-conditioning. CO2: To cover the basic principle of psychrometric and applied psychrometric. CO3: Familiarise you with load calculation and duct design. CO4: To cover the basic principle of psychrometric and load calculation and duct design. CO5: Explain the construction and working of various components in Refrigeration & Air-Conditioning systems.
19.	Machine Design	KME-602	CO1: Student will able to identify the design requirement and design procedure and able to calculate the dimensions of five different machine elements such as shaft, Rivet, spring, key and coupling. CO2: Student will able to design the machine elements subjected to static as well as fluctuating load. CO3: Student will able to analyse the cause of failure of shafts and able to design the shaft on strength and rigidity bases. CO4: Students will able to solve stresses and deflection of helical springs and also able to design helical springs subjected to static and fluctuating load. CO5: Student will able to calculate the efficiency of square threads and able to analyse the stresses in the screw.
20.	Theory of Machine	KME-603	CO1: Students will able to do velocity and acceleration analysis of four bar and slider crank mechanism.



Handwritten signature
Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad

Handwritten signature

Handwritten signature
Dr. Munish Chhabra
 Professor & Head
 Deptt. of Mechanical Engg.
 Moradabad Institute of Techno
 Moradabad - 244001

			<p>CO2: Students will be able to compute the problems of the simple, compound and epicyclic gear train.</p> <p>CO3: Analyze dynamic force analysis of slider crank mechanism and design of flywheel.</p> <p>CO4: Analyse analytical and graphical methods for calculating balancing of rotary and reciprocating masses. Balancing of reciprocating and rotary masses.</p> <p>CO5: Compute frictional losses, torque transmission of mechanical systems.</p>
21.	Non Destructive Testing	KME-061	<p>CO1: Understand the concept of destructive and Non-destructive testing methods.</p> <p>CO2: Explain the working principle and application of die penetrate test and magnetic particle inspection.</p> <p>CO3: Apply the principle of radiographic techniques for testing of various fields.</p> <p>CO4: Apply the principle of Ultrasonic testing and applications in medical and engineering areas.</p> <p>CO5: Understand the working principle of special NDT techniques like eddy current inspection.</p>
22.	Human Values in Buddha & Jain Darshan	KOE-097	<p>CO1: Understand the basic concepts of Buddha and Jain Darshan.</p> <p>CO2: Understand the human being, the needs and activities of human being through Bauddha and Jain Darshan.</p> <p>CO3: Understand the whole existence.</p> <p>CO4: Understand the role of human being in the entire existence, thus getting clarity about values at all levels of living and human conduct.</p> <p>CO5: Understand the foundation of human society and human tradition.</p>
23.	Entrepreneurship Development	KOE-083	<p>CO1: Students will be able to have understanding of the basic concepts in the area of entrepreneurship and to know the importance of various levels of industries.</p> <p>CO2: Developing the personal creativity in the field of entrepreneurship and taking entrepreneurial initiative.</p> <p>CO3: Adoption of the key steps in the elaboration of business ideas.</p> <p>CO4: Understanding the stages of the entrepreneurial process and the resources needed for the successful development of entrepreneurial ventures.</p> <p>CO5: Understanding the importance of various acts and laws of entrepreneurship for economic development.</p>



Handwritten signature
 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad

Handwritten signature
 Dr. Munish Chhabra
 Professor & Head
 Deptt. of Mechanical Engg.
 Moradabad Institute of Techno...
 Moradabad - 244001

Handwritten signature

(B1-205)

MBA

PO1: Cross-Disciplinary Integration and Strategic Perspective: Conceptualize, organize and resolve complex business problems or issues by using the resources available under their discretion.

PO2: Critical Thinking and Problem Solving: Apply the perspective of their chosen specialized area of study to develop fully-reasoned opinions on such contemporary issues as the need for integrity, leading and managing change, globalization and technology management.

PO3: Teamwork: Able to determine the effectiveness with which goals are defined and achieved in team environments to assess the contributions made by themselves as well as by their peers within those environments and to identify and resolve conflicts.

PO4: Leadership Skills: Able to document their participation and contribution to student organizations, business or consulting projects, internship opportunities or other MBA sanctioned initiatives.

PO5: Modern Tool Usage: Create, select, and apply appropriate techniques, resources and modern management and IT tools including prediction and modeling to complex management activities with an understanding of the limitations.

PO6: Environment and Sustainability: Understand the impact of the professional management solutions in societal and environmental contexts and demonstrate the knowledge of and need for sustainable development.

PO7: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the management practice.

PO8: Entrepreneurial Perspective: Able to identify, assess and shape entrepreneurial opportunities and to evaluate their potential for business success.

PO9: Global Perspective: Able to demonstrate their ability to assess and evaluate the dynamic internal and external elements of the competitive global environment.

SEMESTER I

S. N	Subject Name	Subject Code	Course Outcomes
1	MANAGEMENT CONCEPTS & ORGANISATIONAL BEHAVIOUR	KMBN101	CO 1: Developing understanding of managerial practices and their perspectives. CO2: Understanding and Applying the concepts of organizational behaviour CO 3: Applying the concepts of management and analyze organizational behaviors in real world situations CO 4: Comprehend and practice contemporary issues in management. CO 5: Applying managerial and leadership skills among students



Handwritten signature

Handwritten signature

Handwritten signature
Director
Moradabad Institute of Technology
Ganga Vihar, Phase-2
Moradabad

2	MANAGERIAL ECONOMICS	KMBN102	<p>CO1: Students will be able to remember the concepts of micro economics and also able to understand the various micro economic principles to make effective economic decisions under conditions of risk and uncertainty.</p> <p>CO2: The students would be able to understand the law of demand & supply & their elasticities , evaluate & analyse these concepts and apply them in various changing situations in industry . Students would be able to apply various techniques to forecast demand for better utilization of resources.</p> <p>CO3: The students would be able to understand the production concept and how the production output changes with the change in inputs and able to analyse the effect of cost to business and their relation to analyze the volatility in the business world</p> <p>CO4: The students would be able to understand & evaluate the different market structure and their different equilibriums for industry as well as for consumers for the survival in the industry by the application of various pricing strategic</p> <p>CO5: The students would be able to analyse the macroeconomic concepts & their relation to micro economic concept & how they affect the business & economy.</p>
3	FINANCIAL ACCOUNTING & ANALYSIS	KMBN103	<p>CO1. Understand and apply accounting concepts, principles and conventions for their routine monetary transaction.</p> <p>CO2. Understand about IFRS, Ind AS and IAS for preparation and reporting of financial statements.</p> <p>CO3. Create and prepare financial statements and Cash flow in accordance with Generally Accepted Accounting Principles</p> <p>CO4. Analyse, interpret and communicate the information contained in basic financial statements and explain the limitations of such statements.</p> <p>CO5. Recognising various types of accounting and utilize the technology and social responsibility in facilitating and enhancing accounting and financial reporting processe</p>
4	BUSINESS STATISTICS & ANALYTICS	KMBN104	<p>CO1. Gaining Knowledge of basic concept /fundamentals of business statistics.</p> <p>CO2. To compute various measures of central tendency, Measures of Dispersion, Time Series Analysis, Index Number, Correlation and Regression analysis and their implication on Business performance.</p> <p>CO3. Evaluating basic concepts of probability and perform probability theoretical distributions</p> <p>CO4. To apply Hypothesis Testing concepts and able to apply inferential statistics- t, F, Z Test and Chi Square Test</p> <p>CO5. To perform practical application by taking managerial decision and evaluating the Concept of Business Analytics.</p>
5	MARKETING MANAGEMENT	KMBN105	<p>CO1. Remember and Comprehend basic marketing concepts.</p> <p>CO2. Understand marketing Insights on application of basic marketing concepts.</p>



Handwritten signature

Handwritten signature

Handwritten signature
Director
Moradabad Institute of Technology
Sam Ganga Vihar, Phase-2

			CO3. Able to Apply and develop Marketing Strategies and Plans
			CO4. Understand and Analyzing Business/ Consumer Markets and ability Identify & evaluate Market Segments and Targeting
			CO5. Develop skills to understand the current global and digital aspect of marketing.
6	DESIGN THINKING	KMBN106	CO1. Gain in depth knowledge about creative thinking and design thinking in every stage of problem CO2. Applying design thinking to your real life problems / situations in order to evolve an innovative and workable solutions CO3. Understand and implement design thinking to your real life problems / situations in order to evolve an innovative and workable solutions
7	BUSINESS COMMUNICATION	KMBN107	CO1. Apply business communication strategies and principles to prepare effective communication for domestic and international business situations. CO2. Analyse ethical, legal, cultural, and global issues affecting business Communication. CO3. Develop an understanding of appropriate organizational formats and channels used in business communications CO4. Gaining an understanding of emerging electronic modes of communication. CO5. Developing effective verbal and non verbal communication skills.
8	IT SKILLS LAB-1	KMBN151	CO1. Gain in depth knowledge about the functioning of computers and its uses for managers CO2. Learn to use Internet and its applications CO3. Understand and implement Word processing software CO4. Learn applications on Spread sheet softwares CO5. Analyse and learn Presentation software
9	MINI PROJECT -1	KMBN152	CO1. Gain in depth knowledge on innovative idea for product or services in form of a project report. CO2. To apply innovative idea, its feasibilities and detail descriptions.

SEMESTER II

S. No.	Paper Name	Paper Code	CO
1	BUSINESS ENVIRONMENT & LEGAL ASPECT OF BUSINESS	KMBN 201	CO1. Develop understanding and fundamental knowledge about business environment CO2. Develop understanding on the concepts of Business Environment and international business environment. CO3. Develop basic understanding of law of contract CO4. understanding of provisions of Companies Act concerning incorporation and regulation of business organizations CO5. Able to analyze case laws in arriving at conclusions facilitating business decisions.



Director
Moradabad Institute of Technology
Ram Ganga Vihar, Phase-2
Moradabad

(Handwritten signature)

(Handwritten signature)

2	HUMAN RESOURCE MANAGEMENT	KMB N 202	<p>CO1. Synthesize the role of human resources management as it supports the success of the organization including the effective development of human capital as an agent for organizational change.</p> <p>CO2. Demonstrate knowledge of laws that impact behaviour in relationships between employers and employees that ultimately impact the goals and strategies of the organization.</p> <p>CO3. Understand the role of employee benefits and compensation as a critical component of employee performance, productivity and organizational effectiveness.</p> <p>CO4. Show evidence of the ability to analyze, manage and problem solve to deal with the challenges and complexities of the practice of collective bargaining.</p> <p>CO5. Demonstrate knowledge of practical application of training and employee development as it impacts organizational strategy and competitive advantage.</p>
3	BUSINESS RESEARCH METHODS	KMB N 203	<p>CO1. Knowledge of concept / fundamentals for different types of research.</p> <p>CO2. Applying relevant research techniques.</p> <p>CO3. Understanding relevant scaling & measurement techniques and should use appropriate sampling techniques</p> <p>CO4. Synthesizing different techniques of coding, editing, tabulation and analysis in doing research.</p> <p>CO5. Evaluating statistical analysis which includes ANOVA technique and prepare research report.</p>
4	FINANCIAL MANAGEMENT & CORPORATE FINANCE	KMB N 204	<p>CO1 Understand the different basic concept / Models of Corporate Finance and Governance</p> <p>CO2 Understand the practical application of time value of money and evaluating long term investment decisions</p> <p>CO3 Develop analytical skills to select the best source of capital, structure and leverage.</p> <p>CO4 Understand the use and application of different models for firm's optimum dividend pay-out.</p> <p>CO5 Understand the recent trends of mergers and acquisition and its valuation</p>
5	OPERATIONS MANAGEMENT	KMB N 205	<p>CO1. Understand the role of Operations in overall Business Strategy of the firm - the application of OM policies and techniques to the service sector as well as manufacturing firms.</p> <p>CO2. Understand and apply the concepts of Material Management, Supply Chain Management and TQM perspectives.</p> <p>CO3. Identify and evaluate the key factors and their interdependence of these factors in the design of effective operating systems.</p> <p>CO4. Analyze / understand the trends and challenges of Operations Management in the current business environment.</p>



Handwritten signature

Handwritten signature

Handwritten signature

Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad

			CO5. Apply techniques for effective utilization of operational resources and managing the processes to produce good quality products and services at competitive prices.
6	QUANTITATIVE TECHNIQUES FOR MANAGERS	KMB N 206	CO1. Be able to understand the characteristics of different types of decision-making environments and the appropriate decision making approaches and tools to be used in each type. CO2. To formulate linear programming problem and to find optimal solution by graphical simplex method. CO3. Be able to build and solve Transportation Models and Assignment Models also to solve game theory problems by understanding pure and mix strategies. CO4. To assign optimal sequence of difference jobs on different machines and develop understanding of queuing theory concepts. CO5. To implement replacement of equipments at right time and able to implement project management concepts like CPM, PERT to reduce cost and time.
7	DIGITAL MARKETING & E COMMERCE	KMB N 207	CO1. Be able to understand the concept of Digital Marketing & E-commerce in today's scenario. CO2. To able to create and maintain a good website and blog posts. CO3. Be able to understand and apply SEO and Email Marketing in today's modern world CO4. To apply the Social Media Marketing techniques via various platforms CO5. To implement various Analytics tools of online marketing
8	MANAGEMENT INFORMATION SYSTEMS	KMB N 208	CO1. Be able to understand the importance of information management in business and management. CO2. To understand and formulate different types of information systems in business CO3. Be able to apply the theory and concepts in practical with help of software CO4. To apply various security and ethical issues with Information Systems CO5. To synthesize applications on Spread sheet and database software
9	IT SKILLS LAB-2	KMB N 251	CO1. To gain knowledge of pivot table and understand the validating & auditing techniques CO2. Learn to use different charting techniques in MS Excel CO3. Learn to use different formatting techniques in MS Excel
10	MINI PROJECT -2	KMB N 252	CO1. To gain knowledge of issues challenge of the industry CO2. Learn to prepare report on the application of emerging technologies in the selected industry

SEMESTER III



Handwritten signature
 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad

1	STRATEGIC MANAGEMENT	KMB N301	CO 1: Formulate organizational mission, goals, and values vision, CO2. Develop strategies and action plans to achieve an organization's vision, mission, and goals. CO3. Develop powers of managerial judgment, how to assess business risk, and improve ability to make sound decisions and achieve effective outcomes. CO4. Evaluate and revise programs and procedures in order to achieve organizational goals; CO5. Consider the ethical dimensions of the strategic management process;
2	INNOVATION AND ENTREPRENEURSHIP	KMB N302	CO 1: Remember and comprehend basic concepts of entrepreneurship CO2: Develop knowledge on Entrepreneurial Finance, Assistance and role of Entrepreneurial Development Agencies CO3: Develop understanding of converting an Idea to an opportunity and develop understanding of various funding sources CO4: Gain in depth knowledge of innovation and its various sources CO5: Develop understanding of various dimensions of innovation along with current trends and general awareness of innovation and startup
3	Universal Human Values and Professional Ethics	KVE 301	CO1- Understand the significance of value inputs in a classroom, distinguish between values and skills, understand the need, basic guidelines, content and process of value education, explore the meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society 2. Distinguish between the Self and the Body, understand the meaning of Harmony in the Self the Co-existence of Self and Body. 3. Understand the value of harmonious relationship based on trust, respect and other naturally Acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society 4. Understand the harmony in nature and existence, and work out their mutually fulfilling participation in the nature. 5. Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work
4	Talent Management	KMB NHR 01	CO 1: Knowledge of Talent Management Processes CO 2: Understanding for analysis of the impacts of Talent management in the organization CO 3: Competency to implement Talent Management practices CO 4: Competency to develop leadership qualities among subordinate CO 5: Knowledge about the reward system to support Talent management
5	Employee Relations & Labour Laws	KMB NHR 02	CO1: Knowledge of Industrial Relation framework CO2: Competency to understand the importance of Employee Relation within the perspective of Industrial Relation CO3: Knowledge about relevant Laws of HR management CO4: Competency to interpreted and implement the Labor Laws within organization CO5: Competency to use Collective Bargaining and Grievance redressal Mechanism



Handwritten signature
Director
 Moradabad Institute of Technology
 Zam Ganga Vihar, Phase-2
 Moradabad

Handwritten signature

Handwritten signature

6	CONSUMER BEHAVIOUR AND MARKETING COMMUNICATION	KMB NMK 01	CO1. Understand the three major influences on customer choice: the process of human decision making in a marketing context; the individual customers make up; the environment in which the customer is embedded. CO2. Develop the cognitive skills to enable the application of the above knowledge to marketing decision making and activities CO3. Be able to demonstrate how concepts may be applied to marketing strategy. CO4. Apply an IMC approach in the development of an overall advertising and promotional plan. CO5. Enhance creativity, critical thinking and analytical ability through developing an integrated marketing communication campaign
7	MARKETING ANALYTICS	KMB NMK 02	CO1. Students will develop the skill in marketing analytics CO2. Students will be acquainted with better understanding of real life marketing data and its analysis CO3. Students will develop analytical skill for effective market decision making in real life environment.
8	INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT	KMB NFM 01	CO 1: Understand about various investment avenues. CO 2: Understand the value of assets and manage investment portfolio. CO 3 : Understand various Models of Investment and its application CO 4: Understand and create various investment strategies on the basis of various market conditions. CO 5: Measure riskiness of a stock or a portfolio position.
9	FINANCIAL PLANNING AND TAX MANAGEMENT	KMB NFM 02	CO1: Understand about various tax provision and planning CO2: Understand the scope tax planning concerning various business and managerial and strategic activities can be explored CO3: Have Know about various Tax Dates Rates and Forms CO4: Have Knowledge of Financial Planning and its Process CO5: Have knowledge about asset allocation and retirement planning process
10	Summer Training Project report & Viva Voce	KMB N308	1. At the end of the second semester examination, it is mandatory for every student of MBA to undergo on-the-job practical training in any manufacturing, service or financial organization. The training will be of 6 to 8 weeks duration. The college/institute will facilitate this compulsory training for students. 2. During the training, the student is expected to learn about the organization and analyze and suggest solutions to a live problem. The objective is to equip the students with the knowledge of actual functioning of an organization and problems faced by them for exploring feasible solutions.

SEMESTER IV

1	Emerging Technologies in Global Business Environment	KMB N401	CO1: To get an overview of the changing context of International Business in the wake of Industry 4.0
---	------------------------------------------------------	-------------	-------------------------------------------------------------------------------------------------------



[Signature]
 Director
 Moradabad Institute of Technology
 Ram Ganga Vihar, Phase-2
 Moradabad

[Signature]

[Signature]

			<p>CO 2 : Conceptual understanding of the new technologies that are driving change in business operations and strategy</p> <p>CO 3: Understand shifts in economic thought and its impact on business decisions.</p> <p>CO 4 : Understand changing geo politics and analyses its impact on international Business</p> <p>CO 5 : Critically think about issues and challenges in the Global World and find sustainable solutions</p>
2	HR ANALYTICS	KMB NHR 03	<p>CO 1: Apply HR Analytical techniques in the areas of HRP, recruitment and selection, Compensation and Benefits and Training etc.</p> <p>CO2: Demonstrate HR function in adding value in business terms.</p> <p>CO3: Utilise soft factors in a people management context and convert them into measurable variables</p> <p>CO4: Design a Metrics and Analysis index for recruitment, performance and or a training and development context</p> <p>CO5: Predict the issues using the available HR data and formulate the best strategies.</p>
3	PERFORMANCE AND REWARD MANAGEMENT	KMB NHR 04	<p>CO 1: Knowledge of Performance Management and Performance Appraisal</p> <p>CO 2: Competency to understand the importance of Performance Management</p> <p>CO 3: Knowledge about the Compensation and Reward Systems</p> <p>CO 4: Competency to implement the effective reward systems in the organization</p> <p>CO 5: Ability to explain the relevance of competency mapping and understanding its linkage with career development</p>
4	INTERNATIONAL HUMAN RESOURCE MANAGEMENT	KMB N HR05	<p>CO 1: Understanding the Contexts of International HRM</p> <p>CO 2: Knowledge about the HR Processes in International Context</p> <p>CO 3: Able to evaluate the impacts of Globalization on HRM</p> <p>CO 4: Desired level of expertise on organizational</p> <p>CO 5: Understanding the International culture in SHRM</p>
5	B2B & SERVICE MARKETING	KMB NMK 03	<p>CO1.Understand and nature of B2B marketing</p> <p>CO2. Ability to create an integrated marketing communications plan which includes promotional strategies</p> <p>CO3.Define and apply knowledge of various aspects of managerial decision making related to pricing strategy and tactics.</p> <p>CO4. Be able to identify critical issues related to service design, such as identifying and managing customer service experience, expectations, perceptions and outcomes.</p> <p>CO5. Use critical analysis to perceive service shortcomings in reference to ingredients to create service excellence.</p>
6	SALES AND RETAIL MANAGEMENT	KMB NMK 04	<p>CO1: Students will develop knowledge, understanding and skills in Sales force management</p> <p>CO2: Acquainted with better understanding of implementation of sales management strategies.</p>



Handwritten signature
 Director
 Moradabad Institute of Technology,
 Ram Ganga Vihar, Phase-2
 Moradabad

Handwritten signature

Handwritten signature

			<p>CO3: Develop analytical skills for effective decision alternatives in sales management problems</p> <p>CO4: Develop the knowledge, understanding and skills in retail management.</p> <p>CO5: Acquainted with better understanding of implementation of retail management strategies and develop analytical skills for effective decision alternatives in retail operations.</p>
7	SOCIAL MEDIA AND WEB ANALYTICS	KMB NMK 05	<p>CO1: Students will develop knowledge, understanding and skills in analysis of Social Media</p> <p>CO2: Acquainted with better understanding of implementation Web Analytics tool</p> <p>CO3: Develop analytical skills for effective decision alternatives in social media problems</p> <p>CO4: Develop the knowledge, understanding and skills in Facebook and google analytics.</p> <p>CO5: Acquainted with better understanding of implementation of web analytics strategies and develop analytical skills for effective decision alternatives in social media operations.</p>
8	FINANCIAL DERIVATIVES	KMB N FM03	<p>CO1: Understand about various derivatives instruments and derivative Market structure</p> <p>CO2 Understand the forward and future pricing mechanism and strategies for hedging using various futures products</p> <p>CO3 Understand the option pricing mechanism and using options strategies for mitigating risk</p> <p>CO4 Understand the Commodity derivative market</p> <p>CO5 Understand the Swaps derivatives and their mechanism</p>
9	FOREIGN EXCHANGE & FOREX RISK MANAGEMENT	KMB N FM04	<p>CO1 Understand the BOP and evaluation various exchange rate system</p> <p>CO2 Understand the theories of exchange rate determination</p> <p>CO3 Understand the foreign exchange transactions mechanism</p> <p>CO4 Understand the exchange dealings</p> <p>CO5 Understanding the various foreign exchange risk and its management</p>
10	FINANCIAL CREDIT RISK ANALYTICS	KMB N FM 05	<p>CO 1: Understand about various types of financial credit.</p> <p>CO 2: Understand the credit risk and its rating</p> <p>CO 3 : Understanding of credit commitments and its application</p> <p>CO 4: Understanding of risk management and corporate governance.</p> <p>CO 5: Measure riskiness of a stock or a portfolio position.</p>
11	Research Project Report & Viva Voce	KMB N408	<p>1. In fourth semester, the candidates will have to submit a Research Project Report on a problem/topic (from the specialization areas) to be assigned by the MBA department under the supervision of a core faculty member of the department.</p> <p>2. The Research Project Report will carry 150 marks.</p> <p>3. The evaluation of the project report will be done by two examiners (external & internal). The evaluation will consist of (1) Evaluation of Project Report (2) Presentation and Viva Voce.</p>



Handwritten signature
Director
 Moradabad Institute of Technology,
 Ram Ganga Vihar, Phase-2
 Moradabad

Handwritten signature

Handwritten signature