Dt: 08/04/2022

NEW VERSION

VISION OF THE DEPARTMENT

Aspire to be a center of excellence to impart value based education in the field of Electrical and Electronics Engineering to transform the young minds to serve the societal needs.

MISSION OF THE DEPARTMENT

1. To provide theoretical and practical knowledge in the field of Electrical and Electronics Engineering.
2. To enhance the computational skills by usage of software tools.
3. To provide the learning environment to gain knowledge of Inter-disciplinary domains.
4. To collaborate with industry to facilitate learning beyond the curriculum.

PROGRAM SPECIFIC OUTCOMES

PSO1: Apply the fundamentals of mathematics, electrical and electronics engineering knowledge to formulate and solve the problems.

PSO2: Use the tools and techniques to implement the solutions in the area of electrical and electronic systems.

PSO3: Develop the ability of interpersonal skills for successful adaptation in multi disciplinary platform.

PROGRAM EDUCATIONAL OBJECTIVES

PEO 1: To contribute in implementation of products and services through technology development in the area of electrical engineering and allied fields.

PEO 2: To develop professionally through training and lifelong learning keeping abreast of the technology developments.
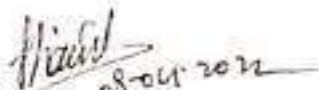
PEO 3: To develop leadership qualities and entrepreneurship skills.

HOD – EEE
Head of the Department
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Don Bosco Institute of Technology
Kumbalagodu, Bangalore - 560 074

IQAC – Director 8/4/22
Director - IQAC
Don Bosco Institute of Technology
Mysore Road, Kumbalagodu
Bengaluru-560 074

Principal
PRINCIPAL
Don Bosco Institute of Technology
Kumbalagodu, Mysore Road,
Bengaluru - 560 074

PROGRAM OUTCOMES (PO)

1. **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization to the solution of complex engineering problems.

2. **Problem Analysis:** Identify, formulate, review 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 the public health and safety, and the 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 the information to provide valid conclusions for complex problems.

5. **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding 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 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 lifelong learning in the broadest context of technological change.

1/4/2022

HOD - EEE
Head of the Department
Dept. of Electrical & Electronics Engg.
Don Bosco Institute of Technology

Course Outcome Definition for AY 2023-24

Semester: 3rd

Course: Mathematics-III for EE Engineering   **Course Code: BMATE301**

C201.1	Understand that physical systems can be described by differential equations and solve such equations
C201.2	Make use of correlation and regression analysis to fit a suitable mathematical model for statistical data
C201.3	Demonstrate the Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing, and field theory.
C201.4	To use Fourier transforms to analyze problems involving continuous-time signals and to apply Z-Transform techniques to solve difference equations
C201.5	Apply discrete and continuous probability distributions in analyzing the probability models arising in the engineering field. Demonstrate the validity of testing the hypothesis.

Course: Electric Circuit Analysis   **Course Code: BEE302**

C202.1	Understand the basic concepts, basic laws and methods of analysis of DC and AC networks and reduce the complexity of network using source shifting, source transformation and network reduction using transformations.
C202.2	Solve complex electric circuits using network theorems.
C202.3	Discuss resonance in series and parallel circuits and also the importance of initial conditions and their evaluation.
C202.4	Synthesize typical waveforms using Laplace transformation.
C202.5	Solve unbalanced three phase systems and also evaluate the performance of two port networks.

Course: Analog Electronic Circuits   **Course Code: BEE303**

C203.1	Utilize the characteristics of transistor for different applications.
C203.2	Design and analyze biasing circuits for transistor.
C203.2	Design, analyze and test transistor circuitry as amplifiers and oscillators

Course: Transformers and Generators   **Course Code: BEE304**

C204.1	Explain the construction, working and various tests of single phase Transformer.
C204.2	Explain the construction, working and parallel operation of three phase Transformer
C204.3	Explain the construction, working and analysis of Synchronous Generator.
C204.4	Explain the construction, working of solar and wind power generators.

Course: Transformers and Generators Lab **Course Code: BEEL305**

C205.1	Conduct various tests on transformers and synchronous machines and evaluate their performance.
C205.2	Perform the parallel operation on two single phase transformers.
C205.3	Verify the performance of synchronous generator.
C205.4	Calculate the voltage regulation of an alternator using different methods for comparison.

Course: Digital Logic Circuits **Course Code: BEE306A**

C206.1	Explain the concept of combinational and sequential logic circuits
C206.2	Analyse and design combinational circuits
C206.3	Describe and characterize flip flops and its applications
C206.4	Design the sequential circuits using SR, JK, D and T flip-flops and Melay and Moore applications
C206.5	Design applications of combinational and sequential circuits
C206.6	Employ the digital circuits for different applications

Course: Circuit Laboratory using P-spice **Course Code: BEEL358C**

C207.1	Simulate and verify Kirchhoff's Current Law & Kirchhoff's Voltage Law and Determine Z & Y parameters of a given 2 port network.
C207.2	Simulate and verify Mesh and Nodal analysis for a given circuit
C207.3	Simulate and verify Superposition theorem, Millman's, Thevenin's and Norton's Theorems, Maximum Power Transfer theorem and Reciprocity theorem
C207.4	Simulate and verify Series and Parallel Resonance circuit
C207.5	Simulate and observe phase difference between waveforms of voltage and current in Series RL & RC circuit

Semester: 4th

Course: Electric Motors
Course Code: BEE401

C210.1	Understand the construction and operation, characteristics, Testing of DC Motors and determine losses and efficiency.
C210.2	Understand the construction and operation, classification and types of Three phase Induction motors.
C210.3	Describe the performance characteristics and applications of three phase Induction motors.
C210.4	Demonstrate and explain Speed Control methods of three phase induction motor and types of single phase induction motors.
C210.5	Understand the construction and operation, V and inverted V curves of synchronous motors.
C210.6	Construction and operation of Universal motor, AC servomotor, Linear induction motor, PMSM, SRM and BLDC motors.

Course: Transmission and Distribution
Course Code: BEE402

C211.1	Explain the structure of electrical power system, its components, advantages of high voltage AC and DC transmission, various conductors used for transmission, sag and its calculation.
C211.2	Explain various types of insulators and methods to improve string efficiency.
C211.3	Explain the various transmission line parameters, their effects on transmission of electricity.
C211.4	Evaluate the parameters that influence the performance of transmission line and to calculate performance parameters of various transmission lines.
C211.5	Explain carona and its effects, underground cable and its construction, classification, limitations and specifications.
C211.6	Evaluate different types of distribution systems.

Course: Microcontrollers
Course Code: BEE403

C212.1	Outline the 8051 architecture, registers, internal memory organization, addressing modes.
C212.2	Discuss 8051 addressing modes, instruction set of 8051, accessing data and I/O port programming.
C212.3	Develop 8051C programs for time delay, I/O operations, I/O bit manipulation, logic and arithmetic operations, data conversion and timer/counter programming.
C212.4	Summarize the basics of serial communication and interrupts, also develop 8051 programs for serial data communication and interrupt programming.
C212.5	Program 8051 to work with external devices for ADC, DAC, Stepper motor control, DC motor control
C212.6	Develop various 8051 based projects.

Course: Electric Motors Lab   **Course Code: BEEL404**

C213.1	Perform tests on DC Machines to determine their characteristics.
C213.2	Control the DC Motors using different methods.
C213.3	Pre-determination the performance characteristics of DC Machines.
C213.4	Conduct load test on single-phase and three-phase Induction Motor and draw performance characteristics.
C213.5	Conduct test on Induction Motor to determine performance characteristics.
C213.6	Conduct test on synchronous motor to draw performance curves.

Course: Electrical Power Generation and Economics   **Course Code: BEE405A**

C214.1	Explain the basics of hydro electric power plant, merits and demerits of hydroelectric power plants, site selection, arrangement and elements of hydro electric plant.
C214.2	Explain the working, site selection and arrangement of Steam, Diesel and Gas Power Plants.
C214.3	Explain the working, site selection and arrangement of Nuclear Power Plants.
C214.4	Explain the importance of different equipments in substation, Interconnection of power stations and
C214.5	Explain the economics of power generation

Course: OPAMPS and LIC'   **Course Code: BEE405B**

C215.1	Explain the basics of linear ICs.
C215.2	Design circuits using linear ICs.
C215.3	Demonstrate the application of Linear ICs.
C215.4	Use ICs in the electronic projects

Course: Scilab / MATLAB for Electrical and Electronic Measurements
Course Code: BEEL456B

C216.1	Design, Analyse and simulate of Measurement of resistance, inductance and capacitance using bridges .
C216.2	Design, Analyse and simulate of measurement of frequency, Power, Energy in single phase and Three phase systems and also measurement of flux and flux density.
C216.3	Design, Analyse and generate MATLAB code for Current transformers and Potential Transformer.
C216.4	Design, Analyse and generate MATLAB code for different electronic instruments.

Rasmilas
23/04/24
Criterion Coordinator

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DON BOSCO INSTITUTE OF TECHNOLOGY
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Course Outcome Definition AY 2023-24

Semester: 5th

Course: Transmission and Distribution   **Course Code: 21EE51**

C301.1	Explain transmission and distribution scheme, identify the importance of different transmission systems and types of insulators.
C301.2	Analyze and compute the parameters of the transmission line for different configurations.
C301.3	Assess the performance of overhead lines.
C301.4	Interpret corona, explain the use of underground cables
C301.5	Classify different types of distribution systems; examine its quality & reliability.

Course: Control Systems   **Course Code: 21EE52**

C302.1	Analyze and model electrical and mechanical system using analogous.
C302.2	Formulate transfer functions using block diagram and signal flow graphs.
C302.3	Analyze the stability of control system, ability to determine transient and steady state time response and simulate them.
C302.2	Illustrate the performance of a given system in time and frequency domains, stability analysis using Root locus and simulate them.
C302.3	Discuss stability analysis using Bode plots, Nyquist plots, Design controller and compensator for a given specification and simulate them.

Course: Power System Analysis - 1   **Course Code: 21EE53**

C303.1	Model the power system components & construct per unit impedance diagram of power system.
C303.2	Analyze three phase symmetrical faults on power system.
C303.3	Compute unbalanced phasors in terms of sequence components and vice versa, also develop sequence networks.
C303.4	Analyze various unsymmetrical faults on power system.
C303.5	Examine dynamics of synchronous machine and determine the power system stability.

Course: Power Electronics   **Course Code: 21EE54**

C304.1	To give an overview of applications power electronics, different types of power semiconductor devices, their switching characteristics, power diode characteristics, types, their operation and the effects of power diodes on RL circuits.
C304.2	To explain the techniques for design and analysis of single phase diode rectifier circuits.
C304.3	To explain different power transistors, their steady state and switching characteristics and limitations.
C304.4	To explain different types of Thyristors, their gate characteristics and gate control requirements
C304.5	To explain the design, analysis techniques, performance parameters and characteristics of controlled rectifiers, DC- DC, DC -AC converters and Voltage controllers.

Course: Power Electronics Laboratory

C305.1	Obtain static characteristics of semiconductor devices to discuss their performance.
C305.2	Trigger the SCR by different methods
C305.3	Verify the performance of single phase controlled full wave rectifier and AC voltage controller with R and RL loads.
C305.4	Control the speed of a DC motor, universal motor and stepper motors.
C305.5	Verify the performance of single phase full bridge inverter connected to resistive load.

Course: Research Methodology & IPR

Course Code: 21RMI56

C306.1	To know the meaning of engineering research.
C306.2	To know the procedure of Literature Review and Technical Reading.
C306.3	To know the fundamentals of patent laws and drafting procedure.
C306.4	Understanding the copyright laws and subject matters of copyrights and designs
C306.5	Understanding the basic principles of design rights.

Course: Energy Audit Project

Course Code: 21EEP583

C306.1	To analyze the data collected for energy audit of a building or industry or organization.
C306.2	To perform comparative analysis with and without energy audit.
C306.3	To analyze the energy saving measures to be considered with economy considerations.
C306.4	Analyse in a systematic way, think better, and perform better.

Course Outcome Definition for AY 2023-24

Semester: 6th

Course: Management and Entrepreneurship   **Course Code: 21EE61**

C310.1	Explain the field of management, task of the manager, planning and steps in decision making.
C310.2	Discuss the structure of organization, importance of staffing, leadership styles, modes of communication, and techniques of coordination and importance of managerial control in business.
C310.3	Explain the concepts of entrepreneurship and a businessman's social responsibilities towards different groups.
C310.4	Show an understanding of role of SSI's in the development of country and state/central level institutions/ agencies supporting business enterprises.
C310.5	Discuss the concepts of project management, capital budgeting, project feasibility studies, need for project report and new control techniques.

Course: Power System Analysis 2   **Course Code: 21EE62**

C311.1	Formulate network matrices and models for solving load flow problems.
C311.2	Perform steady state power flow analysis of power systems using numerical iterative techniques.
C311.3	Solve issues of economic load dispatch and unit commitment problems.
C311.4	Analyze short circuit faults in power system networks using bus impedance matrix. And apply Point by Point method and Runge Kutta Method to solve Swing Equation.

Course: Signals and Digital Signal Processing   **Course Code: 21EE63**

C312.1	Discuss classification and basic operations that can be performed on both continuous and discrete time signals.
C312.2	Evaluate Discrete Fourier Transform of a sequence and the convolution of two sequences to determine the output sequence.
C312.3	Evaluate Discrete Fourier Transform of a sequence by using fast methods.
C312.4	Design Butterworth and Chebyshev IIR digital filters and FIR filters using different techniques.
C312.5	Develop different structures for IIR and FIR filters.

Course: Sensors and Transducers   **Course Code: 21EE641**

C313.1	Classify transducers, working of transducer & sensors and selection of sensor technology
C313.2	Analyze the signal conditioning & signal conditioning equipment, data transmission and telemetry and illustrate different configuration of data acquisition system and data conversion
C313.3	Ability to measure non-electrical quantities temperature, flow, speed, force, torque, power and viscosity

Course: Introduction to Database Management Systems

Course Code: 21CS652

C314.1	Identify, analyze and define database objects, enforce integrity constraints on a database using RDBMS.
C314.2	Use Structured Query Language (SQL) for database manipulation
C314.3	Design and build simple database systems
C314.4	Develop application to interact with databases

Course: Introduction to Cyber Security

Course Code: 21CS653

C315.1	Describe the cyber crime terminologies.
C315.2	Analyze cybercrime in mobiles and wireless devices along with the tools for Cybercrime and prevention.
C315.3	Analyze the motive and causes for cybercrime, cybercriminals, and investigators.
C315.4	Apply the methods for understanding criminal case and evidence, detection standing criminal case and evidence.

Course: Digital Signal Processing Lab

Course Code: 21EEL66

C316.1	Conduct sampling of signals in time and frequency domains.
C316.2	Evaluate the impulse response of a system.
C316.3	Obtain convolution of given sequences to evaluate the response of a system.
C316.4	Compute DFT and IDFT of a given sequence using the basic definition and/or fast methods.
C316.5	Provide a solution for a given difference equation.
C316.6	Design and implement IIR and FIR filters.

Course: Mini Project

Course Code: 21EEMP67

C317.1	Make links across different areas of knowledge and to generate, develop and evaluate ideas and information so as to apply these skills to the project task.
C317.2	Habituated to critical thinking and use problem solving skills
C317.3	Work in a team to achieve common goal
C317.4	Able to Manage the project by properly managing the finance.
C316.5	Communicate effectively and to present ideas clearly and coherently in both the written and oral forms
C316.6	Present the mini-project and be able to defend it

Sharmila.
02/05/24
Criterion Coordinator

07/05/2024
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Course Outcome Definition

Semester: 7th

AY 2023-24

Course: Power System Analysis 2

Course Code: 18EE71

C401.1	Formulate Network Matrices and model for solving Load flow problems
C401.2	Perform steady state power flow analysis using numerical iterative techniques
C401.3	Analyse issues of economic load dispatch and Unit commitment Problems
C401.4	Analyse SC faults in power system Networks using Bus impedance matrix .
C401.5	Apply point by point method and Range kutta method to solve swing equation.

Course: Power System Protection

Course Code: 18EE72

C402.1	Discuss performance of protection scheme component of protection scheme
C402.2	Discuss different types of protection relays effect of resistances on power swings
C402.3	Understand the pilot protection construction operation of different relays transformer and bus zones protection
C402.4	Understand different types of circuit breakers, fuses characteristics types protection against over voltage and over current modern trend in power system protection

Course: Solar and Wind Energy

Course Code: 18EE731

C403.1	Discuss the importance of the role of renewable energy, the concept of energy storage devices and solar energy basic concepts.
C403.2	Discuss the concept of solar radiation data and application of solar thermal system
C403.3	Discuss the concept of solar PV system fabrication, operation of solar cell, sizing and design of PV system and application of solar PV system.
C403.4	Explain basic Principles of Wind Energy Conversion, collection of wind data, energy estimation and site selection and economics of wind energy.
C403.5	Discuss the performance of different wind-machines, energy storage, applications of wind energy and environmental aspects.

Course: Utilization of Electrical Power

Course Code: 18EE742

C404.1	Explain different methods of electric heating & welding.
C404.2	Explain the laws of electrolysis, extraction, refining of metals and electro deposition process.
C404.3	Explain the laws of illumination, different types of lamps, lighting schemes and design of lighting systems.
C404.4	Analyze systems of electric traction, speed time curves and mechanics of train movement.
C404.5	Explain the motors used for electric traction, their control & braking and power supply system used for electric traction also Explain the working of electric and hybrid electric vehicles.

Course: ARM Embedded Systems   **Course Code: 18EC753**

C405.1	Depict the organization, architecture, bus technology, memory and operation of the ARM processors.
C405.2	Employ the knowledge of Instruction set of ARM processors to develop basic Assembly Language Programs.
C405.3	Recognize the importance of the Thumb mode of operation of ARM processors.
C405.4	Describe the techniques involved in writing C code for ARM processors and Exception & Interrupt handling in ARM Processors.
C405.5	Describe the importance and use of Firmware, OS and cache in ARM Embedded systems.

Course: POWER SYSTEM SIMULATION LAB   **Course Code: 18EEL76**

C406.1	Assess the performance of medium and long transmission lines & to obtain the power angle characteristics of salient and non-salient pole alternator.
C406.2	Able to formulate bus admittance and bus impedance matrix of interconnected power system.
C406.3	Able to solve power flow problems for simple power system.
C406.4	Able to assess the transient stability under 3 phase fault and unsymmetrical fault at different location in radial power system.
C406.5	Able to study optimal generation scheduling problem for thermal power plants.

Course: Relay and High Voltage Lab   **Course Code: 18EEL77**

C407.1	Verify the characteristics of over current, under voltage and negative sequence relay for electromagnetic
C407.2	Verify the characteristics of microprocessor based over current, over voltage, under voltage relays
C407.3	Show knowledge of protecting motor and feeders.
C407.4	Analyze the spark over characteristics for both uniform and non-uniform configurations using High A and DC voltages.
C407.5	Measure high AC and DC voltages and breakdown strength of transformer oil
C407.6	Draw electric field and measure the capacitance of different electrode configuration models

Course: PROJECT PHASE – I AND SEMINAR   **Course Code: 18EEP78**

C408.1	Undertake problem identification, formulation and solution
C408.2	Design engineering solutions to complex problems utilizing a systems approach.
C408.3	Communicate with engineers and the community at large in written an oral forms.
C408.4	Demonstrate a sound technical knowledge of their selected project topic.

DON BOSCO INSTITUTE OF TECHNOLOGY
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Course Outcome Definition for AY 2023-24

Semester: 8th

Course: Power system Operation and control   Course Code: 18EE81

C410.1	Describe various levels of controls in power systems, the vulnerability of the system, components, architecture and configuration of SCADA.
C410.2	Analyse Automatic Generation Control (AGC) and AGC in interconnected power systems
C410.3	Explain voltage, Reactive Power control, Reliability, Security and state estimation

Course: Electrical Estimation & Costing   Course Code: 18EE822

C411.1	Discuss wiring methods, cables used, design of lighting points and sub-circuits, internal wiring, wiring accessories and fittings, fuses and types.
C411.2	Discuss estimation of service mains and power circuits.
C411.3	Discuss estimation of overhead transmission and distribution system its components.
C411.4	Discuss types of substation, main components and estimation of substation.

Course: PROJECT WORK PHASE –II   Course Code: 18EEP83

C412.1	Make links across different areas of knowledge and to generate, develop and evaluate ideas and information so as to apply these skills to the project task.
C412.2	Habituated to critical thinking and use problem solving skills
C412.3	Learn on their own, reflect on their learning and take appropriate actions to improve it.
C412.4	Work in a team to achieve common goal.
C412.5	Communicate effectively and to present ideas clearly and coherently in both the written and oral forms.
C412.6	Present the project and be able to defend it.

Course: Technical Seminar   Course Code: 18EES84

C413.1	ability to identify state of art and futuristic technologies through self learning through others
C413.2	Ability to conduct detailed literature survey and self-study in order to completely understand the intricies of chosen topic.
C413.3	ability to conceptualize solutions built using in terms of architecture and technology design development
C413.4	ability to identify the scope and limitations of specific technology and create comprehensive technical reports using tools to make oral presentation

Course: Internship

C414.1	Student is able to construct the company profiles by compiling the brief history management structure, achievement.
C414.2	Able to learn asses it's strength threat opportunities.
C414.3	Able to determine the challenges and future potential for organisation in particular and in general
C414.4	Able to learn theory and practical situations by accompanying task during the period

Sarmilas 12/02/24
Criterion Coordinator

12/02/2024
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DON BOSCO INSTITUTE OF TECHNOLOGY

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Department of Physics

VISION

To provide foundations of physics for Engineering applications

MISSION

➢ To impart basic concepts and principles of physics applied to Engineering Science.

➢ To imbibe the applications of Physics in the area of Oscillations, Lasers, Optical Fibre, Electrical Conductivity and Semiconductors.

HOD

HEAD OF DEPARTMENT

BANGALORE - 560 074

PRINCIPAL

PRINCIPAL

Don Bosco Institute of Technology
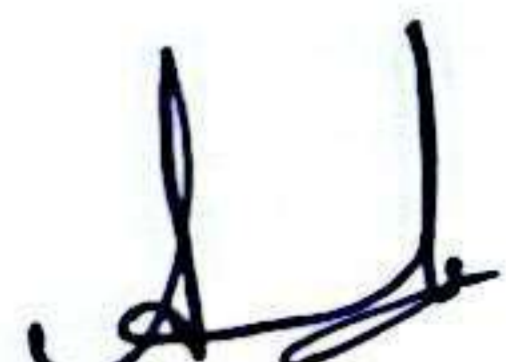Kumbalagodu, Mysore Road,
Bangalore - 560 074.

Wayanamac Education Trust ®
DON BOSCO INSTITUTE OF TECHNOLOGY
Kumbalagodu, Mysore Road, Bangalore - 560074
Department of Science & Humanities
I Year Course Outcomes
2022 Scheme -CSE stream

Sl. No	Subject Name	Subject Code	CO No.	Course Outcomes(CO)
1	Mathematics-I for CSE stream	BMATS101	CO1	Apply the knowledge of calculus to solve problems related to polar curves and learn the notion of partial differentiation to compute rate of change of multivariate functions
			CO2	Analyze the solution of linear and nonlinaer ordinary differential equations
			CO3	Get acquainted and to apply modular arithmatic to compute algorithms
			CO4	Make use of matrix theory for solving the system of linear equations and compute eigenvalues and
			CO5	Familiarize with modern mathematical tools namely MATHEMATICA/MATLAB/PYTHON/SCILAB
2	Physics for CSE stream	BPHYS102	CO1	Describe the principles of LASERS and Optical fibers and their relevant applications.
			CO2	Discuss the basic principles of the Quantum Mechanics and its application in Quantum Computing.
			CO3	Summarize the essential properties of superconductors and its applications in qubits.
			CO4	Illustrate the application of physics in design and data analysis.
			CO5	Practice working in groups to conduct experiments in physics and perform precise and honest measurements.
3	Principles of Programming Using C	BPOPS103	CO1	Elucidate the basic architecture, functionalities of a computer and the structure of C program.
			CO2	Explore the different types of operators and looping constructs
			CO3	Interpret usage of functions in C and user-defined data structures in arrays.
			CO4	Explore the strings and user-defined structures like unions, pointers in implementing solutions.
			CO5	Design and Develop Solutions to problems using modular programming constructs.
4	Introduction to civil Engg	BESCK104A	CO1	Explain the different fields of civil engineering and identify the different building materials used in
			CO2	Compute the resultant of a force system subjected to various loads by resolution of a force
			CO3	Locate the centroid and compute the moment of inertia of regular and built-up sections
			CO4	Compute the support reactions in beams with different types of supports and loads and also analyse member forces in truss
			CO5	Compute the relationship between the motion of bodies and analyse the bodies in motion.
5	Introduction to internet of things	BETCK105H	CO1	Describe the evolution of IOT, IOT networking components, and addressing strategies in IOT
			CO2	Classify various sensing devices and actuator types.
			CO3	Demonstrate the processing in IOT.
			CO4	Explain Associated IOT Technologies
			CO5	Illustrate architecture of IOT Applications
	Introduction to cyber		CO1	Explain the cybercrime terminologies
			CO2	Describe Cyber offenses and Botnets

#				
5	Introduction to cyber security	BETCK1051	CO3	Illustrate Tools and Methods used on Cybercrime
			CO4	Explain Phishing and Identity Theft
			CO5	Justify the need of computer forensics
6	Communicative English	BENGK106	CO1	Understand and apply the Fundamentals of Communication Skills in their communication skills.
			CO2	Identify the nuances of phonetics, intonation and enhance pronunciation skills.
			CO3	To impart basic English grammar and essentials of language skills as per present requirement.
			CO4	Understand and use all types of English vocabulary and language proficiency.Adopt the Techniques of Information Transfer through presentation.
7	Indian constitution	BICOK107	CO1	Analyze the basic structure of Indian Constitution.
			CO2	Understanding the Preamble, Fundamental Rights and its limitations.
			CO3	know about the Directive Principles of State Policies (DPSP), Fundamental Duties (FD's) of Indian constitution, Union Government, political structure & codes, procedures.
			CO4	Understanding Parliamentary and Judicial system of India.
			CO5	Know about the State Executive & Elections system of India, the Amendments and Emergency Provisions, other Important provisions given by the constitution.
8	Innovation and Design Thinking	BIDTK158	CO1	Appreciate various design process procedure
			CO2	Generate and develop design ideas through different technique
			CO3	Identify the significance of reverse Engineering to Understand products
			CO4	Draw technical drawing for design ideas
9	Mathematics-II for CSE stream	BMATS201	CO1	Apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing area and volume.
			CO2	Understand the applications of vector calculus refer to solenoidal, and irrotational vectors.Orthogonal curvuilinear coordinates.
			CO3	Demonstrate the idea of Linear dependence and independence of sets in the vector space,and linear transformation.
			CO4	Apply the knowledge of numerical methods in analysing the discrete data and solving the physical and engineering problems.
			CO5	Get familiarize with modern mathematical tools namely MATHEMATICA/MATLAB/PYTHON/SCILAB
10	Chemistry for CSE stream	BCHES202	CO1	Understand theconcepts of Sensors and Energy Systems.
			CO2	Apply the knowledge of Materials for Memory and Display Systems
			CO3	Impart the basic knowledge of chemistry and its principles involved in corrosion,electrode system and Analytical Techniques
			CO4	Acquire the knowledge of green fuels and synthesis, properties and utilization of engineering materials like polymers.
			CO5	Solve for the problems in chemistry that are pertinent in engineering applications like e-waste management.
11	Computer Aided Engineering Drawing	BCEDK103/203	CO1	Drawand communicate the objects with definite shape and dimensions
			CO2	Recognize andDraw the shape and size of objects through different views
			CO3	Create a Drawing views using CAD software
			CO4	Create a Drawing views using CAD software

			CO5	Identify the interdisciplinary engineering components or systems through its graphical representation.
12	Introduction to eletronics	BESCKC104/BES CK204B	CO1	Understand the concepts of various energy sources and Electric circuits.
			CO2	Apply the basic Electrical laws to solve circuits
			CO3	Discuss the construction and operation of various Electrical Machines.
			CO4	Identify suitable Electrical machine for practical implementation
			CO5	Explain the concepts of electric power transmission and distribution, electricity billing, circuit protective devices and personal safety measures.
13	Introduction to Python Programming	BPLCK105B/205B	CO1	Demonstrate proficiency in handling loops and creation of functions.
			CO2	Identify the methods to create and manipulate lists, tuples and dictionaries
			CO3	Develop programs for string processing and file organization
			CO4	Interpret the concepts of Object-Oriented Programming as used in Python
14	Samskruthica kannada	BKSKK207	CO1	To understand the necessity of learning of local language for comfortable life.
			CO2	To speak , read and write kannada language as per requirement
15	Balake kannada	BKBKK207S	CO1	To understand the necessity of learning of local language for comfortable life.
			CO2	To speak, read and write Kannada language as per requirement.
			CO3	To communicate (converse) in Kannada language in their daily life with kannada speakers.
			CO4	To Listen and understand the Kannada language properly
			CO5	To speak in polite conservation.
16	Scientific Foundation of health	BSFHK158/258	CO1	To understand and analyse about Health and wellness (and its Beliefs) & It's balance for positive mindset.
			CO2	Develop the healthy lifestyles for good health for their better future.
			CO3	Build a Healthy and caring relationships to meet the requirements of good/social/positive life.
			CO4	To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright
			CO5	Prevent and fight against harmful diseases for good health through positive mindset
17	Professional writing skills in English	BPWSK106/206	CO1	To understand and identify the Common Errors in Writing and Speaking
			CO2	To Achieve better Technical writing and Presentation skills.
			CO3	To read Technical proposals properly and make them to Write good technical reports
			CO4	Acquire Employment and Workplace communication skills.
			CO5	To learn about Techniques of Information Transfer through presentation in different level

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Department of Management Studies & Research

Vision

To be a centre of eminence that fosters quality in management education and research through collaborative learning and developing world class business leaders capable of managing change and transformation in a globally competitive environment.

Mission

M1: To impart management education that implies and nurtures management students with entrepreneurial mind set.

M2: Creating collaborative learning environment through industry institute interaction and networking with professional bodies to enhance employability skills & career opportunities to the management students.

M3: To inculcate research among young minds recognized as a driving force of progress and innovation.

M4: To foster continuous learning for innovative solutions with ethical values so that they become capable transformational leaders and contributing members of the society and dynamic business world.

Programme Educational Objectives (PEOs)

The PEOs of MBA will enable the graduates:

PEO1: To nurture students of management studies with contemporary skills of management enabling them to adapt and operate in diverse sectors of economy.

PEO2: To inculculate the leadership qualities and team building skills among management students.

PEO3: Exhibit competence in research aptitude and entrepreneurial abilities to solve problems in real world. It instils resilience and adaptability in students in facing the challenges of the contemporary business world.

PEO4: Be lifelong learners for easy transition into the dynamic world of business with ethics.

Program Specific Outcomes (PSOs)

The post graduate students of the programme shall develop the ability to:

PSO1: Demonstrate the professional knowledge of management science to solve complex business problems with innovative solutions to achieve the stated business goals.

PSO2: Analyse and interpret the dynamic business environment and crafting business strategies and decisions at the national and global level.

PSO3: Establish openness to explore solutions to social issues in understanding business ethics and resolving ethical dilemmas.

PSO4: Adapt and focus on achieving the organisational goal and objectives with complete zeal and commitment.

Program Outcomes (POs)

On successful completion of the MBA Programme the students shall develop

PO1: Ability to demonstrate knowledge of management theories and practices to solve complex corporate /business problems using limited resources.

PO2: Competence to analyse and design statistics – based business decision making.

PO3: Proficiency to identify business opportunities, design and implement innovations in work place with value based leadership.

PO4: Aptitude to understand, analyze and apply ethical principles for making judicious managerial decisions.

PO5: Capability to communicate effectively with various stakeholders and contributing member in realising the organizational goals.

PO6: Adaptability to engage in continuous learning for the holistic individual development.

1st SEM 2022 SCHEME

Sl. No	Subject Name	Subject Code		Course Outcomes(CO)
1	Principles of Management and Organisational Behaviour	22MBA11	CO1	Gain practical experience in the field of Management and Organization Behaviour
			CO2	Acquire conceptual knowledge of management, various functions of
			CO3	Comprehend and apply management and behavioural models to relate
			CO4	Analyse the recent trends in Management and OB models.
2	ENTREPRENEURSHIP DEVELOPMENT	22MBA12	CO1	Display keen interest and orientation towards entrepreneurship, entrepreneurial opportunity Modules in order to setup a business and to think creatively
			CO2	To know about the various business models and B-Plans across Business sectors.
			CO3	Able to understand the importance of marketing and different forms of businesses.
			CO4	Become aware about various sources of funding and institutions supporting entrepreneurs
			CO5	Awareness about legal aspects and ways to protect the ideas.
			CO6	To understand the ways of starting a business and to know how to foster their ideas.
3	Accounting for Managers	22MBA13	CO1	Know what and how books of accounts and financial statements are prepared.
			CO2	How to interpret financial statements of companies for decision making.
			CO3	Independently undertake financial statement analysis and take decisions.
4	Statistics for Managers	22MBA14	CO1	Understand how to organize, manage, and present the data
			CO2	Use and apply a wide variety of specific statistical tools.
			CO3	Understand the applications of probability in business
			CO4	Effectively interpret the results of statistical analysis
			CO5	Develop competence of using computer packages to solve the problems
5	Marketing Management	22MBA15	CO1	Comprehend the concepts of Marketing Management
			CO2	Gain knowledge on consumer behaviour and buying process
			CO3	Understand concept of Branding, development of product and significance of market segmentation , targeting and positioning

				CO4	Identify marketing channels and the concept of product distribution, techniques of sales promotion
				CO5	Simply ideas into a viable marketing plan for various modes of marketing
6	Business Communication	22MBA16		CO1	The students will be aware of their communication skills and know their potential to become successful managers
				CO2	The students will get enabled with the mechanics of writing and can compose the business letters in English precisely and effectively
				CO3	The students will be introduced to the managerial communication practices in business those are in vogue
				CO4	Students will get trained in the art of Interpersonal communication and technological advancement and social

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Department of Management Studies and Research

COURSE OUTCOMES (2023-24)

II SEM 2022 SCHEME

1	Human Resource Management	22MBA21	CO1	Gain practical experience in the field of Human Resource Concepts, functions and theories.
			CO2	Acquire the conceptual insight of Human Resource and various functions of HR.
			CO3	Apply personnel, managerial and welfare aspects of HR
			CO4	Develop a greater understanding about HR practices
			CO5	Perceive knowledge about the future trends in HRM
2	Financial Management	22MBA22	CO1	Understand the basic financial concepts.
			CO2	Apply time value of money.
			CO3	Evaluate the investment decisions.
			CO4	Estimate working capital requirements
			CO5	Analyze the capital structure and dividend decisions.
3	Research Methodology & IPR	22MBA23	CO1	Understand various research approaches, techniques and strategies in the appropriate in business.
			CO2	Apply a range of quantitative / qualitative research techniques to business and day to day management problems.
			CO3	Demonstrate knowledge and understanding of data analysis, interpretation and report writing.
			CO4	Develop necessary critical thinking skills in order to evaluate different research approaches in Business using excel in particular
			CO5	Discuss various forms of the intellectual property, its relevance and business impact in the changing global business environment and leading International Instruments concerning IPR.
4	Operations Research	22MBA24	CO1	Get an insight into the fundamentals of Operations Research and its definition, characteristics and phases phases
			CO2	Use appropriate quantitative techniques to get feasible and optimal solutions
			CO3	Understand the usage of game theory , Queuing Theory and Simulation for Solving Business Problems
			CO4	Understand and apply the network diagram for project completion
5	Strategic Management	22MBA25	CO1	Students should get clear idea about the concept of Strategic Management, its relevance, Characteristics, process nature and purpose
			CO2	Student to acquire an understanding of how firms successfully institutionalize a strategy and create an organisational structure for domestic and overseas operations
			CO3	To give the students an insight on strategy at different levels of an organization to gain competitive advantage.
			CO4	To help students understand the strategic drive in multinational firms and their decisions in different markets

6	Managerial Economics	22MBA26	CO1	The student will understand the application of Economic Principles in Management decision making.
			CO2	The student will earn the microeconomic concepts and apply them for effective functioning of a Firm and Industry
			CO3	The Student will be able to understand, assess and forecast the demand.
			CO4	The student will apply the concepts of production and cost for optimization of production
			CO5	The student will design competitive strategies like pricing, product differentiation etc. and marketing according to the market structure.
			CO6	The student will be able to understand the impact of macroeconomic concepts.

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Department of Management Studies and Research

COURSE OUTCOMES (2023-24)

III Sem 2022 Scheme

Sl. No	Subject Name	Subject Code		Course Outcomes(CO)
1	LOGISTICS AND SUPPLY CHAIN MANAGEMENT	22MBA301	CO1	Demonstrate knowledge of the functions of logistics and supply chain management
			CO2	Relate concepts and activities of the supply chain to actual organizations
			CO3	Analyse the role of technology in logistics and supply chain management.
			CO4	Evaluate cases for effective supply chain management and its implementation
2	Information Technology for Managers	22MBA302	CO1	Understand the importance of Information technology for business.
			CO2	Develop insights into technology and investigate its impact on Business.
			CO3	Understand Various Measures of Technology available in corporate world.
			CO4	Understanding how creativity and innovative Technologies help to find a solution to problems.
3	Consumer Behaviour	22MBAMM303	CO1	The students will be able understand the background and concepts of consumer behaviour
			CO2	The students will be able to identify the dynamics of consumer behaviour and the basic factors that influence the consumers decision process
			CO3	The students will be able to demonstrate how concepts may be applied to marketing strategy.
			CO4	Students will be able to apply and demonstrate theories to real world marketing situations by profiling and identifying marketing segments
4	Sales and Retail Management	22MBAMM304	CO1	Understand the selling techniques in an organisation.
			CO2	Develop a plan for organizing, staffing & training sales force.
			CO3	Organize sales territories to maximize selling effectiveness.
			CO4	Evaluate sales management strategies.
			CO5	Find out the contemporary retail management issues and strategies.
			CO6	Evaluate the recent trends in retailing and its impact in the success of modern business.
			CO7	Understand Relate store management and visual merchandising practices for effective retailing
5	SERVICES MARKETING	22MBAMM305	CO1	Develop an understanding about the various concepts and importance of Services Marketing.
			CO2	Enhance knowledge about emerging issues and trends in the service sector.
			CO3	Learn to implement service strategies to meet new challenges.
			CO4	Analysing Services blue print and SERVQUAL model
6	RURAL MARKETING	22MBAMM306	CO1	Recognize appropriate Rural marketing objectives.
			CO2	Knowledge on consumer buying behavior and influencing factors on consumer buying behavior at rural market and the decision processAppreciate the e-commerce and Innovation in Rural marketing.

			CO3	Illustrate the promotional mix in rural markets Rural marketing and marketing strategies.
			CO4	Knowledge of premise underlying in rural markets
			CO5	To comprehend the initiatives and future of rural markets
7.	Strategic Cost Management	22MBAFM303	CO1	Understand the goals and strategies of business units.
			CO2	Determine standard costing and variance analysis cost control in Business decision making.
			CO3	Applications of Management accounting and control systems in Corporate.
			CO4	Critically evaluate all traditional and non-traditional costing methods such as absorption costing, marginal costing and activity based costing.
8.	SAPM	22MBAFM304	CO1	Understand the capital market and various Instruments for Investment.
			CO2	Assess the risk and return associated with investments and methods to value securities.
			CO3	Analyze the Economy, Industry and Company framework for Investment.
			CO4	Learn the theories of Portfolio management and also the tools and techniques for efficient portfolio management.
9	ADVANCED FM	22MBAFM305	CO1	Demonstrate the applicability of the concept of Financial Management to understand the managerial Decisions and Corporate Capital Structure
			CO2	Apply the Leverage and EBIT EPS Analysis associate with Financial Data in the corporate& Analyse the complexities associated with management of cost of funds in the capital Structure
			CO3	Demonstrate how the concepts of financial management and investment, financing and dividend policy decisions could integrate while identification
			CO4	Be aware of the techniques of cash, inventory and receivables management
10	Banking and Services Operations	22MBAFM306	CO1	The Student will be acquainted to various Banking and Non-Banking financial services in India
			CO2	The Student will understand the activities of Merchant Banking and credit rating.
			CO3	The Student will be equipped to understand micro financing and other financial services in India
			CO4	The Student will understand how to evaluate and compare leasing & hire purchase
11	Recruitment and Selection	22MBAHR303	CO1	Gain the practical insight of various principles and practices of recruitment and selection.
			CO2	Acquire knowledge of latest conceptual framework used in recruitment and selection process and procedure applied in various industries.
			CO3	Illustrate the application of recruitment and selection tools and techniques in various sectors
			CO4	Develop a greater understanding about strategies for workforce planning and assessment, analyse the
12	Industrial Realtions and Labour laws	22MBAHR304	CO1	Gain practical experience related to labour legislations in India across various sectors
			CO2	Acquire conceptual knowledge of industrial relations and labour laws followed within industries
			CO3	Develop the greater understanding of IR concepts and its application in solving various issues in IR.
			CO4	Apply the IR and labour laws concepts in various industries in India.
13	ORGANISATIONAL CHANGE AND DEVELOPMENT	22MBAHR305	CO1	Gain conceptual insight of change management models, OD processes and interventions.
			CO2	Develop the understanding of OD to apply OD aspects in private and public sectors in India
			CO3	Analyse the tools and techniques available to implement changes in the organization environment.
			CO4	Handle the OD interventions by analysing the role of OD consultant.
14	Compensation and Reward	22MBAHR306	CO1	Gain insights of various conceptual aspects of Compensation and Benefits to achieve organizational goals.
			CO2	Determine the performance based compensation system for business excellence and solve various cases.

			CO3	Designing the compensation strategies for attraction, motivation and retaining high quality workforce.
	Management			Understand the Legal & Administrative issues at global compensation to prepare compensation plan, CTC.
			CO4	wage survey and calculate various bonus.
15	Introduction to Python, Data and Control Systems	22MBABA303	CO1	Understand the concepts of python programming
			CO2	Structure a simple Python programs for solving problems
			CO3	Apply the knowledge to decompose a Python program into functions.
			CO4	Analyse and Represent compound data using Python lists, tuples, dictionaries.
			CO5	Read and write data form/to files in Python Program.
15	EDAB	22MBABA304	CO1	Understand Data Mining and its importance .
			CO2	Apply knowledge of research design for business problems
			CO3	Analyze the cause and effect relationship between the variables from the analysis
			CO4	Evaluate Regression and decision tree based methodsto solve business problems
15	Business Analytics and Intelligence	22MBABA305	CO1	To understand concepts of business analytics and business intelligence
			CO2	To apply the knowledge of the processes needed to develop, report, and analyse business data
			CO3	Analyse data using Excel and Excel add-ins to solve business problems.
			CO4	Evaluate the Data Structure and pattern for Decision making in business management
15	Marketing, Web and Social Media Analytics	22MBABA306	CO1	Understand the concepts of Marketing.
			CO2	apply of knowledge on data analysis in Facebook and web
			CO3	Analyse the usage of digital platforms for business purpose
			CO4	Evaluate the business models with integration of technology

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Department of Management Studies and Research

COURSE OUTCOMES (2023-24)

IV Sem 2022 Scheme

1	International Business	22MBA401	CO1	Defining international business and describe how it differs from domestic business with respect to laws, regulations and taxation.
			CO2	Identify and describe factors and forces that affect an organization's decision to internationalize its business.
			CO3	Describe and compare strategies for internationalization.
			CO4	Identify and analyze challenges in working, communicating and negotiating in a cross-cultural context.
2	Innovation and Design Thibking	22MBA402	CO1	Understand the Design Thinking process from business management perspective
			CO2	Apply the knowledge and skills of DT in prototype development for product/service intovations
			CO3	Analyse sustainable and societal challenges and find solutions
			CO4	Evaluate the pros and cons for sustainable development by applying DT
3	Strategic Brand Management	22MBAMM403	CO1	Comprehend & correlate all the management functions which are happening around with fundamental concepts and principles of management
			CO2	Ability to develop the branding strategies
			CO3	Demonstrate their acumen in applying managerial and behavioural concepts in creating brand equity
			CO4	Ability to analyse the global brands and their SWOT.
4	Integrated Marketing Communication	22MBAMM404	CO1	The students will be able to define and apply knowledge of various aspects of managerial decision making related to marketing communications strategy and tactics.
			CO2	The students will be getting an idea to explain the role of IMC in the overall marketing &Use effectiveness measures to evaluate IMC strategies.
			CO3	The students will get the ability to create an integrated marketing communications plan which includes promotional strategies.
			CO4	The students will get trained in the art of drafting, prepare advertising copy and design other basic IMC tools ethically Situations.
5	Digital and Social Media Marketing	22MBAMM405	CO1	Illustrate the knowledge about digital marketing strategy and planning.
			CO2	Describe and/or improve a strategy for measuring and improving digital media effectiveness
			CO3	Describe online advertising including ad networks and behavioural targeting.
			CO4	Evaluate Emerging trends in digital marketing
6	Business Marketing	22MBAMM406	CO1	Understand significance of B2B marketing
			CO2	Ability to create an integrated marketing communications plan which includes promotional strategies.
			CO3	Effectively use marketing communication for customer acquisition.

			CO4	Define and apply knowledge of various aspects of managerial decision making related to marketing communications strategy and tactics.
7	Global FM	22MBAFM403	CO1	The student will have an understanding of the International Financial Environment
			CO2	The student will learn about the foreign exchange market, participants and transactions.
			CO3	The student will be able to use derivatives in foreign exchange risk management
			CO4	The student will be able to evaluate the Firm's Exposure to risk in International environment and various theories associated with it.
8	MACR	22MBAFM404	CO1	To explain the major forms and objectives of corporate restructuring.
			CO2	To describe the process of value creation under different forms of M & A
			CO3	To Understand M&A with its different classifications, strategies, theories, synergy etc.
			CO4	To Conduct financial evaluation of M&A
			CO5	To Analyze and demonstrate the accounting aspects of Amalgamation
			CO6	To Critically evaluate different types of M&A, takeover and anti takeover strategies
9	Risk Management and Insurance	22MBAFM405	CO1	Understand various types of risks.
			CO2	Assess the process of identifying and measuring the risk.
			CO3	Acquaint with the functioning of life Insurance in risk management
			CO4	Understand general insurance contract.
10	Indirect Taxation	22MBAFM406	CO1	Explain the various terms related to Indian Goods and Service tax (GST)
			CO2	Analyze whether a person is eligible to obtain registration as well as filing of returns under GST law
			CO3	Have clarity on Provisions of levy and collection of GST in India
			CO4	Assess the Value of goods and services based on provisions of Time, value and Place of supply
			CO5	Understand the concept of import and export procedure for Custom duty.
			CO6	Identify Customs duty provisions and valuation of imported goods.
11	Conflict and Negotiation Management	22MBAHR403	CO1	Understand the concepts of conflict and negotiation and its role
			CO2	Learn various contemporary methods of conflict and negotiation.
			CO3	Gain insights of various conflict handling mechanisms
			CO4	Demonstrate the cross-cultural and gender dimensions of negotiation
12	Global HRM	22MBAHR404	CO1	Understand various practices within the field of global HRM.
			CO2	Describe HR concepts, policies and practices to deal with issues in an international context.
			CO3	Appraise the impact of global factors in shaping HR practices.
			CO4	Apply the concepts of HR in global perspective
13	Personal Growth and Interpersonal Effectiveness	22MBAHR405	CO1	Have in-depth understanding the various personality traits which promotes personal growth.
			CO2	Analyze the concepts of human personality, behaviour and functioning of mind
			CO3	Learn and apply the psychometrics tests in understanding the personality traits.
			CO4	Develop the greater insight of self, and others through various theories and prepare the developmental plan for interpersonal effectiveness.
14	Strategic Talent Management	22MBAHR406	CO1	Aquire knowledge and the various challenges of acquisition and retention of talents for competitive advantage of the organization
			CO2	Gain insights to develop and retain best talents in the industry.

			CO3	Learn the concepts of competency and its usage in evaluating a person's
15	Machine Learning	22MBABA403	CO4	Adhere knowledge in the identified competencies.
			CO1	Understand the concepts of Machine learning
			CO2	Apply the knowledge of Data visualisation and accurate decision making
			CO3	Analyse the Big data and pattern using machine learning algorithms
			CO4	Evaluate the Data Structure and provide immersive experience to users
16	HR Analytics	22MBABA404	CO1	Have an understanding of How HR function adds value and demonstrates the value in business terms
			CO2	Measure the value of Intangibles that HR helps builds for the organization given a particular business context to facilitate decision making.
			CO3	Convert soft factors in a people management context into measurable variables across various domains.
			CO4	Devise, conduct and analyse a study on employees or any other related to the HR context in an organization.
17	BIG DATA	22MBABA405	CO1	Understand Big Data and its Business Implications
			CO2	Apply the knowledge of Hadoop and Hadoop Eco-System in big data analysis
			CO3	Analyse the big data and provide data visualization and helps in decisions
			CO4	Develop Big Data Solutions using Hadoop Eco System
			CO5	Apply Machine Learning Techniques using R
			CO6	Understanding about NoSQL and Indexing in Big data
18	FINANCIAL ANALYTICS	22MBABA406	CO1	Understand and perform the basics of financial analytics.
			CO2	Application of quantitative methods for financial data analysis.
			CO3	Apply Multivariate time series analysis for financial data of any business
			CO4	Analyse the data using Jamovi real world application