DEPARTMENT OF MECHANICAL ENGINEERING
Course Outcomes-2022 Scheme

S.No.	Subject Code	Course Code	Course Outcomes
1	BMATM101 Mathematics for Mechanical Engg Stream-I	C101.1	Apply the knowledge of calculus to solve problems related to polar curves.
		C101.2	Learn the notion of partial differentiation to compute rate of change of multivariate functions
		C101.3	Analyze the solution of linear and non-linear ordinary differential equations.
		C101.4	Make use of matrix theory for solving the system of linear equations and compute eigen values and eigenvectors.
		C101.5	Familiarize with modern mathematical tools namely MATHEMATICA/ MATLAB/ PYTHON/SCILAB

S.No.	Subject Code	Course Code	Course Outcomes
2	BMATM201 Mathematics for MES-II	C102.1	Apply the knowledge of multiple integrals to compute area and volume.
		C102.2	Understand the applications of vector calculus refer to solenoidal, irrotational vectors, line integral and surface integral.
		C102.3	Demonstrate partial differential equations and their solutions for physical interpretations
		C102.4	Apply the knowledge of numerical methods in solving physical and engineering phenomena.
		C102.5	Get familiarize with modern mathematical tools namely Mathematica/MatLab/Python/Scilab

S.No.	Subject Code	Course Code	Course Outcomes
3	BPHYM202 Applied Physics for ME Stream	C103.1	Elucidate the concepts in oscillations, waves, elasticity and material failures
		C103.2	Discuss the fundamentals of Thermoelectric materials and their application
		C103.3	Summarize the low temperature phenomena and generation of low temperature
		C103.4	Explain the various material characterization techniques
		C103.5	Practice working in groups to conduct experiments in physics and perform precise and honest measurements.

S.No.	Subject Code	Course Code	Course Outcomes
4	BCHEM102 Applied Chemistry for	C104.1	Identify the terms and applications processes involved in scientific and engineering.
		C104.2	Explain the phenomena of chemistry to describe the methods

	Mechanical Engineering stream		of engineering processes.
		C104.3	Solve the problems in chemistry that are pertinent in engineering applications.
		C104.4	Apply the basic concepts of chemistry to explain the chemical properties and processes.
		C104.5	Analyze properties and multidisciplinary situations processes associated with chemical substances in multidisciplinary situations.

S.No.	Subject Code	Course Code	Course Outcomes
5	BEMEM103/203 Elements Of Mechanical Engineering	C105.1	Explain the role of mechanical engineering in industry and society, fundamentals of steam and non-conventional energy sources
		C105.2	Describe different conventional and advanced machining processes, IC engines, propulsive devices, air-conditioning, refrigeration
		C105.3	Explain different gear drives, gear trains, aspects of future mobility and fundamentals of robotics
		C105.4	Determine the condition of steam and its energy, performance parameters of IC engines, velocity ratio and power transmitted through power transmission systems.
		C105.1	Explain the role of mechanical engineering in industry and society, fundamentals of steam and non-conventional energy sources

S.No.	Subject Code	Course Code	Course Outcomes
6	BESCK104E Introduction to C Programming	C106.1	Elucidate the basic architecture and functionalities of a computer and also recognize the hardware parts.
		C106.2	Apply programming constructs of C language to solve the real world problem
		C106.3	Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting.
		C106.4	Explore user-defined data structures like structures, unions and pointers in implementing solutions
		C106.5	Design and Develop Solutions to problems using modular programming constructs using functions

S.No.	Subject Code	Course Code	Course Outcomes
7	BETCK205I Introduction To Cyber Security	C107.1	To familiarize cyber crimeterminilogies and perspective
		C107.2	To understand cyber offence and Botnet
		C107.3	To gain Knowledge on tools and methods used in cybercrime
		C107.4	To understand phishing and computer forensics
		C107.5	Justify the need of computer forensics

S.No.	Subject Code	Course Code	Course Outcomes
8	BCEDK203/203 Computer Aided Engineering Drawing	C108.1	Drawand communicate the objects with definite shape and dimensions
		C108.2	Recognize andDraw the shape and size of objects through different views
		C108.3	Develop the lateral surfaces of the object
		C108.4	Create a Drawing views using CAD software.
		C108.5	Identify the interdisciplinary engineering components or systems through its graphical representation.

S.No.	Subject Code	Course Code	Course Outcomes
9	BENGK106-206 Communicative English	C109.1	Understand and apply the Fundamentals of Communication Skills in their communication skills.
		C109.2	Identify the nuances of phonetics, intonation and enhance pronunciation skills.
		C109.3	To impart basic English grammar and essentials of language skills as per present requirement
		C109.4	Understand and use all types of English vocabulary and language proficiency.
		C109.5	Adopt the Techniques of Information Transfer through presentation.

S.No.	Subject Code	Course Code	Course Outcomes
10	BPWSK206-106 Professional Writing Skills in English	C110.1	To understand and identify the Common Errors in Writing and Speaking.
		C110.2	To Achieve better Technical writing and Presentation skills.
		C110.3	To read Technical proposals properly and make them to Write good technical reports.
		C110.4	Acquire Employment and Workplace communication skills.
		C110.5	To learn about Techniques of Information Transfer through presentation in different level.

S.No.	Subject Code	Course Code	Course Outcomes
11	BKSKK107-207 Samskruthika Kannada	C111.1	ಕನ್ನಡ ಭಾಷೆ, ಸಾಹಿತ್ಯ ಮತ್ತು ಕನ್ನಡದ ಸಂಸ್ಕೃತಿಯ ಕುರಿತು ಅರಿವು ಮೂಡಿರುತ್ತದೆ.
		C111.2	ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಪ್ರಧಾನ ಭಾಗವಾದ ಆಧುನಿಕ ಪೂರ್ವ ಮತ್ತು ಆಧುನಿಕ ಕಾವ್ಯಗಳನ್ನು ಸಾಂಕೇತಿಕವಾಗಿ ಕಲಿತು ಹೆಚ್ಚಿನ ಓದಿಗೆ ಮತ್ತು ಜ್ಞಾನಕ್ಕೆ ಸ್ಫೂರ್ತಿ ಮೂಡುತ್ತದೆ.
		C111.3	ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಹಿತ್ಯ ಮತ್ತು ಸಂಸ್ಕೃತಿಯ ಬಗ್ಗೆ ಅರಿವು ಹಾಗೂ ಆಸಕ್ತಿಯನ್ನು ಹೆಚ್ಚಾಗುತ್ತದೆ.
		C111.4	ತಾಂತ್ರಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯ ಹಾಗೂ ಅವರುಗಳ ಸಾಧಿಸಿದ ವಿಷಯಗಳನ್ನು ತಿಳಿದುಕೊಂಡು ನಾಡಿನ ಇನ್ನಿತರ ವ್ಯಕ್ತಿಗಳ ಬಗ್ಗೆ ತಿಳಿದುಕೊಳ್ಳಲು ಕೌತುಕತೆ ಹೆಚ್ಚಾಗುತ್ತದೆ.
		C111.5	ಸಾಂಸ್ಕೃತಿಕ, ಜನಪದ ಹಾಗೂ ಪ್ರವಾಸ ಕಥನಗಳ ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು.

11	BKSKK107-207 Balake Kannada	OR	
		C112.1	To understand the necessity of learning of local language for comfortable life.
		C112.2	To speak, read and write Kannada language as per requirement.
		C112.3	To communicate (converse) in Kannada language in their daily life with kannada speakers.
		C112.4	To Listen and understand the Kannada language properly.
		C112.5	To speak in polite conservation.

S.No.	Subject Code	Course Code	Course Outcomes
12	BICOK107-207 Indian Constitution	C113.1	Analyse the basic structure of Indian Constitution.
		C113.2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
		C113.3	know about our Union Government, political structure & codes, procedures.
		C113.4	Understand our State Executive & Elections system of India.
		C113.5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

S.No.	Subject Code	Course Code	Course Outcomes
13	BSFHK158 Scientific Foundation Of Health	C114.1	To understand and analyse about Health and wellness (and its Beliefs) & It's balance for positive mindset.
		C114.2	Develop the healthy lifestyles for good health for their better future.
		C114.3	Build a Healthy and caring relationships to meet the requirements of good/social/positive life.
		C114.4	To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future.
		C114.5	Prevent and fight against harmful diseases for good health through positive mindset

S.No.	Subject Code	Course Code	Course Outcomes
14	BIDTK158/258 Innovation And Design Thinking	C115.1	Appreciate various design process procedure
		C115.2	Generate and develop design ideas through different technique
		C115.3	Identify the significance of reverse Engineering to Understand products
		C115.4	Draw technical drawing for design ideas

S.No.	Subject Code	Course Code	Course Outcomes
15	BME301 Mechanics Of Materials	C116.1	Understand the concepts of stress and strain in simple and compound bars.
		C116.2	Explain the importance of principal stresses and principal planes & Analyse cylindrical pressure vessels under various loadings
		C116.3	Apply the knowledge to understand the load transferring

			mechanism in beams and stress distribution due to shearing force and bending moment
		C116.4	Evaluate stresses induced in different cross-sectional members subjected to shear loads.
		C116.5	Apply basic equation of simple torsion in designing of circular shafts & Columns

S.No.	Subject Code	Course Code	Course Outcomes
16	BME302 Manufacturing Process	C117.1	Describe the casting process and prepare different types of cast products. Acquire knowledge on Pattern, Core, Gating, Riser system and to use Jolt, Squeeze, and Sand Slinger Moulding machines
		C117.2	Compare the Gas fired pit, Resistance, Coreless, Electrical and Cupola Metal Furnaces. Compare the Gravity, Pressure die, Centrifugal, Squeeze, slush and Continuous Metal mold castings.
		C117.3	Understand the Solidification process and Casting of Non-Ferrous Metals.
		C117.4	Describe the Metal Arc, TIG, MIG, Submerged and Atomic Hydrogen Welding processes etc. used in manufacturing
		C117.5	Describe the methods of different joining processes and thermal effects in joining process

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17	BME303 Material Science and Engineering	C201.1	Understand the atomic arrangement in crystalline materials and describe the periodic arrangement of atoms in terms of unit cell parameters.
		C201.2	Understand the importance of phase diagrams and the phase transformations
		C201.3	Explain various heat treatment methods for controlling the microstructure
		C201.4	Correlate between material properties with component design and identify various kinds of defects.
		C201.5	Apply the method of materials selection, material data and knowledge sources for computer-aided selection of materials

S.No.	Subject Code	Course Code	Course Outcomes
18	BME304 Basic Thermodynamics	C202.1	Explain fundamentals of thermodynamics and evaluate energy interactions across the boundary of thermodynamic systems.
		C202.2	Apply 1st law of thermodynamics to closed and open systems and determine quantity of energy transfers.
		C202.3	Evaluate the feasibility of cyclic and non-cyclic processes using 2nd law of thermodynamics
		C202.4	Apply the knowledge of entropy, reversibility and irreversibility to solve numerical problems and Interpret the behaviour of pure substances and its application in practical problems
		C202.5	Recognize differences between ideal and real gases and evaluate thermodynamic properties of ideal and real gas

| | | | mixtures using various relations. |

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19	BMEL305 Introduction to Modelling and Design for Manufacturing	C203.1	Create and modify a form based design
		C203.2	use design tools for a moulded parts
		C203.3	Demonstrate proficiency in the setup and creation of a design
		C203.4	Simulate the assembly of machine components in 3D environment

S.No.	Subject Code	Course Code	Course Outcomes
20	BME306A Electric and Hybrid Vehicle Technology	C204.1	Understand the architecture and vehicle dynamics of electric and hybrid vehicles
		C204.2	Analyze the power management systems for electric and hybrid vehicles
		C204.3	Understand different motor control strategies for electric and hybrid vehicles
		C204.4	Analyze various components of electric and hybrid vehicles with environment concern
		C204.5	Understand the domain related grid interconnections of electric and hybrid vehicle.

S.No.	Subject Code	Course Code	Course Outcomes
21	BSCK307 Social Connect and Responsibility	C205.1	Communicate and connect to the surrounding.
		C205.2	Create a responsible connection with the society.
		C205.3	Involve in the community in general in which they work.
		C205.4	Notice the needs and problems of the community and involve them in problem –solving.
		C205.5	Develop among themselves a sense of social & civic responsibility & utilize their knowledge in finding practical solutions to individual and community problems

S.No.	Subject Code	Course Code	Course Outcomes
22	BME358C Spreadsheet for Engineers	C206.1	Create different plots and charts
		C206.2	Compute different functions, conditional functions and make regression analysis
		C206.3	Carryout iterative solutions for roots, multiple roots, optimization and non-linear regression analysis
		C206.4	Carryout matrix operations
		C206.5	Understand VBA and UDF, VBA subroutines and Macros

S.No.	Subject Code	Course Code	Course Outcomes
23	BPEK359 Physical Education(Sports & Athletics)-I	C209.1	Understand the fundamental concepts and skills of Physical Education, health, Nutrition and Fitness
		C209.2	Familiarization of health-related exercises, sports for overall-growth and development
		C209.3	Create a foundation for the professionals in Physical Education and Sports
		C209.4	Participate in the competition at regional/state/national/international levels.
		C209.5	Create consciousness among the students on Health, Fitness, and Wellness in developing and maintaining a healthy lifestyle.
	OR		
	BNSK359 National Service Scheme (NSS)	C209.1	Understand the importance of his / her responsibilities towards society
		C209.2	Analyse the environmental and societal problems/issues and will be able to design solutions for the same.
		C209.3	Evaluate the existing system and to propose practical solutions for the same for sustainable development.
		C209.4	Implement government or self-driven projects effectively in the field.
		C209.5	Develop capacity to meet emergencies and natural disasters & practice national integration and social harmony in general.
	OR		
	BYOK359 Yoga for a Better Life	C209.1	Understand the meaning, aim and objectives of Yoga.
		C209.2	Perform Suryanamaskar and able to Teach its benefits.
		C209.3	Understand and teach different Asanas by name, its importance, methods and benefits.
		C209.4	Instruct Kapalabhati and its need and importance
		C209.5	Teach different types of Pranayama by its name, precautions, procedure and uses
		C209.6	Coach different types of Kriyas , method to follow and usefulness.

S.No.	Subject Code	Course Code	Course Outcomes
27	BME401 Applied Thermodynamics	C210.1	Analyse air standard cycle to evaluate the performance of I C engines.
		C210.2	Analyze the gas power cycles to evaluate the overall efficiency of gas turbine plant.
		C210.3	Apply thermodynamic concepts to analyze the performance of vapour power cycles
		C210.4	Analyze the vapour compression and vapour absorption systems to improve refrigeration
		C210.5	Determination of various parameters of air compressors and steam nozzles.

S.No.	Subject Code	Course Code	Course Outcomes
28	BME402 Machining Science & Metrology	C211.1	Analyze various cutting parameters in metal cutting.
		C211.2	Understand the construction of machines & machine tools and compute the machining time of various operations
		C211.3	Understand the concept of Temperature in Metal Cutting, forms of wear in metal cutting and Cutting fluids
		C211.4	Understand the objectives of metrology, methods of measurement, standards of measurement & various measurement parameters. Explain tolerance, limits of size, fits, geometric and position tolerances, gauges and their design
		C211.5	Understand the working principle of different types of comparators, gauges, angular Measurements

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29	BME403 Fluid Mechanics	C212.1	Identify and calculate the key fluid properties used in the analysis of fluid behavior.
		C212.2	Understand and apply the principles of pressure, buoyancy and floatation
		C212.3	Apply the knowledge of fluid dynamics while addressing problems of mechanical and chemical engineering.
		C212.4	Understand the concept of boundary layer in fluid flow and apply dimensional analysis to form dimensionless numbers in terms of input output variables.
		C212.5	Understand the basic concept of compressible flow and CFD

S.No.	Subject Code	Course Code	Course Outcomes
30	BME404 Mechanical Measurements And Metrology Lab	C213.1	To calibrate pressure gauge, thermocouple, LVDT, load cell, micrometer
		C213.2	To measure angle using Sine Center/ Sine Bar/ Bevel Protractor, alignment using Autocollimator/Roller set
		C213.3	To demonstrate measurements using Optical Projector/Tool maker microscope, Optical flats.
		C213.4	To measure cutting tool forces using Lathe/Drill tool dynamometer
		C213.5	To measure Screw thread parameters using 2-Wire or 3-Wire method, gear tooth profile using geartooth vernier/Gear tooth micrometer.

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31	BME405A Non Traditional Machining	C214.1	Describe non-traditional machining process and compare with Traditional machining process. Recognize the need for Non-traditional machining process.
		C214.2	Describe the constructional features, performance parameters, process characteristics, applications, advantages, and limitations of USM, AJM and WJM.
		C214.3	Characterize the need of Chemical and electro-chemical machining process along with the constructional features, process parameters, process characteristics, applications,

		C214.4	Illustrate the constructional feature of the equipment, process parameters, process characteristics, applications, advantages and limitations EDM & PAM
			advantages, and limitations.

S.No.	Subject Code	Course Code	Course Outcomes
32	BME456D Programming in C++	C215.1	Apply Object Oriented Programming concepts in C++
		C215.2	Write a C++ program by applying knowledge of mathematics, science, and engineering
		C215.3	Function on multi-disciplinary teams.
		C215.4	Identify, formulate, and solve engineering problems

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32	BBOK407 Biology for Engineers	C216.1	Elucidate the basic biological concepts via relevant industrial applications and case studies.
		C216.2	Evaluate the principles of design and development, for exploring novel bioengineering projects.
		C216.3	Corroborate the concepts of biomimetics for specific requirements
		C216.4	Think critically towards exploring innovative biobased solutions for socially relevant problems.

S.No.	Subject Code	Course Code	Course Outcomes
33	BUHK408 Universal Human Values	C217.1	They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
		C217.2	They would have better critical ability.
		C217.3	They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).
		C217.4	It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.

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	BPEK459 Physical Education(Sports & Athletics)-II	C218.1	Understand the ethics and moral values in sports and athletics
		C218.2	Perform in the selected sports or athletics of student's choice.
		C218.3	Understand the roles and responsibilities of organization and administration of sports and games.
	OR		
	BNSK459	C218.1	Understand the importance of his / her responsibilities towards society
		C218.2	Analyse the environmental and societal problems/issues and will be able to design solutions for the same.
		C218.3	Evaluate the existing system and to propose practical solutions for the same for sustainable development.

34	National Service Scheme (NSS)	C218.4	Implement government or self-driven projects effectively in the field.
		C218.5	Develop capacity to meet emergencies and natural disasters & practice national integration and social harmony in general.
		OR	
	BYOK459 Yoga for a Better Life	C218.1	Understand the meaning, aim and objectives of Yoga.
		C218.2	Perform Suryanamaskar and able to Teach its benefits.
		C218.3	Understand and teach different Asanas by name, its importance, methods and benefits.
		C218.4	Instruct Kapalabhati and its need and importance
		C218.5	Teach different types of Pranayama by its name, precautions, procedure and uses
		C218.6	Coach different types of Kriyas , method to follow and usefulness.