

DEPARTMENT OF CIVIL ENGINEERING
Course Outcomes-2022 Scheme

S.No.	Subject Code	Course Code	Course Outcomes
1	BMATC101 Mathematics-I for Civil Engineering stream	C101.1	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
		C101.2	analyze the solution of linear and nonlinear ordinary differential equations
		C101.3	get acquainted and to apply modular arithmetic to computer algorithms
		C101.4	make use of matrix theory for solving the system of linear equations and compute eigenvalues and eigen vectors
		C101.5	familiarize with modern mathematical tools namely MATHEMATICA/MATLAB/ PYTHON/ SCILAB

S.No.	Subject Code	Course Code	Course Outcomes
2	BCHEC102 Chemistry for CSE Stream	C102.1	Identify the terms and applications processes involved in scientific and engineering
		C102.2	Explain the phenomena of chemistry to describe the methods of engineering processes
		C102.3	Solve the problems in chemistry that are pertinent in engineering applications.
		C102.4	Apply the basic concepts of chemistry to explain the chemical properties and processes.
		C102.5	Analyze properties and multidisciplinary situations processes associated with chemical substances in multidisciplinary situations.

S.No.	Subject Code	Course Code	Course Outcomes
3	BCEDK103 Computer Aided Engineering Drawing	C103.1	Draw and communicate the objects with definite shape and dimensions
		C103.2	Recognize and Draw the shape and size of objects through different views
		C103.3	Develop the lateral surfaces of the object
		C103.4	Create a Drawing views using CAD software.
		C103.5	Identify the interdisciplinary engineering components or systems through its graphical

			representation.
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S.No.	Subject Code	Course Code	Course Outcomes
4	BESCK104D Introduction to Mechanical Engineering	C104.1	Explain the concepts of Role of Mechanical Engineering and Energy sources.
		C104.2	Describe the Machine Tool Operations and advanced Manufacturing process.
		C104.3	Explain the Working Principle of IC engines and EV vehicles
		C104.4	Discuss the Properties of Common Engineering Materials and various Metal Joining Processes.
		C104.5	Explain the Concepts of Mechatronics, Robotics and Automation in IoT

S.No.	Subject Code	Course Code	Course Outcomes
5	BPLCK105B Introduction to Python Programming	C105.1	Learn the syntax and semantics of the Python programming language.
		C105.2	Illustrate the process of structuring the data using lists, tuples
		C105.3	Appraise the need for working with various documents like Excel, PDF, Word and Others.
		C105.4	Demonstrate the use of built-in functions to navigate the file system
		C105.5	Implement the Object Oriented Programming concepts in Python.

S.No.	Subject Code	Course Code	Course Outcomes
6	BENGK106 Communicative English	C106.1	understand and apply the fundamentals of communication skills in their communication skills
		C106.2	identify the nuance of phonetics , intonation and enhance pronunciation skills
		C106.3	to impart basic english grammar and essentials of language skills as per presentation requirement
		C106.4	understand and use all types of english vocabulary and language proficiency
		C106.5	adapt the technique of information transfer through presentation

S.No.	Subject Code	Course Code	Course Outcomes
		C107.1	Analyse the basic structure of Indian Constitution.
		C107.2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.

7	BICOK107 Indian Constitution	C107.3	Know about our Union Government, political structure & codes, procedures.
		C107.4	Understand our State Executive & Elections system of India
		C107.5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

S.No.	Subject Code	Course Code	Course Outcomes
8	BSFHK158 Scientific Foundations of Health	C108.1	To understand and analyse about Health and wellness (and its Beliefs) & It's balance for positive mindset.
		C108.2	Develop the healthy lifestyles for good health for their better future
		C108.3	Build a Healthy and caring relationships to meet the requirements of good/social/positive life.
		C108.4	To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future.
		C108.5	Prevent and fight against harmful diseases for good health through positive mindset.

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9	BMATC201 Mathematics- II for Civil Engineering Stream	C109.1	Apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing area and volume.
		C109.2	Understand the applications of vector calculus refer to solenoidal, and irrotational vectors. Orthogonal curvilinear coordinates.
		C109.3	Demonstrate the idea of Linear dependence and independence of sets in the vector space, and linear transformation
		C109.4	Apply the knowledge of numerical methods in analyzing the discrete data and solving the physical and engineering problems.
		C109.5	Get familiarize with modern mathematical tools namely MATHEMATICA/ MATLAB /PYTHON/ SCILAB

S.No.	Subject Code	Course Code	Course Outcomes
		C110.1	Elucidate the concepts in oscillations, waves, elasticity and material failures
		C110.2	Summarize concepts of acoustics in buildings and explain the concepts in radiation and photometry

10	BPHYC202 Applied Physics for Civil Engineering Stream	C110.3	Discuss the principles photonic devices and their application relevant to civil engineering.
		C110.4	Describe the various natural hazards and safety precautions.
		C110.5	Practice working in groups to conduct experiments in physics and perform precise and honest measurements.

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11	BCIVC203 Engineering Mechanics	C111.1	Compute the resultant of a force system and resolution of a force
		C111.2	Comprehend the action for forces, moments, and other types of loads on rigid bodies and compute the reactive forces
		C111.3	Analyse the frictional resistance offered by different planes
		C111.4	Locate the centroid and compute the moment of inertia of sections
		C111.5	Analyze the bodies in motion

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12	BESCK204E Introduction to C Programming	C112.1	. Elucidate the basic architecture and functionalities of a computer and also recognize the hardware parts.
		C112.2	Apply programming constructs of C language to solve the real world problem
		C112.3	Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting
		C112.4	Explore user-defined data structures like structures, unions and pointers in implementing solutions
		C112.5	Design and Develop Solutions to problems using modular programming constructs using functions

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13	BETCK205B Green Buildings	C113.1	Select different building materials for construction
		C113.2	Apply effective environmental friendly building technology
		C113.3	Analyze global warming due to different materials in construction
		C113.4	Analyse buildings for green rating
		C113.5	Use alternate source of energy and effective use water

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14	BPWSK206 Professional Writing Skills in English	C114.1	To understand and identify the Common Errors in Writing and Speaking.
		C114.2	To Achieve better Technical writing and Presentation skills.
		C114.3	To read Technical proposals properly and make them to Write good technical reports.
		C114.4	Acquire Employment and Workplace communication skills.
		C114.5	Acquire Employment and Workplace communication skills.

S.No.	Subject Code	Course Code	Course Outcomes
15	BKBKK207 Balake Kannada	C115.1	To understand the necessity of learning of local language for comfortable life.
		C115.2	To speak, read and write Kannada language as per requirement.
		C115.3	To communicate (converse) in Kannada language in their daily life with kannada speakers.
		C115.4	To Listen and understand the Kannada language properly.
		C115.5	To speak in polite conversation.
	OR		
	BKBKK207 Samskrutika Kannada	C115.1	ಕನ್ನಡ ಭಾಷೆ, ಸಾಹಿತ್ಯ ಮತ್ತು ಕನ್ನಡದ ಸಂಸ್ಕೃತಿಯ ಕುರಿತು ಅರಿವು ಮೂಡಿರುತ್ತದೆ.
		C115.2	ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಪ್ರಧಾನ ಭಾಗವಾದ ಆಧುನಿಕ ಪೂರ್ವ ಮತ್ತು ಆಧುನಿಕ ಕಾವ್ಯಗಳನ್ನು ಸಾಂಕೇತಿಕವಾಗಿ ಕಲಿತು ಹೆಚ್ಚಿನ ಓದಿಗೆ ಮತ್ತು ಜ್ಞಾನಕ್ಕೆ ಸ್ಪೂರ್ತಿ ಮೂಡುತ್ತದೆ.
		C115.3	ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಹಿತ್ಯ ಮತ್ತು ಸಂಸ್ಕೃತಿಯ ಬಗ್ಗೆ ಅರಿವು ಹಾಗೂ ಆಸಕ್ತಿಯನ್ನು ಹೆಚ್ಚಾಗುತ್ತದೆ.
		C115.4	ತಾಂತ್ರಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯ ಹಾಗೂ ಅವರುಗಳ ಸಾಧಿಸಿದ ವಿಷಯಗಳನ್ನು ತಿಳಿದುಕೊಂಡು ನಾಡಿನ ಇನ್ನಿತರ ವ್ಯಕ್ತಿಗಳ ಬಗ್ಗೆ ತಿಳಿದುಕೊಳ್ಳಲು ಕೌತುಕತೆ ಹೆಚ್ಚಾಗುತ್ತದೆ.
C115.5		ಸಾಂಸ್ಕೃತಿಕ, ಜನಪದ ಹಾಗೂ ಪ್ರವಾಸ ಕಥನಗಳ ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು.	

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16	BIDTK258 Innovation & Design	C116.1	Appreciate various design process procedure
		C116.2	Generate and develop design ideas through different technique
		C116.3	Identify the significance of reverse Engineering to

	Thinking		Understand products
		C116.4	Draw technical drawing for design ideas

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17	BCV301 Strength of Materials	C201.1	Evaluate the simple stresses, strains and compound stresses
		C201.2	Calculate the Bending moments, shear force and draw BMD, SFD for various types of beams and loadings
		C201.3	Analyse the bending stress, shear stress and torsional stress in beams and shafts with different cross sections
		C201.4	Evaluate the deflection in beams and determine the stability of the columns.
		C201.5	Evaluate the behaviour and strength of structural elements under the action of compound stresses and stresses in thin and thick cylinders.

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18	BCV302 Engineering Survey	C202.1	Summarize various types of surveying and carry out distance measurement using various equipment's <input type="checkbox"/>
		C202.2	Illustrate the use and applications of levelling and theodolite <input type="checkbox"/>
		C202.3	Plot contours, longitudinal and cross sections for construction projects. <input type="checkbox"/>
		C202.4	Set curves for construction works and carry out estimation of areas and volumes. <input type="checkbox"/>
		C202.5	Demonstrate the necessary skills to carry out GPS and DRONE Surveying

S.No.	Subject Code	Course Code	Course Outcomes
19	BCV303 ENGINEERING GEOLOGY	C203.1	Apply geological knowledge in different civil engineering practice. <input type="checkbox"/> <input type="checkbox"/>
		C203.2	Acquire knowledge on durability and competence of foundation rocks, and will be able to use the best building materials.
		C203.3	Students will become competent enough for the safety, stability, economy and life of the structures that they construct <input type="checkbox"/>
		C203.4	Able to solve various issues related to ground water exploration, build up dams, bridges, tunnels which are often confronted with ground water problems <input type="checkbox"/>
		C203.5	Students will become Intelligent enough to apply GIS, GPS and remote sensing as a latest tool in different civil engineering for safe and solid construction

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20	BCV304 WATER SUPPLY AND WASTEWATER ENGINEERING	C204.1	Estimate the average and peak water demand for a community.
		C204.2	Evaluate water quality and environmental significance of various parameters and plan suitable treatment system
		C204.3	Design the different units of water treatment plant
		C204.4	Design the various units of wastewater treatment plant.
		C204.5	Design of various AOPs and low cost treatment units

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21	BCV305 COMPUTER AIDED BUILDING PLANNING AND DRAWING	C205.1	Prepare, read and interpret the drawings in a professional set up
		C205.2	Know the procedures of submission of drawings and Develop working and submission drawings for building
		C205.3	Plan of residential or public building as per the given requirements

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22	BCV306A Sustainable Design Concept for Building Services	C206.1	Comprehend sustainable design, climatology, shading system and analyze heat transfer mechanism in buildings
		C206.2	Assess the design considerations and parameters for thermal comfort, visual comfort, indoor air quality and acoustics
		C206.3	Develop solutions for energy efficiency, water efficiency and waste management in buildings
		C206.4	Adopt green project management methodology and evaluate building life cycle assessment.
		C206.5	Implement green practices during construction and operation phase of the buildings for achieving green rating.

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23	BSCK307	C207.1	Communicate and connect to the surrounding.
		C207.2	Create a responsible connection with the society
		C207.3	Involve in the community in general in which they work.
		C207.4	Notice the needs and problems of the community and involve them in problem –solving.
		C207.5	Develop among themselves a sense of social & civic responsibility & utilize their knowledge in

	Social Connect & Responsibility		finding practical solutions to individual and community problems.
		C207.6	Develop competence required for group-living and sharing of responsibilities & gain skills in mobilizing community participation to acquire leadership qualities and democratic attitudes.

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24	BCV358A Data analytics with Excel	C208.1	Prepare the data sets and perform the analysis.
		C208.2	Analyse and perform repetitive calculations using several functions
		C208.3	Design and apply solutions to verify the data sets

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25	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			
			C209.1	Understand the meaning, aim and objectives of Yoga.
			C209.2	Perform Suryanamaskar and able to Teach its benefits.

	BYOK359 Yoga for a Better Life	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.

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26	BCV401 Analysis of Structures	C210.1	. identify the different forms of structural systems and analyse the trusses.
		C210.2	Evaluate the slope and deflections in beams, frames and trusses by using moment area method and energy principle.
		C210.3	Analyse and determine the stress resultants in arches and cables.
		C210.4	Analyse the indeterminate structures and construct BMD AND SFD using slope deflection methods.
		C210.5	Analyse the indeterminate structures and construct BMD AND SFD using Moment Distribution Method

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27	BCV402 FLUID MECHANICS AND HYDRAULICS	C211.1	Explain the fundamental properties of fluids and solve problems on fluid pressure and hydrostatics.
		C211.2	Apply the principles of kinematics and dynamics of fluid flow to solve problems on velocity and pressure.
		C211.3	Compute the discharge through pipes, notches and weirs.
		C211.4	Design the turbines and open channels of different sections and to estimate the energy loss in hydraulic jump.
		C211.5	Able to interpret the experimental results of discharge, efficiency based on the test conducted in the laboratory.

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28	BCV403 TRANSPORTA TION ENGINEERIN G	C212.1	Explain the basic principles of geometric design in the context of transportation engineering and planning.
		C212.2	Select the appropriate pavement materials for construction and design the pavement as per standard practices.
		C212.3	Conduct traffic studies and analyse traffic data for practical applications
		C212.4	Identify the Components parts of Railway Track and design the suitable runway for an Airport.
		C212.5	Able to interpret the experimental results of highway materials based on laboratory tests and design the

			pavement as per IRC guidelines
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29	BCV404 BUILDING MATERIALS LABORATOR Y	C213.1	Analyze the physical characteristics, and behavior of common building materials
		C213.2	Reproduce the basic knowledge of mathematics and engineering in finding the strength in tension, compression, shear and torsion for steel
		C213.3	Evaluate the impact of engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to unsuitable materials
		C213.4	Recognize the importance of ethical conduct, integrity, and accuracy in materials testing and reporting

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30	BCV405D Watershed Management	C214.1	Discuss surface and ground water resources system and, human influences.
		C214.2	Integrate water resources system in arid and semi-arid regions and explain watershed aquifer for management
		C214.3	Analyse water resources related issues for conservation and synthesize augmentation of water resources
		C214.4	Design integrated watershed management system.
		C214.5	Apply modern tools in watershed management

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31	BCV456A Electronic Waste Management - Issues and Challenges	C215.1	Explain the concept of e-waste and its significance in the context of environmental sustainability.
		C215.2	Identify and classify different types of e-waste and describe their components.
		C215.3	Recognize the potential health and environmental hazards associated with improper e-waste management
		C215.4	Evaluate and apply appropriate methods for the collection, recycling, and disposal of e-waste.
		C215.5	Demonstrate knowledge of the existing policies, regulations, and frameworks for e-waste management in India

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32	BBOK407	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.

	Biology for Engineers	C216.3	Corroborate the concepts of biomimetics for specific requirements
		C216.4	Think critically towards exploring innovative biobased solutions for socially relevant problems.

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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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34	BPEK459 Physical Education(Sport & 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 National Service Scheme (NSS)	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.
		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		
		C218.1	Understand the meaning, aim and objectives of Yoga.

	<p style="text-align: center;">BYOK459 Yoga for a Better Life</p>	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.