



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

ACADEMIC YEAR: 2022-23

ODD SEMESTER

III Semester: 2022-2023 (ODD Sem)

Course Name: Transform Calculus, Fourier Series And Numerical Techniques

Course Code: 21MAT31/C301

Cos	Statements
C301.1	To solve ordinary differential equations using Laplace transform.
C301.2	Demonstrate Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.
C301.3	To use Fourier transforms to analyze problems involving continuous-time signals and to apply Z-Transform techniques to solve difference equations
C301.4	To solve mathematical models represented by initial or boundary value problems involving partial differential equations
C301.5	Determine the extremals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	1								1	3	2	
CO2	3	2	2	2								1	3	2	
CO3	3	2	2	1								1	3	2	
CO4	3	2	1	2								1	3	2	
CO5	3	2	1	2								1	3	2	



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

ACADEMIC YEAR: 2022-23

ODD SEMESTER

III Semester: 2022-2023 (ODD Sem)

Course Name: Data Structures and Applications

Course Code: : 21CS32/C302

Cos	Statements
C302.1	Identify different data structures and their applications.
C302.2	Apply stack and queues in solving problems
C302.3	Demonstrate applications of linked list.
C302.4	Explore the applications of trees and graphs to model and solve the real-world problem .
C302.5	Make use of Hashing techniques and resolve collisions during mapping of key value pairs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2											2	3	
CO2	2	1	3	3									2	3	
CO3		2	3	2									2	3	
CO4	1	2	3	1									2	3	
CO5	3	2	3										2	3	



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

ACADEMIC YEAR: 2022-23

ODD SEMESTER

III Semester: 2022-2023 (ODD Sem)

Course Name:Analog and Digital Electronics

Course Code: : 21CS33/C303

Cos	Statements
C303.1	Design and analyze application of analog circuits using photo devices, timer IC, power supply and regulator IC and op-amp.
C303.2	Explain the basic principles of A/D and D/A conversion circuits and develop the same.
C303.3	Simplify digital circuits using Karnaugh Map , and Quine-McClusky Methods
C303.4	Explain Gates and flip flops and make us in designing different data processing circuits, registers and counters and compare the types.
C302.5	Develop simple HDL programs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO ₃
CO1	1	2	3										3	2	
CO2	3	2	1										3	2	
CO3	1	2	3										3	2	
CO4	3	1	2										2	3	
CO5	1	1	3										2	3	



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

ACADEMIC YEAR: 2022-23

ODD SEMESTER

III Semester: 2022-2023 (ODD Sem)

Course Name: Computer Organization and Architecture

Course Code: 21CS34/C304

Cos	Statements
C304.1	Explain the organization and architecture of computer systems with machine instructions and programs
C304.2	Analyze the input/output devices communicating with computer system
C304.3	Demonstrate the functions of different types of memory devices
C304.4	Apply different data types on simple arithmetic and logical unit
C304.5	Analyze the functions of basic processing unit, Parallel processing and pipelining

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C01	3	1		2									3	2	
C02	1	2	3	1									3	2	
C03	2	2	3	2									2	3	
C04	1	2	3	2									3	3	
C05	3	2	1										3	2	



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

ACADEMIC YEAR: 2022-23

ODD SEMESTER

V Semester: 2022-2023 (ODD Sem)

Course Name: Management and Entrepreneurship for IT Industry

Course Code: 18CS51 /C501

Cos	Statements
C501.1	Define management, organization, entrepreneur, planning, staffing, ERP and outline their importance in entrepreneurship
C501.2	Describe Directing and controlling for the management
C501.3	Make use of IPRs and institutional support in entrepreneurship
C501.4	Utilize the resources available effectively through ERP
C501.5	To know about the Micro and small enterprises

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3					1	2				2	1	3		3
CO2	3					1	2	2			3	1	2		3
CO3	2					1	2	1			2	1	3		3
CO4	2					1	2	2			3	1	2		3
CO5						1	2	1			2	1	3		3



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

ACADEMIC YEAR: 2022-23

ODD SEMESTER

V Semester: 2022-2023 (ODD Sem)

Course Name: Python Programming
Course Code: 18AI52/C502

Cos	Statements
C502.1	Demonstrate proficiency in handling of loops and creation of functions.
C502.2	Identify the methods to create and manipulate lists, tuples and dictionaries
C502.3	Discover the commonly used operations involving regular expressions and file system.
C502.4	Interpret the concepts of Object-Oriented Programming as used in Python.
C502.5	Determine the need for scraping websites and working with CSV, JSON and other file formats.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C01	3	2											2	3	
C02	2	1	3	2									2	3	
C03	1	2	3	2									2	3	
C04	1	2	3	1									2	3	
C05	3	2	3										2	3	



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

ACADEMIC YEAR: 2022-23

ODD SEMESTER

V Semester: 2022-2023 (ODD Sem)

Course Name: Database Management System

Course Code: : 18CS53/C503

Cos	Statements
C503.1	Identify, analyze and define database objects, enforce integrity constraints on a database using RDBMS.
C503.2	Use Structured Query Language (SQL) for database manipulation.
C503.3	Design and build simple database systems
C503.4	Develop application to interact with databases.
C503.5	Demonstrate about the Database Recovery Protocols

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO ₃
C01	1	2	3										3	2	
C02	3	2	1										3	2	
C03	1	2	3										3	2	
C04	3	1	2										2	3	
C05	1	1	3										2	3	



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

ACADEMIC YEAR: 2022-23

ODD SEMESTER

V Semester: 2022-2023 (ODD Sem)

Course Name: Automata Theory and Computability

Course Code: 18CS54/C504

Cos	Statements
C504.1	Acquire fundamental understanding of the core concepts in automata theory and Theory of Computation
C504.2	Learn how to translate between different models of Computation (e.g., Deterministic and Non-deterministic and Software models).
C504.3	Design Grammars and Automata (recognizers) for different language classes and become knowledgeable about restricted models of Computation (Regular, Context Free) and their relative powers.
C504.4	Develop skills in formal reasoning and reduction of a problem to a formal model, with an emphasis on semantic precision and conciseness.
C504.5	Classify a problem with respect to different models of Computation.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C01	3	1		2									3	2	
C02	1	2	3	1									3	2	
C03	2	2	3	2									2	3	
C04	1	2	3	2									3	3	
C05	3	2	1										3	2	



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

ACADEMIC YEAR: 2022-23

ODD SEMESTER

V Semester: 2022-2023 (ODD Sem)

Course Name: Principles of Artificial Intelligence

Course Code: : 18AI55 /C505

Cos	Statements
C506.1	Apply the knowledge of Artificial Intelligence to write simple algorithm for agents.
C506.2	Apply the AI knowledge to solve problem on search algorithm.
C506.3	Develop knowledge base sentences using propositional logic and first order logic.
C506.4	Apply first order logic to solve knowledge engineering process.
C506.5	To Know about the knowledge presentation and Exert system

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO1	3		3										3	2	
CO2	1	2	2	2				3					3	2	
CO3	2	1	1	2					2				3	2	
CO4	1	1	3	2	3	2							3	2	
CO5	1	2	3	2									3	2	



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

ACADEMIC YEAR: 2022-23

ODD SEMESTER

V Semester: 2022-2023 (ODD Sem))

Course Name: Mathematics for Machine Learning

Course Code: : 18CS36 /C306

Cos	Statements
C307.1	To know about the basics of linear algebra
C307.2	Improve the skills and knowledge in linear algebra to get more out of machine learning.
C307.3	Understand the vector calculus required to build many common machine learning techniques.
C307.4	Learn the probability and distribution in statistics to build machine learning applications.
C307.5	Learn the basic theoretical properties of optimization problems, for applications in machine learning

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C01	2	1	2	2									3	3	
C02	1	1	1	2									2	3	
C03	1	3	2	3									3	3	
C04	2	2	3	2									2	3	
C05	1	2		1									2	3	



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

ACADEMIC YEAR: 2022-23

ODD SEMESTER

V Semester: 2022-2023 (ODD Sem))

Course Name: ENVIRONMENTAL STUDIES

Course Code : 18CS36 /C306

Cos	Statements
C307.1	Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale
C307.2	Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment
C307.3	Demonstrate ecology knowledge of a complex relationship between biotic and a biotic components
C307.4	Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.
C307.5	To demonstrate Latest Developments in Environmental Pollution Mitigation Tools

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C01	2	1	2				3						3	3	
C02	1	1	1	3			3						2	3	
C03	1	3	2				3						3	3	
C04	2	2	3				3		3	2			2	3	
C05	1	2					3		3	1			2	3	



Doddakallasandra, Bangalore-560061

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2022-23

COURSE OUTCOMES (ODD)

7th Semester

COURSE NAME: QUALITY SURVEYING AND CONTRACT MANAGEMENT

COURSE CODE: 18CV71(C701)

COs	STATEMENTS
C701.1	Taking out quantities and work out the cost and preparation of abstract for the estimated cost for various civil engineering works.
C701.2	Prepare detailed and abstract estimates for various road works, structural works and water supply and sanitary works.
C701.3	Prepare the specifications and analyze the rates for various items of work
C701.4	Assess contract and tender documents for various construction works.
C701.5	Prepare valuation reports of buildings.



Doddakallasandra, Bangalore-560061

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2022-23

COURSE OUTCOMES (ODD)

7th Semester

COURSE NAME: DESIGN OF RCC AND STEEL STRUCTURES

COURSE CODE: 18CV72(C702)

COs	STATEMENTS
C702.1	Students will acquire the basic knowledge in design of RCC and Steel Structures.
C702.2	Students will have the ability to follow design procedures as per codal provisions and skills to arrive at structurally safe RC and Steel members.



Doddakallasandra, Bangalore-560061

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2022-23

COURSE OUTCOMES (ODD)

7th Semester

COURSE NAME: AIR POLLUTION AND CONTROL

COURSE CODE: 18CV732(C703)

COs	STATEMENTS
C703.1	Identify the major sources of air pollution and understand their effects on health and environment.
C703.2	Evaluate the dispersion of air pollutants in the atmosphere and to develop air quality models.
C703.3	Ascertain and evaluate sampling techniques for atmospheric and stack pollutants.
C703.4	Choose and design control techniques for particulate and gaseous emissions.



Doddakallasandra, Bangalore-560061

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2022-23

COURSE OUTCOMES (ODD)

7th Semester

COURSE NAME: URBAN TRANSPORT PLANNING

COURSE CODE: 18CV745(C704)

COs	STATEMENTS
C704.1	Design, conduct and administer surveys to provide the data required for transportation planning
C704.2	Supervise the process of data collection about travel behavior and analyze the data for use in transport planning.
C704.3	Develop and calibrate modal split, trip generation rates for specific types of land use developments.
C704.4	Adopt the steps that are necessary to complete a long-term transportation plan.



Doddakallasandra, Bangalore-560061

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2022-23

COURSE OUTCOMES (ODD)

7th Semester

COURSE NAME: ENERGY AND ENVIRONMENT

COURSE CODE: 18ME751 (C705)

COs	STATEMENTS
C705.1	Understand energy scenario, energy sources and their utilization.
C705.2	Understand various methods of energy storage, energy management and economic analysis.
C705.3	Analyse the awareness about environment and eco system.
C705.4	Understand the environment pollution along with social issues and acts.



Doddakallasandra, Bangalore-560061

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2022-23

COURSE OUTCOMES (ODD)

7th Semester

COURSE NAME: COMPUTER AIDED DETAILING OF STRUCTURES

COURSE CODE: 18CVL76 (C706)

COs	STATEMENTS
C706.1	Prepare detailed working drawings



Doddakallasandra, Bangalore-560061

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2022-23

COURSE OUTCOMES (ODD)

7th Semester

COURSE NAME: GEOTECHNICAL ENGINEERING LABORATORY

COURSE CODE: 18CVL77(C707)

COs	STATEMENTS
C707.1	Physical and index properties of the soil
C707.2	Classify based on index properties and field identification
C707.3	To determine OMC and MDD, plan and assess field compaction program
C707.4	Shear strength and consolidation parameters to assess strength and deformation characteristics
C707.5	In-situ shear strength characteristics (SPT-Demonstration)



Department of Computer Science and Engineering
2.6.1 QIM Programme Outcomes (POs) and Course Outcomes (COs) offered by the
department -ODD Semester
Academic Year 2022-2023

SL NO	SEMESTER	SUBJECT/SUBJECT CODE
1	3	Transform Calculus, Fourier Series and Numerical Techniques(21MAT31)
2		Data Structures and Applications(21CS32)
3		Analog And Digital Electronics(21CS33)
4		Computer Organization and Architecture (21CS34)
5		Object Oriented Programming with Java Laboratory (21CSL35)
6		Social Connect & Responsibilities (21SCR36)
7		Samskruthika Kannada /Balake Kannada (21KSK37/21KBK37)
8		Mastering Office (21CSL381)
9	5	Management, Entrepreneurship for IT industry(18CS51)
10		Computer Networks and Security(18CS52)
11		Database Management Systems(18CS53)
12		Automata theory and Computability(18CS54)
13		Application Development using Python(18CS55)
14		Unix Programming (18CS56)
15		Computer Networks Laboratory (18CSL57)
16		DBMS Laboratory with Mini Project(18CSL58)
17	7	Artificial Intelligence & Machine Learning(18CS71)
18		Big Data Analytics(18CS72)
19		User Interface Design(18CS734)
20		Network Management(18CS742)
21		Energy & Environment(18ME751)
22		Artificial Intelligence & Machine Learning Lab(18CSL76)



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-III

Course Name: Transform Calculus, Fourier Series and Numerical Techniques

Course Code: 21MAT31/C301

Cos	Statements
C301.1	To solve ordinary differential equations using Laplace transform
C301.2	Demonstrate Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.
C301.3	To use Fourier transforms to analyze problems involving continuous-time signals and to apply Z-Transform techniques to solve difference equations
C301.4	To solve mathematical models represented by initial or boundary value problems involving partial differential equations
C301.5	Determine the extremals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.

Co-Po Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	1	1							1	1	1	1
CO2	2	2	1	1	1				2	1		2	1	1	3
CO3	3	3	3	1	1					1		2	2	2	2
CO4	3	3	3	3	1	1		1	1	3		2	3	1	1
CO5	2	3	3	1	2					1		3	2	1	2
AVERAGE	2.6	2.4	2.2	1.4	1.2	1	0	1	1.5	1.5	0	2	1.8	1.2	1.8



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-III

Course Name: DATA STRUCTURES AND APPLICATIONS

Course Code: 21CS32/C302

Cos	Statements
C302.1	Identify different data structures and their applications.
C302.2	Apply stack and queues in solving problems.
C302.3	Demonstrate applications of linked list.
C302.4	Explore the applications of trees and graphs to model and solve the real-world problem.
C302.5	Make use of Hashing techniques and resolve collisions during mapping of key value pairs

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	1	1							1	1	1	3
CO2	2	3	1	1	1							1	1	2	2
CO3	2	2	1	2	1							1	1	1	2
CO4	1	3	2	1	1							1	1	1	1
CO5	3	2	2	1	1							1	1	1	3
AVERAGE	2.2	2.2	1.4	1.2	1	0	0	0	0	0	0	1	1	1.2	2.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-III

Course Name: ANALOG AND DIGITAL ELECTRONICS

Course Code: 21CS33/C303

Cos	Statements
C303.1	Design and analyze application of analog circuits using photo devices, timer IC, power supply and regulator IC and op-amp.
C303.2	Explain the basic principles of A/D and D/A conversion circuits and develop the same..
C303.3	Simplify digital circuits using Karnaugh Map, and Quine-McClusky Methods
C303.4	Explain Gates and flip flops and make us in designing different data processing circuits, registers and counters and compare the types.
C303.5	Develop simple HDL programs

Co-Po Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	2	1	1							3	1	1	3
CO2	1	1	2	1	1							2	1	2	2
CO3	1	1	2	1	1							2	1	1	2
CO4	1	1	1	1	1							2	1	2	1
CO5	1	1	1	2	1							3	1	2	3
AVERAGE	1	1	1.6	1.2	1	0	0	0	0	0	0	2.4	1	1.6	2.2



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-III

Course Name: COMPUTER ORGANIZATION AND ARCHITECTURE

Course Code: 21CS34/C304

Cos	Statements
C304.1	Explain the organization and architecture of computer systems with machine instructions and programs
C304.2	Analyze the input/output devices communicating with computer system
C304.3	Demonstrate the functions of different types of memory devices
C304.4	Apply different data types on simple arithmetic and logical unit
C304.5	Analyze the functions of basic processing unit, Parallel processing and pipelining

Co-Po Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	1	1	1							1	2	1
CO2	3	1	1	1								2	2	1	2
CO3	3	3	3	3	1								3	3	3
CO4	1	3	3	1	1								2	2	2
CO5	3	3	3	1	3	3						1	3	3	3
AVERAGE	2.6	2.2	2.2	1.4	1.5	2	0	0	0	0	0	1.5	2.2	2.2	2.2



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-III

Course Name: OBJECT ORIENTED PROGRAMMING WITH JAVA LABORATORY

Course Code: 21CSL35/C305

Cos	Statements
C305.1	Use Eclipse/NetBeans IDE to design, develop, debug Java Projects.
C305.2	Analyze the necessity for Object Oriented Programming paradigm over structured programming and become familiar with the fundamental concepts in OOP.
C305.3	Demonstrate the ability to design and develop java programs, analyze, and interpret objectoriented data and document results.
C305.4	Apply the concepts of multiprogramming, exception/event handling, abstraction to develop robust programs.
C305.5	Develop user friendly applications using File I/O and GUI concepts.

Co-Po Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	1	1									1	1	1
CO2	1	1	1	1								2	1	1	2
CO3	2	2	3	2	2						1	1	2	2	2
CO4	2	2	1	2							1	1	2	2	2
CO5	2	2	2	1										1	1
AVERAGE	1.6	1.6	1.6	1.4	2	0	0	0	0	0	1	1.3	1.5	1.4	1.6



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-III

Course Name: SOCIAL CONNECT & RESPONSIBILITIES

Course Code: 21SCR36 /C306

Cos	Statements
C306.1	Understand social responsibility
C306.2	Practice sustainability
C306.3	Practice creativity
C306.4	Showcase planning skills
C306.5	Showcase organizational skills



CITY
ENGINEERING COLLEGE

2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-III

Course Name: Samskruthika Kannada /Balake Kannada

Course Code: 21KSK37/21KBK37/C307

Cos	Statements
C307.1	Introduction to Kannada literature and culture/To understand the necessity of learning of local language for comfortable life.
C307.2	The impact of modern developments on Kannada language, literature, and culture/To Listen and understand the Kannada language properly.
C307.3	Introduction to classical works/To speak, read and write Kannada language as per requirement
C307.4	Explanation of Kannada proverbs, idioms/To communicate (converse) in Kannada language in their daily life with kannada speakers.
C307.5	Explanation of commonly used Kannada words/To speak in polite conversation.



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-III

Course Name: MASTERING OFFICE

Course Code 21CSL381/C308

Cos	Statements
C308.1	Know the basics of computers and prepare documents, spreadsheets, make small presentations with audio, video and graphs and would be acquainted with internet.
C308.2	Create, edit, save and print documents with list tables, header, footer, graphic, spellchecker, mail merge and grammar checker
C308.3	Attain the knowledge about spreadsheet with formula, macros spell checker etc
C308.4	Demonstrate the ability to apply application software in an office environment.
C308.5	Use Google Suite for office data management tasks



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-V

V Semester :2022-23(Odd Semester)

Course Name: Management, Entrepreneurship for IT industry

Course Code: 18CS51/C501

Cos	Statements
C5O1.1	Define management, organization, entrepreneur, planning, staffing, ERP and outline their importance in entrepreneurship
C5O1.2	Utilize the resources available effectively through ERP .
C5O1.3	Define management, organization, entrepreneur, planning, staffing, ERP and outline their importance in entrepreneurship
C5O1.4	Make use of IPRs and institutional support in entrepreneurship
C5O1.5	Discuss on planning, staffing, ERP and their importance

CO PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	1	1								1	1	1
CO2	2	2	1	1	1								1	1	1
CO3	3	3	1	1	1								1	2	2
CO4	3	3	1	1	1								1	1	1
CO5	2	3	1	1	1								1	1	2
AVERAGE	2.6	2.4	1	1	1	0	0	0	0	0	0	0	1	1.2	1.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-V

Course Name: Computer Networks and Security

Course Code: 18CS52/C502

Cos	Statements
C5O2.1	Explain principles of application layer protocols
C5O2.2	Recognize transport layer services and infer UDP and TCP protocols
C5O2.3	Classify routers, IP and Routing Algorithms in network layer
C5O2.4	Understand the Wireless and Mobile Networks covering IEEE 802.11 Standard
C5O2.5	Describe Multimedia Networking and Network Management

CO PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C01	3	3	1	2	1	1						1	3	2	1
C02	3	3	1	2	2							2	1	1	2
C03	3	3	3	2	1							2	3	3	3
C04	1	3	3	1	1							2	2	2	2
C05	3	3	3	1	3	3						1	3	3	3
AVERAGE	2.6	3	2.2	1.6	1.6	2	0	0	0	0	0	1.6	2.4	2.2	2.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-V

Course Name: DATABASE MANAGEMENT SYSTEMS

Course Code: 18CS53/C503

Cos	Statements
C503.1	Identify, analyze and define database objects, enforce integrity constraints on a database using RDBMS.
C503.2	Use Structured Query Language (SQL) for database manipulation and also demonstrate the basic of query evaluation.
C503.3	Use Structured Query Language (SQL) for database manipulation.
C503.4	Design and build simple database systems
C503.5	Develop application to interact with databases.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	1										1	1	1
CO2	2	3	1							1		1	1	1	2
CO3	2	2	3	2	2						1	1	2	2	2
CO4	2	2	3	2						1	1	1	2	2	2
CO5	2	2	2											1	1
AVERAGE	8.2	2.4	2	2	2	0	0	0	0	1	1	1	1.5	1.4	1.6



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-V

Course Name: Automata theory and Computability

Course Code: 18CS54/C504

Cos	Statements
C5O4.1	Acquire fundamental understanding of the core concepts in automata theory and Theory of Computation.
C5O4.2	Design and develop lexical analysers, parsers and code generators.
C5O4.3	Design Grammars and Automata (recognizers) for different language classes and become knowledgeable about restricted models of Computation (Regular, Context Free) and their relative powers.
C5O4.4	Acquire fundamental understanding of the structure of a Compiler and Apply concepts automata theory and Theory of Computation to design Compilers.
C5O4.5	Classify a problem with respect to different models of Computation.

CO PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	3	1								1	1	1
CO2	2	2	1	2	1								1	1	3
CO3	3	3	3	3	1								2	2	2
CO4	3	3	3	2	1								3	1	1
CO5	2	3	3	3	2								2	1	2
AVERAGE	2.6	2.4	2.2	2.6	1.2	0	0	0	0	0	0	0	1.8	1.2	1.8



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-V

Course Name: Application Development using Python

Course Code: 18CS55/C505

Cos	Statements
C5O5.1	Demonstrate proficiency in handling of loops and creation of functions.
C5O5.2	Identify the methods to create and manipulate lists, tuples and dictionaries.
C5O5.3	Discover the commonly used operations involving regular expressions and file system.
C5O5.4	Interpret the concepts of Object-Oriented Programming as used in Python.
C5O5.5	Determine the need for scraping websites and working with CSV, JSON and other file formats.

CO PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	1	1								1	1	2
CO2	3	2	1	1	1								1	1	2
CO3	3	2	3	1	1								2	2	2
CO4	3	2	3	1	1								1	1	2
CO5	3	2	3	1	2								1	1	2
AVERAGE	3	2	2.2	1	1.2	0	0	0	0	0	0	0	1.2	1.2	2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-V

Course Name: Unix Programming

Course Code: 18CS56/C506

Cos	Statements
C506.1	Explain Unix Architecture, File system and use of Basic Commands
C506.2	Illustrate Shell Programming and to write Shell Scripts
C506.3	Illustrate Shell Programming and to write Shell Scripts
C506.4	Categorize, compare and make use of Unix System Calls
C506.5	Build an application/service over a Unix system.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	1										1	1	1
CO2	2	3	1							1		1	1	1	2
CO3	2	2	3	2	2						1	1	2	2	2
CO4	2	2	3	2						1	1	1	2	2	2
CO5	2	2	2											1	1
AVERAGE	8.2	2.4	2	2	2	0	0	0	0	1	1	1	1.5	1.4	1.6



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-V

Course Name: COMPUTER NETWORKS LABORATORY

Course Code:18CSL57/C507

Cos	Statements
C507.1	Demonstrate operation of network and its management commands
C507.2	Simulate and demonstrate the performance of GSM and CDMA
C507.3	Implement data link layer and transport layer protocols.
C507.4	Demonstrate the working of different concepts of networking.
C507.5	Implement, analyze and evaluate networking protocols in NS2 / NS3 and JAVA programming language



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

ODD SEMESTER-V

Course Name: DBMS LABORATORY WITH MINI PROJECT

Course Code:18CSL58/C507

Cos	Statements
C508.1	Foundation knowledge in database concepts, technology and practice to groom students into well-informed database application developers
C508.2	Strong practice in SQL programming through a variety of database problems.
C508.3	Develop database applications using front-end tools and back-end DBMS.
C508.4	Demonstrate the working of different concepts of DBMS
C508.5	Implement, analyze and evaluate the project developed for an application.



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

VII Semester ODD SEMESTER

Course Name: Artificial Intelligence & Machine Learning

Course Code: 18CS71/C701

Cos	Statements
C701.1	Appraise the theory of Artificial intelligence and Machine Learning.
C701.2	Explain theory of probability and statistics related to machine learning
C701.3	Investigate concept learning, ANN, Bayes classifier, k nearest neighbor, Q,
C701.4	Develop Kernel Methods with Dual Representations, Radial Basis and Function Networks
C701.5	Analyse implementation of Maximum Margin Classifiers and Relevance Vector Machines

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1									1	1	1	1
CO2	2	2	1	1	1				2	1		2	1	1	3
CO3	3	3	3	1	1					1		2	2	2	2
CO4	3	3	3	3	1	1		1	1	3		2	3	1	1
CO5	2	3	3	1	2					1		3	2	1	2
AVG	2.6	2.4	2.2	1.5	1.2	1	0	1	1.5	1.5	0	2	1.8	1.2	1.8



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

VII Semester ODD SEMESTER

Course Name: Big Data Analytics

Course Code: 18CS72/C702

Cos	Statements
C7O2.1	Understand fundamentals of Big Data analytics.
C7O2.2	Investigate Hadoop framework and Hadoop Distributed File system.
C7O2.3	Illustrate the concepts of NoSQL using MongoDB and Cassandra for Big Data.
C7O2.4	Demonstrate the MapReduce programming model to process the big data along with Hadoop tools.
C7O2.5	Use Machine Learning algorithms for real world big data. Analyze web contents and Social Networks to provide analytics with relevant visualization tools.

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1		1	1							3	2	1
CO2	3	1	1									2	1	1	2
CO3	3	3	3	3	1								3	3	3
CO4	1	3	3	1	1								2	2	2
CO5	3	3	3	1	3	3						1	3	3	3
AVERAGE	2.6	2.2	2.2	1.6	1.5	2	0	0	0	0	0	1.5	2.4	2.2	2.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

VII Semester ODD SEMESTER

Course Name: USER INTERFACE DESIGN

Course Code: 18CS734/C703

Cos	Statements
C7O3.1	To study the concept of menus, windows, interfaces
C7O3.2	To study about business functions
C7O3.3	To study the characteristics and components of windows and the various controls For the windows.
C7O3.4	To study about various problems in windows design with color, text, graphics.
C7O3.5	To study the testing methods

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	1	1	1							1	1	1	3
CO2	1	3	1	1	1							1	1	2	2
CO3	2	2	1	2	1							1	1	1	2
CO4	1	3		1	1							1	1	1	1
CO5	1	2		1	1							1	1	1	3
AVERAGE	1.2	2.2	1	1.2	1	0	0	0	0	0	0	1	1	1.2	2.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

VII Semester ODD SEMESTER

Course Name: Network Management

Course Code: 18CS742/C704

Cos	Statements
C7O4.1	Analyze the issues and challenges pertaining to management of emerging network technologies such as wired/wireless networks and high-speed internets.
C7O4.2	Apply network management standards to manage practical networks
C7O4.3	Formulate possible approaches for managing OSI network model.
C7O4.4	Use on SNMP for managing the network. Use RMON for monitoring the behavior of the network
C7O4.5	Identify the various components of network and formulate the scheme for the managing them

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1			2	1	3	1				3	1	1	3
CO2	1	1			2	1	3	1		1		2	1	2	2
CO3	1	1			2	1	3	1		1		2	1	1	2
CO4	1	1			1	1	3			1		2	1	2	1
CO5	1	1			1	2	2	1				3	1	2	3
AVERAGE	1	1	0	0	1.6	1.2	2.8	1	0	1	0	2.4	1	1.6	2.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

VII Semester ODD SEMESTER

Course Name: Energy & Environment

Course Code: 18ME751/C705

Cos	Statements
C7O5.1	Understand energy scenario, energy sources and their utilization.
C7O5.2	Understand various methods of energy storage, energy management and economic analysis.
C7O5.3	Analyse the awareness about environment and eco system.
C7O5.4	Understand the environment pollution along with social issues and acts

CO-PO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1			2	1	3	1				3	1	1	3
CO2	1	1			2	1	3	1		1		2	1	2	2
CO3	1	1			2	1	3	1		1		2	1	1	2
CO4	1	1			1	1	3			1		2	1	2	1
CO5	1	1			1	2	2	1				3	1	2	3
AVERAGE	1	1	0	0	1.6	1.2	2.8	1	0	1	0	2.4	1	1.6	2.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR: 2022-23

VII Semester ODD SEMESTER

Course Name: Artificial Intelligence & Machine Learning Lab

Course Code: 18CSL76/C706

Cos	Statements
C7O6.1	Implement and demonstrate AI and ML algorithms.
C7O6.2	Design Java/Python programs for various Learning algorithms.
C7O6.3	Apply appropriate data sets to the Machine Learning algorithms.
C7O6.4	Apply Classification, Clustering and regression algorithm on the data set.
C7O6.5	Identify and apply Machine Learning algorithms to solve real world problems.



Department of Electronics and Communication Engineering

Academic Year: 2022-23

III - Semester

2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

Course Name : LD (Logic Design) Lab using Pspice / MultiSIM
Course Code : 21EC381

Cos	Statements
C305.1	Demonstrate the truth table of various expressions and combinational circuits using logic gates
C305.2	Design various combinational circuits such as adders, subtractors, comparators, multiplexers and code converters
C305.3	Construct flips-flops, counters and shift registers
C305.4	Design and implement synchronous counters

Co-Po Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2
CO1	2	1	1										2	
CO2	2	1	1										2	
CO3	2	1	1										1	
CO4	2	1	1			1							2	
AVERAGE	2	1	1			1							1.7	



Academic Year: 2022-23

III - Semester

2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

Course Name : Social Connect and Responsibility

Course Code : UHV21UH36

Cos	Statements
C305.1	Understand social responsibility
C305.2	Practice sustainability and creativity
C305.3	Showcase planning and organizational skills

Co-Po Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2
CO1						1	2	1	2	2	1			2
CO2			2			2	1	1	1					1
CO3						1	1		2		1			1
AVERAGE			0.6			1.3	1.3	0.6	1.3	0.6	0.6			1.3



Department of Electronics and Communication Engineering

Academic Year: 2022-23

III - Semester

2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

Course Name : Constitution of India and Professional Ethics

Course Code : HSMC 21CIP37/47

Cos	Statements
C305.1	Analyze the Basic Structure of Indian Constitution
C305.2	Remember their Fundamental Rights DPSP's and Fundamental Duties
C305.3	Know about our Union Government
C305.4	Understand our State and Election System of India
C305.5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution

Co-Po Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2
CO1						1		2	1	2				1
CO2						1		2	2	1				1
CO3						1		1	1	1				1
CO4						1		1	1	2				1
AVERAGE						1		1	1	2.0				1



Department of Electronics and Communication Engineering

Academic Year: 2022-23

V - Semester

2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

Course Name : Technological Innovation Management Entrepreneurship
Course Code : 18ES51

Cos	Statements
C505.1	Understand the fundamental concepts of Management and Entrepreneurship and opportunities in order to set up a business
C505.2	Identify the various organizations' architecture
C505.3	Describe the functions of Managers, Entrepreneurs and their social responsibilities
C505.4	Understand the components in developing a business plan
C505.5	Recognize the various sources of funding and institutions supporting entrepreneurs

Co-Po Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2
CO1					1	1								
CO2				1	1	1								
CO3			1	1		1								
CO4						1								
CO5					1	1			1		1	1		
AVERAGE			1	0.4	0.6	1			1		1	1		



Department of Electronics and Communication Engineering

Academic Year: 2022-23

V - Semester

2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

Course Name : Environmental Studies
Course Code : 18CIV59

Cos	Statements
C505.1	Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,
C505.2	Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
C505.3	Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components
C505.4	Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues

Co-Po Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2
CO1			2				2							2
CO2			1				1							2
CO3			1				1							1
CO4			1				1							1
CO4			1				1							1
AVERAGE			1.5				1.5							1.75



Department of Electronics and Communication Engineering

Academic Year: 2022-23

V - Semester

2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

Course Name : Technological Innovation Management Entrepreneurship
Course Code : 18ESS1

Cos	Statements
C305.1	Understand the fundamental concepts of Management and Entrepreneurship and opportunities in order to set up a business
C305.2	Identify the various organizations' architecture
C305.3	Describe the functions of Managers, Entrepreneurs and the in social responsibilities
C305.4	Understand the components in developing a business plan
C305.5	Recognize the various sources of funding and institutions supporting entrepreneurs

Co-Po Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2
CO1			1	1							1		1	
CO2				1										
CO3														
CO4	1													
CO5	1		1			1		1			1		1	
AVERAGE	1		1	1		1		1			1		1	



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-III

CourseName: Transform Calculus, Fourier Series and Numerical Techniques

Course Code:21MAT31/C301

Cos	Statements
C301.1	To solve ordinary differential equations using Laplace transform
C301.2	Demonstrate Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.
C301.3	To use Fourier transforms to analyze problems involving continuous-time signals and to apply Z-Transform techniques to solve difference equations
C301.4	To solve mathematical models represented by initial or boundary value problems involving partial differential equations
C301.5	Determine the extremals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.

Co-Po Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	1	1							1	1	1	1
CO2	2	2	1	1	1				2	1		2	1	1	3
CO3	3	3	3	1	1					1		2	2	2	2
CO4	3	3	3	3	1	1		1	1	3		2	3	1	1
CO5	2	3	3	1	2					1		3	2	1	2
AVERAGE	2.6	2.4	2.2	1.4	1.2	1	0	1	1.5	1.5	0	2	1.8	1.2	1.8



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-III

CourseName:DATA STRUCTURES AND APPLICATIONS

Course Code:21CS32/C302

Cos	Statements
C302.1	Identify different data structures and their applications.
C302.2	Apply stack and queues in solving problems.
C302.3	Demonstrate applications of linked list.
C302.4	Explore the applications of trees and graphs to model and solve the real-world problem.
C302.5	Make use of Hashing techniques and resolve collisions during mapping of key value pairs

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	1	1							1	1	1	3
CO2	2	3	1	1	1							1	1	2	2
CO3	2	2	1	2	1							1	1	1	2
CO4	1	3	2	1	1							1	1	1	1
CO5	3	2	2	1	1							1	1	1	3
AVERAGE	2.2	2.2	1.4	1.2	1	0	0	0	0	0	0	1	1	1.2	2.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-III

CourseName:ANALOG AND DIGITAL ELECTRONICS

Course Code:21CS33/C303

Cos	Statements
C303.1	Design and analyze application of analog circuits using photo devices, timer IC, power supply and regulator IC and op-amp.
C303.2	Explain the basic principles of A/D and D/A conversion circuits and develop the same..
C303.3	Simplify digital circuits using Karnaugh Map, and Quine-McClusky Methods
C303.4	Explain Gates and flip flops and make us in designing different data processing circuits, registers and counters and compare the types.
C303.5	Develop simple HDL programs

Co-Po Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	2	1	1							3	1	1	3
CO2	1	1	2	1	1							2	1	2	2
CO3	1	1	2	1	1							2	1	1	2
CO4	1	1	1	1	1							2	1	2	1
CO5	1	1	1	2	1							3	1	2	3
AVERAGE	1	1	1.6	1.2	1	0	0	0	0	0	0	2.4	1	1.6	2.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-III

CourseName:COMPUTER ORGANIZATION AND ARCHITECTURE

Course Code:21CS34/C304

Cos	Statements
C304.1	Explain the organization and architecture of computer systems with machine instructions and programs
C304.2	Analyze the input/output devices communicating with computer system
C304.3	Demonstrate the functions of different types of memory devices
C304.4	Apply different data types on simple arithmetic and logical unit
C304.5	Analyze the functions of basic processing unit, Parallel processing and pipelining

Co-Po Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C01	3	1	1	1	1	1							1	2	1
C02	3	1	1	1								2	2	1	2
C03	3	3	3	3	1								3	3	3
C04	1	3	3	1	1								2	2	2
C05	3	3	3	1	3	3						1	3	3	3
AVERAGE	2.6	2.2	2.2	1.4	1.5	2	0	0	0	0	0	1.5	2.2	2.2	2.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-III

CourseName:OBJECT ORIENTED PROGRAMMING WITH JAVA LABORATORY

Course Code:21CSL35/C305

Cos	Statements
C305.1	Use Eclipse/NetBeans IDE to design, develop, debug Java Projects.
C305.2	Analyze the necessity for Object Oriented Programming paradigm over structured programming and become familiar with the fundamental concepts in OOP.
C305.3	Demonstrate the ability to design and develop java programs, analyze, and interpret objectoriented data and document results.
C305.4	Apply the concepts of multiprogramming, exception/event handling, abstraction to develop robust programs.
C305.5	Develop user friendly applications using File I/O and GUI concepts.

Co-Po Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	1	1									1	1	1
CO2	1	1	1	1								2	1	1	2
CO3	2	2	3	2	2						1	1	2	2	2
CO4	2	2	1	2							1	1	2	2	2
CO5	2	2	2	1										1	1
AVERAGE	1.6	1.6	1.6	1.4	2	0	0	0	0	0	1	1.3	1.5	1.4	1.6



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2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-III

CourseName: SOCIAL CONNECT & RESPONSIBILITIES

Course Code:21SCR36 /C306

Cos	Statements
C306.1	Understand social responsibility
C306.2	Practice sustainability
C306.3	Practice creativity
C306.4	Showcase planning skills
C306.5	Showcase organizational skills



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2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-III

CourseName: Samskruthika Kannada /Balake Kannada

Course Code:21KSK37/21KBK37/C307

Cos	Statements
C307.1	Introduction to Kannada literature and culture/To understand the necessity of learning of local language for comfortable life.
C307.2	The impact of modern developments on Kannada language, literature, and culture/To Listen and understand the Kannada language properly.
C307.3	Introduction to classical works/To speak, read and write Kannada language as per requirement
C307.4	Explanation of Kannada proverbs, idioms/To communicate (converse) in Kannada language in their daily life with kannada speakers.
C307.5	Explanation of commonly used Kannada words/To speak in polite conversation.



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2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-III

CourseName: MASTERING OFFICE

Course Code 21CSL381/C308

Cos	Statements
C308.1	Know the basics of computers and prepare documents, spreadsheets, make small presentations with audio, video and graphs and would be acquainted with internet.
C308.2	Create, edit, save and print documents with list tables, header, footer, graphic, spellchecker, mail merge and grammar checker
C308.3	Attain the knowledge about spreadsheet with formula, macros spell checker etc
C308.4	Demonstrate the ability to apply application software in an office environment.
C308.5	Use Google Suite for office data management tasks



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-V

V Semester:2022-23(Odd Semester)

Course Name: Management, Entrepreneurship for IT industry

Course Code: 18CS51/C501

Cos	Statements
C5O1.1	Define management, organization, entrepreneur, planning, staffing, ERP and outline their importance in entrepreneurship
C5O1.2	Utilize the resources available effectively through ERP .
C5O1.3	Define management, organization, entrepreneur, planning, staffing, ERP and outline their importance in entrepreneurship
C5O1.4	Make use of IPRs and institutional support in entrepreneurship
C5O1.5	Discuss on planning, staffing, ERP and their importance

CO PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	1	1								1	1	1
CO2	2	2	1	1	1								1	1	1
CO3	3	3	1	1	1								1	2	2
CO4	3	3	1	1	1								1	1	1
CO5	2	3	1	1	1								1	1	2
AVERAGE	2.6	2.4	1	1	1	0	0	0	0	0	0	0	1	1.2	1.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-V

Course Name: Computer Networks and Security

Course Code: 18CS52/C502

Cos	Statements
C502.1	Explain principles of application layer protocols
C502.2	Recognize transport layer services and infer UDP and TCP protocols
C502.3	Classify routers, IP and Routing Algorithms in network layer
C502.4	Understand the Wireless and Mobile Networks covering IEEE 802.11 Standard
C502.5	Describe Multimedia Networking and Network Management

CO PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	1	2	1	1						1	3	2	1
CO2	3	3	1	2	2							2	1	1	2
CO3	3	3	3	2	1							2	3	3	3
CO4	1	3	3	1	1							2	2	2	2
CO5	3	3	3	1	3	3						1	3	3	3
AVERAGE	2.6	3	2.2	1.6	1.6	2	0	0	0	0	0	1.6	2.4	2.2	2.2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-V

Course Name: DATABASE MANAGEMENT SYSTEMS

Course Code: 18CS53/C503

Cos	Statements
C503.1	Identify, analyze and define database objects, enforce integrity constraints on a database using RDBMS.
C503.2	Use Structured Query Language (SQL) for database manipulation and also demonstrate the basic of query evaluation.
C503.3	Use Structured Query Language (SQL) for database manipulation.
C503.4	Design and build simple database systems
C503.5	Develop application to interact with databases.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	1										1	1	1
CO2	2	3	1							1		1	1	1	2
CO3	2	2	3	2	2						1	1	2	2	2
CO4	2	2	3	2						1	1	1	2	2	2
CO5	2	2	2											1	1
AVERAGE	8.2	2.4	2	2	2	0	0	0	0	1	1	1	1.5	1.4	1.6



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-V

Course Name:Automata theory and Computability

Course Code: 18CS54/C504

Cos	Statements
C5O4.1	Acquire fundamental understanding of the core concepts in automata theory and Theory of Computation.
C5O4.2	Design and develop lexical analysers, parsers and code generators.
C5O4.3	Design Grammars and Automata (recognizers) for different language classes and become knowledgeable about restricted models of Computation (Regular, Context Free) and their relative powers.
C5O4.4	Acquire fundamental understanding of the structure of a Compiler and Apply concepts automata theory and Theory of Computation to design Compilers.
C5O4.5	Classify a problem with respect to different models of Computation.

CO PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	3	1								1	1	1
CO2	2	2	1	2	1								1	1	3
CO3	3	3	3	3	1								2	2	2
CO4	3	3	3	2	1								3	1	1
CO5	2	3	3	3	2								2	1	2
AVERAGE	2.6	2.4	2.2	2.6	1.2	0	0	0	0	0	0	0	1.8	1.2	1.8



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-V

Course Name: Application Development using Python

Course Code: 18CS55/C505

Cos	Statements
C5O5.1	Demonstrate proficiency in handling of loops and creation of functions.
C5O5.2	Identify the methods to create and manipulate lists, tuples and dictionaries.
C5O5.3	Discover the commonly used operations involving regular expressions and file system.
C5O5.4	Interpret the concepts of Object-Oriented Programming as used in Python.
C5O5.5	Determine the need for scraping websites and working with CSV, JSON and other file formats.

CO PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	1	1								1	1	2
CO2	3	2	1	1	1								1	1	2
CO3	3	2	3	1	1								2	2	2
CO4	3	2	3	1	1								1	1	2
CO5	3	2	3	1	2								1	1	2
AVERAGE	3	2	2.2	1	1.2	0	0	0	0	0	0	0	1.2	1.2	2



2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-V

Course Name: Unix Programming

Course Code: 18CS56/C506

Cos	Statements
C5O6.1	Explain Unix Architecture, File system and use of Basic Commands
C5O6.2	Illustrate Shell Programming and to write Shell Scripts
C5O6.3	Illustrate Shell Programming and to write Shell Scripts
C5O6.4	Categorize, compare and make use of Unix System Calls
C5O6.5	Build an application/service over a Unix system.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	1										1	1	1
CO2	2	3	1							1		1	1	1	2
CO3	2	2	3	2	2						1	1	2	2	2
CO4	2	2	3	2						1	1	1	2	2	2
CO5	2	2	2											1	1
AVERAGE	8.2	2.4	2	2	2	0	0	0	0	1	1	1	1.5	1.4	1.6



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2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-V

Course Name: COMPUTER NETWORKS LABORATORY

Course Code:18CSL57/C507

Cos	Statements
C507.1	Demonstrate operation of network and its management commands
C507.2	Simulate and demonstrate the performance of GSM and CDMA
C507.3	Implement data link layer and transport layer protocols.
C507.4	Demonstrate the working of different concepts of networking.
C507.5	Implement, analyze and evaluate networking protocols in NS2 / NS3 and JAVA programming language



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2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ACADEMIC YEAR:2022-23

ODD SEMESTER-V

Course Name: DBMS LABORATORY WITH MINI PROJECT Course Code:18CSL58/C507

Cos	Statements
C508.1	Foundation knowledge in database concepts, technology and practice to groom students into well-informed database application developers
C508.2	Strong practice in SQL programming through a variety of database problems.
C508.3	Develop database applications using front-end tools and back-end DBMS.
C508.4	Demonstrate the working of different concepts of DBMS
C508.5	Implement, analyze and evaluate the project developed for an application.



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Department of Mechanical Engineering
ACADEMIC YEAR 2022-2023
Course Outcomes

Subject: METAL CASTING FORMING & JOINING PROCESS		Subject Code: 21ME32
Course Outcomes		
CO1	Select appropriate primary manufacturing process and related parameters for obtaining initial shape and size of components.	
CO2	Design and develop adequate tooling linked with casting, welding and forming operations.	
CO3	Appreciate the effect of process parameters on quality of manufactured components	
CO4	Demonstrate various skills in preparation of molding sand for conducting tensile, shear and compression tests using Universal sand testing machine.	
CO5	Demonstrate skills in preparation of forging models involving upsetting, drawing and bending operations.	
CO6	Demonstrate skills in preparation of Welding models.	

Subject: MATERIAL SCIENCE AND ENGINEERING		Subject Code: 21ME33
Course Outcomes		
CO1	Understand the atomic arrangement in crystalline materials and describe the periodic arrangement of atoms in terms of unit cell parameters.	
CO2	Understand the importance of phase diagrams and the phase transformations.	
CO3	Know various heat treatment methods for controlling the microstructure.	
CO4	Correlate between material properties with component design and identify various kinds of defects.	
CO5	Apply the method of materials selection, material data and knowledge sources for computer-aided selection of materials.	

Subject: THERMODYNAMICS		Subject Code: 21ME34
Course Outcomes		
CO1	Describe the fundamental concepts and principles of engineering thermodynamics	
CO2	Apply the governing laws of thermodynamics for different engineering applications.	
CO3	Analyse the various thermodynamic processes, cycles and results	
CO4	Interpret and relate the impact of thermal engineering practices to real life problems.	



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Subject: MACHINE DRAWING AND GD & T		Subject Code: 21MEL35
Course Outcomes		
CO1	Interpret the Machining and surface finish symbols on the component drawings.	
CO2	Apply limits and tolerances to assemblies and choose appropriate fits for given assemblies.	
CO3	Illustrate various machine components through drawings	
CO4	Create assembly drawings as per the conventions.	

Subject: INTRODUCTION TO PYTHON		Subject Code: 21ME381
Course Outcomes		
CO1	Demonstrate proficiency in handling of loops and creation of functions.	
CO2	Identify the methods to create and manipulate lists, tuples and dictionaries.	
CO3	Discover the commonly used operations involving regular expressions and file system.	
CO4	Examine working of PDF and word file formats	



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Subject: MANAGEMENT AND ECONOMICS		Subject Code:18ME51
Course Outcomes		
CO1	Explain the development of management and the role it plays at different levels in an organization	
CO2	Comprehend the process and role of effective planning, organizing and staffing for the development of an organization	
CO3	Understand the necessity of good leadership, communication and coordination for establishing effective control in an organization	
CO4	Understand engineering economics demand supply and its importance in economic decision making and problem solving	
CO5	Calculate present worth, annual worth and IRR for different alternatives in economic decision making	

Subject: DESIGN OF MACHINE ELEMENTS I		Subject Code:18ME52
Course Outcomes		
CO1	Apply the concepts of selection of materials for given mechanical components	
CO2	List the functions and uses of machine elements used in mechanical systems.	
CO3	Apply codes and standards in the design of machine elements and select an element based on the Manufacturer's catalogue.	
CO4	Analyse the performance and failure modes of mechanical components subjected to combined loading and fatigue loading using the concepts of theories of failure.	
CO5	Demonstrate the application of engineering design tools to the design of machine components like shafts, couplings, power screws, fasteners, welded and riveted joints.	
CO6	Understand the art of working in a team	

Subject: DYNAMICS OF MACHINES		Subject Code:18ME53
Course Outcomes		
CO1	Estimate the forces and couples for four bars and slider crank mechanisms to keep the system in equilibrium	
CO2	Analyze and estimate balancing of rotating & reciprocating masses in same and different planes	
CO3	Applying principles of governors and gyroscope and its applications	
CO4	Analyze different modes of vibration for damped vibration with single degree of freedom systems	
CO5	Compare modes of vibration for forced and damped vibration with single degree of freedom systems	

Subject: TURBO MACHINES		Subject Code:18ME54
Course Outcomes		
CO1	Model studies and thermodynamics analysis of turbo machines.	
CO2	Analyze the energy transfer in Turbo machine with degree of reaction and utilization factor.	
CO3	Classify, analyze and understand various type of steam turbine.	
CO4	Classify, analyze and understand various type of hydraulic turbine.	
CO5	Understand the concept of radial power absorbing machine and the problems involved during its operation.	



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Subject: FLUID POWER ENGINEERING		Subject Code: 18ME55
Course Outcomes		
CO1	Understand the basic concepts (principles) of working and maintenance of fluid power system with its potential applications.	
CO2	Interpret the construction and working of input and output elements of fluid power systems viz. hydraulic and pneumatic pumps, motors and cylinders.	
CO3	Demonstrate the functioning of control valves for obtaining desired output from fluid power systems.	
CO4	Formulate (construct) the hydraulic and pneumatic circuits for various outputs	
CO5	Integrate fluid power system with electrical and logic elements, controls to maintain the sequence of operations	

Subject: OPERATIONS MANAGEMENT		Subject Code: 18ME56
Course Outcomes		
CO1	Understand the fundamental basis and nature of operation management techniques for the manufacturing Industry and also to assess a range of strategies for improving the efficiency and effectiveness of organizational operations	
CO2	Analyze the appropriateness and applicability of a range of operations management systems/models in decision making and forecasting techniques.	
CO3	Evaluate various facility alternatives and their capacity decisions and sequencing techniques in operations management environment.	
CO4	Summarize Aggregate Planning & Master Scheduling methods by graphical, charting techniques and mathematical techniques as applied to product and process industries.	
CO5	Assess the operational issues between Industry, vendor and customer by using Material Requirement Planning (MRP), Purchasing and Supply Chain Management (SCM).	

Subject: FLUID MECHANICS/MACHINES LAB		Subject Code: 18MEL57
Course Outcomes		
CO1	Perform experiments to determine the coefficient of discharge of flow measuring devices.	
CO2	Conduct experiments on hydraulic turbines and pumps to draw characteristics.	
CO3	Determine the frictional losses for flow through pipe.	
CO4	Apply the momentum equation for determination of coefficient of impact of jet on vanes.	
CO5	Test the performance of reciprocating air compressor and air blower.	

Subject: ENERGY CONVERSION LAB		Subject Code: 18MEL58
Course Outcomes		
CO1	Perform experiments to determine the properties of Fuels and Oils.	
CO2	Conduct experiments on Internal Combustion engines to determine performance parameters.	
CO3	Identify Exhaust Emission and factors affecting them.	
CO4	Exhibit his competency towards preventive maintenance of Internal Combustion engines.	



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Subject: ENVIRONMENTAL STUDIES		Subject Code: 18CIV59
Course Outcomes		
CO1	Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale	
CO2	Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment	
CO3	Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components	
CO4	Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.	



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Subject: CONTROL ENGINEERING		Subject Code: 18ME71
Course Outcomes		
CO1	Identify the control system and its types , control actions	
CO2	Construct the system governing equations for physical models(Electrical, Thermal, Mechanical, Electro Mechanical)	
CO3	Analyze the gain of the system using block diagram and signal flow graph	
CO4	Evaluate the stability of Control system in complex domain and frequency domain	
CO5	Employ state equations to study the Bode's plot	

Subject: COMPUTER AIDED DESIGN AND MANUFACTURING		Subject Code: 18ME72
Course Outcomes		
CO1	Define automation, CIM,CAD,CAM& explain differences between these concepts. Solve simple problems of transformations of entities on computer screen	
CO2	Explain the basics of automated manufacturing industries through mathematical models and analyze different types of automated flow lines	
CO3	Analyze the automated flowlines to reduce time and enhance productivity	
CO4	Explain the use of different computer applications in manufacturing and able to prepare part program for simple jobs on CNCand Robot Programming	
CO5	Visualize and appreciate the modern trends in manufacturing like additive manufacturing industry 4.0 and applications of IOT leading to smart manufacturing.	

Subject: TOTAL QUALITY MANAGEMENT		Subject Code: 18ME734
Course Outcomes		
CO1	Explain the various approaches of TQM	
CO2	Infer the customer perception of quality	
CO3	Analyze customer needs and perception to design feed back systems	
CO4	Apply statistical tools for continuous improvement of systems	
CO5	Apply the tools and technology for effective improvement of TQM	



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Subject: ENERGY AND ENVIRONMENT		Subject Code: 18ME751
Course Outcomes		
CO1	To understand the fundamentals of energy sources, energy use, energy efficiency, and resulting environmental implications of various energy supplies	
CO2	To introduce various aspects of environmental pollution and its control	
CO3	To understand the causes and remedies related to social issues like global warming, ozone layer depletion, climate change etc	
CO4	To introduce various acts related to prevention and control of pollution of water and air, forest protection act, wild life protection act etc.	

Subject: COMPUTER INTEGRATED MANUFACTURING LAB		Subject Code: 18MEL76
Course Outcomes		
CO1	Generate CNC Lathe part programs for different turning operations.	
CO2	Generate CNC Mill Part programs for point to point motions & line motions	
CO3	Make use of Canned Cycles for Drilling, Peck drilling, Boring, Tapping, Turning, Facing, Taper turning Thread cutting etc.	
CO4	Simulate Tool Path for different machining operations using CNC TRAIN software.	

Subject: DESIGN LAB		Subject Code: 18MEL77
Course Outcomes		
CO1	Analyze principal stresses, strains in members subjected to various loading using Strain Gauge Rosettes	
CO2	Evaluate the parameters for single DOF of vibrational systems and identify critical speed of shaft for different modes	
CO3	Estimate the parameters of journal bearing, governor and apply the knowledge of dynamics to balance the rotating masses	
CO4	Apply the concept of photo elasticity for stress analysis and to calibrate photo elastic models	

Subject: Project Phase I		Subject Code: 18MEP78
Course Outcomes		
CO1	Review the research literature, identify and analyze the complex engineering problems, formulate the sustainable conclusions or solutions using the basic principles of applied mathematics, science and engineering	
CO2	Design proper methodology to derive the solutions for the existing or anticipated complex engineering problems in concern with the issues of public health, safety societal, cultural and environmental areas.	
CO3	Practice and establish the professional engineering methodology for sustainable development in the society to address the complex engineering problems associated with societal and environmental factors.	
CO4	Form internal & external group to work together as a team in the project under consideration under multi-disciplinary settings.	
CO5	Communicate effectively addressing the complex engineering activities with documentation reports and proper presentation tools.	



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Department of Basic Science

2.6.1 QIM Programme Outcomes (POs) and Course Outcomes (COs) offered by the department (EVEN and ODD) ACY 2022-2023

I YEAR COURSES

Sl. No	Course Name	Course Code
1	Mathematics-I for Computer Science and Engineering stream	BMATS101
2	Mathematics-I for Electrical & Electronics Engineering Stream	BMATE101
3	Mathematics-I for CIVIL Engineering Stream	BMATC101
4	Applied Physics for CSE Stream	BPHYS102/202
5	Applied Physics for EEE Stream	BPHYE102/202
6	Applied Physics for CIVIL Stream	BPHYC102/202
7	Applied Chemistry for Computer Science	BCHE102/202
8	Applied Chemistry for Electrical and Electronics Stream	BCHEE102/202
9	Applied Chemistry for Civil Engineering stream	BCHEC102/202
10	Engineering mechanics	BCIVC103/203
11	Principles of Programming using C	BPOPS103/203
12	Communicative English	BENGG106-206
13	Professional Writing Skills in English	BPWSK206-106
14	Balake Kannada	BKBKK107-207
15	Indian Constitution	BICOK107-207

Sl. No	Course Name	Course Code
16	Innovation and Design Thinking	BIDTK158/258
17	Scientific Foundations of Health	BICOK107-207
18	Introduction to Internet of Things (IOT)	BETCK105H/205H
19	Introduction to Python Programming	BPLCK105B/205B
20	Introduction to mechanical engineering	BESCK104D/204D
21	Computer Aided Engineering Drawing	BCEDK103/203
22	Basic Electronics	BBEE103
23	Introduction to Electronics & Communication	BESCK104C/204C
24	Introduction to C Programming	BESCK104E/204E
25	Mathematics-II for Computer Science and Engineering Stream	BMATS201
26	Mathematics-II for Electrical & Electronics Engineering Stream	BMATE201
27	Mathematics-II for Civil Engineering stream	BMATC201
27	Introduction to Electrical Engineering	BESCK204B



HOD



CITY
ENGINEERING COLLEGE

DEPARTMENT OF BASIC SCIENCE

ACADEMIC YEAR 2022-23

COURSE OUTCOMES OF I YEAR

COURSE NAME: Mathematics-I for Computer Science and Engineering stream

COURSE CODE: BMATS101[C101]

COs	STATEMENTS
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 eigenvectors
C101.5	Familiarize with modern mathematical tools namely MATHEMATICA/MATLAB/PYTHON/ SCILAB

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C101.1	3	2										1	3	1	
C101.2	3	2										1	3	1	
C101.3	3	2										1	3	2	
C101.4	3	2		1								1	3	2	
C101.5	3	2		1								1	3	1	2



COURSE NAME: Mathematics-I for Electrical & Electronics Engineering Stream
COURSE CODE: BMATE101[C102]

COs	STATEMENTS
C102.1	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
C102.2	Analyse the solution of linear and nonlinear ordinary differential equations
C102.3	Apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing area and volume
C102.4	Make use of matrix theory for solving the system of linear equations and compute eigenvalues and eigenvectors
C102.5	Familiarize with modern mathematical tools namely MATHEMATICA/MATLAB/PYTHON/ SCILAB

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C102.1	3	2										1	3	1	
C102.2	3	2										1	3	1	
C102.3	3	2										1	3	2	
C102.4	3	2		1								1	3	2	
C102.5	3	2		1								1	3	1	2



COURSE NAME: Mathematics-I for CIVIL Engineering Stream

COURSE CODE: BMATC101[C103]

COs	STATEMENTS
C103.1	apply the knowledge of calculus to solve problems related to polar curves.
C103.2	learn the notion of partial differentiation to compute rate of change of multivariate functions.
C103.3	analyze the solution of linear and nonlinear ordinary differential equations.
C103.4	make use of matrix theory for solving the system of linear equations and compute eigenvalues and eigenvectors.
C103.5	familiarize with modern mathematical tools namely MATHEMATICA/ MATLAB/ PYTHON/SCILAB

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C103.1	3	2										1	3	1	
C103.2	3	2										1	3	1	
C103.3	3	2										1	3	2	
C103.4	3	2		1								1	3	2	
C103.5	3	2		1								1	3	1	2



COURSE NAME: Applied Physics for CSE Stream

COURSE CODE: BPHYS102/202[C104]

COs	STATEMENTS
C104.1	Describe the principles of LASERS and Optical fibers and their relevant applications.
C104.2	Discuss the basic principles of the Quantum Mechanics and its application in Quantum Computing.
C104.3	Summarize the essential properties of superconductors and its applications in qubits.
C104.4	Illustrate the application of physics in design and data analysis.
C104.5	Practice working in groups to conduct experiments in physics and perform precise and honest measurements.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C104.1	3	2										2	3	2	
C104.2	3	3										2	3	2	
C104.3	3	3										2	2		
C104.4	3	2	1		1							2	3	1	
C104.5	3	2	1		2			3	3			2	3		2



COURSE NAME: Applied Physics for EEE Stream

COURSE CODE: BPHYE102/202 [C105]

COs	STATEMENTS
C105.1	Describe the fundamental principles of the Quantum Mechanics and the essentials of Photonics.
C105.2	Elucidate the concepts of conductors, dielectrics and superconductivity
C105.3	Discuss the fundamentals of vector calculus and their applications in Maxwell's Equations and EM Waves
C105.4	Summarize the properties of semiconductors and the working principles of semiconductor devices.
C105.5	Practice working in groups to conduct experiments in physics and perform precise and honest measurements.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C105.1	3	2										2	3	2	
C105.2	3	2										2	3	2	
C105.3	3	2										2	2		
C105.4	3	2			1							2	3	1	
C105.5	3	2	1		2			3	3			2	3		2



COURSE NAME: Applied Physics for CIVIL Stream

COURSE CODE: BPHYC102/202 [C106]

COs	STATEMENTS
C106.1	Describe the fundamental principles of the Quantum Mechanics and the essentials of Photonics.
C106.2	Elucidate the concepts of conductors, dielectrics and superconductivity
C106.3	Discuss the fundamentals of vector calculus and their applications in Maxwell's Equations and EM Waves
C106.4	Summarize the properties of semiconductors and the working principles of semiconductor devices.
C106.5	Practice working in groups to conduct experiments in physics and perform precise and honest measurements.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C106.1	3	2			1							2	3	2	
C106.2	3	2										2	3	2	
C106.3	3	2										2	2		
C106.4	3	2				1						2	3	1	
C106.5	3	2	1		2			3	3			2	3		2



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COURSE NAME: Applied Chemistry for Computer Science

COURSE CODE: BCHES102/202[C107]

COs	STATEMENTS
C107.1	Identify the terms and applications processes involved in scientific and engineering.
C107.2	Explain the phenomena of chemistry to describe the methods of engineering processes
C107.3	Solve the problems in chemistry that are pertinent in engineering applications
C107.4	Apply the basic concepts of chemistry to explain the chemical properties and processes
C107.5	Analyse properties and multidisciplinary situations processes associated with chemical substances in multi-disciplinary situations.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C107.1	3	1	1				1						3	2	
C107.2	3	1	1				1						3	2	
C107.3	3	1	1				1						3		
C107.4	3	1	1				1						3	2	
C107.5	3	1	1				1						3		2



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COURSE NAME: Applied Chemistry for Electrical and Electronics Stream
COURSE CODE: BCHES102/202[C108]

COs	STATEMENTS
C108.1	Identify the terms and applications processes involved in scientific and engineering
C108.2	Explain the phenomena of chemistry to describe the methods of engineering processes
C108.3	Solve the problems in chemistry that are pertinent in engineering applications
C108.4	Apply the basic concepts of chemistry to explain the chemical properties and processes
C108.5	Analyse properties and multidisciplinary situations processes associated with chemical substances in multi-disciplinary situations.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C108.1	3	1	1				1						3	2	
C108.2	3	1	1				1						3	2	
C108.3	3	1	1				1						3		
C108.4	3	1	1				1						3	2	
C108.5	3	1	1				1						3		2



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Course Name: Applied Chemistry for Civil Engineering stream

COURSE CODE: BCHES102/202 [C109]

COs	STATEMENTS
C109.1	Identify the terms and applications processes involved in scientific and engineering
C109.2	Explain the phenomena of chemistry to describe the methods of engineering processes
C109.3	Solve the problems in chemistry that are pertinent in engineering applications
C109.4	Apply the basic concepts of chemistry to explain the chemical properties and processes
C109.5	Analyse properties and multidisciplinary situations processes associated with chemical substances in multi-disciplinary situations.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C109.1	3	1	1				1						3	2	
C109.2	3	1	1				1						3	2	
C109.3	3	1	1				1						3		
C109.4	3	1	1				1						3	2	
C109.5	3	1	1				1						3		2



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Course Name: ENGINEERING MECHANICS

COURSE CODE: BCIVC103/203[C110]

COs	STATEMENTS
C110.1	Compute the resultant of a force system and resolution of a force
C110.2	Comprehend the action for forces, moments, and other types of loads on rigid bodies and compute the reactive forces
C110.3	Analyse the frictional resistance offered by different planes
C110.4	Locate the centroid and compute the moment of inertia of sections
C110.5	Analyse the bodies in motion.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C110.1	2	3											2	2	
C110.2	2	3											2	2	
C110.3	2	3											3	2	
C110.4	2	3											2	2	
C110.5	2	3											3	1	



Course Name: Principles of Programming using C
COURSE CODE: BPOPS103/203 [C111]

COs	STATEMENTS
C111.1	Elucidate the basic architecture and functionalities of a computer and also recognize the hardware parts.
C111.2	Apply programming constructs of C language to solve the real-world problem
C111.3	Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting
C111.4	Explore user-defined data structures like structures, unions and pointers in implementing solutions
C111.5	Design and Develop Solutions to problems using modular programming constructs

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C111.1	3	1											3	2	
C111.2	3	3	3										3	2	
C111.3	3	2	1										3	3	
C111.4	3	2	1										3	3	
C111.5	3	3	3		1								3	1	3



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Course Name: Communicative English

COURSE CODE: BENGK106-206[C112]

COs	STATEMENTS
C112.1	Understand and apply the Fundamentals of Communication Skills in their communication skills.
C112.2	Identify the nuances of phonetics, intonation and enhance pronunciation skills.
C112.3	To impart basic English grammar and essentials of language skills as per present requirement.
C112.4	Understand and use all types of English vocabulary and language proficiency
C112.5	Adopt the Techniques of Information Transfer through presentation.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C112.1										3			1		
C112.2										3					
C112.3										3					1
C112.4										3					
C112.5										3			1		



CITY
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Course Name: Professional Writing Skills in English

COURSE CODE: BPWSK206-106[C113]

COs	STATEMENTS
C113.1	To understand and identify the Common Errors in Writing and Speaking.
C113.2	To Achieve better Technical writing and Presentation skills.
C113.3	To read Technical proposals properly and make them to Write good technical reports.
C113.4	Acquire Employment and Workplace communication skills.
C113.5	To learn about Techniques of Information Transfer through presentation in different level.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C113.1										1					
C113.2										3			1		
C113.3										3		1			2
C113.4										3					
C113.5										3		2	1		



CITY
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Course Name: Balake Kannada

COURSE CODE: BKBKK107-207[C114]

COs	STATEMENTS
C114.1	To understand the necessity of learning of local language for comfortable life.
C114.2	To speak, read and write Kannada language as per requirement.
C114.3	To communicate (converse) in Kannada language in their daily life with kannada speakers.
C114.4	To Listen and understand the Kannada language properly.
C114.5	To speak in polite conversation

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C114.1										1		1			
C114.2										1				1	
C114.3										1				1	
C114.4										1					
C114.5										1		2			



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Course Name: Indian Constitution

COURSE CODE: BICOK107-207[C115]

COs	STATEMENTS
C115.1	Analyse the basic structure of Indian Constitution.
C115.2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
C115.3	Know about our Union Government, political structure & codes, procedures.
C115.4	Understand our State Executive & Elections system of India.
C115.5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C115.1															
C115.2															
C115.3							2								
C115.4														1	
C115.5								1							



CITY
ENGINEERING COLLEGE

Course Name: INNOVATION and DESIGN THINKING

COURSE CODE: BIDTK158/258[C116]

COs	STATEMENTS
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 Understand products
C116.4	Draw technical drawing for design ideas

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C116.1			1										1		
C116.2													1	1	
C116.3													1		
C116.4													1		



CITY
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Course Name: Introduction to Internet of Things (IOT)

COURSE CODE: BETCK105H/205H[C118]

COs	STATEMENTS
C118.1	Describe the evolution of IoT, IoT networking components, and addressing strategies in IoT.
C118.2	Classify various sensing devices and actuator types.
C118.3	Demonstrate the processing in IoT.
C118.4	Explain Associated IOT Technologies
C118.5	Illustrate architecture of IOT Applications

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C118.1	3												1		
C118.2	3	3											1	1	
C118.3	3												2		
C118.4	3		2								1		1		
C118.5	3		2										1	1	



CITY
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Course Name: Introduction to Python Programming
COURSE CODE: BPLCK105B/205B[C119]

COs	STATEMENTS
C119.1	Demonstrate proficiency in handling loops and creation of functions.
C119.2	Identify the methods to create and manipulate lists, tuples and dictionaries.
C119.3	Develop programs for string processing and file organization
C119.4	Interpret the concepts of Object-Oriented Programming as used in Python.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C119.1	3		2		1								2	2	
C119.2	3		2		1								2	2	
C119.3	3	1	2		2							1	3	2	
C119.4	3	1	2		2								3	2	



CITY
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Course Name: INTRODUCTION TO MECHANICAL ENGINEERING
COURSE CODE: BESCK104D/204D[C120]

COs	STATEMENTS
C120.1	Explain the concepts of Role of Mechanical Engineering and Energy sources.
C120.2	Describe the Machine Tool Operations and advanced Manufacturing process.
C120.3	Explain the Working Principle of IC engines and EV vehicles.
C120.4	Discuss the Properties of Common Engineering Materials and various Metal Joining Processes
C120.5	Explain the Concepts of Mechatronics, Robotics and Automation in IoT

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C120.1	3					1	2			1		1	3		
C120.2	3					1	1			1		1	2		
C120.3	3					1	1			1		1	2		
C120.4	3					1	1			1		1	2		
C120.5	3					1	1			1		1	2	1	



CITY
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Course Name: Computer Aided Engineering Drawing

COURSE CODE: BCEDK103/203[C121]

COs	STATEMENTS
C121.1	Draw and communicate the objects with definite shape and dimensions
C121.2	Recognize and Draw the shape and size of objects through different views
C121.3	Develop the lateral surfaces of the object
C121.4	Create a Drawing views using CAD software.
C121.5	Identify the interdisciplinary engineering components or systems through its graphical representation.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C121.1	3	2			3	1		1	1	3		2	2		
C121.2	3	2			3	1		1	1	3		2	1		
C121.3	3	2			3	1		1	1	3		2	1		
C121.4	3	2			3	1	1		1	3		1	1	2	
C121.5	3	2			3				1	3		2		2	



Course Name: Basic Electronics
COURSE CODE: BBEE103 [C122]

COs	STATEMENTS
C122.1	Develop the basic knowledge on construction, operation and characteristics of semiconductor devices
C122.2	Apply the acquired knowledge to construct small scale circuits consisting of semiconductor devices
C122.3	Develop competence knowledge to construct basic digital circuit by make use of basic gate and its function.
C122.4	Construct the conceptual blocks for basic communication system
C122.5	Apply the knowledge of various transducers principle in sensor system

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C122.1	3	3	2		2	2							3	2	
C122.2	3	2	3		2	1							3		
C122.3	3	2	3		3				1				3	1	
C122.4	2	1	1		2	1			1			1	2		
C122.5	2	1	1		2	1			1			1	2	1	



Course Name: Introduction to Electronics & Communication

COURSE CODE: BESCK104C/204C [C123]

COs	STATEMENTS
C123.1	Develop the basic knowledge and overview in the field of Electronics and Communication.
C123.2	To comprehend the operations and application of electronic circuits.
C123.3	Develop competence knowledge of logic circuits.
C123.4	Develop competence knowledge to construct embedded systems
C123.5	Analyse the basic communication system

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C123.1	3	1											3	2	
C123.2	3	1	1										3		
C123.3	2	1											3		
C123.4	3	3	2										3	2	
C123.5	1												3		



Course Name: Introduction to C Programming

COURSE CODE: BESCK104E/204E [C124]

COs	STATEMENTS
C124.1	Elucidate the basic architecture and functionalities of a computer and also recognize the hardware parts.
C124.2	Apply programming constructs of C language to solve the real-world problem
C124.3	Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting
C124.4	Explore user-defined data structures like structures, unions and pointers in implementing solutions
C124.5	Design and Develop Solutions to problems using modular programming constructs using functions

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C124.1	3	1											3	2	
C124.2	3	3	3										3	2	
C124.3	3	2	1										3	3	
C124.4	3	2	1										3	3	
C124.5	3	3	3		1								3	1	3



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Course Name: Mathematics-II for Computer Science and Engineering stream
COURSE CODE: BMATS201[C201]

COs	STATEMENTS
C201.1	Apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing area and volume.
C201.2	Understand the applications of vector calculus refer to solenoidal, and irrotational vectors. Orthogonal curvilinear coordinates.
C201.3	Demonstrate the idea of Linear dependence and independence of sets in the vector space, and linear transformation
C201.4	Apply the knowledge of numerical methods in analysing the discrete data and solving the physical and engineering problems.
C201.5	Get familiarize with modern mathematical tools namely MATHEMATICA/ MATLAB /PYTHON/ SCILAB

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C201.1	3	2										1	3	1	
C201.2	3	2										1	3	1	
C201.3	3	2										1	3	2	
C201.4	3	2		1								1	3	2	
C201.5	3	2		1								1	3	1	2



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Course Name: Mathematics-II for Electrical & Electronics Engineering Stream
COURSE CODE: BMATE201[C202]

COs	STATEMENTS
C202.1	Understand the applications of vector calculus refer to solenoidal, irrotational vectors, line integral and surface integral.
C202.2	Demonstrate the idea of Linear dependence and independence of sets in the vector space, and linear transformation
C202.3	To understand the concept of Laplace transform and to solve initial value problems
C202.4	Apply the knowledge of numerical methods in analysing the discrete data and solving the physical and engineering problems.
C202.5	Get familiarize with modern mathematical tools namely MATHEMATICA/ MATLAB /PYTHON/ SCILAB

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C202.1	3	2										1	3	1	
C202.2	3	2										1	3	1	
C202.3	3	2										1	3	2	
C202.4	3	2		1								1	3	2	
C202.5	3	2		1								1	3	1	2



Course Name: Mathematics-II for Civil Engineering stream
COURSE CODE: BMATC201[C203]

COs	STATEMENTS
C203.1	Apply the knowledge of multiple integrals to compute area and volume.
C203.2	Understand the applications of vector calculus refer to solenoidal, irrotational vectors, line integral and surface integral.
C203.3	Demonstrate partial differential equations and their solutions for physical interpretations.
C203.4	Apply the knowledge of numerical methods in analysing the discrete data and solving the physical and engineering problems.
C203.5	Get familiarize with modern mathematical tools namely MATHEMATICA/ MATLAB /PYTHON/ SCILAB

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C203.1	3	2										1	3	1	
C203.2	3	2										1	3	1	
C203.3	3	2										1	3	2	
C203.4	3	2		1								1	3	2	
C203.5	3	2		1								1	3	1	2



CITY
ENGINEERING COLLEGE

Course Name: Introduction to Electrical Engineering

COURSE CODE: BESCK204B[C204]

COs	STATEMENTS
C204.1	Understand the concepts of various energy sources and Electric circuits
C204.2	Apply the basic Electrical laws to solve circuits.
C204.3	Discuss the construction and operation of various Electrical Machines.
C204.4	Identify suitable Electrical machine for practical implementation.
C204.5	Explain the concepts of electric power transmission and distribution, electricity billing, circuit protective devices and personal safety measures.

CO-PO-PSO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C204.1	2												3		
C204.2	2	3	1										3	1	
C204.3	1												2		
C204.4	1	1											1		
C204.5	2	1	1			2							2	1	