



PRINCE **Dr. K.VASUDEVAN COLLEGE OF ENGINEERING AND TECHNOLOGY**

(Approved by AICTE, Affiliated to Anna University & ISO 9001:2015 Certified Institution)
Medavakkam-Mambakkam Main Road, Ponmar, Chennai-600127

DEPARTMENT OF CSE (CYBER SECURITY)

2021 REGULATION

HS3151 PROFESSIONAL ENGLISH – I

C101.1	To use appropriate words in a professional context.
C101.2	To understand the basic grammatical structures and use them in right context.
C101.3	To read and infer the denotative and connotative meanings of technical texts
C101.4	To write definitions, descriptions, narrations and essays on various topics
C101.5	Interpret different genres of texts adopting various reading strategies and to write comprehensively.

MA3151 MATRICES AND CALCULUS

C102.1	To develop matrix algebra methods for solving practical problems
C102.2	Apply differential calculus tools in solving various application problems
C102.3	Able to use differential calculus ideas on several variable functions.
C102.4	Apply different methods of integration in solving practical problems.
C102.5	Apply multiple integral ideas in solving areas, volumes and other practical problems

PH3151 ENGINEERING PHYSICS

C103.1	Understand the importance of mechanics
C103.2	Express their knowledge in electromagnetic waves.



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C103.3	Demonstrate a strong foundational knowledge in oscillations, optics and lasers.
C103.4	Understand the importance of quantum physics.
C103.5	Comprehend and apply quantum mechanical principles towards the formation of energy bands.

CY3151ENGINEERING CHEMISTRY

C104.1	To infer the quality of water from quality parameter data and propose suitable treatment methodologies to treat water.
C104.2	To identify and apply basic concepts of nano science and nanotechnology in designing the synthesis of nano materials for engineering and technology applications.
C104.3	To apply the knowledge of phase rule and composites for material selection requirements.
C104.4	To recommend suitable fuels for engineering processes and applications
C104.5	To recognize different forms of energy resources and apply them for suitable applications in energy sectors.

GE3151 PROBLEM SOLVING AND PYTHON PROGRAMMING

C105.1	Develop algorithmic solutions to simple computational problems
C105.2	Develop and execute simple Python programs
C105.3	Ability to Write simple Python programs using conditionals and loops for solving problems
C105.4	Decompose a Python program into functions.
C105.5	Explain compound data using Python lists, tuples, dictionaries etc.



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GE3171 PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY

C106.1	Develop algorithmic solutions to simple computational problems
C106.2	Develop and execute simple Python programs.
C106.3	Implement programs in Python using conditionals and loops for solving problems
C106.4	Explain Deploy functions to decompose a Python program
C106.5	Explain Process compound data using Python data structures

BS3171 PHYSICS AND CHEMISTRY LABORATORY

C107.1	To analyse the quality of water samples with respect to their acidity, alkalinity, hardness.
C107.2	To determine the amount of metal ions through volumetric and spectroscopic techniques.
C107.3	Apply mathematical models as a medium for quantitative reasoning and describing physical reality.
C107.4	To learn simple method of synthesis of nano particles.
C107.5	Ability to Access, process and analyze scientific information.

GE3172 ENGLISH LABORATORY

C108.1	To listen and comprehend complex academic texts.
C108.2	To speak fluently and accurately in formal and informal communicative contexts.
C108.3	To express their opinions effectively in both oral and written medium of communication.



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C108.4	Ability to listen/view and comprehend different spoken excerpts critically and infer unspoken and implied meanings and write reports and winning job applications.
C108.5	Ability to identify, define and express the different components of grammar and Speak appropriately and effectively in varied formal and informal contexts.

HS3251 PROFESSIONAL ENGLISH -II

C109.1	To compare and contrast products and ideas in technical texts.
C109.2	To identify cause and effects in events, industrial processes through technical texts
C109.3	To analyse problems in order to arrive at feasible solutions and communicate them orally and in the written format.
C109.4	To report events and the processes of technical and industrial nature.
C109.5	To present their opinions in a planned and logical manner, and draft effective resumes in context of job search.

MA3251 STATISTICS AND NUMERICAL METHODS

C110.1	Apply the concept of testing of hypothesis for small and large samples in real life problems.
C110.2	Apply the basic concepts of classifications of design of experiments in the field of agriculture.
C110.3	Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems.
C110.4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations
C110.5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications.



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PH3256 PHYSICS FOR INFORMATION SCIENCE

C111.1	Understand the knowledge on classical and quantum electron theories, and energy band structures.
C111.2	Acquire knowledge on basics of semiconductor physics and its applications in various devices.
C111.3	Apply knowledge on magnetic properties of materials and their applications in data storage
C111.4	Understand the function of optical materials for optoelectronics
C111.5	Understand the basics of quantum structures and their applications and basics of quantum computing

BE3251 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

C112.1	Compute the electric circuit parameters for simple problems.
C112.2	Explain the working principle and applications of electrical machines.
C112.3	Analyze the characteristics of analog electronic devices.
C112.4	Explain the basic concepts of digital electronics.
C112.5	Explain operating principles of measuring instruments

GE3251 ENGINEERING GRAPHICS

C113.1	Use BIS conventions and specifications for engineering drawing
C113.2	Construct the conic curves, involutes and cycloid
C113.3	Solve practical problems involving projection of lines
C113.4	Draw the orthographic, isometric and perspective projections of simple solids
C113.5	Ability to develop a simple solids



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CS3251 PROGRAMING IN C

C114.1	Demonstrate knowledge on C Programming constructs.
C114.2	Develop simple applications in C using basic constructs
C114.3	Design and implement applications using arrays and strings
C114.4	Develop and implement modular applications in C using functions.
C114.5	Design applications using sequential and random access file processing.

GE3271 ENGINEERING PRACTICES LABORATORY

C115.1	Construct a pipe line plan; lay and connect various pipe fittings used in common household plumbing work; Saw; plan; make joints in wood materials used in common household wood work
C115.2	Explain various electrical joints in common household electrical wire work.
C115.3	Explain various joints in steel plates using arc welding work; Machine various simple processes like turning, drilling, tapping in parts; Assemble simple mechanical assembly of common household equipments
C115.4	Ability to make a tray out of metal sheet using sheet metal work.
C115.5	Ability to Solder and test simple electronic circuits; Assemble and test simple electronic components on PCB.

CS3271 PROGRAMMING IN C LABORATORY

C116.1	Demonstrate knowledge on C programming constructs.
C116.2	Develop programs in C using basic constructs, arrays.
C116.3	Develop applications in C using strings, pointers, functions
C116.4	Develop applications in C using structures.
C116.5	Develop applications in C using file processing.



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GE3272 COMMUNICATION LABORATORY / FOREIGN LANGUAGE

C117.1	Ability to speak effectively in group discussions held in a formal/semi formal contexts.
C117.2	Able to write emails and effective job applications.
C117.3	Identify varied group discussion skills and apply them to take part in effective discussions in a professional context.
C117.4	Able to communicate effectively through writing.
C117.5	Able to use appropriate words in a professional context.

MA3354 DISCRETE MATHEMATICS

C201.1	Apply the knowledge of the concepts needed to test the logic of a program.
C201.2	Understanding in identifying structures on many levels.
C201.3	Understand the class of functions which transform a finite set into another finite set which relates to input and output functions in computer science.
C201.4	Apply the concept of the counting principles.
C201.5	Apply the concepts and properties of algebraic structures such as groups, rings and fields.

CS3351 DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION

C202.1	Design various combinational digital circuits using logic gates.
C202.2	Design sequential circuits and analyze the design procedures.
C202.3	State the fundamentals of computer systems and analyze the execution of an instruction.
C202.4	Analyze different types of control design and identify hazards.
C202.5	Identify the characteristics of various memory systems and I/O communication.



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CS3352 FOUNDATIONS OF DATA SCIENCE

C203.1	Define the data science process.
C203.2	Understand different types of data description for data science process.
C203.3	Implement knowledge on relationships between data.
C203.4	Apply the Python Libraries for Data Wrangling.
C203.5	Apply visualization Libraries in Python to interpret and explore data.

CD3291 DATA STRUCTURES AND ALGORITHMS

C204.1	Explain abstract data types.
C204.2	To design, implement, and analyze linear data structures, such as lists, queues, and stacks, according to the needs of different applications.
C204.3	To design, implement, and analyze different sorting algorithms.
C204.4	Implement efficient Tree structure algorithms.
C204.5	Explain graph problems and implement efficient graph algorithms to solve them.

CS3391 OBJECT ORIENTED PROGRAMMING

C205.1	Apply the concepts of classes and objects to solve simple problems.
C205.2	Develop programs using inheritance, packages and interfaces.
C205.3	Apply the exception handling mechanisms and multithreaded model to solve real world problems.
C205.4	Develop Java applications with I/O packages, string classes,



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	Collections and generics concepts.
C205.5	Integrate the concepts of event handling and JavaFX components and controls for developing GUI based applications.

CD3281 DATA STRUCTURES AND ALGORITHMS LABORATORY

C206.1	Implement ADTs as Python classes.
C206.2	To design, implement, and analyse linear data structures, such as lists, queues, and stacks, according to the needs of different applications.
C206.3	To design, implement, and analyze different sorting algorithms.
C206.4	Implement efficient Tree structure algorithms.
C206.5	Develop graph problems and implement efficient graph algorithms to solve them.

CS3381 OBJECT ORIENTED PROGRAMMING LABORATORY

C207.1	Design and develop java programs using object oriented programming concepts.
C207.2	Develop simple applications using object oriented concepts such as package, exceptions.
C207.3	Implement multithreading, and generics concepts.
C207.4	Create GUIs and event driven programming applications for real world problems.
C207.5	Implement and deploy web applications using Java.

CS3361 DATA SCIENCE LABORATORY

C208.1	Illustrate the python libraries for data science.
C208.2	Understand the basic Statistical and Probability measures for data



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	science.
C208.3	Perform descriptive analytics on the benchmark data sets.
C208.4	Perform correlation and regression analytics on standard data sets.
C208.5	Present and interpret data using visualization packages in Python.

GE3361 PROFESSIONAL DEVELOPMENT

C209.1	Create quality documents, by structuring and organizing content for their day to day technical and academic requirements by using MS WORD.
C209.2	To perform data operations and analytics, record, retrieve data as per requirements and visualize data for ease of understanding BY USING MS EXCEL.
C209.3	To create high quality academic presentations by including common tables, charts, graphs, interlinking other elements, and using media objects BY USING MS PowerPoint.
C209.4	Ability to organize the content for their day to day technical and academic requirements by using MS WORD.
C209.5	To create common tables, charts and using media objects by using Ms PowerPoint.

CS3452 THEORY OF COMPUTATION

C211.1	Construct automata theory using Finite Automata.
C211.2	Construct regular expressions for any pattern.
C211.3	Design context free grammar and Pushdown Automata.
C211.4	Design Turing machine for computational functions.
C211.5	Evaluate whether a problem is decidable and undecidable problems.

CS3491 ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

C212.1	Explain appropriate search algorithms for problem solving.
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C212.2	Apply reasoning under uncertainty.
C212.3	Build supervised learning models.
C212.4	Build ensembling and unsupervised models.
C212.5	Construct deep learning using neural network models.

CB3401 DATABASE MANAGEMENT SYSTEMS AND SECURITY

C213.1	Develop a modern application's data requirements using conceptual modeling and design database schemas based on the conceptual model.
C213.2	Develop solutions to a broad range of query problems using relational algebra/SQL.
C213.3	Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.
C213.4	Estimate the procedures for controlling the consequences of concurrent data access.
C213.5	Understand and handle security issues in database management systems

CB3402 OPERATING SYSTEMS AND SECURITY

C214.1	Understand the concepts of Operating Systems.
C214.2	Apply knowledge on process management concepts including scheduling, synchronization, threads and deadlock.
C214.3	Understand the memory, file and I/O management activities of OS.
C214.4	To understand security issues in operating systems and appreciate the need for security models.
C214.5	Understand the operating systems security models of WINDOWS and UNIX OS.

CB3491 CRYPTOGRAPHY AND CYBER SECURITY



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C215.1	Understand the fundamentals of networks security, security architecture, threats and vulnerabilities.
C215.2	Apply the different cryptographic operations of symmetric cryptographic algorithms .
C215.3	Apply the different cryptographic operations of public key cryptography.
C215.4	Apply the various Authentication schemes to simulate different applications.
C215.5	Understand various cyber crimes and cyber security.

GE3451 ENVIRONMENTAL SCIENCES AND SUSTAINABILITY

C216.1	Create public awareness of environmental is at infant stage.
C216.2	Understand the problem posed by Environmental Pollution which cannot be solved by mere laws.
C216.3	Comprehend the natural resources available to us.
C216.4	Analyze and provide judgmental solutions to prevailing social issues in the environment.
C216.5	Develop and improve standard of living.

CB3411 CRYPTOGRAPHY AND CYBER SECURITY LABORATORY

C217.1	Develop a code for classical encryption techniques.
C217.2	Build symmetric and asymmetric algorithms.
C217.3	Construct a code for various Authentication schemes.
C217.4	Implement hashing techniques such as SHA-1, MD-5.
C217.5	Apply the principles of digital signature.

CB3412 DATABASE MANAGEMENT SYSTEMS AND SECURITY LABORATORY



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C218.1	To Create databases with different types of key constraints.
C218.2	Develop a simple and complex SQL queries using DML and DCL commands.
C218.3	Realize database design using 3NF and BCNF.
C218.4	Ability to use advanced features such as stored procedures and triggers.
C218.5	Develop Secure databases and mitigate attacks on databases.