2021 REGULATION

SEMESTER I

**(HS3152) PROFESSIONAL ENGLISH I**

COURSE OUTCOMES :

COURSE OUTCOMES: At the end of the course the students will be able to

CO1:To use appropriate words in a professional context

CO2:To gain understanding of basic grammatic structures and use them in right context.

CO3:To read and infer the denotative and connotative meanings of technical texts

CO4:To write definitions, descriptions, narrations and essays on various topics

**(MA3151) MATRICES AND CALCULUS**

COURSE OUTCOMES: At the end of the course the students will be able to

CO1:Use the matrix algebra methods for solving practical problems.

 CO2:Apply differential calculus tools in solving various application problems.

 CO3:Able to use differential calculus ideas on several variable functions.

CO4:Apply different methods of integration in solving practical problems.

CO5:Apply multiple integral ideas in solving areas, volumes and other practical problems.

**(PH3151) ENGINEERING PHYSICS**

COURSE OUTCOMES: After completion of this course, the students should be able to

CO1:Understand the importance of mechanics.

 CO2:Express their knowledge in electromagnetic waves.

CO3:Demonstrate a strong foundational knowledge in oscillations, optics and lasers.

CO4:Understand the importance of quantum physics.

 CO5:Comprehend and apply quantum mechanical principles towards the formation of energy bands.

**CY3151 ENGINEERING CHEMISTRY**

COURSE OUTCOMES: At the end of the course, the students will be able:

CO1:To infer the quality of water from quality parameter data and propose suitable treatment methodologies to treat water.

CO2:To identify and apply basic concepts of nanoscience and nanotechnology in designing the synthesis of nanomaterials for engineering and technology applications.

CO3:To apply the knowledge of phase rule and composites for material selection requirements.

CO4:To recommend suitable fuels for engineering processes and applications.

CO5:To recognize different forms of energy resources and apply them for suitable applications in energy sectors.

**(GE3151) PROBLEM SOLVING AND PYTHON PROGRAMMING**

COURSE OUTCOMES: Upon completion of the course, students will be able to

CO1: Develop algorithmic solutions to simple computational problems.

CO2: Develop and execute simple Python programs.

CO3: Write simple Python programs using conditionals and loops for solving problems.

CO4: Decompose a Python program into functions.

CO5: Represent compound data using Python lists, tuples, dictionaries etc. CO6: Read and write data from/to files in Python programs.

**(GE3171) PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY**

**C**OURSE OUTCOMES: On completion of the course, students will be able to:

CO1: Develop algorithmic solutions to simple computational problems

CO2: Develop and execute simple Python programs.

CO3: Implement programs in Python using conditionals and loops for solving problems.

CO4: Deploy functions to decompose a Python program.

CO5: Process compound data using Python data structures. CO6: Utilize Python packages in developing software applications.

**(BS3171) PHYSICS AND CHEMISTRY LABORATORY**

**PHYSICS LABORATORY :**

COURSE OUTCOMES: Upon completion of the course, the students should be able tol

 CO1:Understand the functioning of various physics laboratory equipment.

CO2:Use graphical models to analyze laboratory data.

CO3:Use mathematical models as a medium for quantitative reasoning and describing physical reality.

CO4:Access, process and analyze scientific information.

CO5:Solve problems individually and collaboratively.

**CHEMISTRY LABORATORY:**

COURSE OUTCOMES:

CO1:To analyse the quality of water samples with respect to their acidity, alkalinity, hardness and DO.

CO2:To determine the amount of metal ions through volumetric and spectroscopic techniques

CO3:To analyse and determine the composition of alloys.

CO4:To learn simple method of synthesis of nanoparticles

CO5:To quantitatively analyse the impurities in solution by electroanalytical techniques

GE3172 ENGLISH LABORATORY

COURSE OUTCOMES: At the end of the course, learners will be able

CO1:To listen to and comprehend general as well as complex academic information

CO2:To listen to and understand different points of view in a discussion

CO3:To speak fluently and accurately in formal and informal communicative contexts

CO4:To describe products and processes and explain their uses and purposes clearly and accurately

CO5:To express their opinions effectively in both formal and informal discussions

**SEMESTER II**

**HS3252 PROFESSIONAL ENGLISH – II**

**C**OURSE OUTCOMES:

At the end of the course, learners will be able

 CO1:To compare and contrast products and ideas in technical texts.

 CO2:To identify and report cause and effects in events, industrial processes through technical texts.

CO3:To analyse problems in order to arrive at feasible solutions and communicate them in the written format.

CO4:To present their ideas and opinions in a planned and logical manner

 CO5:To draft effective resumes in the context of job search.

**MA3251 STATISTICS AND NUMERICAL METHODS**

**C**OURSE OUTCOMES:

Upon successful completion of the course, students will be able to:

CO1:Apply the concept of testing of hypothesis for small and large samples in real life problems.

CO2:Apply the basic concepts of classifications of design of experiments in the field of agriculture.

CO3:Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems.

CO4:Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations.

CO5:Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications.

**PH3256 PHYSICS FOR INFORMATION SCIENCE**

**CSE & IT COURSE OUTCOMES**

**C**OURSE OUTCOMES:

 At the end of the course, the students should be able to

CO1: Gain knowledge on classical and quantum electron theories, and energy band structures

CO2: Acquire knowledge on basics of semiconductor physics and its applications in various devices

CO3: Get knowledge on magnetic properties of materials and their applications in data storage,

CO4: Have the necessary understanding on the functioning of optical materials for optoelectronics

CO5: Understand the basics of quantum structures and their applications and basics of quantum computing

**PH3251 -MATERIALS SCIENCE**

**COURSE OUTCOMES:**

**At the end of the course, the students should be able to**

CO1: Know basics of crystallography and its importance for varied materials properties

CO2: Gain knowledge on the electrical and magnetic properties of materials and their applications

CO3: Understand clearly of semiconductor physics and functioning of semiconductor devices

CO4: Understand the optical properties of materials and working principles of various optical

C05: Devices appreciate the importance of functional nanoelectronic devices.

**ECE COURSE OUTCOMES**

**PH3254 PHYSICS FOR ELECTRONICS ENGINEERING**

**COURSE OUTCOMES:**

At the end of the course, the students should be able to

CO1: Know basics of crystallography and its importance for varied materials properties

CO2: Gain knowledge on the electrical and magnetic properties of materials and their applications

CO3: Understand clearly of semiconductor physics and functioning of semiconductor devices

CO4: Understand the optical properties of materials and working principles of various optical devices

CO5: Appreciate the importance of nanotechnology and nanodevices.

**PH3256 PHYSICS FOR INFORMATION SCIENCE**

**COURSE OUTCOMES:**

At the end of the course, the students should be able to

CO1: Gain knowledge on classical and quantum electron theories, and energy band structures

CO2: Acquire knowledge on basics of semiconductor physics and its applications in various devices

CO3: Get knowledge on magnetic properties of materials and their applications in data storage,

CO4: Have the necessary understanding on the functioning of optical materials for optoelectronics

CO5: Understand the basics of quantum structures and their applications and basics of quantum

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**BE3251 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING**

COURSE OUTCOMES:

 After completing this course, the students will be able to

CO1: Compute the electric circuit parameters for simple problems

CO2: Explain the working principle and applications of electrical machines

CO3: Analyze the characteristics of analog electronic devices

CO4: Explain the basic concepts of digital electronics

CO5: Explain the operating principles of measuring instruments

**GE3251 ENGINEERING GRAPHICS**

COURSE OUTCOMES: On successful completion of this course, the student will be able to

CO1:Use BIS conventions and specifications for engineering drawing.

CO2:Construct the conic curves, involutes and cycloid.

CO3:Solve practical problems involving projection of lines.

CO4:Draw the orthographic, isometric and perspective projections of simple solids.

CO5:Draw the development of simple solids.

**CS3251 PROGRAMMING IN C**

COURSE OUTCOMES:

Upon completion of the course, the students will be able to

CO1: Demonstrate knowledge on C Programming constructs

CO2: Develop simple applications in C using basic constructs

CO3: Design and implement applications using arrays and strings

CO4: Develop and implement modular applications in C using functions.

CO5: Develop applications in C using structures and pointers.

CO6: Design applications using sequential and random access file processing.

**BE3254 ELECTRICAL AND INSTRUMENTATION ENGINEERING**

**COURSE OUTCOMES :**

After completing this course, the students will be able to

CO1: Explain the working principle of electrical machines

CO2: Analyze the output characterizes of electrical machines

CO3: Choose the appropriate electrical machines for various applications

CO4: Explain the types and operating principles of measuring instruments

CO5: Explain the basic power system structure and protection schemes

**EC3251 CIRCUIT ANALYSIS**

**COURSE OUTCOMES**

On successful completion of this course, the student will be able to

CO1: Apply the basic concepts of circuit analysis such as Kirchoff’s laws, mesh current and

Node voltage method for analysis of DC and AC circuits.

CO2: Apply suitable network theorems and analyze AC and DC circuits

CO3: Analyze steady state response of any R, L and C circuits

CO4: Analyze the transient response for any RC, RL and RLC circuits and frequency response

of parallel and series resonance circuits.

 CO5: Analyze the coupled circuits and network topologies

**GE3271 ENGINEERING PRACTICES LABORATORY**

COURSE OUTCOMES:

Upon completion of this course, the students will be able to:

CO1:Draw 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.

 CO2:Wire various electrical joints in common household electrical wire work.

CO3:Weld 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; Make a tray out of metal sheet using sheet metal work.

CO4:Solder and test simple electronic circuits; Assemble and test simple electronic components on PCB.

**BIO TECH**

**PH3252 MATERIALS SCIENCE FOR BIOTECHNOLOGISTS**

**OUTCOMES:**

Upon completion of this course, the students should be able to

CO1: Understand the basics of crystallography and its importance in materials properties

CO2: Understand the significance of dislocations, strengthening mechanisms, and tensile, creep,hardness and fracture behavior of materials

CO3: Gain knowledge on binary phase diagrams, and also will be able to determine the phase

composition and phase amount.

CO4: Understand about the Fe-C system and various microstructures in it, and also about various ferrous and non-ferrous alloys.

CO5: Get adequate understanding on metallic, ceramic and polymeric biomaterials and their

Applications.

**BE3252 BASIC ELECTRICAL, ELECTRONICS AND INSTRUMENTATION ENGINEERING**

**COURSE OUTCOMES:**

After completing this course, the students will be able to

CO1: Compute the electric circuit parameters for simple problems

CO2: Explain the concepts of domestics wiring and protective devices

CO3: Explain the working principle and applications of electrical machines

CO4: Analyze the characteristics of analog electronic devices

CO5: Explain the types and operating principles of sensors and transducers

**BT3201 BIOORGANIC CHEMISTRY**

**COURSE OUTCOMES:**

At the end of the course the students will be able to

CO1: Bonding and stereochemistry

CO2: Mechanisms of substitution and addition reactions

CO3: Thermodynamics, kinetics and mechanism

CO4: Catalysis

CO5: Bioorganic reactions and mechanisms

**AI&DS COURSE OUTCOMES**

**BE3251 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING**

**COURSE OUTCOMES:**

After completing this course, the students will be able to

CO1: Compute the electric circuit parameters for simple problems

CO2: Explain the working principle and applications of electrical machines

CO3: Analyze the characteristics of analog electronic devices

CO4: Explain the basic concepts of digital electronics

CO5: Explain the operating principles of measuring instruments

**AD3251 DATA STRUCTURES DESIGN**

**COURSE OUTCOMES:At the end of the course, the student should be able to:**

CO1: Explain abstract data types

CO2: Design, implement, and analyse linear data structures, such as lists, queues, and stacks,

according to the needs of different applications

CO3: Design, implement, and analyse efficient tree structures to meet requirements such as

searching, indexing, and sorting

CO4: Model problems as graph problems and implement efficient graph algorithms to solve them

**CS3271 PROGRAMMING IN C LABORATORY**

**C**OURSE OUTCOMES: Upon completion of the course, the students will be able to

CO1: Demonstrate knowledge on C programming constructs.

CO2: Develop programs in C using basic constructs.

 CO3: Develop programs in C using arrays.

 CO4: Develop applications in C using strings, pointers, functions.

CO5: Develop applications in C using structures. CO6: Develop applications in C using file processing.

**GE3272 COMMUNICATION LABORATORY**

COURSE OUTCOMES

CO1:Speak effectively in group discussions held in a formal/semi formal contexts.

 CO2:Discuss, analyse and present concepts and problems from various perspectives to arrive at suitable solutions

CO3:Write emails, letters and effective job applications.

CO4:Write critical reports to convey data and information with clarity and precision

CO5: Give appropriate instructions and recommendations for safe execution of tasks