Course Outcomes

I Year – I SEMESTER R20

ENGLISH

At the end of the module, the learners will be able to:

1. Understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information .
2. Ask and answer general questions on familiar topics and introduce oneself/others.
3. Employ suitable strategies for skimming and scanning to get the general idea of a text and locate specific information.
4. Recognize paragraph structure and be able to match beginnings/endings/headings with paragraphs.
5. Form sentences using proper grammatical structures and correct word forms.

MATHEMATICS-I

At the end of the module, the learners will be able to:

1. Utilize mean value theorems to real life problems.
2. Solve the differential equations related to various engineering fields.
3. Familiarize with functions of several variables which is useful in optimization.
4. Apply double integration techniques in evaluating areas bounded by region.
5. Students will also learn important tools of calculus in higher dimensions. Students will become familiar with 2- dimensional and 3-dimensional coordinate systems.

APPLIED CHEMISTRY

At the end of the module, the learners will be able to:

1. *Analyze* the different types of composite plastic materials and *interpret* the mechanism of conduction in conducting polymers.
2. *Utilize* the theory of construction of electrodes, batteries and fuel cells in redesigning new engineering products and c*ategorize* the reasons for corrosion and study methods to control corrosion.
3. *Synthesize* nanomaterials for modern advances of engineering technology.
4. *Summarize the* preparation of semiconductors; analyze the applications of liquid crystals and superconductors.
5. *Analyze* the principles of different analytical instruments and their applications.
6. *Design* models for energy by different natural sources.
7. *Obtain* the knowledge of computational chemistry and molecular machines

PROGRAMMING FOR PROBLEM SOLVING USING C

At the end of the module, the learners will be able to:

1. To write algorithms and to draw flowcharts forsolvingproblems
2. To convert flowcharts/algorithms to C Programs, compile anddebugprograms
3. To use different operators, data types and write programs that use two-way/ multi-way selection
4. To select the best loop construct for agivenproblem
5. To design and implement programs to analyze the differentpointerapplications
6. To decompose a problem into functions and to develop modularreusablecode
7. To apply FileI/Ooperations.

ENGINEERING DAWING

At the end of the module, the learners will be able to:

1. The student will learn how to visualize 2D & 3D objects.

ENGLISH LAB

At the end of the module, the learners will be able to:

1. A study of the communicative items in the laboratory will help the students become successful in the competitive world.
2. Learners learn how to pronounce words using the rules they have been taught.
3. Students learn the importance of speaking English by using rhythm and intonation.
4. Students learn to participate in group discussion, JAM, and debate.
5. Students learn to face different types of interviews with self confidence.

APPLIED CHEMISTRY LAB

1. Thus at the end of the lab course, the student is exposed to different methods of chemical analysis and use of some commonly employed instruments. They thus acquire some experimental skills.

PROGRAMMING FOR PROBLEM SOLVING USING C LAB

At the end of the module, the learners will be able to:

1. Gains Knowledge on various concepts of a C language.
2. Able to draw flowcharts and write algorithms.

3. Able design and development of C problem solving skills.
4. Able to design and develop modular programming skills.
5. Able to trace and debug a program

I Year - II Semester R20

MATHEMATICS-II

At the end of the course, the student will be able to:

1. Develop the use of matrix algebra techniques that is needed by engineers for practical applications.
2. Solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel.
3. Evaluate the approximate roots of polynomial and transcendental equations by different algorithms.
4. Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals.
5. Apply numerical integral techniques to different Engineering problems.
6. Apply different algorithms for approximating the solutions of ordinary differential equations with initial conditions to its analytical computations.

APPLIED PHYSICS

At the end of the course, the student will be able to:

- **Explain** the need of coherent sources and the conditions for sustained interference.
- **Identify** engineering applications of interference.
- **Analyze** the differences between interference and diffraction with applications.
- **Illustrate** the concept of polarization of light and its applications.
- **Classify** ordinary polarized light and extraordinary polarized light.

- **Understand** the basic concepts of LASER light Sources.
- **Apply** the concepts to learn the types of lasers.
- **Identifies** the Engineering applications of lasers.
- **Explain** the working principle of optical fibers.
- **Classify** optical fibers based on refractive index profile and mode of propagation.
- **Identify** the applications of optical fibers in various fields.

- **Explain** the concept of dual nature of matter.
- **Understand** the significance of wave function.
- **Interpret** the concepts of classical and quantum free electron theories.
- **Explain** the importance of K-P model
- **Classify** the materials based on band theory.
- **Apply** the concept of effective mass of electron.

- **Explain** the concept of dielectric constant and polarization in dielectric materials.
- **Summarize** various types of polarization of dielectrics.
- **Interpret** Lorentz field and Claussius- Mosotti relation in dielectrics.
- **Classify** the magnetic materials based on susceptibility and their temperature dependence.
- **Explain** the applications of dielectric and magnetic materials.
- **Apply** the concept of magnetism to magnetic data storage devices.

- **Classify** the energy bands of semiconductors.
- **Interpret** the direct and indirect band gap semiconductors.
- **Identify** the type of semiconductor using Hall effect.
- **Identify** applications of semiconductors in electronic devices.
- **Classify** superconductors based on Meissner's effect.
- **Explain** Meissner's effect, BCS theory & Josephson effect in superconductors.

OBJECT ORIENTED PROGRAMMING THROUGH JAVA

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

1. Show competence in the use of the Java programming language in the development of small to medium- sized application programs that demonstrate professionally acceptable coding and performance standard
2. Illustrate the basic principles of the object-oriented programming
3. Demonstrate an introductory understanding of graphical user interfaces, multithreaded programming, and event-driven programming.

NETWORK ANALYSIS

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

1. Gain the knowledge on basic network elements
2. Will analyze the RLC circuits behavior in detailed
3. Analyze the performance of periodic waveforms.
4. Gain the knowledge in characteristics of two port network parameters (Z, Y, ABCD, h & g).

5. Analyze the filter design concepts in real world applications.

BASIC ELECTRICAL ENGINEERING

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

1. Able to explain the operation of DC generator and analyze the characteristics of DC generator.
2. Able to explain the principle of operation of DC motor and analyze their characteristics. Acquire the skills to analyze the starting and speed control methods of DC motors.
3. Ability to analyze the performance and speed – torque characteristics of a3-phase induction motor and understand starting methods of 3-phaseinductionmotor.
4. Able to explain the operation of Synchronous Machines
5. Capability to understand the operation of various special machines.

ELECTRONIC WORKSHOP LAB

1. Study different meters and instruments for measurement of electronic quantities.
2. Identify and test various electronic components.
3. Assemble and test electronic circuits on boards.
4. Work in a team with good interpersonal skills.

BASIC ELECTRICAL ENGINEERING LAB

The student should be able to:

1. Determine and predetermine the performance of DC machines and transformers.
2. Control the DC shunt machines.
3. Compute the performance of1-phasetransformer.
4. Perform tests on 3-phase induction motor and alternator to determine their performance characteristics.

APPLIED PHYSICS LABORATORY

1. Physics lab curriculum gives fundamental understanding of design of an instrument with targeted accuracy for physical measurements.

ENVIRONMENTAL SCIENCE

The student should be able to:

1. The natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources.

2. The concepts of the ecosystem and its function in the environment. The need for protecting the producers and consumers in various ecosystems and their role in the food web.
3. The biodiversity of India and the threats to biodiversity, and conservation practices to protect the biodiversity.
4. Various attributes of the pollution and their impacts and measures to reduce or control the pollution along with waste management practices.
5. Social issues both rural and urban environment and the possible means to combat the challenges.
6. The environmental legislations of India and the first global initiatives towards sustainable development.
7. About environmental assessment and the stages involved in EIA and the environmental audit.
8. Self Sustaining Green Campus with Environment Friendly aspect of – Energy, Water and Wastewater reuse Plantation, Rain water Harvesting, Parking Curriculum.