

Course Outcomes

I Year – I SEMESTER R20

COMMUNICATIVE 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 course, the student 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

MATHEMATICS-II

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

PROGRAMMING FOR PROBLEM SOLVING USING C

1. To learn about the computer systems, computing environments, developing of a computer program and Structure of a C Program
2. To gain knowledge of the operators, selection, control statements and repetition in C
3. To learn about the design concepts of arrays, strings, enumerated structure and union types. To learn about their usage.
4. To assimilate about pointers, dynamic memory allocation and know the significance of Preprocessor.
5. To assimilate about File I/O and significance of functions

ENGINEERING DRAWING & DESIGN

The objective is also to visualize and represent the 3D objects in 2D planes with proper dimensioning, scaling etc.

COMMUNICATIVE 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

ELECTRICAL ENGINEERING WORKSHOP

After the completion of the course the student should be able to:

1. Explain the limitations, tolerances, safety aspects of electrical systems and wiring.
2. Select wires/cables and other accessories used in different types of wiring.
3. Make simple lighting and power circuits.
4. Measure current, voltage and power in a circuit.

PROGRAMMING FOR PROBLEM SOLVING USING C LAB

After the completion of the course the student should be able to:

1. Gains Knowledge on various concepts of a C language.
2. Draw flowcharts and write algorithms.
3. Design and development of C problem solving skills.
4. Design and develop modular programming skills.
5. Trace and debug a program

I Year II Semester R20

MATHEMATICS-III

1. interpret the physical meaning of different operators such as gradient, curl and divergence
2. estimate the work done against a field, circulation and flux using vector calculus
3. apply the Laplace transform for solving differential equations
4. find or compute the Fourier series of periodic signals
5. know and be able to apply integral expressions for the forwards and inverse Fourier transform to a range of non-periodic waveforms
6. identify solution methods for partial differential equations that model physical processes

APPLIED PHYSICS

1. **Explain** the need of coherent sources and the conditions for sustained interference.
2. **Identify** engineering applications of interference.
3. **Analyze** the differences between interference and diffraction with applications.
4. **Illustrate** the concept of polarization of light and its applications.
5. **Classify** ordinary polarized light and extraordinary polarized light.
6. **Understand** the basic concepts of LASER light Sources.
7. **Apply** the concepts to learn the types of lasers.
8. **Identifies** the Engineering applications of lasers.
9. **Explain** the working principle of optical fibers.
10. **Classify** optical fibers based on refractive index profile and mode of propagation.
11. **Identify** the applications of optical fibers in various fields.

12. **Explain** the concept of dual nature of matter.
13. **Understand** the significance of wave function.
14. **Interpret** the concepts of classical and quantum free electron theories.
15. **Explain** the importance of K-P model
16. **Classify** the materials based on band theory.
17. **Apply** the concept of effective mass of electron.
18. **Explain** the concept of dielectric constant and polarization in dielectric materials.
19. **Summarize** various types of polarization of dielectrics.
20. **Interpret** Lorentz field and Claussius- Mosotti relation in dielectrics.
21. **Classify** the magnetic materials based on susceptibility and their temperature dependence.
22. **Explain** the applications of dielectric and magnetic materials.
23. **Apply** the concept of magnetism to magnetic data storage devices.
24. **Classify** the energy bands of semiconductors.
25. **Interpret** the direct and indirect band gap semiconductors.
26. **Identify** the type of semiconductor using Hall effect.
27. **Identify** applications of semiconductors in electronic devices.
28. **Classify** superconductors based on Meissner's effect.
29. **Explain** Meissner's effect, BCS theory & Josephson effect in superconductors.

DATA STRUCTURES THROUGH C

After the completion of the course the student should be able to:

1. data structures concepts with arrays, stacks, queues.
2. linked lists for stacks, queues and for other applications.
3. traversal methods in the Trees.
4. various algorithms available for the graphs.
5. sorting and searching in the data retrieval applications

ELECTRICAL CIRCUIT ANALYSIS -I

After the completion of the course the student should be able to:

1. Various electrical networks in presence of active and passive elements.
2. Electrical networks with network topology concepts.
3. Any magnetic circuit with various dot conventions.
4. Any R, L, C network with sinusoidal excitation.
5. Any R, L, network with variation of any one of the parameters i.e R, L, C and f.
6. Electrical networks by using principles of network theorems

DATA STRUCTURES THROUGH C LAB

After the completion of the course the student should be able to:

1. Be able to design and analyze the time and space efficiency of the data structure.
2. Be capable to identify the appropriate data structure for given problem.
3. Have practical knowledge on the applications of data structures.

CONSTITUTION OF INDIA

At the end of the semester/course, the student will be able to have a clear knowledge on the following:

1. Understand historical background of the constitution making and its importance for building a democratic India.
 2. Understand the functioning of three wings of the government i.e., executive, legislative and judiciary.
 3. Understand the value of the fundamental rights and duties for becoming good citizen of India.
 4. Analyze the decentralization of power between central, state and local self-government.
 5. Apply the knowledge in strengthening of the constitutional institutions like CAG, Election Commission and UPSC for sustaining democracy.
1. Know the sources, features and principles of Indian Constitution.
 2. Learn about Union Government, State government and its administration.
 3. Get acquainted with Local administration and Panchayati Raj.
 4. Be aware of basic concepts and developments of Human Rights.
 5. Gain knowledge on roles and functioning of Election Commission