# ADITYA COLLEGE OF ENGINEERING

Approved by AICTE, Permanently Affiliated to JNTUK & Accredited by NAAC
Recognized by UGC under Sections 2(f) and 12(B) of UGC Act, 1956
Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph: 99631 76662.


## Course Outcomes

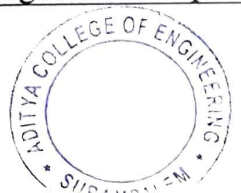
The institution hasadopted OBE approach and accordingly Programme Educational Objectives (PEOs), Programme outcomes (POs), Programme Specific Outcome (PSOs) andCourse outcomes (COs) are developed. Curriculum plan with deployment strategies will be prepared and implemented to attain the outcomes. The following table lists the course outcomes for the courses developed for the curriculum being implemented from the academic year 2019-20.

| SUBJECT NAME | CO | COURSE OUTCOMES – R19 |
|---|---|---|
| English (HS1101) | CO1 | Understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information |
| | CO2 | Ask and answer general questions on familiar topics and introduce oneself/others |
| | CO3 | Employ suitable strategies for skimming and scanning to get the general idea of a text and locate specific information |
| | CO4 | Recognize paragraph structure and be able to match beginnings/endings/headings with paragraphs |
| | CO5 | Form sentences using proper grammatical structures and correct word forms |
| Mathematics-I (BS1101) | CO1 | Utilize mean value theorems to real life problems (L3) |
| | CO2 | Solve the differential equations related to various engineering fields (L3) |
| | CO3 | Familiarize with functions of several variables which is useful in optimization (L3) |
| | CO4 | Apply double integration techniques in evaluating areas bounded by region (L3) |
| | CO5 | Students will also learn important tools of calculus in higher dimensions. Students will become familiar with 2-dimensional and 3-dimensional coordinate systems (L5 ) |

ADITYA COLLEGE OF ENGINEERING SURAMPALEM

PRINCIPAL
Aditya College of Engineering
SURAMPALEM-533 437

| | | |
|---|---|---|
| APPLIED CHEMISTRY (BS1106) | CO1 | Outline the properties of polymers and various additives added and different methods of forming plastic materials.<br>Explain the preparation, properties and applications of some plastic materials.<br>Interpret the mechanism of conduction in conducting polymers .<br>Discuss natural and synthetic rubbers and their applications. |
| | CO2 | Explain the theory of construction of battery and fuel cells.<br>Categorize the reasons for corrosion and study some methods of corrosion control. |
| | CO3 | Understand the importance of materials like nanomaterials and fullerenes and their uses.<br>Understand liquid crystals and superconductors.<br>Understand the preparation of semiconductors. |
| | CO4 | Obtain the knowledge of computational chemistry<br>Understand importance molecular machines |
| | CO5 | Understand the principles of different analytical instruments.<br>Explain the different applications of analytical instruments.<br>Design sources of energy by different natural sources. |
| PROGRAMMING FOR PROBLEM SOLVING USING C (ES1101) | CO1 | Acquires skills to write, compile and debug programs in C language. |
| | CO2 | Be able to use different operators, data types and write programs that use two-way/ multi-way selection. |
| | CO3 | Acquire knowledge to select the best loop construct for a given problem. |
| | CO4 | Design and implements programs to analyze the different pointer applications |
| | CO5 | Design and implements C programs with functions, File I/O operations |
| ENGINEERING DRAWING (ES1103) | CO1 | The student will learn how to visualize 2D & 3D objects. |
| APPLIED CHEMISTRY LAB (BS1107) | CO1 | The students entering into the professional course have practically very little exposure to lab classes. The experiments introduce volumetric analysis; redox titrations with different indicators; EDTA titrations; then they are exposed to a few instrumental methods of chemical analysis. 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 | CO1 | Gains Knowledge on various concepts of a C language. |
| | CO2 | Able to draw flowcharts and write algorithms. |
| | CO3 | Able design and development of C problem solving skills. |
| | CO4 | Able to design and develop modular programming skills. |




PRINCIPAL
Aditya College of Engineering
SURAMPALEM-533 437

| | | |
|---|---|---|
| (ES1102) | CO5 | Able to trace and debug a program |
| MATHEMATICS - II (BS1202) | CO1 | Develop the use of matrix algebra techniques that is needed by engineers for practical applications (L6) |
| | CO2 | Solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel (L3) |
| | CO3 | Evaluate approximating the roots of polynomial and transcendental equations by different algorithms (L5) |
| | CO4 | Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals (L3) |
| | CO5 | Apply different algorithms for approximating the solutions of ordinary differential equations to its analytical computations (L3) |
| MATHEMATICS - III (BS1203) | CO1 | Interpret the physical meaning of different operators such as gradient, curl and divergence (L5) |
| | CO2 | Estimate the work done against a field, circulation and flux using vector calculus (L5) |
| | CO3 | Apply the Laplace transform for solving differential equations (L3) |
| | CO4 | Find or compute the Fourier series of periodic signals (L3) |
| | CO5 | Know and be able to apply integral expressions for the forwards and inverse Fourier transform to a range of non-periodic waveforms (L3) |
| | CO6 | Identify solution methods for partial differential equations that model physical processes (L3) |
| APPLIED PHYSICS (BS1204) | CO1 | Explain the need of coherent sources and the conditions for sustained interference.<br>Analyze the differences between interference and diffraction with applications.<br>Illustrate the resolving power of various optical instruments. |
| | CO2 | Explain the fundamental concepts of quantum mechanics.<br>Analyze the physical significance of wave function.<br>Apply Schrödinger's wave equation for energy values of a free particle . |
| | CO3 | Explain the various electron theories.<br>Calculate the Fermi energy.<br>Analyze the physical significance of wave function .<br>Interpret the effects of temperature on Fermi Dirac distribution function.<br>Summarise various types of solids based on band theory. |
| | CO4 | Classify the energy bands of semiconductors.<br>Outline the properties of n-type and p-type semiconductors.<br>Identify the type of semiconductor using Hall effect. |

ADITYA COLLEGE OF ENGINEERING * SURAMPALEM *

PRINCIPAL
Aditya College of Engineering
SURAMPALEM-533 437

| | | |
|---|---|---|
| | CO5 | explain the concept of polarization in dielectric materials.<br>Summarize various types of polarization of dielectrics .<br>Interpret Lorentz field and Claussius- Mosotti relation in dielectrics.<br>Classify the magnetic materials based on susceptibility and their temperature dependence.<br>Explain the applications of dielectric and magnetic materials .<br>Apply the concept of magnetism to magnetic devices. |
| NETWORK ANALYSIS (ES1209) | CO1 | Gain the knowledge on basic network elements. |
| | CO2 | Will analyze the RLC circuits behavior in detailed. |
| | CO3 | Analyze the performance of periodic waveforms. |
| | CO4 | Gain the knowledge in characteristics of two port network parameters (Z,Y,ABCD,h& g). |
| | CO5 | Analyze the filter design concepts in real world applications. |
| BASIC ELECTRICAL ENGINEERING (ES1211) | CO1 | Able to explain the operation of DC generator and analyze the characteristics of DC generator. |
| | CO2 | 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. |
| | CO3 | Ability to analyze the performance and speed – torque characteristics of a 3-phase induction motor and understand starting methods of 3-phase induction motor. |
| | CO4 | Able to explain the operation of Synchronous Machines |
| | CO5 | Capability to understand the operation of various special machines. |
| BASIC ELECTRICAL ENGINEERING LAB (ES1208) | CO1 | Determine and predetermine the performance of DC machines and transformers. |
| | CO2 | Control the DC shunt machines. |
| | CO3 | Compute the performance of 1-phase transformer. |
| | CO4 | Perform tests on 3-phase induction motor and alternator to determine their performance characteristics. |

ADITYA COLLEGE OF ENGINEERING * SURAMPALEM *

**PRINCIPAL**

PRINCIPAL
Aditya College of Engineering
SURAMPALEM-533 437