ANURAG Engineering College
(An Autonomous Institution)
(Approved by AICTE, New Delhi, Affiliated to JNTUH, Hyderabad)
Ananthagiri (V&M), Kodad, Suryapet (Dt). Pin: 508 206.

DEPARTMENT OF HUMANITIES AND SCIENCES

S.No.	Course Code	Course Name	Description of the course outcomes
1	MA101BS	Matrices and Calculus	1. Write the matrix representation of a set of linear equations and to analyze the solution of the system of equations 2. Find the Eigen values and Eigen vectors of the matrix and discuss the nature of the quadratic form. 3. Discuss the applications of mean value theorems to the mathematical problems, Evaluation of improper integrals using Beta and Gamma functions. 4. Examine the extreme of functions of two variables with/ without constraints. 5. Analyze the convergence of sequence and series.
2	CH102BS	Engineering Chemistry	1. Understand the basic properties of water and its usage in domestic and industrial purposes. 2. Acquire the basic knowledge of electrochemical procedures related to corrosion and its control. 3. Learn the fundamentals and general properties of polymers and other engineering materials. 4. Apply the knowledge of atomic, molecular and electronic changes related to conductivity 5. Apply the knowledge of engineering materials in daily life.
3	CS103ES	Programming For Problem Solving	1. Design algorithms, flowcharts and programs involving decision and iteration structures. 2. Analyze the concepts of arrays, strings and structures

			for real world problems. 3. Apply various file handling techniques for better data management. 4. Apply the concept code reusability using Functions. 5. Implement various searching and sorting Techniques.
4	EE104ES	Basic Electrical Engineering	1. Understand the importance of DC circuits and analyze theorems. 2. Understand the concept of AC circuits and resonance. 3. Concept of principle of operation of transformer and efficiency of single phase transformer. 4. Analyze the performance of DC machines and Induction motors. 5. Demonstrate the importance of electrical installation and the concept of power, power factor and its improvement.
5	EG105ES	Computer Aided Engineering Graphics	1. Apply computer aided drafting tools to create 2D and 3D objects 2. Sketch conics and different types of solids 3. Appreciate the need of Sectional views of solids and Development of surfaces of solids 4. Read and interpret engineering drawings 5. Conversion of orthographic projection into isometric view and vice versa manually and by using computer aided drafting
6	CS106ES	Elements of Computer Science and Engineering	1. Know the working principles of functional units of a basic Computer 2. Understand program development, the use of data structures and algorithms in problem solving. 3. Know the need and types of operating system, database systems. 4. Understand the significance of networks, internet, WWW and cyber security.

			5. Understand Autonomous systems, the application of artificial intelligence.
7	CH107BS	Engineering Chemistry Laboratory	1. Determination of rate of corrosion of mild steel in various conditions. 2. To perform methods such as conductometry, potentiometry and pH metry in order to find out the concentrations or equivalence points of acids and bases. 3. To prepare polymers like Thiokol rubber and Bakelite. 4. Estimation of Saponification value, Viscosity and surface tension of lubricant oils. 5. Estimation of hardness of water, Chloride content of water sample.
8	CS108ES	Programming For Problem Solving Laboratory	1. Apply fundamental programming concepts and Exercise control statements to solve simple problems. 2. Represent and manipulate data with arrays and strings 3. Modularize the code with functions so that they can be reused. 4. Develop applications using user defined data types 5. Implement various searching and sorting techniques
9	EE108ES	Basic Electrical Engineering Laboratory	1. Apply the various procedures and techniques for the experiments. 2. Verify the various electrical laws and theorems with DC Excitation. 3. Determine the losses, efficiency and regulation of single phase transformer. 4. Obtain the performance of induction motors. 5. Evaluate the speed of DC shunt motor.

10	HS110MC	Constitution of India	1. Knowledge of historical perspective and salient features of Indian constitution 2. Aware of the fundamental rights of Indian citizens. 3. Know the directive principles and fundamental duties of government and citizens 4. Knowledge of the Quasi-federal and parliamentary structure of Indian constitution 5. Knowledge of the constitution amendment powers and Emergency Provisions of Indian constitution
11	MA201BS	Ordinary Differential Equations and Vector Calculus	1. Methods of solving the differential equations of first order 2. Methods of solving the second and higher order differential equations. 3. Evaluation of multiple integrals 4. The basic properties of vector valued functions and derivatives 5. Line, surface and volume integrals and vector integral theorems.
12	AP202BS	Applied Physics	1. Understand various optical phenomena of light 2. Apply basic the principles of quantum mechanics to classify solids based on band theory. 3. Identify the role of semiconductor devices in science and engineering Applications. 4. Understand the features and applications of Nanomaterial's in various fields. 5. Understand various aspects of Lasers and Optical fiber and their applications in diverse fields.

13	ME203ES	Engineering Workshop	1. Study and practice on machine tools and their operations 2. Practice on manufacturing of components using workshop trades including pluming, fitting, carpentry, and foundry, house wiring and welding. 3. Identify and apply suitable tools for different trades of engineering processes including drilling, material removing, measuring, and chiseling. 4. Build right attitude, team working, precision and safety at work place. 5. Apply basic electrical engineering knowledge and various manufacturing processes.
14	EN204HS	English for Skill Enhancement	1. Understand the importance of vocabulary and sentence structures. 2. Choose appropriate vocabulary and sentence structures for oral and written communication. 3. Demonstrate understanding of the rules of functional grammar. 4. Develop comprehension skills from known and unknown passages through effective reading strategies. 5. Construct paragraphs, letters, essays, abstracts, précis and reports in various contexts thereby improving proficiency in writing modules of English.
15	EC205ES	Electronic Devices and Circuits	1. Analyze the PN Junction diode operation and its characteristics

			2. Know the applications of Diode such as clippers and clampers. 3. Analyze the characteristics of BJT. 4. Analyze the characteristics of FET. 5. Understand the concept of special purpose devices
16	AP206BS	Applied Physics Laboratory	1. KnowthedeterminationofthePlanck'sconstantusingPhotoelectriceffect 2. Appreciate quantum physics in semiconductor devices and opto electronics. 3. Gain the knowledge of various semiconductor devices like .PN junction diode, Zener diode, BJT, LED, solar Cell 4. Understand the properties and principles of laser and optical fiber. 5. Carried out data analysis
17	CS207ES	Python Programming Laboratory	1. Able to develop programs using control statements. 2. Able to code programs using modular approach. 3. Read and write data from/to files in Python Programs 4. To write GUI program to create window wizard using various buttons. 5. Implement digital systems using python and to install and use various libraries.
18	EN208HS	English Language and Communicati	1. Reproduce speech sounds and improve language

		on Skills Laboratory	2. Develop accent and pronunciation in various situations 3. Understand variants in pronunciation by differentiating between British and American accents 4. Identify the diverse purposes of listening and speaking 5. Exhibit critical thinking, problem-solving and decision-making skills through Group Discussions and Interviews.
19	CS209ES	IT Work Shop	1. Perform Hardware troubleshooting 2. Understand Hardware components and inter dependencies 3. Safeguard computer systems from viruses/worms 4. Document/ Presentation preparation 5. Perform calculations using spreadsheets
20	ES210MC	Environmental Science	1. The multidisciplinary nature of environment, essence of environment, 2. About the natural resources utilization and their conservation 3. The importance of Biodiversity and its Conservation 4. About the causes and effects of environmental pollution and its management as well as environmental issues 5. About the environmental wastes management rules, regulations and EIA for the protection of environment and to achieve sustainable development.
21	CP103ES	C Programming for Engineeries	1. Design algorithm and flowcharts for solving problems 2. Design programs by understanding concepts of

			operators and statements 3. Develop code with functions and arrays 4. Formulate programs using pointers and apply various file handling techniques for data management 5. Analyze programs using searching and sorting techniques.
22	EC106ES	Elements of Electronics and Communication Engineering	1. Identify the different components used for electronics applications 2. Measure different parameters using various measuring instruments 3. Understand the Functionality of the CRO 4. Distinguish various signal used for analog and digital communications 5. Know various software's of Electronics and communication applications
23	CP109ES	C Programming for Engineeries Laboratory	1. Ability to design programs using operators and control statements. 2. Develop code with functions and arrays 3. Ability to use Strings and Structures. 4. Formulate programs using various file handling techniques for data management. 5. Implement programs using searching and sorting techniques.
24	CA207ES	Applied Python Programming Laboratory	1. Able to install python and its modules. 2. Able to build basic programs using fundamental programming constructs 3. Able to code programs using functions and files. 4. Write and execute python codes for different applications. 5. Capable to implement on hardware boards

25	EC209ES	Electronic Devices and Circuits Laboratory	1. Analyze the characteristics of different electronic devices such as Diodes, Rectifiersetc... 2. Operate simple circuits like clippers and clampers. 3. Understand the Input and output characteristics of the BJT and FET transistorconfigurations. 4. Understand switching characteristics of the transistor 5. Understand the characteristics of the SCR and UJT
26	CD103ES	C Programming and Data Structures	1. Understand the various steps and know the usage of operators in Program development. 2. Design programs involving the concepts of arrays and code reusability using functions. 3.Analyze the concepts of pointers,strings to write C programs. 4. Develop programs with user-defined data types and apply various file handling techniques. 5. Implement various searching and sorting Techniques.
27	CE106ES	Elements of Civil Engineering	1. To gain the practical knowledge on physical properties of minerals and rocks. 2. To knew the characteristics of cement 3. To obtain the characteristics of Fine aggregates. 4. To obtain the characteristics of coarse aggregates. 5. To solve the characteristics of Bricks
28	CD109ES	C Programming and Data Structures Laboratory	1. Develop modular and readable C Programs 2. Solve problems using strings, functions 3. Handle data in files 4. Implement stacks, queues using arrays, linked lists. 5. To understand and analyze various searching and sorting algorithms.
29	AM204ES	Applied Mechanics	1. Determine resultant of forces acting on a body and analyze equilibrium of a body subjected to a system of forces.

			2. Solve problem of bodies subjected to friction. 3. Find the location of centroid and calculate moment of inertia of a given section. 4. Understand the kinetics and kinematics of a body undergoing rectilinear, curvilinear,Rotatory motion and rigid body motion. 5. Solve problems using work energy equations fo translation, fixed axis rotation and plane motion and solve problems of vibration.
30	CE205ES	Surveying	1. Calculate angles, distances and levels 2. Identify data collection methods and prepare field notes 3. Understand the working principles of survey instruments 4. Estimate measurement errors and apply corrections 5. Interpret survey data and compute areas and volumes
31	CE208ES	Surveying Laboratory-I	1. Student will be able to prepare Map and Plan for required site with suitable scale. 2. Student will be able to prepare contour Map and Estimate the Quantity of earthwork required for formation level for Road and Railway Alignment. 3. Student will be able to judge which type of instrument to be used for carrying out survey for a Particular Area and estimate the area. 4. Student will be able to judge the profile of ground by observing the available existing contour map. 5. Student will be able to prepare Setting out of curves
32	ME106ES	Elements of Mechanical Engineering	1. Understand the operation, usage, and applications of different measuring instrument and Tools. 2. Examine the different characteristics of instruments

			like accuracy, precision etc. 3. Prepare simple composite components and joining different materials using soldering Process. 4. Identify tools & learn practically the process of turning, milling, grinding on mild steel pieces. 5. Understand the basic components of IC engine, Gear box and boiler.
33	ME204ES	Engineering Mechanics	1. Determine resultant of forces acting on a body and analyse equilibrium of a body subjected to a system of forces. 2. Solve problem of bodies subjected to friction. 3. Find the location of centroid and calculate moment of inertia of a given section. 4. Understand the kinetics and kinematics of a body undergoing rectilinear, curvilinear,rotatory motion and rigid body motion. 5. Solve problems using work energy equations for translation, fixed axis rotation and plane motion and solve problems of vibration.
34	ME205ES	Engineering Materials	1. Classify the various materials that will be essential for the mechanical engineering applications. 2. Express the mechanical properties of metals and their testing procedures. 3. Understand the application of materials and their processing 4. Understand the requirement and need for the development of the new materials.
35	ME208ES	Fuels & Lubricants Laboratory	1. Find the kinematic viscosity of lubricants and its variation with temperature. 2. Determine the flash point, fire point, cloud point and pour point of liquid fuels.

			3. Determine the calorific value of solid, liquid and gaseous fuels. 4. Determination of the dropping point of lubricating grease. 5. Determination of distillation characteristics of petroleum products.
36	EE105ES	Electrical Circuit Analysis-I	1. Understand network analysis, techniques using mesh and node analysis. 2. Evaluate steady state and transient behaviour of single phase circuits. 3. Analyze electric circuits using network theorems. 4. Evaluate steady state and transient behaviour of three phase circuits. 5. Analyze electric circuits using network theorems and concepts of coupled circuits.
37	EE106ES	Elements of Electrical and Electronics Engineering	1. Verify the Kirchhoff's and ohm's laws. 2. Verify the basic Electrical circuit's parameters with DC excitation. 3. Verify the basic Electrical circuit's parameters with AC excitation. 4. Analyze the phenomenon of series and parallel resonance. 5. Evaluate the performance calculations of Electrical Machines and Transformers through various testing methods
38	EE205ES	Electrical Circuit Analysis-II	1. Observe the response of various R, L and C circuits for different excitations. 2. Examine the behavior of circuits using Laplace transforms and transfer function of single port network. 3. Obtain two port network parameters and applications

			and design of various filters. 4. Examine the behaviour of circuits using Fourier transforms and integral. 5. Classify and design various types of filters.
39	EE209ES	Electrical Circuit Analysis Laboratory	1. Analyze complex DC and AC linear circuits 2. Measure the three phase Active and Reactive power of electrical network. 3. Draw the locus diagrams of electrical circuits with R,L &C parameters. 4. Analyze the performance of two port network parameters. 5. Analyze the time response of first order RL, RC and RLC circuits.