

**COURSE STRUCTURE
AND
DETAILED SYLLABUS**

**ELECTRICAL AND ELECTRONICS
ENGINEERING**

**For
B.TECH FOUR YEAR DEGREE PROGRAMME
(Applicable for the batches admitted from 2020-2021)**



**VAAGDEVI COLLEGE OF ENGINEERING
(Autonomous)
Bollikunta, Warangal-506 005
Telangana State, India.**

**VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)
ELECTRICAL AND ELECTRONICS ENGINEERING**

COURSE STRUCTURE

(R20 Regulations applicable for the batches admitted from Academic Year 2020-2021)

I-SEMESTER

S.No	Course Code	Title of the Course	L	T	P	Credits
1		Linear Algebra and Complex Variables	3	1	0	4
2		Programming for Problem Solving	3	1	0	4
3		Fundamentals of Mechanical Engineering	3	0	0	3
4		Chemistry	3	0	0	3
5		English Language and Interactive Communication Skills Lab	0	0	3	1.5
6		Programming for Problem Solving Lab	0	0	2	1
7		Engineering and IT Workshop	0	0	3	1.5
8		Induction Program	0	0	0	0
		Total Credits	12	02	08	18

**VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)**

LINEAR ALGEBRA AND COMPLEX VARIABLES

B. TECH- I Semester

L/T/P/C

3/1 /0 /4

Pre-requisites: None

Course Objectives:

To learn

- Concept of rank of matrix and apply to know the consistency of system of linear equations.
- To determine Eigen values, Eigen vectors of matrices.
- Geometrical approach to the mean value theorems and their applications.
- Differentiation and integration of complex functions.
- Expansion of complex functions using Taylor's and Laurent's series.

UNIT-I

Matrices: Types of Matrices: Symmetric, Skew-symmetric, Hermitian, Skew-Hermitian, orthogonal, unitary matrices, Rank of a matrix by Echelon form and Normal form, System of linear equations: Solving system of Homogeneous and Non-Homogeneous equations.

UNIT-II

Eigen Values and Eigen vectors: Linear Transformation and Orthogonal Transformation: Eigen values and Eigen vectors and their properties: Diagonalization of a matrix; Cayley-Hamilton Theorem (without proof); finding inverse and power of a matrix by Cayley-Hamilton Theorem;

UNIT-III

Calculus: Mean value theorems: Rolle's theorem, Lagrange's Mean value, Cauchy's Mean value Theorem. Taylor's Series. Partial derivatives, Maxima and Minima of functions of two variables.

UNIT-IV

Complex variable and Integration: Limit, Continuity and Differentiability, Analytic functions, Cauchy – Riemann conditions in Cartesian and Polar Form, Cauchy's integral theorem, Cauchy's integral formula (All theorems without proof).

UNIT-V

Power Series and Residues: Taylor's series, Laurent's series, Residues, Cauchy's Residue Theorem (All theorems without proof) , Evaluation of real Integrals: $\int_0^{2\pi} f(\sin \theta, \cos \theta) d\theta$, $\int_{-\infty}^{\infty} f(x) dx$.

TEXT BOOKS:

1. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 42nd Edition, 2012.
2. Erwin kreyszig, Advanced Engineering Mathematics, 9th Edition, John wiley& Sons, 2006.
3. Complex Variables and Applications : J.W. Brown & R.V. Churchill, 7th Edition, Mc. Grawhill, 2004

REFERENCE BOOKS:

1. G.B. Thomas and R.L. Finney, Calculus and Analytic geometry, 9th Edition, Pearson, Reprint, 2002.
2. N.P. Bali and Manish Goyal, A text book of Engineering Mathematics, Laxmi Publications, Reprint, 2008.
3. Ramana B.V., Higher Engineering Mathematics, Tata McGraw Hill New Delhi, 11th Reprint, 2010.
4. Fundamentals of Complex Analysis: Sal E.B. and A.B. Sinder Pearson.

COURSE OUTCOMES:

On successful completion of this course, students are able to:

CO1: Understand the principles of matrix to calculate the characteristics of system of linear equations using multiple methods.

CO2: Determine Eigen values, Eigenvectors of matrices.

CO3: Calculate Partial derivatives, extreme of functions of multiple variables.

CO4: Analyze the complex function with reference to their analyticity and evaluate using integral theorems.

CO5: Expand the complex function using power series.

**VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)**

PROGRAMMING FOR PROBLEM SOLVING

B. TECH- I Semester

L/T/P/C

3/1 /0 /4

Pre-requisites: None

Course Objectives:

- To provide the necessary knowledge on general engineering problem solving methodologies.
- To provide necessary foundations for step by step computer program development and to present the basic concepts in C programming language.
- To prepare the students to write modular and readable C Programs.
- The Course introduces the essential concepts like abstract data types, user defined data types.
- To analyze the performance of algorithms and how to use such knowledge for later processing with the help of files.
- Aims to train the students to write working programs to solve problems.

UNIT-I

Introduction: Steps in Problem Solving, Algorithms, Flowcharts, Pseudo code, Types of Programming Languages, Introduction to C, History of C, Structure of a C Program.

Introduction to C Programming: The C Character Set, Identifiers and - Keywords, Data Types, Constants and Variables, Declarations, Expressions & Statements, Input / Output Statements (Formatted and Unformatted), Creating and Running a C program.

Operators and Expressions: Unary Operators, Arithmetic Operators, Relational and Logical Operators, Assignment Operators, Conditional operator, Bitwise Operators, special operators, Precedence & Associativity, Type Casting and Type Conversion.

UNIT-II

Control Statements: Branching Statements – if, if-else, else- if, nested-if. Switch statement. Un - conditional Branching Statement- goto. Looping Statements- while, do-while, for, nested loops. Break & Continue.

Functions : Introduction, Defining a Function, Types of Functions, Accessing a Function, Function Prototypes, Passing Arguments to a Function – call by value, Recursion.

Storage Classes: Automatic Variables, External (Global) Variables, Static Variables, Register.

UNIT-III

Arrays: Definition - Single Dimensional Arrays, Multi Dimensional Arrays, Declaration, Initialization, Reading & Writing elements in to an Array, Passing Arrays to Functions. Linear Search, Binary search, Bubble sort.

Strings: Declaration and Initialization of Strings, Reading and Writing a String, String Manipulation Functions, String as Array of Characters, Array of strings, Sorting of Strings.

Structures and Unions: User-Defined Data Types , Defining a Structure, Processing a Structure, Array of Structures, Nested Structures, Passing Structures To Functions.Unions. Typedef, Enumerated types - enum.

UNIT-IV

Pointers: Introduction, Pointer Declarations, Pointer to Pointer, Operations on Pointers -Pointer Arithmetic, Dynamic Memory Allocation – Malloc(), Calloc(), Realloc(), Free(). Pointers and Functions - call by Reference, Pointers and Arrays (one dimensional, two dimensional), Array of Pointers. Structures and Pointers, Self-Referential Structures.

UNIT-V

File Handling: Introduction, Text Files and Binary Files, File Handling Functions-Opening and Closing a File, File Opening Modes, Reading and Writing a File. Random Access File Functions – fseek() , rewind(), ftell(). Command Line Arguments, C Preprocessor Directives.

TEXT BOOKS:

1. Byron Gottfried, “*Programming with C*” . Third Edition(Schaum’s Outlines) McGrawHill.

REFERENCE BOOKS:

1. B.A. Forouzanand R.F. Gilberg, “*C Programming and Data Structures*”, Cengage Learning (3rdEdition)
2. Pradip Dey& Manas Ghosh, “*Programming in C*”, 2nd Edition , Oxford University Press,2013.
3. E. Balaguruswamy , “*Programming in ANSI C* “ ,McGraw-Hill Education,2008.

COURSE OUTCOMES:

On successful completion of this course, students are able to:

CO1: Understanding how problems are posed and how they can be analyzed for obtaining solutions.

CO2: Understanding the fundamentals of C programming.

CO3: Learning of sequencing, branching, looping and decision-making statements to solve scientific and engineering problems.

CO4: Implementing different operations on arrays and creating and using of functions to solve problems.

CO5: Design and implement different types of file structures using standard methodology.

**VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)**

FUNDAMENTALS OF MECHANICAL ENGINEERING

B. Tech : I-Semester

**L/T/P/C
3/0 /0 /3**

Pre-requisites: None

Course Objectives:

- Understand mechanism of power transfer through belt, rope, chain and gear drives
- Understand the working principle of internal combustion engine and its components details
- Demonstrate the understanding of working principle of steam power plant.
- Identify engineering materials, their properties, manufacturing methods encountered in engineering practice
- Understand working of various manufacturing techniques.

Unit I

Power Transmission: Transmission by Belt Drives, spur, helical and bevel gears, Chain drives, Simple Problems.

Unit II

IC Engines – 2 Stroke and 4 stroke systems in IC Engines. Automobiles - Transmission systems, Suspension system, E-Vehicles.

Unit III

Energy Systems - Power plants, Types, Gas Turbines, Steam Turbines, Utility boilers, R & A/C system (Summer and Winter) - Green Energy production and Devices.

Unit IV

Engineering materials, Machine elements, Fasteners and Support systems.

Unit V

Manufacturing, Classification, Metal forming, Casting (Sand, Investment, Die, Centrifugal), Lathe, Drilling machines, Milling, machines, Metal joining (Arc, Welding, Gas Welding, TIG and MIG Welding, Resistance Welding).

TEXT BOOKS:

1. Elements of Mechanical Engineering, N M Bhatt and J R Mehta, Mahajan Publishing House
2. Basic Mechanical Engineering, Pravin Kumar, Pearson Education
3. Elements of Mechanical Engineering, Sadhu Singh, S. Chand Publication.

COURSE OUTCOMES:

On successful completion of this course, students are able:

CO1: To understand the various sources of energy and basic terminology of Mechanical systems

CO2: To understand the various types of automobile engines

CO3: To understand and appreciate significance of mechanical engineering in different fields of engineering

CO4: To understand power transmission elements, and applications of various engineering materials

CO5: To understand various manufacturing processes.

**VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)****CHEMISTRY****B. Tech : I-Semester (EEE&ECE)****L/T/P/C
3/0 /0 /3****Pre-requisites:****Course Objectives:**

- To bring adaptability to the concepts of chemistry and to acquire the required skills to become a perfect engineer.
- To acquire the knowledge of electrochemistry, different batteries.
- To acquire the knowledge of corrosion and its control methods which are essential for the Engineers and in industry.
- To acquire the knowledge of water treatment which is essential for the Engineers and in industry.
- To acquire the knowledge of resistors and capacitors.
- To acquire the skills and knowledge to organic reactions and importance of polymers in engineering and everyday life.

UNIT-I**Electrochemistry & Batteries (12 Lectures)**

Introduction to electrochemistry, conductance-specific, equivalent and molar conductance, units and their relation. Electrochemical and Electrolytic cells, Galvanic cell, measurement of e.m.f. and single electrode potential, Nernst's equation and its applications, Electro chemical series-applications.

Batteries: primary cells-lithium cells. Secondary cells – Pb-acid storage cell, lithium-ion cells, Fuel cells-hydrogen-oxygen fuel cell. Methanol-oxygen fuel cell-advantages and applications, Reserve batteries - silver peroxide-zinc alkaline cell.

UNIT-II**Water Technology (10 Lectures)**

Introduction, types of hardness, units and Numerical problems. Estimation of hardness of water-EDTA method. Boiler troubles-scales and sludges. Treatment of Boiler feed water-Ion-exchange process. Desalination of brackish water-Reverse Osmosis. Domestic water treatment-specifications and steps involved in the treatment of potable water.

UNIT-III**Corrosion & Its control methods**

Corrosion: Introduction, causes of corrosion, types of corrosion-dry and wet corrosion-mechanism of electrochemical corrosion. Caustic embrittlement and boiler corrosion. Factors affecting on corrosion and corrosion control methods- cathodic protection (sacrificial anodic protection and impressed current cathodic protection) and surface coatings (anodic and cathodic), Methods of application of metal coatings-Hot dipping (galvanization and tinning) and electroplating of copper.

UNIT-IV**Polymers (8 Lectures)**

Polymers: Introduction to polymers, classification of polymers, mechanism of free radical addition polymerization, properties of polymers-crystallinity, melting point, boiling point and glass transition temperature. Conducting polymers-classification, mechanism of conduction in conducting polymers-poly acetylene and poly aniline, applications.

UNIT-V

Chemistry of Passive Devices (10 Lectures)

Resistors: Types of resistors, composition types of resistors- carbon resistor, film type resistor, wire-wound resistor.

Capacitors: Electrolytic capacitors family tree, Charge principle, Basic materials and construction.

TEXT BOOKS:

1. Text book of Engineering Chemistry by Jain & Jain.
2. Text book of Engineering Chemistry, CENGAGE learning by Prasanta Rath, B. Ramadevi, Ch. Venkata Ramana Reddy & Subhendu Chakroborty.
3. University chemistry, by B. H. Mahan
4. Engineering Chemistry by Shashi Ch

COURSE OUTCOMES:

The basic concepts included in this course will help the student to gain:

CO1: The knowledge of electrochemical cells, different batteries

CO2: The required principles and concepts of corrosion ,control methods.

CO3: The knowledge of water treatment.

CO4: The knowledge of polymers and their importance in day to day life.

CO5: The required principles and concepts of passive devices.

**VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)****ENGLISH LANGUAGE AND INTERACTIVE COMMUNICATION SKILLS LAB****B. Tech : I-Semester****L/T/P/C
0/0 /3 /1.5****Pre-requisites: None****Pre-requisites:**

The English Language and Interactive Communication Skills Lab considers English as a skill and focuses on the production and practice of sounds of the language to familiarize the students with the use of English in everyday situations both in formal and informal contexts.

Course Objectives

- To facilitate computer-assisted multi-media instruction enabling individualized and independent language learning.
- To sensitize students to the nuances of English speech sounds, stress and intonation to use in day to day situations.
- To enable students to write simple texts with unity, brevity and coherence using apt vocabulary.
- To improve students' IT skills and research skills to search for needed information from the Internet and use it in e-mails.

Module 1: Part – 1 Individualized Speaking Skills

1. I can introduce myself in English when meeting someone for the first time.
2. I can talk about familiar, everyday topics: my hobbies and interests.
3. I can talk about familiar, everyday topics: my past experiences.
4. I can talk about familiar, everyday topics: my future plans, goals, and predictions.
5. I can talk about familiar, everyday topics: my college and stream.
6. I can talk about familiar, everyday topics: C-block, my subjects and teachers.
7. I can talk about familiar, everyday topics: regional, domestic, and international issues.
8. I can ask effective follow-up questions.
9. I can ask for and give opinions.
10. I can agree with someone politely.
11. I can disagree with someone politely.
12. I can talk about personal and ethical problems.
13. I can talk about solutions to personal and ethical problems.
14. I can answer questions from a passport officer.
15. I can make a hotel reservation on the telephone.
16. I can make a restaurant reservation on the telephone.
17. I can order food and drinks on phone / from a waiter at a restaurant.
18. I can ask a salesperson at a clothing store for assistance.
19. I can ask for directions when I am lost in a new place/city.
20. I can give directions to someone who is lost.

Part – 2. Towards Ideal English Pronunciation

Introduction to English speech sounds, stress, accent, rhythm and intonation with individualized practice.

Module 2: Writing Skills

1. I can write the name of my university, college, department, and engineering stream in English.
2. I can use Brainstorming and Clustering effectively.
3. I can write an introduction for an essay.
4. I can write body paragraphs for an essay.
5. I can write a conclusion for an essay.
6. I can use peer-feedback to rewrite parts of an essay.
7. I can rewrite an essay based on feedback received from a teacher.

Module 3: IT Skills

1. I can submit homework online using e-mail observing e-mail etiquette.
2. I can view homework feedback and complete follow-up online exercises using the suggested websites.

Module 4: Research Skills

1. I can identify a research question and develop survey questions individually.
2. I can identify a research question and develop survey questions as a member of a group.
3. I can conduct research by gathering survey data from others.
4. I can analyze results by ranking / tabulating survey data.
5. I can present survey findings individually to peers.
6. I can present survey findings as a member of a group to peers.

COURSE OUTCOMES:

The basic concepts included in this course will help the student to

CO1: Understand their strengths and weaknesses in English usage in formal and informal contexts.

CO2: Use English comfortably in their individualized contexts.

CO3: Use IT skills and research skills in English speaking and writing.

CO4: Improve their vocabulary, pronunciation, receptive and expressive skills in English.

CO5: Draft narrative, descriptive and expository essays putting their ideas into words.

**VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)**

PROGRAMMING FOR PROBLEM SOLVING LAB

B. Tech : I-Semester

L/T/P/C

0/0 /2 /1

Pre-requisites: None**Course Objectives:**

- To provide the necessary knowledge on general engineering problem solving methodologies.
- To provide necessary foundations for step by step computer program development and to present the basic concepts in C programming language.
- To prepare the students to write modular and readable C Programs.
- The Course introduces the essential concepts like abstract data types, user defined data types.
- To analyze the performance of algorithms and how to use such knowledge for later processing with the help of files.
- Aims to train the students to write working programs to solve problems

WEEK-1

- 1.a) Write a C program to find the areas of shapes like circle, square, rectangle and triangle
- 1.b) Write a C program to demonstrate Type Casting and Type Conversion.

WEEK-2

- 2.a) Write a C program to find the roots of a quadratic equation.
- 2.b) Write a C program to find greatest of any 3 numbers.
- 2.c) Write a C program, which takes two integer operands and one operator from the user, performs the operation and then prints the result. (Consider the operators +, -, *, /, % and use Switch Statement)

WEEK-3

- 3.a) Fibonacci sequence is defined as follows: the first and second terms in sequence are 0 and 1. Subsequent terms are found by adding the preceding two terms in the sequence. Write a C program to generate the first n terms of the sequence.
- 3.b) A positive integer d is said to be a factor of another positive integer N if when N is divided by d, the remainder obtained is zero. For example, for number 12, there are 6 factors 1, 2, 3, 4, 6, 12. Every positive integer k has at least two factors, 1 and the number k itself. Given two positive integers N and k, write a program to print the kth largest factor of N.

Input Format: The input is a comma-separated list of positive integer pairs (N, k).**Output Format:** The kth highest factor of N. If N does not have k factors, the output should be 1.**Constraints:**

- $1 < N < 10000000000$
- $1 < k < 600$.

You can assume that N will have no prime factors which are larger than 13.

Example

- **Input:** 12,3
- **Output:** 4

- 3.c) Write a C program to find the second largest number in a set of n numbers.

WEEK-4

- 4.a) Write a C program to generate Pascal's triangle.
- 4.b) Write a C program to find the LCM (Least Common Multiple) and GCD (greatest common divisor) of two given integers.
- 4.c) Write a C program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.

WEEK-5

- 5.a) Write a C program to find sum of series $1+x^1+x^2+x^3+\dots+x^n$ using functions.
- 5.b) Write a C program to find factorial of a given number using Recursion.
- 5.c) Write a C program to demonstrate the use of Storage Classes

WEEK-6

- 6.a) Write a C program to find both the largest and smallest number in a list of integers.
- 6.b) N monkeys are invited to a party where they start dancing. They dance in a circular formation, very similar to a Gujarati Garba or a Drum Circle. The dance requires the monkeys to constantly change positions after every 1 second.

The change of position is not random & you, in the audience, observe a pattern. Monkeys are very disciplined & follow a specific pattern while dancing.

Consider $N = 6$, and an array `monkeys = {3,6,5,4,1,2}`.

This array (1-indexed) is the dancing pattern. The value at `monkeys[i]`, indicates the new of position of the monkey who is standing at the *i*th position.

Given N & the array `monkeys[]`, find the time after which all monkeys are in the initial positions for the 1st time.

Constraints

$1 \leq t \leq 10$ (test cases)

$1 \leq N \leq 10000$ (Number of monkeys)

Input Format

First line contains single integer *t*, denoting the number of test cases.

Each test case is as follows -

Integer *N* denoting the number of monkeys.

Next line contains *N* integer denoting the dancing pattern array, `monkeys[]`.

Output

t lines,

Each line must contain a single integer *T*, where *T* is the minimum number of seconds after which all the monkeys are in their initial position

- 6.c) Write a C program to insert an element at a given position in an Array using functions.

WEEK-7

7. Write a C program to perform all of the following:
 - a) Matrix Addition and subtraction
 - b) Matrix Multiplication
 - c) Find Transpose and test if a matrix is symmetric or not
 - d) A traditional chess board consists of 8 rows and 8 columns. Write a program to count the number of safest places that a King can be positioned when 3 queens (ministers) are placed at different positions on the chess board.

WEEK-8

- 8.a) Write a C program to perform linear search
- 8.b) Write a C program to perform binary search
- 8.c) Write a C program to sort the elements using bubble sort

WEEK-9

- 9.a) Write a C program to insert a sub-string in to a given main string at a given position.
- 9.b) Write a C program to count number of characters, words and sentences in a given text.
- 9.c) Write a C program to determine if the given string is a palindrome or not.
- 9.d) Write a C program to sort the given names in alphabetical order.

WEEK-10

10.a) Write a C program to implement array of structures.(use student structure) and write functions to search student data using hall ticket number.

ii. to sort the student records based on the total marks.

10.b) Write a menu driven C program that uses functions to perform the following operations on complex numbers stored in a structure:

i. Reading a complex number

ii. Writing a complex number

iii. Addition of two complex numbers

iv. Multiplication of two complex numbers

10.c) Write a C program to demonstrate Unions and enum.

WEEK-11

11.a) Write a C program for Pointer Arithmetic.

11.b) Write a C program to swap two numbers using Call by value and Call by reference.

11.c) Write a C program to demonstrate calling of a function (like add, subtract, multiply) using a function pointer.

WEEK-12

12.a) Write a C program using pointer to create a two-dimensional matrix, to input values in to the matrix and to display the matrix and its transpose. Free the memory properly.

12.b) Write a C program to demonstrate on structures and pointers.

12.c) Write a C program for dynamic creation of structures using pointers

WEEK-13

13.a) Write a C program to count no of alphabets, no of digits, no of special symbols, no of white spaces and no of tabs in a given text file.

13.b) Write a C program which copies one text file to another text file and verify the correctness.

13.c) Write a C program which copies one binary file to another binary file and verify the correctness.

WEEK-14

14.a) Write a C program to produce reverse of the content of a text file into another text file and verify the result.

14.b) Write a C program to merge two text files into a third text file (i.e., the contents of the first file followed by those of the second are put in the third file) and verify the correctness.

WEEK-15

15.a) Write a command-line C program to reverse the first n characters in a file.

(Note: The file name and n are specified on the command line.)

15.b) Write a C Program that removes all comment lines from a C source file.

TEXT BOOK:

1. Byron Gottfried, **“Programming with C”** . Third Edition(Schaum’s Outlines) McGrawHill.

REFERENCE BOOKS:

1. B.A. Forouzanand R.F. Gilberg, **“C Programming and Data Structures”** , Cengage Learning (3rdEdition)
2. Pradip Dey& Manas Ghosh, **“Programming in C”** , 2nd Edition , Oxford University Press,2013.
3. E. Balaguruswamy , **“Programming in ANSI C “** ,McGraw-Hill Education,2008.

COURSE OUTCOMES:

The basic concepts included in this course will help the student to

- CO1:** Understand basic structure of the C Programming, data types, declaration and usage of variables, control structures and all related concepts.
- CO2:** Understand any algorithm and Write the C programming code in executable form.
- CO3:** Implement Programs using functions, pointers and arrays
- CO4:** Use the pre-processors to solve real time problems.
- CO5:** Use file structures and implement programs on files.

**VAAGDEVI COLLEGE OF ENGINEERING
(AUTONOMOUS)**

ENGINEERING AND IT WORKSHOP

B. Tech : I-Semester(EEE)

**L/T/P/C
0/0 /3 /1.5**

Pre-requisites:

Course Objectives:

- Know the usage of various tools and their application in carpentry, tin smithy, black smithy, foundry, welding,
- Know the concepts of hardware and assemble and disassemble of computer.
- Overview of Microsoft word and table formats, Mail-merge concepts, Hyperlink concepts.
- Overview of Microsoft Excel, Functions and formulas.
- Overview of Microsoft PowerPoint , Slides creation, Layouts and insert images
- Overview of Microsoft Access , Creation of Tables , data base
- Information of data analysis functions and concatenate functions.

UNIT – I

TRADES FOR EXERCISES: (Any six trades from the following for Mechanical Engineering Branch & Any four trades for all other Branches with minimum of two exercises in each trade)

1. Carpentry
2. Fitting
3. Tin – Smithy
4. Black Smithy
5. House – wiring
6. Foundry
7. Plumbing
8. Soldering

UNIT - II

TRADES FOR DEMONSTRATION & EXPOSURE

1. Demonstration of Power tools & wiring
2. Welding.
3. Machine Shop

UNIT-III

INTRODUCTION TO COMPUTERS

Block diagram of computer – Memory functions of the CPU along with the configuration of each peripheral. Identify the peripherals of a computer, components in a CPU and its functions. Disassemble and assemble the PC back to working condition. Every student should individually install MS windows and Linux on the personal computer. Students should get connected to their Local Area Network and access the Internet.

UNIT-IV

INTRODUCTION TO MS OFFICE

Overview of Microsoft Word, Formatting Fonts in word, Drop Cap in word, Applying Text effects, Using Character Spacing, Borders and Colors, Inserting Header and Footer, Mail-merge concepts. Inserting table, Bullets and Numbering, Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check, Track Changes.

Overview of Microsoft Excel, Description about Spread Sheet, Gridlines, Format Cells, Summation, auto fill, Formatting Text, Cell Referencing, Filters, Formulae in excel – average, std deviation, Charts, Renaming and Inserting worksheets, Hyper linking, Count function.

Overview of Microsoft PowerPoint, PPT Orientation, Slide Layouts, Inserting Text, Word Art, Formatting Text, Bullets and Numbering, Auto Shapes, Lines and Arrows, Hyperlinks, Inserting –Images, Clip Art.

Overview of Microsoft Access, Creation of Tables, creation of data base, import or export the data base, hyperlinks to another tools.

UNIT-V**DATA ANALYSIS**

Insert tables, Draw the column chart, Pie chart, Line chart, bar Diagrams and also insert Auto functions.

Data analysis functions: Concatenate, Len, Count of sell, sum if function, average if condition, find/search techniques, if error function, count ifs function.

COURSE OUTCOMES:

The students will be able to

CO1: Know the fundamental knowledge of various trades and their usage in real time Applications.

CO2: Understand the basis for analyzing power tools in construction and wood working

CO3: Apply basic concepts of computer hardware for assembly and disassembly.

CO4: Use Microsoft word, power point

CO5: Use Microsoft Excel
