**Program Specific Outcomes and Course Outcomes**

**for**

**Diploma in Engineering (Computer Engineering)**

**BATCH (2022 Onwards) BOS (2022)**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Program Specific Outcomes:*** To analyse, design, develop, test and apply management principles, mathematical foundation and make them expert in designing computer software and hardware.
* To develop their skills to solve problems in area of programming and simulation.
* To demonstrate basic knowledge of computer applications and apply standard practices in software project development.
* To understand, analyse and develop computer programs for efficient design of computer based systems of varying complexity.
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**Diploma in Engineering (Computer Engineering)**

**1st Year 1st Semester**

**(Group-A)**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** English and Communication Skills - I | **Course Code**: CPED1101T/ECED1101T |
| **Course Outcomes:**At the end of this course, the student will be able to:* Understand the facts of literature from short stories and poetry.
* Solve vocabulary Exercise Based on selective Reading.
* Acquire the knowledge about kinds of communications, process and objectives of communications.
* Use grammar, tenses, voice, Pair of speech.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Physics - I | **Course Code**: CPED1102T/ECED1102T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Acquire the knowledge about units and dimensions of physical quantities.
* Understand the concept of scalar and vector product and the application of Newton’s law of motion.
* Study different types of waves along with mathematical representations.
* Get knowledge about Simple Harmonic Motion and its parameters.
* Impart the basic concepts of work in various types of planes, power with numerical problems and derivations of energy.
* Acquire knowledge about various properties of matter and pressure measuring devices.
* Study about temperature measuring scales and modes of transfer of heat.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Mathematics - I | **Course Code**: CPED1103T/ECED1103T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Describe the important tools of mathematics for further study in B.Tech., M.Tech.
* Learn to solve the problems of derivatives, integrals.
* Learn various types of properties of tools to solve complex matrices and determinants to simple.
* Get introduced to different types of tools to solve equations.
* Practice on different tools to solve the real world problems.
* Aquire much information about to convert derivatives into multiple domain variables.
* Learn the students to view different functions in a different domain.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Chemistry | **Course Code**: CPED1104T/ECED1104T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Apply the fundamental principles of measurement, matter, atomic theory, chemical periodicity, chemical bonding, general chemical reactivity and solution chemistry to subsequent courses in science.
* Acquire knowledge about the fundamental principles of bonding in materials.
* Develop innovative methods to produce soft water for industrial use and potable water at cheaper cost.
* Apply their knowledge for protection of different metals from corrosion.
* Get basic knowledge of organic compounds and their common names.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Engineering Drawing - I | **Course Code**: CPED1105T/ECED1105T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Understand the basics of engineering drawing, lettering, scales and projections.
* Learn to draw the projections of points, lines, planes and solids.
* Learn to draw the projections of technical drawing of threads and hexagonal & square nuts.
* Draw and understand the drawing of isometric and sectional views.
* Learn the basic drawings of various mechanical components used in mechanical engineering.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** English and Communication Skills - I Lab | **Course Code**: CPED1108P/ECED1108P |
| **Course Outcomes:**At the end of this course, the student will be able to:* Locate books in library.
* look up words in a dictionary meaning and pronunciation of words.
* seek information from encyclopaedia.
* Read Paper and unseen Passage.
* Introduce oneself others and leave taking etc.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Physics Lab - I | **Course Code**: CPED1109P/ECED1109P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Make the students gain practical knowledge to corelate with the theoretical studies.
* Understand the fundamentals of units and dimensions by using instruments.
* Understand the Scalar and vector quantities of force and motion.
* Understand the waves motion, vibrations and harmonics.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Chemistry Lab | **Course Code**: CPED1110P/ECED1110P |
| **Course Outcomes:**At the end of this course, the student will be able to:* Prepare various concentration solutions like molar, normal, ppm, etc.
* Develop in the student the ability to record scientific experimental processes, analyze results, draw conclusions, write reports and present their work orally.
* Learn the method to prepare iodoform from ethanol or acetone.
* Acquire practical knowledge on the techniques for the preparation bakelite.
* Prepare the Mohr’s salt from ferrous sulphate and ammonium sulphate.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Basics of Information Technology Lab | **Course Code**: CPED1111P/ECED1111P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Make aware the students about basics of computer, electronics components and its measurement.
* Provide knowledge of different units of computer like processing unit, I/O unit, and storage unit.
* Operate windows OS and its features.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name**: Workshop Practice-I | **Course Code**: CPED1112P/ECED1112P |
| **Course Outcomes**: At the end of this course, the student will be able to:* Develop the basic working knowledge required for the production of various engineering products.
* Understand the Design different sheet metal working processes.
* Demonstrate operation such as turning, facing, threading, knurling and grooving on centre lathe.
* Understand the metal cutting and joining by the welding.
* Develop the knowledge about wood working.
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**Diploma in Engineering (Computer Engineering)**

**1st Year 1st Semester**

**(Group-B)**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** English and Communication Skills - I | **Course Code**: CPED1101T/ECED1101T |
| **Course Outcomes:**At the end of this course, the student will be able to:* Understand the facts of literature from short stories and poetry.
* Solve vocabulary exercise based on selective reading.
* Acquire the knowledge about kinds of communications, process and objectives of communications.
* Use grammar, tenses, voice, pair of speech.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Physics - I | **Course Code**: CPED1102T/ECED1102T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Acquire the knowledge about units and dimensions of physical quantities.
* Understand the concept of scalar and vector product and the application of Newton’s law of motion.
* Study different types of waves along with mathematical representations.
* Get knowledge about Simple Harmonic Motion and its parameters.
* Impart the basic concepts of work in various types of planes, power with numerical problems and derivations of energy.
* Acquire knowledge about various properties of matter and pressure measuring devices.
* Study about temperature measuring scales and modes of transfer of heat.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Mathematics - I | **Course Code**: CPED1103T/ECED1103T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Learn the important tools of mathematics for further study in B.Tech., M.Tech.
* Learn to solve the problems of derivatives, integrals.
* Learn various types of properties of tools to solve complex matrices/determinants to simple.
* Get introduced to different types of tools to solve equations.
* Practice on different tools to solve the real world problems.
* Get much information about to convert derivatives into multiple domain variables.
* Learn to view different functions in a different domain.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Basic Electrical Engineering | **Course Code**: CPED1106T/ECED1106T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Study the electrical quantities and various electrical circuits.
* Application of Kirchhoff’s Law’s and star delta conversions.
* Analyze the concept of AC and DC circuits.
* Understand various Voltage and Current Source.
* Understand the Concept of electro-magnetic, AC Fundamentals.
* Apply the basic concepts and theorems in solving the electrical networks.
* Understand the applications of electrical engineering.
* Evaluate the results of varoius electrical networks.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Basic Electronics | **Course Code**: CPED1107T/ECED1107T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Understand basic concepts of various materials specially semiconductors, their characteristics and applications.
* Learn to analyze the PN junction behavior at the circuit level and its role in the operation of diodes and active device.
* Develop design competence in signal and power amplifiers using BJT and FET.
* Understand the working principles of different semiconductor devices and circuits.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** English and Communication Skills - I Lab | **Course Code**: CPED1108P/ECED1108P |
| **Course Outcomes:**At the end of this course, the student will be able to:* Locate books in library.
* Look up words in a dictionary meaning and pronunciation of words.
* To seek information from encyclopaedia.
* Read paper and unseen passage.
* Introduce oneself others and leave taking etc.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Physics Lab - I | **Course Code**: CPED1109P/ECED1109P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Make the students gain practical knowledge to co-relate with the theoretical studies.
* Understand the fundamentals of units and dimensions by using instruments.
* Understand the scalar and vector quantities of force and motion.
* Understand the waves motion, vibrations and harmonics.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Basic Electrical Engineering Lab | **Course Code**: CPED1113P/ECED1113P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Study the electrical quantities and various electrical circuits.
* Application of Kirchhoff’s Law’s and star delta conversions.
* Analyze the concept of AC and DC circuits.
* Understand various voltage and current source.
* Understand the Concept of electro-magnetic, AC fundamentals.
* Apply the basic concepts and theorems in solving the electrical networks.
* Understand the applications of electrical engineering.
* Evaluate the results of various electrical networks.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Basic Electronics Lab | **Course Code**: CPED1114P/ECED1114P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Dain the basic knowledge of electronic instruments such as multimeter, cathode ray oscilloscope (CRO), function generator etc.
* Familiarize about operating characteristics and applications of the PN junction diode.
* Gain the knowledge about the operating characteristics of transistor and field effect transistor (FET).
* Study about the applications of various transistors as an amplifier.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name**: Workshop Practice-I | **Course Code**: CPED1112P/ECED1112P |
| **Course Outcomes**: At the end of this course, the student will be able to:* Develop the basic working knowledge required for the production of various engineering products.
* Understand the design different sheet metal working processes
* Demonstrate operation such as turning, facing, threading, knurling and grooving on centre lathe.
* Understand the metal cutting and joining by the welding
* Develop the knowledge about wood working.
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**Diploma in Engineering (Computer Engineering)**

**1st Year 2nd Semester**

**(Group-A)**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** English and Communication Skills - II | **Course Code**: CPED1201T/ECED1201T |
| **Course Outcomes:**At the end of this course, the student will be able to:* Learn effective communication- verbal & nonverbal communication, barriers to communication.
* Learn the listening skills: kinds of listening, skills for effective listening and barriers to listening
* Learn the speaking skills: effective talk, oral presentation and role of audio-visual aids
* Learn the writing skills: précis writing and business letters
* Learn the grammar: using a word as different parts of speech, prefixes and suffixes (english and hindi)
* Learn the reading skills: purposes, kinds of reading
* Long and short questions (from short stories & prose) summary/central idea(from poetry) vocabulary exercises based on following selective readings
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Physics - II | **Course Code**: CPED1202T/ECED1202T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Deal with phenomena related to reflection, refraction, lasers and fiber optics.
* Learn basic concepts of semiconductor physics.
* Apply the laws of physics to various engineering problems.
* Implement their scientific knowledge to solve real world problems.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Mathematics - II | **Course Code**: CPED1203T/ECED1203T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Learn mathematics fundamental necessary to formulate, solve and analyze engineering problems.
* Deal with functions of several variables, matrices, system of linear equations, improper integrals and functions of complex variables.
* Understand the statistics and probability.
* Solve series solution of differential equations.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Basic Electrical Engineering | **Course Code**: CPED1204T/ECED1204T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Study the electrical quantities and various electrical circuits.
* Application of Kirchhoff’s Law’s and star delta conversions.
* Analyze the concept of AC and DC circuits.
* Understand various voltage and current source.
* Understand the concept of electro-magnetic, AC fundamentals.
* Apply the basic concepts and theorems in solving the electrical networks.
* Understand the applications of electrical engineering.
* Evaluate the results of various electrical networks.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Basic Electronics | **Course Code**: CPED1205T/ECED1205T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Understand basic concepts of various materials specially semiconductors, their characteristics and applications.
* Learn to analyze the PN junction behavior at the circuit level and its role in the operation of diodes and active device.
* Develop design competence in signal and power amplifiers using BJT and FET.
* Understand the working principles of different semiconductor devices and circuits.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** English and Communication Skills – II Lab | **Course Code**: CPED1208P/ECED1208P |
| **Course Outcomes:**At the end of this course, the student will be able to:**Listening Practical:** * Using pre-recorded CDs/DVDs with pre-listening exercise to prepare students about what they are going to hear and comprehension based on the audio.
* Listening for the main ideas.
* Assessing listening proficiency.

**Speaking Practical:** * Pronunciation of common words as given in the standard dictionary using symbols of phonetics
* Greetings for different occasions.
* Introducing oneself, others and leave taking(talking about yourself).
* Paper reading before an audience (reading unseen passages).
* Reading aloud of Newspaper headlines and important articles.
* Improving pronunciation through tongue twisters.

**Reading Practical:*** Paper reading.
* Poetry recitation.
* Reading newspaper headlines.

**Writing Practical:*** Exercise on spellings.
* Group exercise on writing paragraphs on given topics.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Physics – II Lab | **Course Code**: CPED1209P/ECED1209P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Verify ohm’s law, laws of resistances in series and parallel.
* Analyze basic experimental techniques required to find fundamentals parameters in physics.
* Find resistance of a galvanometer by half deflection method and measure low and high resistance using Wheat Stone bridge
* Draw characteristics of a p-n junction diode, use of CRO and study of zener diode characteristics.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Basic Electrical Engineering Lab | **Course Code**: CPED1210P/ECED1210P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Study the working principles and operation of different instruments.
* VerifY Kirchhoff’s current and voltage laws in a DC circuit.
* Understand the basic concepts and principles of dc and ac fundamental, ac circuits, batteries, electromagnetic induction, voltage and current sources etc.
* Apply the basic concepts and theorems in solving the electrical networks.
* Evaluate the results through the parameters obtained after working on the electrical networks.
* Measureme power and power factor in a single phase RLC circuit.
* Understand the applications of electrical engineering
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Basic Electronics Lab | **Course Code**: CPED1211P/ECED1211P  |
| **Course Outcomes:** At the end of this course, the student will be able to:* Gain the basic knowledge of electronic instruments such as multimeter, cathode ray oscilloscope (CRO), function generator etc.
* Familiarize about operating characteristics and applications of the PN junction diode.
* Gain the knowledge about the operating characteristics of transistor and field effect transistor (FET).
* Study about the applications of various transistors as an amplifier.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name**: Workshop practice-II | **Course Code**: CPED1212P/ECED1212P |
| **Course Outcomes**: At the end of this course, the student will be able to:* Gain knowledge about the construction, function, use and application of different working tools, equipment, machines as well as the technique of manufacturing a product from its raw material.
* Understand the various welding techniques.
* Gain a broad knowledge of sand casting, Pattern making, requirement of pattern materials, different pattern materials and designing of the pattern, Molding and core making.
* Gain knowledge about the various machining techniques and wood working techniques.
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**Diploma in Engineering (Computer Engineering)**

**1st Year 2nd Semester**

**(Group-B)**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** English and Communication Skills - II | **Course Code**: CPED1201T/ECED1201T |
| **Course Outcomes:**At the end of this course, the student will be able to:* Learn effective communication- verbal & non-verbal communication, barriers to communication.
* Learn the listening skills: kinds of listening, skills for effective listening and barriers to listening.
* Learn the speaking skills: effective talk, oral presentation and role of audio-visual aids.
* Learn the writing skills: précis writing and business letters.
* Learn the grammar: using a word as different parts of speech, prefixes and suffixes (english and hindi)
* Learn the reading skills: purposes, kinds of reading.
* Long and short questions(from short stories & prose) summary/central idea (from poetry) vocabulary exercises based on following selective readings.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Physics - II | **Course Code**: CPED1202T/ECED1202T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Deal with phenomena related to reflection, refraction, lasers and fiber optics.
* Learn basic concepts of semiconductor physics.
* Apply the laws of physics to various engineering problems.
* Implement their scientific knowledge to solve real world problems.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Mathematics - II | **Course Code**: CPED1203T/ECED1203T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Mathematics fundamental necessary to formulate, solve and analyze engineering problems.
* Deal with functions of several variables, matrices, system of linear equations, improper integrals and functions of complex variables.
* Understand of statistics and probability.
* Solve series solution of differential equations.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Chemistry | **Course Code**: CPED1206T/ECED1206T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Apply the fundamental principles of measurement, matter, atomic theory, chemical periodicity, chemical bonding, general chemical reactivity and solution chemistry to subsequent courses in science.
* Acquire knowledge about the fundamental principles of bonding in materials.
* Develop innovative methods to produce soft water for industrial use and potable water at cheaper cost.
* Apply their knowledge for protection of different metals from corrosion.
* Basic knowledge of organic compounds and their common names.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Engineering Drawing - I | **Course Code**: CPED1203T/ECED1203T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Understand the basics of engineering drawing, lettering, scales and projections.
* Learn to draw the projections of points, lines, planes and solids.
* Learn to draw the projections of technical drawing of threads and hexagonal & square nuts.
* Draw and understand the drawing of isometric and sectional views.
* Learn the basic drawings of various mechanical components used in mechanical engineering.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** English and Communication Skills – II Lab | **Course Code**: CPED1207P/ECED1207P |
| **Course Outcomes:**At the end of this course, the student will be able to:**Listening Practical:** * Using pre-recorded CDs/DVDs with pre-listening exercise to prepare students about what they are going to hear and comprehension based on the audio.
* Listening for the main ideas.
* Assessing listening proficiency.

**Speaking Practical:** * Pronunciation of common words as given in the standard dictionary using symbols of phonetics.
* Greetings for different occasions.
* Introducing oneself, others and leave taking(talking about yourself).
* Paper reading before an audience (reading unseen passages).
* Reading aloud of Newspaper headlines and important articles.
* Improving pronunciation through tongue twisters.

**Reading Practical:*** Paper reading.
* Poetry recitation.
* Reading newspaper headlines.

**Writing Practical:*** Exercises on spellings.
* Group exercises on writing paragraphs on given topics.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Physics – II Lab | **Course Code**: CPED1209P/ECED1209P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Verify ohm’s law, Laws of resistances in series and parallel.
* Analyze basic experimental techniques required to find fundamentals parameters in physics.
* Find resistance of a galvanometer by half deflection method and measure low and high resistance using wheat stone bridge.
* Draw characteristics of a p-n junction diode, use of CRO and study of zener diode characteristics.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Applied Chemistry Lab | **Course Code**: CPED1213P/ECED1213P |
| **Course Outcomes:**At the end of this course, the student will be able to:* Prepare various concentration solutions like molar, normal, ppm, etc.
* Develop in the student the ability to record scientific experimental processes, analyze results, draw conclusions, write reports and present their work orally.
* Learn the method to prepare iodoform from ethanol or acetone.
* Acquire practical knowledge on the techniques for the preparation bakelite.
* Prepare the Mohr’s salt from ferrous sulphate and ammonium sulphate.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Basics of Information Technology Lab | **Course Code**: CPED1214P/ECED1214P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Make aware the students about basics of computer, electronics components and its measurement.
* Provide knowledge of different units of computer like processing unit, I/O unit, and storage unit.
* Operate windows OS and its features.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name**: Workshop practice-II | **Course Code**: CPED1212P/ECED1212P |
| **Course Outcomes**: At the end of this course, the student will be able to:* Gain knowledge about the construction, function, use and application of different working tools, equipment, machines as well as the technique of manufacturing a product from its raw material.
* Understand the various welding techniques.
* Gain a broad knowledge of sand casting, Pattern making, requirement of pattern materials, different pattern materials and designing of the pattern, Molding and core making.
* Gain knowledge about the various machining techniques and wood working techniques.
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**Diploma in Engg. (CE)**

**2nd Year 3rd Semester**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Digital Electronics | **Course Code**: CPED2301T/ECED2301T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Learn about the various number systems used in the computer-based systems and their arithmetic and logic operations.
* Demonstrate the use of logic gates, basic boolean laws, minimization techniques for the designing of various combinational circuits.
* Describe the use of logic gates to design various logic circuits such as adder, subtractor, encoders, decoders, mux, demux etc.
* Describe operation, characteristic equations, excitation table of various flip flops.
* Learn about the applications of flip-flops as counters and shift registers.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Computer Programming Using ‘C’ | **Course Code**: CPED2302T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Demonstrate programs with the program structure and control structure.
* Demonstrate the concept various functions of ‘C’.
* Demonstrate the concept of single and multidimensional arrays and pointers.
* Declare the structures, arrays of structures and union.
* Demonstrate the concept of string and files for reading and writing.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Operating Systems | **Course Code**: CPED2303T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Describe the basic concepts of operating systems, including development and achievements, functionalities and objectives.
* Explain how memory, I/O devices, files, processes and threads are managed.
* Analyze memory management schemes.
* Understand deadlock, prevention and avoidance algorithms.
* Understand I/O management and file systems.
* Make familiar with the basics of Linux system.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Computer Architecture | **Course Code**: CPED2304T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Understand the structure, function and characteristics of computer systems.
* Understand the design of the various functional units and components of computers.
* Explain the function of each element of a memory hierarchy.
* Identify and compare different methods for computer I/O.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** System Analysis and Design | **Course Code**: CPED2305T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Understand the life cycle of a systems development project.
* Understand the ways in which an analyst’s interaction with system sponsors and users play a part in information systems development.
* Experience in developing information systems models.
* Experience in developing systems project documentation.
* Understand of the object-oriented methods models as covered by the unified modelling language.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Digital Electronics Lab | **Course Code**: CPED2351P/ECED2351P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Realize the basic logic gates AND, OR, NOR, NOT using ICs.
* Realize AND, OR, NOR, NOT functions using NAND/NOR gates.
* Implement EX-OR, EX-NOR using basic and universal gates.
* Realize and verify circuits of binary adders and subtractors.
* Construct and verify different types of flip-flops.
* Implement and verify multiplexers, shift registers, counters.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Computer Programming Using ‘C’ Lab | **Course Code**: CPED2352P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Execute and edit a C program., define variables and assign values to variables.
* Write programs using arithmetic and relational operators.
* Format input/output using printf and scanf
* Write programs using if, if – else, switch, do – while & for statements.
* Write programs using one and two dimensional array & strings.
* Write programs using structures and pointers, and reading and writing from a file.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Operating Systems Lab | **Course Code**: CPED2353P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Understand fundamental operating system abstractions such as processes, threads, files, semaphores, IPC abstractions, shared memory regions, etc.
* Able to analyse important algorithms e.g process scheduling and memory management.
* Categorize the operating system’s resource management techniques.
* Demonstrate the ability to perform OS tasks in different operating systems e.g windows, Unix and Linux.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name**: Computer Workshop Lab | **Course Code**: CPED2350P |
| **Course Outcomes**: At the end of this course, the student will be able to:* Understand the meaning and basic components of computer system.
* Define and distinguish between hardware and software components and working of each.
* Familiarize the concepts of assembling and dissembling of PCs.
* Install the various operating systems and device drivers.
* Understand the basics of detection and prevention of various attacks.
* Learn the installation and un-installation of Antivirus software.
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**Qualifying Subjects**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Environment Studies | **Course Code**: **\*** |
| **Course Outcomes:** At the end of this course, the student will be able to:* State and explain the basics of ecology, eco system and sustainable development.
* Read and identify different types of environmental pollution and control measures.
* Visualize the energy efficient techniques in day-to-day life.
* Introduction to clean technology and green buildings.
* Discuss and analyze the impact of human activities on the environment.
* Analyze and comprehend the role of non-conventional sources of energy in environmental Protection
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**Diploma in Engg. (CE)**

**2nd Year 4th Semester**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Data Structures using ‘ C’ | **Course Code**: CPED2401T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Learn the concept of Arrays and operation of Arrays with Algorithms.
* Understand the Linked lists with its representation in memory, application of Linked lists.
* Study the representation and implementation of stacks, introduction to queues with algorithm.
* Understand the concept of representation of binary trees (Preorder, Post order and In order).
* Study concept of sorting algorithms (bubble, insertion, quick, selection, merge & heap sort).
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Object Oriented Programming Using C++ | **Course Code**: CPED2402T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Identify the importance of object-oriented programming and difference between structured and object oriented programming features.
* Use various object-oriented concepts to solve different problems.
* Describe and use software tools along with the way to compile, load, save, and debug a ‘C++’ program.
* Apply upright programming principles to the design and implementation of ‘C++’ programs along with the understanding of algorithms in the problem-solving process.
* Illustrate the process of virtual functions data file manipulations using ‘C++’.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Relational Database Management System (RDBMS) | **Course Code**: CPED2403T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Study the concepts of database systems and architecture with data models, its levels & independence.
* Understand data base management system and various types including their advantages/disadvantages.
* Understand the concepts of data modeling using entity relationships.
* Study and understand the concepts of relational models, their attributes, tuples and relations including various relational and domain constraints and relational database schemes.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Internet and Web Technologies | **Course Code**: CPED2404T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Build the fundamental concepts of computer networking.
* Learn basics of Internet and its various applications.
* Familiarize the students with basic taxonomy and terminologies of internet protocols.
* Learn technical background to establish the internet connections.
* Understand network security issues and solutions with technical details.
* Develop web pages by using HTML-5 and CSS.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Data Structure using ‘C’ Lab | **Course Code**: CPED2451P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Understand the implementation of insertion and deletion of elements in an array and in linked list.
* Study stack implementation & queue implementation using arrays and pointers.
* Study and implement linear search and binary search in a given list.
* Understand the Implementation of bubble sort algorithm and insertion sort algorithm.
* Understand the Implementation of factorial of a number using recursion and fibonacci series using recursion.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Object Oriented Programming Using C++ Lab | **Course Code**: CPED2452P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Develop solutions for a range of problems using objects and classes.
* Programs to demonstrate the implementation of constructors, destructors and operator overloading.
* Apply fundamental algorithmic problems including type casting, inheritance, and polymorphism.
* Understand functional overloading.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Relational Database Management System (RDBMS) Lab | **Course Code**: CPED2453P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Understand the concepts of database technologies.
* Design and implement database schema for a given problem-domain.
* Normalize the database.
* Populate and query a database using SQL DML/DDL commands.
* Declare and enforce integrity constraints on database using state-of-the-art RDBMS.
* Programming PL/SQL including stored procedures, functions, joins etc
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Internet and Web Technologies Lab | **Course Code**: CPED2454P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Be able to configure computer system to access internet , manage social networking profile and e-mail account and Use WWW for accessing relevant information.
* Demonstrate the use of TELNET, FTP, IRC , e-commerce transactions and audio-video conferencing.
* Learn to create Web pages using HTML ,web pages using Dream Weaver , Homepage with frames, animation, background sound and hyperlinks.
* Designing simple server side program which accept some request from the client and respond and establishing sessions between servers and clients.
* Design fill-out form with text, check box, radio buttons and embed Java script to validate users input.
* Learn to create interface with database (MYSQL etc) for online retrieval .
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name**: Generic Skills and Entrepreneurship | **Course Code**: **\***CPED2405T/ECED2306T |
| **Course Outcomes**: At the end of this course, the student will be able to:* Enhance Generic skills among students.
* Self control in difficult situation such as anxiety, depression and stress.
* Cooperate with culturally diverse team members.
* Enhance task management skills for better performance.
* Develop problem solving mind in every difficult situation.
* Increase entrepreneurship competencies and qualities among future entrepreneurs.
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**Qualifying Subjects**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Punjabi | **Course Code**: \*\*  |
| **Course Outcomes:** At the end of this course, the student will be able to:* ਵਿਦਿਆਰਥੀਆ ਨੂੰ ਪੰਜਾਬੀ ਕਹਾਣੀ, ਕਹਾਣੀਕਾਰ ਤੇ ਕਹਾਣੀ ਦਾ ਬਣਤਰ ਬਾਰੇ ਦੱਸਿਆ ਗਿਆ।
* ਕਹਾਣੀ ਅਤੇ ਸਮਾਜ ਦੇ ਆਪਸੀ ਰਿਸ਼ਤੇ ਬਾਰੇ ਜਾਗਰੂਕ ਹੋਏ।
* ਕਵਿਤਾ ਦੇ ਪਾਠ, ਉਸਦਾ ਉਚਾਰਣ, ਕਵਿਤਾ ਦੀ ਬਣਤਰ ਬਾਰੇ ਵਿਦਿਆਰਥੀ ਜਾਗਰੂਕ ਹੋਏ।
* ਪੰਜਾਬੀ ਦੇ ਪ੍ਰਸਿੱਧ ਕਵੀ ਤੇ ਕਵਿਤਾ ਦੀ ਮਨੁੱਖੀ ਜੀਵਨ ਵਿੱਚ ਮਹੱਤਤਾ ਬਾਰੇ ਜਾਗਰੂਕ ਹੋਏ।
* ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਸ਼ੁੱਧ ਉਚਾਰਣ ਦਾ ਵਿਦਿਆਰਥੀ ਨੂੰ ਗਿਆਨ ਹੋਇਆ।
* ਵਿਦਿਆਰਥੀਆ ਨੂੰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਸ਼ੁੱਧ ਲਿਖਾਈ ਤੇ ਵਿਆਕਰਣ ਬਾਰੇ ਭਰਪੂਰ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਈ।
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**Diploma in Engg. (CE)**

**3rd Year 5th Semester**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Industrial Training Semester(One Semester Training in Industry) | **Course Code**: CPED3101P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Participate in the projects in industries during his or her industrial training.
* Describe use of advanced tools and techniques encountered during industrial training and visit.
* Interact with industrial personnel and follow engineering practices and discipline prescribed in industry.
* Develop awareness about general workplace behaviour and build interpersonal and team skills.
* Prepare professional work reports and presentations.
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**Diploma in Engg. (CE)**

 **3rd Year 6th Semester**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Java Programming | **Course Code**: CPED3601T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Able to write programs for solving real world problems using java collection frame work.
* Able to write programs using abstract classes.
* Able to write multithreaded programs.
* Able to write GUI programs using swing controls in Java.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Computer Networks | **Course Code**: CPED3602T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Build an understanding of the fundamental concepts of computer networking.
* Familiarize the student with the basic taxonomy and terminology of the computer networking area.
* Introduce the student to networking concepts.
* Provide practical environment in the design and maintenance of networks.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Visual Programming (using VB.net) | **Course Code**: CPED3603T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Understand an overview of computers and computer programming.
* Understand visual basic applications.
* Understand how to perform operations and store results.
* Understand the concept of data-driven program execution flow control in Visual Basic programming.
* Understand additional visual basic controls.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Software Engineering | **Course Code**: CPED3604T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Apply software engineering principles and techniques.
* Develop, maintain and evaluate large-scale software systems.
* Produce efficient, reliable, robust and cost-effective software solutions.
* Perform independent research and analysis.
* Work as an effective member or leader of software engineering teams.
* Manage time, processes and resources effectively by prioritising competing demands to achieve personal and team goals Identify and analyses the common threats in each domain.
* Understand and meet ethical standards and legal responsibilities.
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**ELECTIVE#**

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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Microprocessor | **Course Code**: CPED3605T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Analyze the functional block diagram of 8085.
* Write assembly language program for given problem.
* Use instructions in different addressing modes.
* Develop an assembly language program using assembler.
* Develop assembly language programs using programming approach.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Computer Peripheral and Interfacing | **Course Code**: CPED3606T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Provide the knowledge and skills regarding working construction and interfacing aspects of peripherals.
* Get to know how various peripherals communicate with central processing unit of the computer system and pattern their respective operations.
* Be able to maintain keyboard, printer, monitors and Power Supplies along with computer system.
* Provide the required skill and background of computer installation, maintenance and testing of peripheral with computers.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Network Security | **Course Code**: CPED3607T/ECED3608T |
| **Course Outcomes:**At the end of this course, the student will be able to:* Understand the concept of various threats like viruses, worms , trojan horses etc.
* Do research in the emerging areas of cryptography and network security.
* Understand the concept of public key cryptography and digital and signature.
* Protect any network from the threats.
* Study about message authentication and hash functions.
* Implement various networking protocols using IPsec and Secure DNS.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Java Programming Lab | **Course Code**: CPED3651P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Able to write programs using Object Oriented Methodology in java.
* Able to write multithreaded programs and exception handling mechanism.
* Develop programs for handling I/O and file streams.
* Able to write Applets in java.
* Able to write GUI programs using AWT controls in Java.
* Able to write programs using JDBC concepts and JSP.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name**: Computer Networks Lab | **Course Code**: CPED3652P |
| **Course Outcomes**: At the end of this course, the student will be able to:* Be able to understand fundamental underlying principles of computer networking.
* Be able to recognise the physical topology, cabling and various types of connectors of a network.
* Be able to identify the IP address and setup IP subnetting for network.
* Be able to diagnose &amp; solve network connectivity problems.
* Exposure to industrial practices in installation and maintenance of latest computer networking techniques.
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| **Program Name: Diploma in Engg. (CE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Visual Programming (using VB.net) Lab | **Course Code**: CPED3653P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Design, formulate, and construct applications with VB.NET.
* Integrate variables and constants into calculations applying VB.NET.
* Determine logical alternatives with VB.NET decision structures.
* Implement lists and loops with VB.NET controls and iteration.
* Separate operations into appropriate VB.NET procedures and functions.
* Assemble multiple forms, modules, and menus into working VB.NET solutions.
* Create VB.NET programs using multiple array techniques.
* Build integrated VB.NET solutions using files and structures with printing capabilities.
* Translate general requirements into data-related solutions using database concepts.
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