**Electronics and Communication Engineering**

 **Batch 2021**

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| **Program Name:** Diploma in Engineering (ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Program Outcomes of M. Tech (ECE) program is to improve the following attributes in students:**1. An understanding of the theoretical foundations based on mathematics, science and engineering with a focus on applications in ECE.
2. An ability to adapt existing models, tools and techniques etc. for efficiently solving problems related to ECE.
3. Understanding and ability to use advanced hardware and software tools for development of new electronic systems.
4. An ability to experimentally evaluate and carry out intelligent tradeoffs in design of electronic systems as per the needs of the industry and society.
5. An ability to undertake original research at the cutting edge of ECE & related areas.
6. An ability to function effectively individually or as a part of a team to accomplish a stated goal.
7. An understanding of professional and ethical responsibility.
8. An ability to communicate effectively with a wide range of audience.
9. An ability to learn independently and engage in lifelong learning in the broadest context of technological change.
10. An understanding of the impact of ECE based technologies in an economic, societal and environmental context.

**Program Specific Outcomes:*** To apply knowledge of recent computing technologies, skills and current tools of computer science and engineering.
* To design and conduct experiments as well as to analyse and interpret data.
* To recognize the need to engage in lifelong learning through continuing education and research.
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**Diploma in Engineering (Electronics and Communication Engineering)**

**1st Year 1st Semester**

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| **Program Name: Diploma in Engg. (ECE) (3 Years)** | **Program Code**: ECE3PUP |
| **Course Name:** English and Communication Skills - I | **Course Code**: ECED1101T/ CPED1101T |
| **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. (ECE) (3 Years)** | **Program Code**: ECE3PUP |
| **Course Name:** Applied Physics - I | **Course Code**: ECED1102T/CPED1102T |
| **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. (ECE) (3 Years)** | **Program Code**: ECE3PUP |
| **Course Name:** Applied Mathematics - I | **Course Code**:ECED1103T/ CPED1103T |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** Applied Chemistry | **Course Code**: ECED1104T/ CPED1104T |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** Engineering Drawing - I | **Course Code**: ECED1105T/ CPED1105T |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** English and Communication Skills - I Lab | **Course Code**: ECED1108P/ CPED1108P |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** Applied Physics Lab - I | **Course Code**: ECED1109P0/CPED1109P |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** Basics of Information Technology Lab | **Course Code**: ECED1111P/CPED1111P |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name**: Workshop Practice-I | **Course Code**: ECED1112P/ CPED1112P |
| **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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| **Program Name: Diploma in Engg. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** Basic Electrical Engineering | **Course Code**: ECED1106T/CPED1106T |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** Basic Electronics | **Course Code**: ECED1107T/CPED1107T |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** Basic Electrical Engineering Lab | **Course Code**: ECED1113P/ CPED1113P |
| **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. (ECE) (3 Years)** | **Program Code**: CPED3PUP |
| **Course Name:** Basic Electronics Lab | **Course Code**: ECED1114P/CPED1114P |
| **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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**Diploma in Engineering (Electronics and Communication Engineering)**

**1st Year 2nd Semester**

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| **Program Name: Diploma in Engg. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** English and Communication Skills - II | **Course Code**: ECED1201T/ CPED1201T |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** Applied Physics - II | **Course Code**: ECED1202T/ CPED1202T |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** Applied Mathematics - II | **Course Code**: ECED1203T /CPED1203T |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** English and Communication Skills – II Lab | **Course Code**: ECED1208P/ CPED1208P |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** Applied Physics – II Lab | **Course Code**: ECED1209P /CPED1209P |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name**: Workshop practice-II | **Course Code**: ECED1212P /CPED1212P |
| **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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| **Program Name: Diploma in Engg. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name:** Basics of Information Technology Lab | **Course Code**: ECED1214P/CPED1214P |
| **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. (ECE) (3 Years)** | **Program Code**: ECED3PUP |
| **Course Name**: Workshop practice-II | **Course Code**: ECED1212P/ CPED1212P |
| **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 (Electronics and Communication Engineering)**

**2nd Year 3rd Semester**

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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Digital Electronics | **CourseCode**: ECED2301T/CPED2301T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Verify and interpret truth tables for all logic gates and realize all logic functions with NAND and NOR gates.
* Design of half adder and full adder circuit and enumerate adders and subtractors on the basis of number of bits.
* Verify and interpret truth tables for all flip flops.
* Verify and interpret truth tables of multiplexer, de-multiplexer, encoder and decoder ICs.
* Design a four bit ring counter, Decoders, Multiplexers, Demultiplexeres and verify its operation.
* Analyze the performance of various SISO, PISO, SIPO, PIPO shift registers.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Principles of Communication Engineering | **Course Code**: ECED2302T |
| **Course Outcomes:** At the end of this course, the student will be able to:* To deal with phenomena related to radio wave propagation, FM transmission, modulation, various communication techniques, radio eave transmitters and receivers.
* To implement their scientific knowledge to solve real world problems in advanced communication.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Electronic Devices and Circuits | **Course Code**: ECED2303T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Demonstrate the concept of multistage amplifiers and plot the frequency response of the same Measure the bandwidth of multistage amplifier
* Describe the operation of large signal amplifiers.
* Demonstrate the concept of negative and positive feedback.Measure the gain of emitter follower and push pull amplifiers.
* Plot the frequency response of oscillators (Hartley, Colpitt, Wein Bridge). Explain the concept of feedback amplifiers.
* Plot the frequency response of tuned voltage amplifiers Design various wave-shaping circuits (concepts of clipping and clamping).Describe the concept of multi-vibrators.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Electrical Machines | **Course Code**: ECED2304T |
| **Course Outcomes:** At the end of this course, the student will be able to:* To analyze and apply the concept of stead state analysis and electrical transients in polyphase supply machines and single phase supply machines
* To examine the starting and running performance of single phase induction motor and DC and AC motors.
* The principle of operation and the effect of pulsating ,rotating magnetic field on the working of AC machines
* Able to analyze of different types of DC generators, their characteristics, industrial applications, effect of armature reaction and its assessment.
* To study the principle of operation and constructional detail of single and three phase transformers.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Electronic Instruments and Measurement | **Course Code**: ECED2305T |
| **Course Outcomes:** At the end of this course, the student will be able to:* To understand the basics of measurements, types &amp; specifications of various instruments.
* To understand voltage, current &amp; resistance measurement by using various types of Instruments.
* Understand construction, working principle and types of oscilloscopes.
* Comprehend different types of signal generators and analyzers, their construction and operation.
* An understanding of signal generators, Impedance bridges &amp; working principle of Q meter.
* An understanding of comparison between Analog &amp; Digital Instruments &amp; their applications.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Generic Skills and Enterpreneurships | **Course Code**: ECED2306T/CPED2405T |
| **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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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **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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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Digital Electronics Lab\* | **Course Code**: ECED2351P |
| **Course Outcomes:** At the end of this course, the student will be able to:* To familiarize the students with the analysis, design and evaluation of digital systems of medium complexity that is based on SSI, MSI and Programmable logic devices.
* To familiarize the students with the issues in the design of various flip-flops.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Principles of Communication Engineering Lab\* | **Course Code**: ECED2352P |
| **Course Outcomes:** At the end of this course, the student will be able to:* To understand working of transmitters and receivers.
* To understand the concept of AM/FM/PM modulation in detail.
* To understand noise in propagation and calculate Signal by noise ratio.
* To understand concept of demodulation.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Electronic Devices and Circuits Lab\* | **Course Code**: ECED2353P |
| **Course Outcomes:** At the end of this course, the student will be able to:* To understand h-Parameters of CE/CB transistors.
* To plot and understand CE/CB/CC characteristics of NPN/PNP transistors.
* To understand V-I characteristics of Photodiode, Phototransistor, JFET,MOSFET, SCR, DIAC, TRIAC.
* To understand working properties of diode as Clippers, Clampers and Rectifiers.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Electrical Machines Lab\* | **Course Code**: ECED2354P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Demonstrate various instruments use viz Ammeter, Voltmeter, Wattmeter, p.f meter etc for their identification and connecting procedure in a circuit.
* To measure power and power factors in 3 Phase load by two wattmeter method.
* To determine the efficiency of a single phase transformer from the data obtained through open circuit and short circuit test .
* To connect the primary and secondary windings of a three phase transformer in a suitable circuit and to verify line and phase current and voltage relationship respectively.
* To connect a dc shunt motor with supply through a 3 point starter and to run the motor at different speeds with the help of a field regulator .
* To run a 3 phase squirrel cage induction motor with the help of a star-delta starter. To change the direction of rotation of the motor.
* To measure power and power factor of a single phase induction motor.

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**Diploma in Engineering (Electronics and Communication Engineering)**

**2nd Year 4th Semester**

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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Network Filters and Transmission Lines | **Course Code**: ECED2401T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Describe the concept of symmetrical, asymmetrical, balanced, unbalanced, T, PI, ladder, lattice, L and Bridge T networks
* Demonstrate the operation of filters and attenuators.
* Understand the concept and applications of Transmission lines.
* Measure standing wave ratio and characteristic impedance of the line
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| **Program Name**: Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Communication system-1 | **Course Code**: ECED2402T |
| **Course Outcomes:** At the end of this course, the student will be able to:* To understand all types of analog modulation &amp; demodulation techniques such as AM, FM and PM
* To understand function of various stages of AM, FM transmitters &amp; Characteristics of AM, and FM receivers.
* To quantify the fields radiated by various types of antennas.
* To understand the concept of radio wave propagation
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Consumer Electronics | **Course Code**: ECED2403T |
| **Course Outcomes:** At the end of this course, the student will be able to:* To understand the Troubleshoot different types of microphones and speakers.
* Understand the maintain audio systems.
* Analyses the composite video signal used in TV signal transmission.
* Understand the troubleshoot color TV receivers.
* To understand maintenance of various consumer electronics appliances/equipment’s.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Optical Fiber Communication | **Course Code**: ECED2404T |
| **Course Outcomes:** At the end of this course, the student will be able to:* To understand the basic architecture of optical fiber related losses like absorption, attenuation, bending etc.
* Understand the different kind of losses, signal distortion in optical wave guides and other signal degradation factors.
* To understand the architecture of optical communication systems.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Power Electronics | **Course Code**: ECED2405T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Acquire expertise approximately essential standards and techniques utilized in strength electronics.
* Capability to research various single phase and 3 phase strength converter circuits and recognize their programs.
* Foster potential to identify basic requirements for electricity electronics based totally layout software to develop skills to build, and troubleshoot power electronics circuits.
* Foster ability to understand the use of power converters in commercial and industrial application
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Network Filters and Transmission Lines lab\* | **Course Code**: ECED2451P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Design and measure the attenuation of a symmetrical T/ PI type attenuator
* Determine the characteristic impedance experimentally and plot the attenuation characteristic of prototype low pass filter and prototype high pass filter
* Plot the Impedance characteristic and attenuation characteristics of prototype band-pass filter and m-derived filters
* Draw the attenuation characteristics of a crystal filter
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Communication system-1 Lab\* | **Course Code**: ECED2452P |
| **Course Outcomes:** At the end of this course, the student will be able to:* To impart the basic concepts of data structures and algorithms.
* To understand concepts about searching and sorting techniques.
* To understand basic concepts about stacks, queues, lists, trees and graphs.
* To understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures.
* Able to analyze the performance of various sorting and searching algorithms.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:**Consumer Electronics Lab\* | **Course Code**: ECED2453P |
| **Course Outcomes:** At the end of this course, the student will be able to:* To understand the basic concepts of a Microphones and speakers
* To understand the function of Black/White TV and colour TV receivers
* Able to analyse the Fault of colour TV and Troubleshooting of CD/DVD Players
* To understand concepts of Microwave oven, DTH system, Photostat Machine and Automatic Washing Machine.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Optical Fiber Communication Lab\* | **Course Code**: ECED2454P |
| **Course Outcomes:** At the end of this course, the student will be able to:* To get familiarize with optical components like fiber optic cables and connection parts.
* To observe optical fiber analog/digital link.
* To observe bending loss and numerical aperture in fiber optic cable.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **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 Engineering (Electronics and Communication Engineering)**

**3rd Year 5th Semester**

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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** One Semester Training In Industry | **Course Code**: ECED3501P |
| **Course Outcomes:** At the end of this course, the student will be able to:* To identify the problems, data collection, and analysis.
* To generate the solution with cost and benefits.
* To recommend project implementation.
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**Diploma in Engineering (Electronics and Communication Engineering)**

**3rd Year 6th Semester**

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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name:** Wireless and Mobile Communications | **Course Code**: ECED3601T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Identify and explain the features, specification and working of cellular mobile
* Measure and analyse the signal strength at various points from a transmitting antenna/cordless phone
* Describe and analyse different Multiple Access Techniques for Wireless Communication (FDMA, TDMA, CDMA, SSMA, FHSS)
* Describe different Mobile Communication Systems (GSM and CDMA)
* Demonstrate call processing on a GSM and CDMA trainer Kit
* Troubleshoot GSM and CDMA mobile phones
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name**: Microwave and Radar Engineering | **Course Code:** ECED3602T |
| **Course Outcomes:** At the end of this course, the student will be able to:* An understanding of microwave waveguides, passive &amp; active devices, tubes and network analysis.
* An ability to design microwave matching networks.
* An ability to perform microwave measurements.
* An understanding of RADARs and its applications.
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| **Program Name:** Diploma in ECE (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name**: Communication Systems-II | **Course Code** : ECED3603T |
| **Course Outcomes:** At the end of this course, the student will be able to:* To understand the digital communication system and various coding techniques.
* To understand and implement Amplitude, Frequency and Phase Shift Keying Modulation & Demodulation.
* To understand the functions of modems, Telemetry, and Facsimile.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name**: Microcontroller & applications \*\* | **Course Code:** ECED3604T |
| **Course Outcomes:** At the end of this course, the student will be able to:* To learn the basic concepts of microcontroller (specially MCS-51 family) and its internal architecture and the logic for assembly language programming.
* To learn about interfacing concepts of microcontroller with the external world.
* To learn the C language programming for microcontroller-based system design.
* To become familiar with the design of various applications based on microcontrollers.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name**: Medical Electronics\*\* | **Course Code:** ECED3605T |
| **Course Outcomes:** At the end of this course, the student will be able to:* To gain basic knowledge of complete body system that includes heart and circulatory system, nervous system, respiratory system and reproduction system.
* To understand the method of operation of medical instruments, medical measurement and its applications.
* To learn types of electrodes used for ECG and EEG.
* To understand the concept of different types of transducer.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name**: VLSI System Design\*\* | **Course Code:** ECED3606T |
| **Course Outcomes:** At the end of this course, the student will be able to:* To understand MOS transistor fabrication processes.
* To understand basic circuit concepts
* To have an exposure to the design rules to be followed for drawing the layout of circuits
* Design of building blocks using different approaches.
* To have a knowledge of the testing processes of CMOS circuits.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name**: Computer Networks \*\*\* | **Course Code:** ECED3607T |
| **Course Outcomes:** At the end of this course, the student will be able to:* To build an understanding of the fundamental concepts of computer networking.
* To get familiarize the student with the basic terminology of the computer networking area.
* To gain expertise in some specific areas of networking such as the design and maintenance of individual networks.
* To get familiarize the student wireless networking.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name**: Network Security\*\*\* | **Course Code:** ECED3608T/CPED3607T |
| **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 threats.
* Study message authentication and hash functions.
* Implement various networking protocols using IPsec and Secure DNS
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name**: Personal Computer Organization \*\*\* | **Course Code:** ECED3609T |
| **Course Outcomes:** At the end of this course, the student will be able to:* Introduction to different type of mother boards
* Identify the hardware organization of personal computers
* Different type of buses serial and parallel ports
* Connect the external components to the computer for data transfer.
* Analyze the aspects of cost performance while procuring the computer.
* Use and describe various storage devices.
* Various CRT Display devices and printers
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name**: Project Lab\* | **Course Code:** ECED3650P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Complete a project based upon design and analysis of different electronics circuits.
* Develop a sound technical knowledge of the selected project topic.
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| **Program Name:** Diploma in Engg.(ECE) (3Year)\* | **Program Code**: **ECED3PUP** |
| **Course Name**: Wireless and Mobile Communication Lab | **Course Code:** ECED3651P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Troubleshoot mobile handsets
* BTS with nearby cellular tower
* Call processing of GSM and CDMA trainer kit
* Data transfer using Bluetooth
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name**: Microwave and Radar Engineering Lab\* | **Course Code:** ECED3652P |
| **Course Outcomes:** At the end of this course, the student will be able to:* Able to handle various microwave equipment &amp; Test Bench.
* Able to understand various microwave measurements.
* Able to understand Wave guide and antenna measurements.
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| **Program Name:** Diploma in Engg.(ECE) (3Year) | **Program Code**: **ECED3PUP** |
| **Course Name**: Communication Systems-II Lab\* | **Course Code:** ECED3653P |
| **Course Outcomes:** At the end of this course, the student will be able to:* To understand and implement Amplitude, Frequency and Phase Shift Keying Modulation & Demodulation.
* To implement data formatting and reformatting, carrier modulation and demodulation.
* To understand the FAX machine, and telephone handset.
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