

National Diploma: ELECTRONICS ENGINEERING

Electronic Engineering comprises career in research, design production, installation, maintenance and repair.

CAREER OPPORTUNITIES

- Radio and TV Technician
- Technician: Office Equipment, Photocopier and Fax machine
- Telecommunications Technician
- Instrumentation Technician
- Domestic Appliance Technician
- Cellphone Repairs
- Car Radio Installation
- TV & Aerial Installation

COMPREHENSIVE eBOOKS AND ASSOCIATED DOCUMENTATION

You will receive four of our up-to-date technical eBooks to add to your library. Together these texts contain hundreds of pages of valuable know-how distilled from years of experience in presenting these programs throughout the world.

- Fundamentals of Industrial Electronics
- Practical Process Control
- Digital Signal Processing
- Best Practice in Industrial Data Communications

| ENGINEERING: ELECTRONICS | | | |
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| N4 (Any 4 of the subjects below) | N5 (Any 4 of the subjects below) | N6 (Any 4 of the subjects below) | |
| <p>1. Mathematics</p> <ul style="list-style-type: none"> • Equations, Manipulation and Word Problems • Determinants • Complex Numbers • Trigonometry • Sketch Graphs • Limits and Differentiation • Integration <p>2. Industrial Electronics</p> <ul style="list-style-type: none"> • Alternating Current Theory • Direct Current Theory • Semi-Conductors (Diodes) • Power Supplies • Transistor and Amplifier Devices • Operational Amplifiers • Electronic Power Control • Transducer • Testing Equipment <p>3. Digital Electronics</p> <ul style="list-style-type: none"> • Number Systems and Codes • Logic Circuits and Systems • Basic Treatment of Interfacing Elements and Applications <p>4. Communication Electronics</p> <ul style="list-style-type: none"> • Network Theorems • Vectors • Frequency Response • Modulation • Demodulation • Communication Systems • Radiowave Propagation <p>5. Industrial Instruments</p> <ul style="list-style-type: none"> • Pressure and Vacuum Measurements, Including Electrical Methods • Level Measurement • Flow Measurement • Temperature Measurement • Telemetering • Automatic Control | <p>1. Mathematics</p> <ul style="list-style-type: none"> • Limits and Continuity • Differentiation • Application of Differentiation • Integration Techniques • Application of the Definite Integral • Differential Equations <p>2. Industrial Electronics</p> <ul style="list-style-type: none"> • Alternating Current Theory • Power Supply • Transistor Amplifiers • Operational Amplifiers • Integrated Circuits • Transducers • Electronic Phase Control • Test Equipment • Oscillators <p>3. Digital Electronics</p> <ul style="list-style-type: none"> • Number Systems and Codes • Logic Circuits and Systems • Interfacing Elements and Applications <p>4. Communication Electronics</p> <ul style="list-style-type: none"> • Resonating Circuits • Mutual Inductance • First Order Lag and Lead Coupling Circuit Response • Basics of 4 Terminal Passive Transmission Paths • Basics of Radio Communication A. Radiation of RF by Means of an Antenna B. Modulation C. Demodulation D. Block Diagrams <p>5. Industrial Instruments</p> <ul style="list-style-type: none"> • Flow • Analytical Instruments • Control (Hardware) • Temperature Measurement • Telemetering • Automatic Control | <p>1. Mathematics</p> <ul style="list-style-type: none"> • Differentiation • Integration Techniques • Partial Fractions • Differential Equations • Applications of the Definite Integral • Applications Where Differentiation and Integration Techniques are Combined <p>2. Industrial Electronics</p> <ul style="list-style-type: none"> • Transients • Transducers • Ultrasonic • X-Rays and Radio Activity • Automatic Inspection and Testing • Non-Destructive Testing • Electronic Safety Devices • Thyristor Power Supplies • Electronic Power Control • Programmable Logic Controller (PLC) <p>3. Digital Electronics</p> <ul style="list-style-type: none"> • Number Systems and Codes • Logic Circuits and Systems • Interfacing Elements and Applications <p>4. Communication Electronics</p> <ul style="list-style-type: none"> • Alternators and Filters • Transmission Lines • Antennas • Noise • Modulation and Demodulation | <p>5. Industrial Instruments</p> <ul style="list-style-type: none"> • Emission Spectroscopy • Gas Analysers • Calorimetry • Chromatography • Automatic Control • Control Valves • Process Reaction • Instrumentation of Plant • Explosion Hazard and Intrinsic Safety <p>6. Control Systems</p> <p>A. General Theory Of Control Systems</p> <ul style="list-style-type: none"> • Block Diagram Algebra • Transient Response • Bode Diagrams • Practical Control Systems • Root-Locus Diagrams <p>B. Practical Control Systems</p> <ul style="list-style-type: none"> • Transducers • Electronic Systems • Electrical Machines and Systems • Hydraulic Systems • Pneumatic Systems • Test and Testing Equipment |