

COURSE OUTLINE FOR SECOND YEAR ARTISANS

UNIT 1 MATHEMATICS II

- Business Calculations
 - Simple Social Arithmetic
- statistics
 - Data collection
 - Data organization
 - Data representation
 - Median
 - Charts
 - Interpretation of charts
- Geometrical Calculations II
 - Cone
 - Pyramid
- Algebra II
 - Simple Quadratic Equations
 - Linear Graphs
- Geometrical Calculations III
 - Trigonometry

UNIT 2 APPLIED SCIENCE II

- Linear Motion
 - Distance
 - Displacement
 - Speed
 - Acceleration
 - Velocity
 - Scalar
 - Vector
- Moment of Force
 - Forces on a particle
 - Forces on a solid body
 - Principles of Moments and its application in machines
- Friction
 - Definition
 - Causes of friction
 - Advantages and disadvantages of friction
 - Friction experiments

- Simple Machines
 - Levers
 - Pulleys
 - Inclined plane
 - Atmospheric Pressure
- Air
 - Experimental determination of pressure
 - Atmospheric Pressure
 - Measurement of Pressure
- General Chemistry
 - Experimental techniques
 - Classification of matter
 - Atomic structure
 - Chemical bonding
- Pressure in Liquids
 - Density
 - Floatation
- Electrolysis and its use
 - Principles of Electrolysis
 - Electroplating
 - Metal purification
 - Corrosion
- Primary and Secondary Cells
 - Construction of dry and wet cells
 - Leclanche Cells
 - Secondary Cells
 - Lead Accumulator
- Thermal properties of matter
 - State of Matter
 - Change of state
 - Heat transfer
 - Expansion and Construction
 - Energy principles
 - Heat Engines (Motor Vehicle)
 - Heating of water
- Magnetism
 - Magnetic and Non-magnetic materials
 - Laws of Magnetism
 - Magnetization and Demagnetization

- Electricity
 - D. C and A. C
 - Heating Effect of Current
 - Sources of E. M. F
 - Ring Main
 - Measuring Instruments

UNIT 3 GENERAL STUDIES II

- Communication Skills
 - Interpretation of words
 - Simple reports
 - Types and purpose of official forms
 - Writing formal letters
 - Human and Public Relations
- Production
 - Location of Business
 - Types and techniques of production
 - Costing and pricing
 - Marketing
 - Contracts
- Saving, Borrowing and Investing
 - Methods of saving
 - Raising business capital
 - Financial institutions
 - Investing
- Buying and Selling
 - Purpose of Buying and Selling
 - Methods of Buying and Selling
 - Determination of selling price
 - Sales promotion
 - Means of payment
- Book-Keeping
 - Record Books
 - Elementary Budgeting
- Science and Technology
 - Importance of Science and Technology
 - Appropriate Technologies

- Government
 - The Three Arms of the Government

UNIT 4 APPLIED GEOMETRY II

- Plane Geometry II
 - Ellipse
 - Loci
 - Curved figures
- Solid Geometry II
 - Intersection of regular solids
 - Locating the lines and curves of intersection
 - Development of intersecting surfaces
- Pictorial Drawing II
 - Isometric
 - Oblique
 - Conversion from Orthographic to Pictorial
- Orthographic Projection II
 - 1st and 3rd angle projections
 - Simple assembly drawing

UNIT 5 ELECTRICAL INSTALLATION TRADE THEORY II

- A. C. Generation
 - Generator construction
 - Principle of a generator
 - Sine wave
- Conversion of A. C. To D. C.
 - Commuter
 - Diode
 - Filter circuit
- Measuring Instruments
 - Moving coil instruments
 - Moving iron
 - Ammeter
 - Voltmeter
 - Ohmmeter
 - Insulation resistance tester
- Capacitors
 - Capacitor construction
 - Principle of operation
 - Definition

- Types and applications
 - Series and parallel connection
- Protective Devices
 - Fuses
 - Miniature circuit breaker
- Appliance
 - Appliances e.g. electric iron, electric cooker, heater and electric hand drill
- Illumination
 - Incandescent lamps
 - Fluorescent lamps
- The National Grid System
 - Generating stations
 - Stages of power supply system
- Occupational Information
 - Electrical contractor
 - Apprenticeship Training
 - Trade testing
 - Electrical licensing board

UNIT 6 ELECTRICAL INSTALLATION TRADE PRACTICE II

- Cable, Joints and Terminations
 - Termination of armoured cables
- Final Lighting Sub-Circuits
 - Fluorescent lamps
 - Discharge lamp fittings
- Power Sub-Circuits
 - Radial circuits
 - Ring circuits
 - Spurs
 - Cookers circuit
 - Water heater circuit
- Appliances
 - Installation of appliances
 - Maintenance and repair of appliances
- Wiring system
 - Armoured cable
 - Heavy gauge steel conduit
 - Wooden surface
 - Masonry surface
- Testing and Inspection

- Verification of polarity
 - Insulation tests
 - Earthing tests
 - Ring continuity test
 - Testing on appliances
- Distribution and control
 - Supply authority
 - Control and metering equipment
 - Consumers control and distribution equipment