

TAMIL NADU PUBLIC SERVICE COMMISSION

SYLLABUS

CODE NO.158

**ARCHITECTURAL ASSISTANTSHIP
(DIPLOMA STANDARD)**

UNIT – I ENGINEERING MECHANICS

Simple Stresses and Strain – Stress and Strain – Moduli of Elasticity / Elastic constants – Application of stress and strain in engineering field – Behaviour of ductile and brittle material – Loads – Shear Force and Bending Moment – Geometrical properties of sections – Centroid – Moment of Inertia – Stress in Beams and Shafts – Stresses in Beams due to bending – Stress in shafts due to torsion – Pin Jointed Frames - Analytical Method – Graphical Method

UNIT – II BUILDING MATERIALS

Soil – Stone – Clay Products – Lime – Cement – Timber – Concrete – Ferrous and Non-Ferrous Metals – Glass – Plastics – Gypsum – Insulation Materials – Asphalt, Sealants & Adhesives – Protective and Decorative Coatings – Water Proofing and Damps Proofing Materials – Rural Building Materials.

UNIT – III HISTORY OF ARCHITECTURE

Egyptian Architecture – Greek Architecture – Roman Architecture – Beginning of Indian Architecture – Early Christian Architecture – Byzantine Architecture – Gothic Architecture – France – Renaissance Architecture – Italy – Hindu Architecture – Indo-Islamic Architecture – Contemporary World Architecture.

UNIT – IV STRUCTURAL ENGINEERING

Slope and Deflection of Beams – Propped Cantilevers – Fixed Beams – Arches – Continuous Beams – Theorem of Three Moments – Continuous Beams – Moment Distribution Method – Columns and Struts – Combined Bending and Direct Stresses – Masonry Dams – Earth Pressure and Retaining Walls – Working Stress Method Design of Beams for Flexure by L.S.M – Design of T-Beams and Continuous Beams by L.S.M – Design of Beams for Shear by L.S.M – Design of Oneway Slabs by L.S.M - Design of Twoway Slabs by L.S.M - Design of Staircases by L.S.M - Design of Columns by L.S.M - Design of Column Footings – Design of Simple Beams – Design of Tension Members – Design of Compression Members – Design of Welded Connections.

UNIT – V ENVIRONMENTAL ENGINEERING AND POLLUTION CONTROL

Quantity of Water – Collections and Conveyance of Water – Quality of Water – Treatment of Water – Distribution System – Appurtenances and Maintenance of Water Lines – Collections and Conveyance of Sewage – Treatments and Disposal – Environmental Pollution and Control – Industrial Waste Water Treatment and Solid Waste Disposal.

UNIT – VI SURVEY THEORY

Chain Surveying – Compass Surveying – Plane Table Surveying – Levelling – Theodolite – Contouring – Minor Instruments.

UNIT – VII BUILDING SERVICES

Electrical Services – Wiring System – Lighting – Renewable Energy Sources – Mechanical Services – Fire Hazards, Safety & Design Regulations – Air Conditioning – Ventilation – Acoustics – Intelligent Architecture.

UNIT – VIII QUANTITY SURVEYING AND COSTING

Stages of Detailed Estimate – Measurements & Material Requirement – Specification & Report Writing – Approximate Estimates – Areas and Volumes – Data – Valuation – Detailed Estimate.

UNIT – IX TOWN PLANNING

Town Planning Principles – Road and Street Planning – Housing – Economy, Society, Environment and Transport Policy and Planning – Town Planning Rules, Building Bye-Laws & Development Control Rules.

UNIT – X COMPUTER APPLICATION IN ARCHITECTURAL

Study of operating System – Using Windows – Using AutoCAD / 3D MAX / Civil Architect / 3D HOME / Architectural Design Desktop Software Packages – Setting limits and creating entities like LINE, ARC, CIRCLE etc – Editing the drawing with edit commands like TRIM, FILLET, COPY, MOVE etc.

