

3003 - ELEMENTS OF CIVIL ENGINEERING										
Teaching Schedule Per Week			Progressive Assessment		Examination Schedule (Marks)					
Lectures	Practical	Credits			Theory		Practical Ex.		Total	
3	2	5	25	25	3Hrs	100	-		150	
Pre-requisite		Source	Semester		Theory	Test	Total	TW	PR	Gr Total
Nil		CVL			75	25	100	25	-	125

RATIONALE: -A broad based knowledge of elements of Civil Engineering is essential for Electrical/Fabrication/Air-conditioning Engineering technicians. They are required to carryout the planning and layout of the distribution lines, supervise the erection of transformers, towers including providing foundations for these structures and heavy machinery. They are also required to select suitable construction materials in the field. Hence it is essential to develop adequate knowledge & skills of the use of survey equipment, elementary knowledge of foundation, R.C.C works, planning & layout of buildings.

COURSE CONTENTS		Hrs	Mks
1. MEASUREMENT OF DISTANCE		5	10
Ranging: - Direct & indirect. Measuring distances with chain and tape; Chaining along a sloping line-method of stepping; To continue a line & measure the distance past an obstacle like building.			
2. COMPASS SURVEY		3	6
Study of Prismatic compass, knowledge of bearing, calculation of included angles, local-attraction.			
3. LEVELLING		10	20
Concept of levelling, instruments used - Dumpy level, levelling staff, reduction of levels, profile levelling, fieldwork & plotting.			
4. THEODOLITE		6	12
Introduction to theodolite, measurement of horizontal & vertical angles, prolonging a line, checking the verticality of poles/towers.			
5. CONSTRUCTION		12	24
Knowledge of bearing capacity of soil. Foundation -Purpose of providing thumb rules for width and depth. Types of foundation - Spread, raft, grillage, pile of machine. Types of flooring suitable for living, a.c. room, factory, workshop, auditorium, office- buildings. Roofs: -Roof supporting structures, trusses- wooden & steel, roof covering: -AC, G.I, acrylic sheets, tiles, north light roofing.			
6. CONCRETE		4	8
Ingredients, various stages in preparing concrete viz. mixing, transporting, placing, compacting, curing, form- work. Concept of R.C.C. Grouting & its use.			
7. INSULATING MATERIALS		4	10
Introduction.; Thermal insulation - materials used.; Sound insulation - materials used. Types of acoustic materials.			
8. BUILDING DRAWING		4	10
Elementary idea about building plan-elevation & section, conventional signs used.			
Total		48	100

TERM-WORK

Term work shall consist of practice on various topics mentioned below: Students are required to maintain a journal where field observations/calculations are recorded.

1. Measurement of distance with chain.
2. Chaining on a sloping ground.