

COURSE TITLE : ELECTRICAL AND MATERIAL TESTING LAB
COURSE CODE : 4127
COURSE CATEGORY : B
TYPE : P
PERIODS PER WEEK : 6
SEMESTER : 4
PERIODS PER SEMESTER : 84
CREDITS : 3

TIME SCHEDULE

Module	Topics	Periods
I	Material testing laboratory	39
	Test	3
II	Electrical engineering laboratory	39
	Test	3
Total		84

CONTENT DETAILS

MATERIAL TESTING LABORATORY

Physical and mechanical tests Determine the tensile, compressive, shear strength, bending strength of timber and wood laminates Determine the glue shear strength of plywood. Determine the hardness test, brinnel hardness test to find out brinnel hardness values of M.S, Brass, /wood Determine the rock well hardness values by conducting rock well hardness test on M.S., Brass, and Aluminium. Determine the impact test – By izode impact test to find out impact values. wood and wood laminates Torsion test on wood and M.S. bar to find out modullous of rigidity of material from angle of twist and torque.

ELECTRICAL ENGINEERING LABORATORY

Practice using ammeters, voltmeters, watt meters, and multimeter for measurements Measure the armature and field resistance of a DC shunt motor Measure the current of 100w incandescent lamp when burning Verify Ohm’s law Start the shunt, compound and series motors using starters Conduct the speed – torque characteristics of D.C shunt motors Reverse the direction of rotation of DC motors Measure the voltage, current and power of a single phase inductive load and calculation of inductance Start the slip ring induction motor Reverse the direction of rotation of single phase and three phase induction motors Conduct the ratio test and polarity test of single phase transformer Load the single phase transformer and determine the efficiency Calibrate the single phase energy meter Plot the magnetization characteristics of a given D.C. shunt generator Measure 3 Phase power by using two watt meter Perform the O.C. and S .C. test on a single phase transformer and pre- determine the efficiency Plot the external characteristics of a D.C. shunt generator 18.Familiarise electronic components List of Equipments:- UTM (Universal Testing Machine) Ammeter, Volt meters, Watt meters, Multi meters Shunt and compound and series motors