

GYANMANJARI INSTITUTE OF TECHNOLOGY

MECHANICAL ENGINEERING DEPARTMENT

SYLLABUS FOR MID-TERM EXAM- A.Y 2015-16 Even

2nd-Sem (Computer Engineering, Electrical Engineering & Information Technology)

SUBJECT: ELEMENTS OF MECHANICAL ENGINEERING (211006)

23/03/2016

Unit No.	Topics	%Weightage
1	INTRODUCTION Prime movers and its types, Concept of Force, Pressure, Energy, Work, Power, System, Heat, Temperature, Specific heat capacity, Change of state, Path, Process, Cycle, Internal energy, Enthalpy, Statements of Zeroth Law and First law	20%
3	PROPERTIES OF GASES Gas laws, Boyle's law, Charle's law, Combined gas law, Gas constant, Relation between Cp and Cv, Various non-flow processes like constant volume process, constant pressure process, Isothermal process, Adiabatic process, Poly-tropic process	
4	PROPERTIES OF STEAM Steam formation, Types of Steam, Enthalpy, Specific volume, Internal energy and dryness fraction of steam, use of Steam tables, steam calorimeters	30%
5	HEAT ENGINES Heat Engine cycle and Heat Engine, working substances, Classification of heat engines, Description and thermal efficiency of Carnot; Rankine; Otto cycle and Diesel cycles	
6	STEAM BOILERS Introduction, Classification, Cochran, Lancashire and Babcock and Wilcox boiler, Functioning of different mountings and accessories	10%
7	INTERNAL COMBUSTION ENGINES Introduction, Classification Engine details, four-stroke/ two-stroke cycle Petrol/Diesel engines, Indicated power, Brake Power, Efficiencies	10%