

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma in Automobile Engineering

Semester: 3

Subject Code

Subject Name THERMODYNAMICS AND HYDRAULICS

Sr. No.	Course content
1.	BASIC CONCEPTS OF THERMODYNAMICS : 1.1 Concept of thermodynamic system 1.2 Properties of system 1.3 Concept of various forms of energy 1.4 Concept of thermodynamic cycles 1.5 Concept of work and heat interaction
2.	FIRST AND SECOND LAW OF THERMODYNAMICS : 2.1 1st Law of Thermodynamics 2.2 Different types of work 2.3 2nd law of Thermodynamics 2.4 Reversible and irreversible processes 2.5 Heat Engine
3.	IDEAL GASES AND PROCESSES : 3.1 Ideal gas laws and equation 3.2 Specific heat of ideal gas 3.3 Various thermodynamic processes
4.	THERMODYNAMIC CYCLES : 4.1 Different ideal cycles and their importance 4.2 Application of ideal cycles
5.	FLUID STATICS, KINEMATICS AND DYNAMICS. : 5.1 Pressure and pressure variation in fluid 5.2 Principle of manometry 5.3 Basic equation of one dimensional fluid flow 5.4 Basic equation controlling fluid flow
6.	FLOW MEASUREMENTS, ORIFICE AND PIPES : 6.1 Different flow measuring devices 6.2 Characteristics of pipe flow
7.	IMPACT OF JET : 7.1 Impact of jet on flat and curved stationary and moving plates 7.2 Impact of jet on series of curved and flat plates
8.	WORKING OF PUMPS : 8.1 Types of pumps 8.2 Working of Reciprocating pumps 8.3 Working of Centrifugal pumps 8.4 comparison of RC of CF pumps

Reference Books:

Sr.No.	Name of Book	Author
1.	Thermodynamic for Engineers	M.L.Mathur and S.C.Gupta
2.	Heat Engines	C.S.Shah and N.C.Pandya
3.	Elements of Heat Engines Vol. I,II	R.C.Patel and Karamchandani
4.	Heat Engines	P.L.Ballaney
5.	Thermodynamics	S A A D
6.	Engineering Thermodynamics	P.K.Nag
7.	Fundamental of fluid mechanics	Dr. D.S.Kumar
8.	Fluid Mechanics and Hydraulics	R.S.Khurmi
9.	Fluid Mechanics and Hydraulics	R. K. Bansal
10.	Hydraulics & Hydraulic machinery	R.C.Patel & A.D.Pandya