

Samrat Ashok Technological Institute, Vidisha

Department of Mechanical Engineering

Lecture Plan

Course Code:	ME-1852	Year/Semester :	BE III th Year/ 5 th Semester
Course Name:	Internal Combustion Engine	Academic Year :	July-2023 / ODD
L – P:	3 – 2	Credit :	4
Course Detail :	Theory and Practical	Term Start Date :	24-07-2023
Course Coordinator:	Dr. Gopal Kumar Deshmukh	Term End Date :	

Academic Year: 2023					
Name of Teacher: Dr. Gopal Kumar Deshmukh					
Subject: Internal Combustion Engine					
Theory/Tutorial: Theory					
Sr. No.	Name Of Unit/Topics	Hrs. Allotted	Actual Date	Teaching Aid Code	Remarks
	Unit: 1- Internal combustion engine				
01	SI and CI Engines of Two and Four-Stroke Cycles, Real Cycle Analysis of SI and CI Engine,	2		2 & 4	
	Determination Of Engine Dimension, Speed, Fuel Consumption; Output, Mean Effective Pressure, Efficiency,	2		2 & 4	
	Factor Affecting Volumetric Efficiency, Heat Balance, Performance Characteristics of SI and CI Engine,	2		2 & 4	
	Cylinder Arrangement Firing Order, Power Balance For Multi-Cylinder Engine, Valve Timing.	2		2 & 4	
	Unit: 2- Combustion S.I. engine:				
02	Flame development and propagation, ignition lag,	2		2 & 4	
	Effect of Air Density, Temperature, Engine Speed, Turbulence and Ignition Timing	1		2 & 4	
	Physical and Chemical Aspects Of Detonation, Effect Of Engine and Fuel Variables On Knocking Tendency,	2		2 & 4	
	Knock Rating of Volatile Fuel, Octane Number, H.U.C.R., Action of Dopes, Pre-Ignition, Its Causes and Remedy,	1		2 & 4	
		1		2 & 4	
	Unit: 3- Combustion CI engine:				
03	Time base indicator diagram and their study, various stages of combustion,	2		2 & 4	
	Delay period, diesel knock, Octane number, knock inhibitors,	1		2 & 4	
	Silent feature of various types of combustion chambers, fuel, ignition, cooling, exhaust and lubrication system; simple problem on fuel injection,	2		2 & 4	
	Various types of engines, their classification and silent features, Rotary I.C. engines, their principle of working.	2		2 & 4	
	Unit: 4- I.C. Engine Systems:				
04	Fuels ignition system, cooling, exhaust scavenging and lubrication system,	2		2 & 4	
	Fuel metering in SI engine: Fuel injection in SI engine, fire and	2		2 & 4	

	fury of cooperation simple problem on cooperation fuel metering in CI engines,				
	Fuel injection in CI engines and simple problems, various types of engines, their classification and silent features	2		2 & 4	
	Fuels: conventional, Fuels and alternative fuels, engine exhaust emission, carbon monoxide, unburnt hydrocarbon, oxide of nitrogen, smoke, density, measurement and control, hydrogen as an alternative fuel.	2		2 & 4	
05	Unit: 5- Supercharging:				
	Effect of attitude on mixture strength and output of SI engines, low and high pressure supercharging,	2		2 & 4	
	Exhaust gas turbocharging, supercharging of two-stroke engines.	2		2 & 4	
Teaching Aid Code:		Sign of Teacher: _____			
1	White board				
2	L.C.D/overhead PROJECTOR				
3	MODEL & CHART				
4	PPT & VIDEO				
LESSON PLANNING, Rev. no. :					

Reference Books:

1. Internal Combustion Engines” by Ganesan V.
2. Internal Combustion Engine Fundamentals” by John Heywood.
3. Internal Combustion Engines” by Mathur M L & Sharma R P.
4. Internal Combustion Engines” by Rajput R K.