

GYANMANJARI INSTITUTE OF TECHNOLOGY

Department of Mechanical Engineering

**LECTURE AND LAB/TUTORIAL PLAN**

Course Code :	2110006	Year/Semester :	BE I Year/ 1 <sup>st</sup> Semester
Course Name :	Elements Of Mechanical Engineering	Academic Year :	2014-15/ EVEN
L -T- P :	4-0-2	Credit :	6
Course Detail :	Theory and Practical	Term Start Date :	10/8/2015
Course Coordinator :	Prof.Krunal Khiraiya	Term End Date :	5/12/2015
Team of Instructors :	Prof. Jay Solanki	Class Test 1 :	22/8/2015
		Class Test 2 :	19/9/2015
		Mid Term Exam :	5/10/2015

**Gyanmanjari Institute of Technology**  
Sidsar Road, Bhavnagar  
**Department of Mechanical Engineering**

**Lesson Plan**

Academic Year : 2015-16 First Term			Sem. : 1st sem			
Name of Teacher : Krunal Khiraiya			Name of Department : Civil (B-Division)			
Subject : EME			Hrs./Week : 5			
Theory/Tutorial : Theory			Days : Tuesday, Wednesday Thursday, Friday, Saturday			
Sr. No.	Name of Unit/Topics	Hrs. Alloted	Planned Date	Actual Date	Teaching Aid Code	Remarks
<b>1</b>	<b>Introduction</b>	<b>5</b>				
A	Concept of Force, Energy, Work, Power	1	11/8/2015			
B	Prime movers and its types, Concept of Pressure	1	12/8/2015			
C	System, Heat, Temperature, Specific heat capacity,	1	13/8/2015			
D	Change of state, Path, Process, Cycle, Internal energy	1	14/8/2015			
E	Enthalpy, Statements of Zeroth Law and First law	1	18/8/2015			
<b>2</b>	<b>Energy</b>	<b>3</b>				
A	Introduction and applications of Energy sources like Fossil fuels, Nuclear fuels, Hydel,	1	28/10/2015			
B	Applications of Energy sources Solar, wind, and bio-fuels	1	29/10/2015			
C	Environmental issues like Global warming and Ozone depletion	1	30/10/2015			
<b>3</b>	<b>Properties of gases</b>	<b>8</b>				
A	Gas laws, Boyle's law, Charle's law, Combined gas law	1	19/8/2015			
B	Gas constant, Relation between Cp and Cv	1	20/8/2015			
C	Various non-flow processes like constant volume process, constant pressure process,	1	21/8/2015			
D	Isothermal process	1	22/8/2015			
E	Adiabatic process, Poly-tropic process	1	25/8/2015			
F	Numerical	1	26/8/2015			
G	Numerical	1	27/8/2015			
H	Numerical	1	28/8/2015			
<b>4</b>	<b>Properties of Steam</b>	<b>6</b>				
A	Steam formation	1	1/9/2015			
B	Types of Steam, Enthalpy,	1	2/9/2015			

C	Specific volume, Internal energy and dryness fraction of steam	1	8/9/2015			
D	Use of Steam tables,	1	9/9/2015			
E	Steam calorimeters	1	10/9/2015			
F	Steam calorimeters	1	11/9/2015			
<b>5</b>	<b>Heat Engines</b>	<b>5</b>				
A	Heat Engine cycle and Heat Engine, working substances,	1	12/9/2015			
B	Classification of heat engines	1	15/9/2015			
C	Description and thermal efficiency of Carnot;	1	16/9/2015			
D	Description and thermal efficiency of Rankine;	1	17/9/2015			
E	Description and thermal efficiency of Otto cycle and Diesel cycles	1	18/9/2015			
<b>7</b>	<b>Internal Combustion Engines</b>	<b>4</b>				
A	Numerical on Thermal Efficiency of I.C Engine	1	19/9/2015			
B	Numerical on Thermal Efficiency of I.C Engine	1	22/9/2015			
C	Numerical on Thermal Efficiency of I.C Engine	1	23/9/2015			
D	Numerical on Thermal Efficiency of I.C Engine	1	24/9/2015			
<b>8</b>	<b>PUMP</b>	<b>3</b>				
A	Types and operation of Reciprocating,	<b>1</b>	26/9/2015			
B	Types and operation of Rotary	1	29/9/2015			
C	Types and operation of Centrifugal pumps, Priming	1	30/9/2015			
<b>9</b>	<b>AIR COMPRESSOR</b>	<b>3</b>				
A	Types and operation of Reciprocating	1	1/10/2015			
B D	Types and operation of Rotary air compressors	1	3/10/2015			
C	significance of Multistaging	1	13/10/2015			
<b>12</b>	<b>TRANSMISSION OF MOTION AND POWER</b>	<b>4</b>				
A	Shaft and axle	1	14/10/2015			
B	Belt drive, Chain drive	1	15/10/2015			
C	Friction drive	1	16/10/2015			
D	Gear drive	1	17/10/2015			
<b>13</b>	<b>ENGINEERING MATERIAL</b>	<b>4</b>				

A	Types and applications of Ferrous & Nonferrous metals	1	20/10/2015			
B	Timber, Abrasive material	1	21/10/2015			
C	silica, ceramics, glass	1	23/10/2015			
D	graphite, diamond, plastic and polymer	1	27/10/2015			
	<b>Revision</b>	<b>5</b>	<b>3/11/2015 to 26/11/2015</b>			
<b>Teaching Aid Code:</b>			Sign of Teacher : _____  Sign of H.O.D : _____			
1	O.H.P					
2	L.C.D PROJECTER					
3	MODEL					
4	CHART					
5	OTHER (VIDEO)					
<i>* Remark column should cover any slippages and remedial action planned</i>						
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**Reference Books:**

1. Basic Mechanical Engineering by Pravin Kumar, Pearson
2. Thermal Science and Engineering by Dr. D.S. Kumar, S.K. Kataria & sons, Publication New Delhi
3. Fundamental of Mechanical Engineering by G.S. Sawhney, PHI Publication New Delhi
4. Elements of Mechanical Engineering by Sadhu Singh S. Chand Publication
5. Introduction to Engineering Materials by B.K. Agrawal Tata McgraHill Publication, New Delhi



## GYANMANJARI INSTITUTE OF TECHNOLOGY

MECHANICAL ENGINEERING DEPARTMENT

### LESSON PLANNING- PRACTICE

SUBJECT CODE		2110006		NAME OF SUBJECT		Elements of Mechanical Engineering		TERM CODE: Winter - 2015		TERM DATE	FROM	TO	REMARKS
PRACTICAL NO.	TITLE			HRS	PLANNED DATES	ACTUAL DATES	PLANNED DATES	ACTUAL DATES	PLANNED DATES	ACTUAL DATES	10-8-15	5-12-15	
					BATCH - B1		BATCH - B2		BATCH - B3				
1	To understand construction and working of various types of boilers.			2	14-08-2015		12-08-2015		10-08-2015				
				2	21-08-2015		19-08-2015		17-08-2015				
2	To understand construction and working of different boiler mountings & accessories.			2	28-08-2015		26-08-2015		24-08-2015				
				2	11-09-2015		02-09-2015		31-08-2015				
3	To understand construction and working of Petrol Engines.			2	18-09-2015		09-09-2015		07-09-2015				
4	To understand construction and working of Diesel Engines.			2	16-10-2015		16-09-2015		14-09-2015				
5	To determine brake thermal efficiency of an I.C. Engine.			-									Cover in theory hours
6	To understand construction and working of different types of Pump			-									Cover in theory hours
7	To understand construction and working of different types of Air compressors			-									Cover in theory hours
8	To demonstrate vapor compression refrigeration cycle of domestic refrigerator, window air conditioner & split air conditioner.			2	23-10-2015		23-09-2015		21-09-2015				
9	To understand construction, working and applications of different types of coupling, clutch and brake.			2	30-10-2015		30-09-2015		28-09-2015				
				2	06-11-2015		14-10-2015		12-10-2015				
10	Demonstration of various types of gear drives, belt drive and pulleys.			2	20-11-2015		21-10-2015		19-10-2015				
Total HRS				20									
PRACTICE		BATCH:B1	BATCH:B2	BATCH:B3	NAME OF FACULTY		FACULTY SIGN		HOD SIGN		DATE		
PLANNED TURNS													
ACTUAL TURNS													