LESSON PLAN

Name of Faculty : RAJESH BANSAL

Discipline : **ME, CSE, ECE, EE**

Semester : **2nd**

Subject : **Basics of Mechanical Engineering**

Lesson Plan Duration : 15 weeks (From Jan 2018 to Apr 2018)

**Workload (lecture/ practical) per week (in hours): lectures(3), Practical's (6).

Weeks	Theory		Practical's	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1st	1st	Introduction to Commonly used Machine Tools in a Workshop	1st	To study the Cochran and Badcock& Wilcox boilers
	2nd	Lathe	2nd	----------do----------
	3rd	Lathe	3rd	----------do----------
2nd	1st	Milling	1st	To study the working and function of mountings and accessories in boilers
	2nd	Milling	2nd	----------do----------
	3rd	Shaper, Planner	3rd	----------do----------
3rd	1st	Drilling, Slotter	1st	To study Two-stroke & Four-Stroke Diesel Engines.
	2nd	Introduction to Metal Cutting.	2nd	----------do----------
	3rd	Basic concept of thermodynamics Introduction, States, Work, Heat, Temperature	3rd	----------do----------
4th	1st	Zeroth, 1st, 2nd and3rd law of thermodynamics,	1st	To study Two-stroke & Four-Stroke Petrol Engines.
	2nd	Concept of internal energy, enthalpy and entropy	2nd	----------do----------
	3rd	CLASS TEST	3rd	----------do----------
5th	1st	Numerical	1st	To study simple screw jack and compound screw jack and determine their efficiency.
	2nd	Formation of steam under constant pressure,	2nd	----------do----------
	3rd	Thermodynamic properties of steam	3rd	----------do----------
6th	1st	use of steam tables	1st	To calculate the Mechanical Advantage, Velocity Ratio and Efficiency of single start, Double start and Triple start worm & Worm Wheel.
	2nd	measurement of dryness fraction by throttling calorimeter	2nd	----------do----------
	3rd	Introduction to refrigeration and air-	3rd	----------do----------

		conditioning,		
7th	1st	Rating of refrigeration Machines, Coefficient of performance	1st	To study the vapor compression Refrigeration System and determination of its C.O.P.
	2nd	simple refrigeration vapour compression cycle	2nd	----------do----------
	3rd	Psychrometric charts and its use, Human comforts	3rd	----------do----------
8th	1st	1st Sessional Exam	1st	To study the functioning of Window Room Air Conditioner.
	2nd	1st Sessional Exam	2nd	----------do----------
	3rd	1st Sessional Exam	3rd	----------do----------
9th	1st	Introduction of Turbine	1st	To perform tensile test, plot the stress-strain diagram and evaluate the tensile properties of a given metallic specimen.
	2nd	Classification of Turbine	2nd	----------do----------
	3rd	Construction details and working of Pelton Turbine	3rd	----------do----------
10th	1st	Francis turbines	1st	To find the Mechanical Advantage, velocity Ratio and Efficiency of a Differential Wheel and Axle.
	2nd	Kaplan turbines	2nd	----------do----------
	3rd	CLASS TEST	3rd	----------do----------
11th	1st	Specific speed and selection of turbines	1st	Practical revision and Problems
	2nd	Classification of water pumps and their working.	2nd	----------do----------
	3rd	Power Transmission Methods and Devices : Introduction to Power transmission	3rd	----------do----------
12th	1st	Belt, Rope, Chain and Gear drive	1st	Practical revision and Problems
	2nd	Types and functioning of clutches	2nd	----------do----------
	3rd	Assignment	3rd	----------do----------
13th	1st	Concept & types of stresses and strains, Poison's ratio	1st	Practical revision and Problems
	2nd	stresses and strains in simple and compound bars under axial loading	2nd	----------do----------
	3rd	flexure & torsional loading	3rd	----------do----------
14th	1st	Stress-strain diagrams. Hook's law	1st	Practical revision and Problems
	2nd	Elasticconstants & their relationships.	2nd	----------do----------
	3rd	Introduction to Manufacturing Systems, Fundamentals of Numerical Control (NC).	3rd	----------do----------
15th	1st	Advantage of NC systems, Classifications of NC	1st	Internal Viva Voce
	2nd	Comparison of NC and CNC	2nd	----------do----------
	3rd	CLASS TEST	3rd	----------do----------