



II Year-I Semester		L	T	P	C
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<b>THERMAL AND HYDRO LAB (R1621027)</b>					

**Prerequisite Course:** Thermal and Hydro Prime Movers

**Course Description and Objectives:**

To impart practical knowledge on the performance evaluation methods of various internal combustion engines, flow measuring equipment and hydraulic turbines and pumps.

**Course Outcomes:**

Upon completion of, the student will be able to achieve the following outcomes.

Cos	CourseOutcomes	POs
1	By learning the concept, a student can understand the working principle of IC	3
2	The student can able to study the performance and can calculate the efficiency	2
3	By understanding the above concept a student can easily know about diesel	3
4	The student can able to understand the various classification of boilers and their	2
5	By learning the calibration techniques student can able to understand how to control the flow of fluids in a piping system.	2
6	Student can able to evaluate performance of a pumps and turbines	3

**Syllabus:**

**SECTION A - THERMAL ENGINEERING LAB**

1. I.C. Engines valve / port timing diagrams.
2. I.C. Engines performance test on 4 -stroke Diesel engine.
3. I.C. Engines performance test on 2-stroke petrol engine.
4. Evaluation of engine friction by conducting Morse test on 4-stroke multi cylinder petrol engine
5. Determination of FHP by retardation and motoring test on IC engine
6. I.C. Engines heat balance on petrol / Diesel engines.
7. Economical speed test of an IC engine
8. Study of boilers

**SECTION B – HYDRAULIC MACHINES LAB**

1. Impact of jets on Vanes.
2. Performance Test on Pelton Wheel.
3. Performance Test on Francis Turbine.
4. Performance Test on Kaplan Turbine.
5. Performance Test on Single Stage Centrifugal Pump.
6. Performance Test on Reciprocating Pump.
7. Calibration of Venturimeter.
8. Calibration of Orifice meter.
9. Determination of loss of head due to sudden contraction in a pipeline.