

GOVT.POLYTECHNIC NAYAGARH
DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN

SUBJECT: THERMAL ENGINEERING-II LABORATORY (PR-2)

PERIODS: 4P/WEEK

NAME OF FACULTY: ABINAS NAYAK, LECTURER STAGE I

SEMESTER FROM : 22/12/2025 to 18/04/2026

SEMESTER: 4th

GROUP: A & B

NO. OF WEEKS: 15

Week	Period	Theory / Practical Topics
1st	1st & 2nd	Exp 1: Study of high-pressure boiler with model (Theory & Explanation)
	3rd & 4th	Demonstration of high-pressure boiler model components
2nd	1st & 2nd	Exp 2: Study of boiler mountings and accessories (Theory of functions)
	3rd & 4th	Demonstration of mountings and accessories using models/charts
3rd	1st & 2nd	Exp 6: Conduct Performance test on 2-S CI/SI engine (Theory of Experiment)
	3rd & 4th	Performance test on 2-S CI/SI engine (Practical Session)
4th	1st & 2nd	Exp 7: Conduct Performance test on 4-S CI/SI engine (Theory of Experiment)
	3rd & 4th	Performance test on 4-S CI/SI engine (Practical Session)
5th	1st & 2nd	Exp 8: Conduct Heat balance test on CI/SI engine (Theory & Calculations)
	3rd & 4th	Heat balance test on CI/SI engine (Practical Session & Graph Plotting)
6th	1st & 2nd	Exp 9: Conduct Economical speed test on 4-S CI/SI engine (Theory of Experiment)
	3rd & 4th	Economical speed test on 4-S CI/SI engine (Practical Session)
7th	1st & 2nd	Exp 5: Conduct Morse test to determine indicated power (Theory of Experiment)
	3rd & 4th	Morse test on multi-cylinder engine (Practical Session)
8th	1st & 2nd	Review: Checking Lab Record for Engine Experiments (Exp 1, 2, 5, 6, 7, 8, 9)
	3rd & 4th	Viva Voce: Engine Performance and Boiler components
9th	1st & 2nd	Exp 4: Conduct performance test on multistage reciprocating compressor (Theory)
	3rd & 4th	Performance test on multistage reciprocating compressor (Practical Session)
10th	1st & 2nd	Exp 3: Conduct performance test on VCR test rig to determine COP (Theory)
	3rd & 4th	Performance test on VCR test rig (Practical Session)
11th	1st & 2nd	Exp 11: Leak detection of refrigeration equipment (Demonstration & Practice)
	3rd & 4th	Exp 12: Conduct performance test on A/C test rig to determine COP (Theory)
12th	1st & 2nd	Performance test on A/C test rig (Practical Session)
	3rd & 4th	Checking Lab Record for Compressor and Refrigeration experiments
13th	1st & 2nd	Exp 10: Thermal conductivity test on thick slab & Composite wall (Theory)
	3rd & 4th	Thermal conductivity test on thick slab & Composite wall (Practical Session)
14th	1st & 2nd	Exp 10: Thermal conductivity test on thick cylinder (Practical Session)
	3rd & 4th	Viva Voce on Heat Transfer and Refrigeration

15th	1st & 2nd	Revision & Catch-up
	3rd & 4th	Final Lab Record Submission / End Exam Review

REFERENCES:

1. **Thermal Engineering**-P.L. Ballaney, Khanna Publishers, 2002
2. **A Course in Thermal Engineering** - S. Domkundwar & C.P. Kothandaraman, Dhanpat Rai & Publication New Delhi
3. **Thermal Engineering** - R.S. Khurmi and J.K. Gupta, 18th Edition, S. Chand & Co, NewDelhi

Abinas
22/12/25

Abinas Nayak
Lecturer Stage I