SHAHAJIRAO PATIL VIKAS PRATISHTHAN

S. B. PATIL COLLEGE OF ENGINEERING, INDAPUR, DIST: PUNE.

DEPARTMENT OF MECHANICAL ENGINEERING

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Industrial Visit Report

Academic Year: 2025-26
Semester: II

Ref: SPVP/SBPCOE/MECH/2025-26 /

Date: 24/04/2026

S.B.Patil College of Engineering Dept.of Mechanical Engineering Indapur

To,
The Principal,
SBPCOE,Indapur

Through: The HOD of Mechanical Engg. Dept
Subject: Submission of the Report of Industrial Visit

Respected Sir,

With above reference, we have successfully conducted the industrial visit for the students of SE/TE on 20/04/2026. The details are given below. The detailed report (Documents, photographs and certificates etc.) is enclosed herewith.

VISIT REPORT ON APPLIED THERMODYNAMICS

Dudh-ganga Dudh Utpadak Sangh

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1. Introduction

A visit to **Dudhganga Dudh Utpadak Sangh** was organized as part of the Applied Thermodynamics curriculum. The purpose of this visit was to understand the practical application of thermodynamic principles in dairy processing industries.

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2. Objectives of the Visit

- To study real-life applications of thermodynamics in dairy plants
- To understand processes like pasteurization, refrigeration, and heat transfer
- To observe boilers, compressors, and heat exchangers
- To gain industrial exposure and practical knowledge

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3. About the Dairy Plant

Dudhganga Dudh Utpadak Sangh is a cooperative dairy industry involved in milk collection, processing, and distribution. The plant uses advanced machinery and thermal systems to maintain product quality and hygiene.

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4. Processes Observed

a) Milk Collection and Storage

- Milk is collected from various villages
- Stored in chilled tanks to prevent spoilage
- Cooling is achieved using refrigeration systems

b) Pasteurization

- Milk is heated to around 72°C and then rapidly cooled
- This process kills harmful bacteria
- Heat exchangers are used for efficient heat transfer

c) Refrigeration System

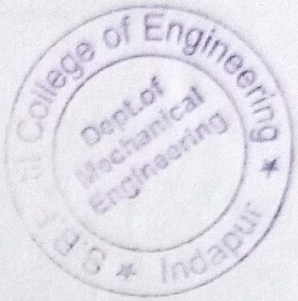
- Used to maintain low temperatures during storage
- Works on the vapor compression cycle
- Key components: compressor, condenser, expansion valve, evaporator

d) Boiler System

- Steam is generated for heating processes
- Fuel is used to produce thermal energy
- Demonstrates energy conversion principles

e) Packaging Process

- Milk is packed using automated machines
- Temperature control is maintained throughout



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5. Thermodynamics Applications

- **Heat Transfer:** Used in pasteurization and cooling
- **Energy Conversion:** Boiler converts chemical energy into heat energy
- **Refrigeration Cycle:** Maintains low temperatures
- **Entropy & Efficiency:** Observed in heat exchangers and systems

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6. Equipment Seen

- Heat exchangers
- Boilers
- Refrigeration compressors
- Milk storage tanks
- Pumps and pipelines

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7. Learning Outcomes

- Understood industrial application of thermodynamics
- Gained knowledge about refrigeration and heat transfer systems
- Learned about energy efficiency in real systems
- Observed safety and hygiene standards in dairy industries

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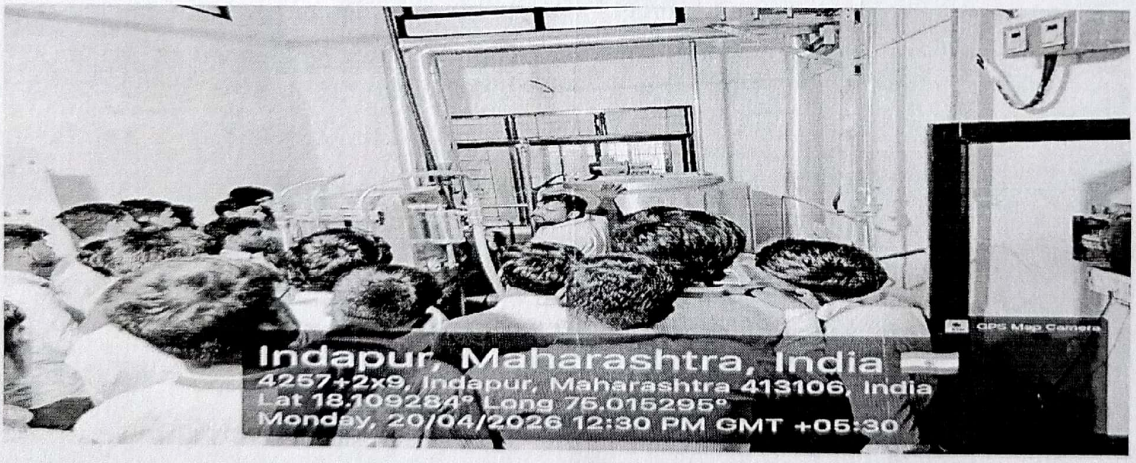
8. Conclusion

The industrial visit to **Dudhganga Dudh Utpadak Sangh** was highly informative. It helped bridge the gap between theoretical knowledge and practical application of thermodynamics. Such visits are essential for engineering students to understand real-world industrial processes.

Thanking You.

Yours faithfully,

Prof. V.D.GAWADE
Subject Teacher
Mechanical Engg. Dept.



Prof.V.D.Gawade
Subject Teacher

Dr.M.D.Jagtap
HOD

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Principal

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