



भारतीय प्रौद्योगिकी संस्थान कानपुर
INDIAN INSTITUTE OF TECHNOLOGY KANPUR
P.O.: IIT Kanpur, 208 016, Uttar Pradesh, India
ACADEMIC SECTION : UNDERGRADUATE OFFICE

Prof. Shashank Shekhar
Chairperson, SUGC

No. A(U)/New _Course/2025/UG/06
September 30, 2025

1965

OFFICE MEMORANDUM

The department of Mechanical Engineering (ME) proposed to increase the credits of an existing course ME334 from 4 to 5 and the same approved by the SUGC in its 2024-25/10th meeting. The details are as follows:

Sl. No.	Course No.	Existing Credits	Revised Credits	Course Title	Course Type
1.	ME334	4	5	Experiments in Mechanical Engineering - II	REGULAR

The copy of the course proposals is enclosed for reference.


Shashank Shekhar

Copy to:

1. Dean, Academic Affairs
2. Associate Dean, Academic Affairs
3. All SUGC members
4. Heads of All Departments
5. OARS Section

Indian Institute of Technology, Kanpur

Proposal for a New/Revised Course

1. Preferred course No: ME334
2. Course Title: Experiments in Mechanical Engineering - II
3. Per Week Lectures:(L), Tutorial: (T), Laboratory: NA (P)
Additional Hours [0-2]: (A), NA
4. Credits (3*L-2*T-P-Total): 0-0-5-5 [10 hours of laboratory every alternate week]
5. Duration of Course: Full Semester
6. Proposing Department: Mechanical Engineering
7. Proposing instructors(s): DUGC, ME
8. Course Description:

1. Objectives:

This course exposes the students to experiments on (a) Energy conversion (b) Mechanisms (c) Heat Transfer (d) Experimental stress analysis

2. Contents (*preferably in the form of 5 to 10 broad titles*):

Tentative list of experiments

(a)

1. Evaluation of Performance Characteristics for a Francis Turbine.
2. Evaluation of Performance Characteristics for a Pelton Turbine.
3. Performance Study of a Single Cylinder four-Stroke Diesel Engine with Variable Compression Ratio.
4. Study of a Refrigeration System with Series and Parallel Evaporators

(b)

Lab1:

Make the following mechanisms using the kit provided.

1. a) Mechanism 1A: Watt's Mechanism
2. b) Mechanism 1B: The Multi-Bar Pantograph Mechanism
3. c) Mechanism 1C: Four bar mechanism with a translational link
4. d) Mechanism 1D: Peaucellier-Lipkin Linkage:

Lab2:

1. Mechanisms 2A:
2. Need to form:
3. a) Various inversions of a 3R-1P mechanism satisfying Grashof Criterion.

(e)

1. Casting
2. Forming
3. Welding
4. Metal additive manufacturing
5. Electric discharge machining (EDM)
6. Machining
7. Metrology

A) Pre-requisites, if any: None

B) Short summary for including in the Courses of Study Booklet:

Experiments on (a) Energy conversion (b) Mechanisms (c) Heat Transfer (d) Experimental stress analysis (e) Manufacturing processes

C) Recommended books:

D) Any other remarks:

Date:

Proposer

Supratik Mulhopadhyay

Date: 20.06.2025

DUGC/BPGG Convener

The course is approved / not approved

Date:

[Signature]
Chairman, SUGC/SPGC