



**Department of Mechanical Engineering**  
**Academic Year 2021 – 2022 (Even Semester)**

**Degree, Semester & Branch:** IV Semester B.E. Mechanical Engineering

**Course Code & Title:** ME8451 Manufacturing Technology II

**Name of the Faculty member (s):** Mr.S.Maharajan, AP/Mech

### Innovative Practice Description

- **Unit / Topic:** Unit II / Capstan and Turret Lathe, Tumbler Gear Mechanism, Apron Mechanism and Half Nut Mechanisms
- **Course Outcome:** CO2
- **Topic Learning Outcome:** TLO4 & TLO5
- **Activity Chosen:** Theory to Practical

- **Justification:**

- ✓ To understand the mechanisms and capstan and turret lathe operations by real time functioning of lathe.
- ✓ To acquire the hands on training in operating the lathe and know about the mechanisms involved in each operations in lathe.
- ✓ To recollect the theoretical concepts of mechanisms by practical experience.

- **Time Allotted for the Activity:** 50 minutes for listening concepts and hands on experience in operating lathe by understanding the various mechanisms involved in all the parts in lathe.

- **Details of the Implementation:**

The students were asked to operate the mechanisms after listening the concepts behind the mechanisms of lathe. Students skills was assessed by interacting with them by asking questions related to concepts and mechanisms of various parts of lathe.

- **CO – PO / PSO mapping:**

CO	PO1	PO4	PO9	PO10	PO12	PSO2
CO2	3	2	3	3	3	3

(1 – Low      2 – Moderate      3 – High)

- **PO / PSO mapped:**

Innovative	PO1	PO4	PO9	PO10	PO12	PSO2
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practice	3	2	3	3	3	3
<b>Justification for correlation</b>	Prerequisite knowledge in various mechanisms (ratchet and pawl mechanisms, gear transmissions) required to understand the real time applications.	To understand the complex operations performed in lathe by acquiring skills in real time practical experience.	By having elaborate discussion with fellow students for understanding the critical power transmission process. The operations were carried out in a group of students for better understanding	By asking questions to individuals and they gave clear explanation about mechanisms involved in lathe.	It is a continuous process of learning to enable the students to improve their practical skills with theory concepts	The students are provided with the manufacturing concepts, process plan and manufacturing solutions.

• **Images / Screenshot of the practice:**



**Live Demo on Turret Lathe operations**



**Live Demo on Capstan Lathe operation**



**Live Demo on Tumbler Gear Mechanism**



**Live demo on Apron Mechanisms in Lathe**

• **Reflective Critique:**

❖ ***Feedback of practice from students and other stakeholders:***

Concepts were clearly understood by the students. They improved the hands on experience in operating various lathe by knowing the mechanisms behind all the parts of lathe.

❖ ***Benefit of the practice:*** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)

- ✓ By the hands on training in Lathes, students can able to understand the tough concepts and mechanisms easily.
- ✓ By interacting with fellow students, they improved the communication skills and team building activities.

❖ ***Challenges faced in implementation:***

Short duration period for the training of Lathe machines is the huge challenge while the students are involving the real time practical session.

References:

- ❖ Hajra Choudhury, “Elements of Workshop Technology”, Vol.II., Media Promoters
- ❖ Rao.P.N “Manufacturing Technology – Metal Cutting and Machine Tools”, Tata McGraw-Hill, New Delhi, 2003.

**Signature of Faculty Member**

**HOD**

# Student feedback on Innovative Practice - Unit II / Capstan and Turret Lathe, Tumbler Gear Mechanism, Apron Mechanism and Half Nut Mechanisms (2021-22) (Even)

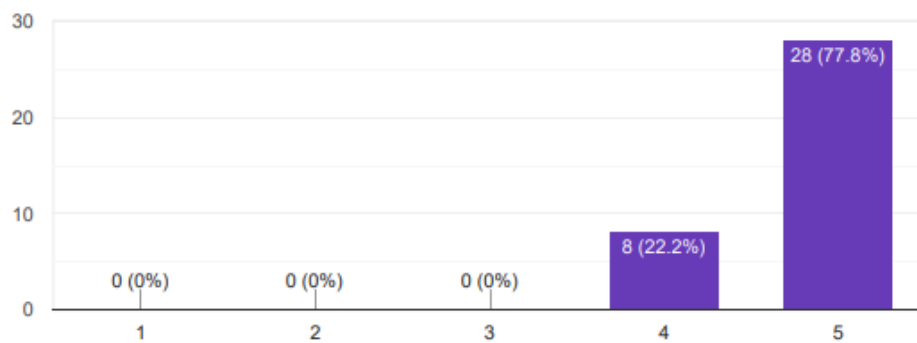
36 responses

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Instructor clarifies difficult aspects of this innovative activity.

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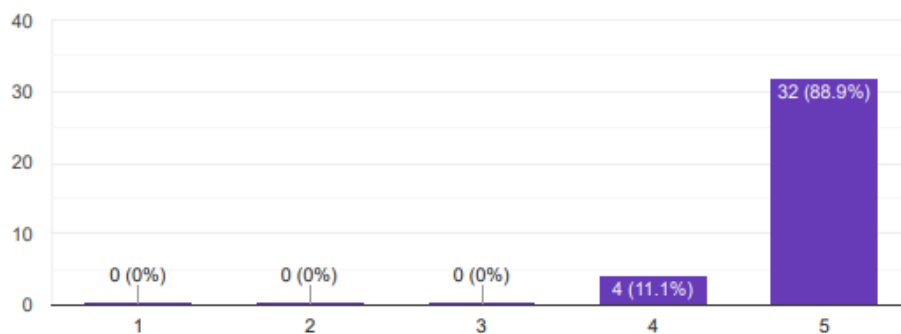
36 responses



This innovative activity improves my opinion about the content of the subject

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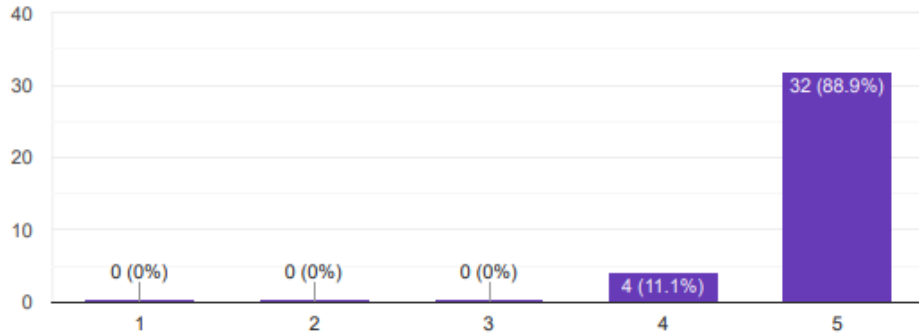
36 responses



I find new information about the topics and subjects using new technologies.

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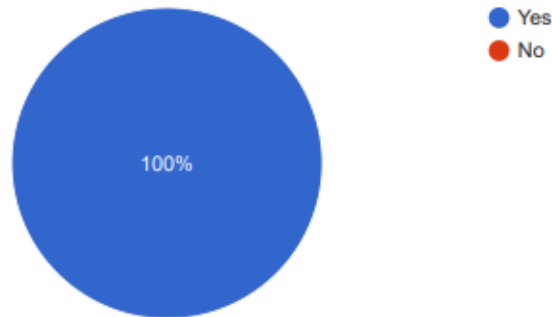
36 responses



I suggest this innovative practice to teach the topic for forthcoming students

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36 responses

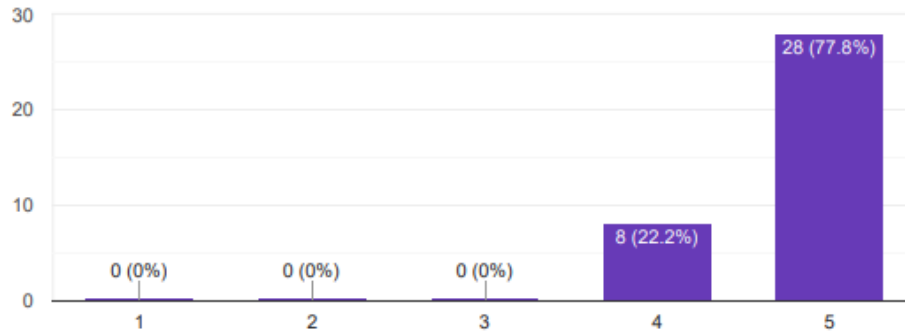




This innovative activity builds any self-confidence to understand the content of the delivery.



36 responses



The most useful thing/skill I learned from this activity was...

36 responses

Nice

i learned turret lathe

I learn turret lathe machine

Turret lathe and capstan lathe

He did his best

I learner turret lathe consept

I leaned about lathes

Most valuable lessons in our life

Very useful information about different kinds of lathe

machining operations tools life calculation etc ..

I LEARNED LATHE MECHANISMS AND LATHE RELATED SKILLS

I was so excited after learnt about this lathe

I learn the turret lathe and capstan lathe

Very useful

I have learned to something new.

I have learned about capsten and turret lathe

I learned about turret/capstan lathe

I learned the capstan lathe

How to operate the machine in the live section

I learned turrent lathe very useful to students



<https://docs.google.com/forms/d/1RCiOa9VMlvf1nAcqjRYt1FdWFcUGXIEkRWD-O9iKpFc/viewanalytics>

4/5

9/5/22, 1:22 PM

Student feedback on Innovative Practice - Unit II / Capstan and Turret Lathe, Tumbler Gear Mechanism, Apron Mechanism and Hal...

I Turret Lathe super sir

I learned turt lathe in lab very well

I learned about turret lathe & captain lathe

Capstan and turret lathe

I LEAREND THE TURRENT LATHE AND CAPSTAN LATHE FUNCTION AND CNC LATHE AND MILLING OPERATIONS...

I Learned Lathe Machine

Usefully to us

Better learning about turret& capstan lathe

I leanned lathe machine

About lathe machining

Types of lathe

Lathe

About lathe machine

He did his best



I learned some knowledge in manufacturing technology

I learned from lot of information in manufacturing technology

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## Google Forms

S.No	Subject Code & Name	Name of the Faculty Member	Topic	Name of the Innovative Practice
1.	ME8451 Manufacturing Technology II	Mr.S.Maharajan, AP/Mech	Unit II / Capstan and Turret Lathe, Tumbler Gear Mechanism, Apron Mechanism and Half Nut Mechanisms	Theory to Practical

