PVP SIDDHARTHA INSTITUTE OF TECHNOLOGY, KANURU, VIJAYAWADA
DEPARTMENT OF MECHANICAL ENGINEERING

Student Centric Teaching Methodologies

A.Y.: 2021-22

1.(A) Presenting the models for KOM class room lecture:

Statement of goals:

- For easy understanding and improving the visualization of mechanisms.
- To explain the working of mechanism in a simple way
- To retain the concept in student for a long time

Appropriate methods:

Following Wooden Models of mechanisms are exhibited in class room teaching

- Beam Engine Model
- Peaucellier Mechanism - 8 Link Mechanism

Fig 5.1: Beam Engine Model

Fig 5.2: Peaucellier Mechanism

1.(b) Presenting the models for Metrology class room lecture:

Statement of goals:

- For easy understanding and improving the visualization of instruments.
- To explain the working of instruments in A simple way
- To retain the concept in student for A long time

Appropriate methods: following instruments are exhibited in class room teaching

- Micrometers
- Sinebar
- Bevel protractor etc.,

Fig 5.3: Sinebar

Fig 5.4: Bevel protractor

1.(c) Presenting the models for Heat Transfer and Refrigeration & Air Conditioning class room lecture:

Statement of goals:

- To develop scientific reasoning abilities in students.
- To increase the understanding capabilities of the complex phenomenon of refrigeration and air conditioning.
- To improve practical skills in making observations.

Appropriate methods: Exhibition of project model in the class

Significant results: Improved understanding levels of students

Fig 5.5: Radiator

Fig 5.6: Refrigerator

2. Using charts for labs like Metallurgy, Metrology and instrumentation etc:

Statement of goals:

- Makes it easier to understand complex concepts/data
- To explain the working principle in a simple way
- Grabs the attention of students in lab

Appropriate methods: charts with diagrams and explanation

Significant results: Improved visualization capacity of students

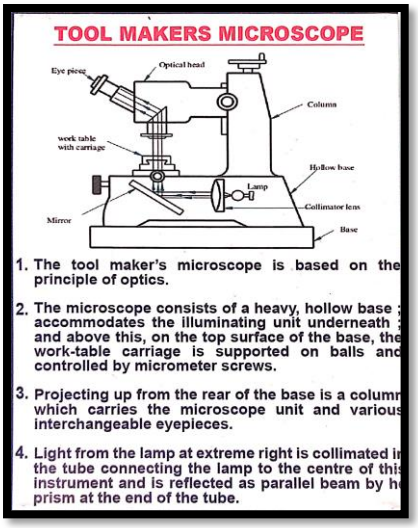


Fig 5.7: Tool makers microscope chart

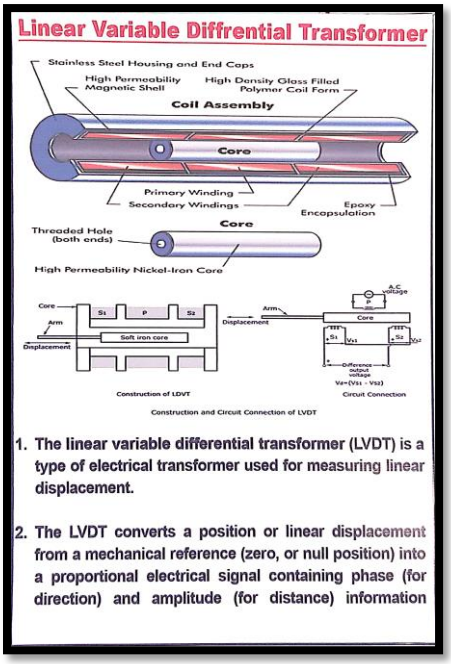


Fig 5.8: LVDT chart

3. Discussing case studies (IEM, Robotics, metallurgy, Production Technology, Automobile Engineering):

Statement of goals:

- For easy understanding And application of concepts.
- To generate new ideas.
- To relate concepts and theories with real life situation.

Appropriate methods:

1. Reconstructing the case history of southwest Airlines step by step in relation with the leadership Concept. (IEM)

2. Explaining the process involved in manually grouping the ice cream bars on a high-speed flat belt Conveyor and placing them in the trays on a tray conveyor in relation with pick and place robots. (Robotics)

3. Discussion on the iron pillar of Delhi in relation with the rust-resistant composition of the metals. (Metallurgy)

4. Explanation of applications of Investment casting in past, Present and Future applications. (Production Technology)

5. Discussion on selection of materials for vehicle bodies. (Automobile Engg)

4. Conduction of flip classes for design thinking subject

Statement of goals:

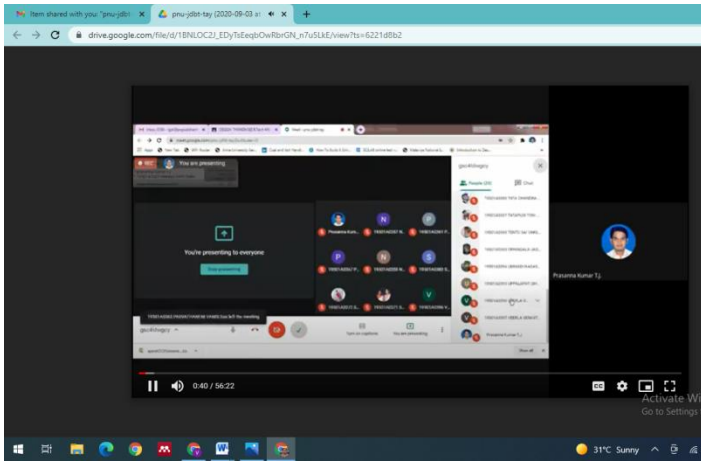
- To explore subjects in deeper manner.
- To support the students for better understanding of concepts.
- To spend more time with complex concepts.

Appropriate methods: Giving lecture content either in online or outside of class and making every student to deliver lecture in the class room before their classmates on the specified date.

Significant results: Improved ability understanding and explaining of concepts

Effective presentation: To spend more time with complex concepts.

Students during design thinking classes gave their presentation on various topics and were recorded in the A.Y 2020-21.



S.NO.	ROLL NO
1	19501A0361
2	19501A0362
3	19501A0363
4	19501A0365
5	19501A0366
6	19501A0367
7	19501A0368
8	19501A0386
9	19501A0396

Fig. 5.9: Recorded Google classes

1. Exhibition of project models in the class :

Statement of goals:

- Makes it easier to understand mechanisms
- To motivate the pre final year students to take up innovative projects

Appropriate methods: Exhibition of project model in the class

Significant results: Students get motivated to carry out projects on working models

Fig 5.10: Solar powered automatic seed sowing robo

Fig 5.11: Prototype of battery operated Drone