

**MARATHWADA MITRA MANDAL'S
INSTITUTE OF TECHNOLOGY
LOHEGAON, PUNE**

**SAMPLE INNOVATIVE PRACTICES IN TEACHING LEARNING IN DEPARTMENT OF MECHANICAL
ENGINEERING**

Sr. No.	Title of innovative practice	Goals of the practice	The context in which it is used
1	Use of Models in teaching	To visualize the concept of 3-2-1 principle in Jig Fixture Design	Subject : Machining Science and Technology Class: T.E. Mechanical Engg Name of Unit: Jigs & Fixtures
2	Use of Models in teaching	To visualize the constant pressure thermometer	Subject : Engineering Thermodynamics Class: S.E. Mechanical Engg Name of Unit: Fundamentals of Thermodynamics
3	Use of Python Programming Language	To develop programming practice	Subject: Engineering Materials & Metallurgy
4	Use of Python Programming Language	To develop programming practice	Subject: Fluid Mechanics
5	Arranging Industrial Visit	To acquainted with real world Problem	Subject: General Visit to Industry under M.E.S.A. Crest Precision Screws Pvt Ltd., Chakan
6	Arranging Industrial Visit	To acquainted with real world Problem	Subject: Lashkar Water Pumping Station
7	Arranging Industrial Visit	To acquainted with real world Problem	Subject: Solid Mechanics ELCA Laboratories, Plot No: Gen-62, TTC Industrial Area, MIDC, Mahape, Navi Mumbai-
8	Case Based Study	To able to implement in product design and development	Subject : Solid Modeling and Drafting
9	Use of Research Paper	To understand and implement Product Data Exchange in CAD environment	Subject : Solid Modeling and Drafting
10	Use of CATIA - 3D Modeling Software	To able to apply software tool tools in product design and assembly	Subject : Solid Modeling and Drafting
11	Use of Models in teaching	To visualize the failure during design process	Subject : Design of Machine elements Class: T.E. Mechanical Engg Name of Unit: All sis units



Innovative Practices in
Teaching Learning
Sample Reports

Use of Innovative Teaching Methodology

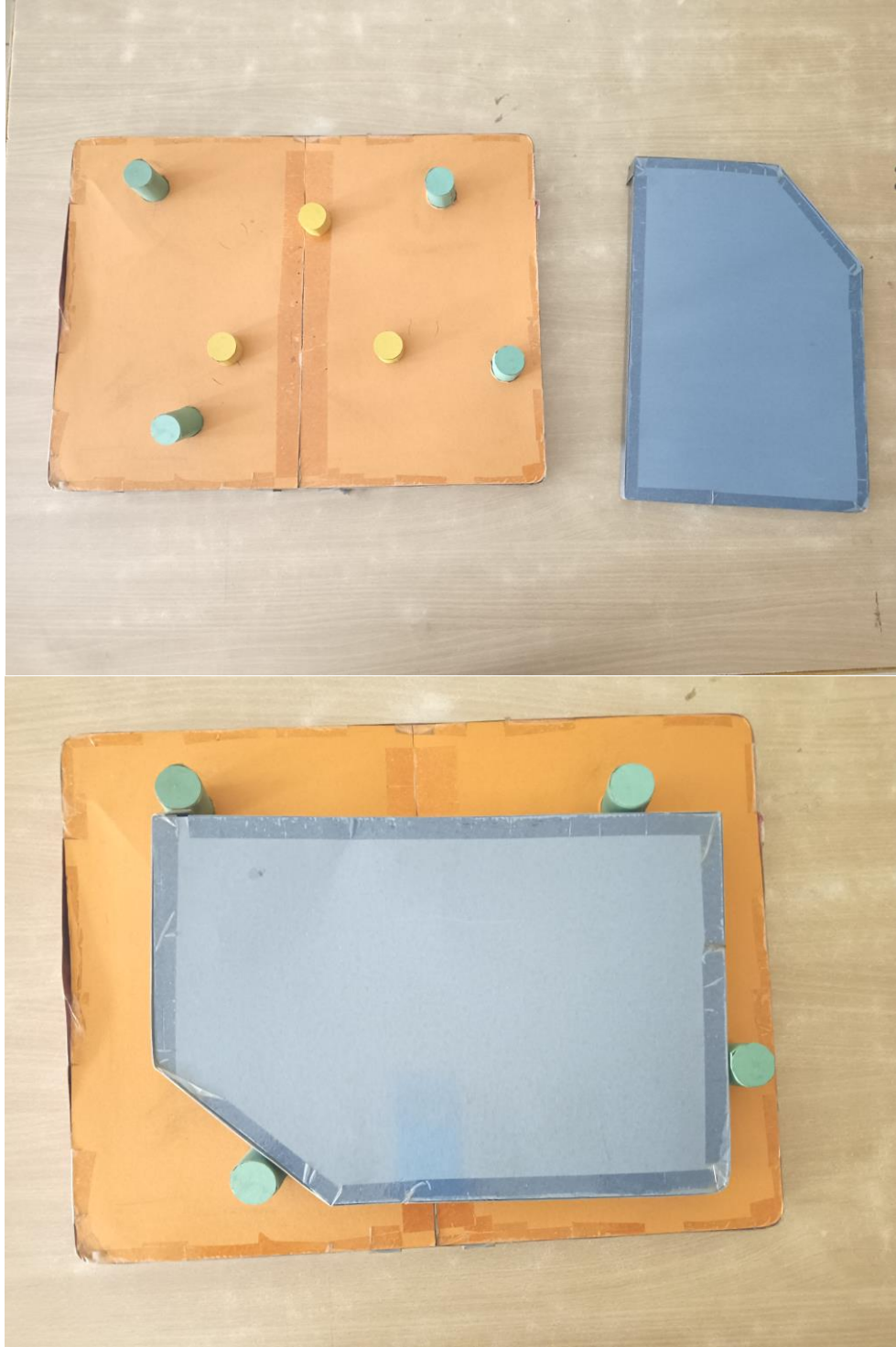
Topic: Degree of Freedom (3-2-1 Principle)

Subject: Machining Science & Technology

Class: T.E. Mechanical Engg.

Tool Used: Physical Model

Model Prepared by: Prof. Naresh Dhamane



Use of Innovative Teaching Methodology

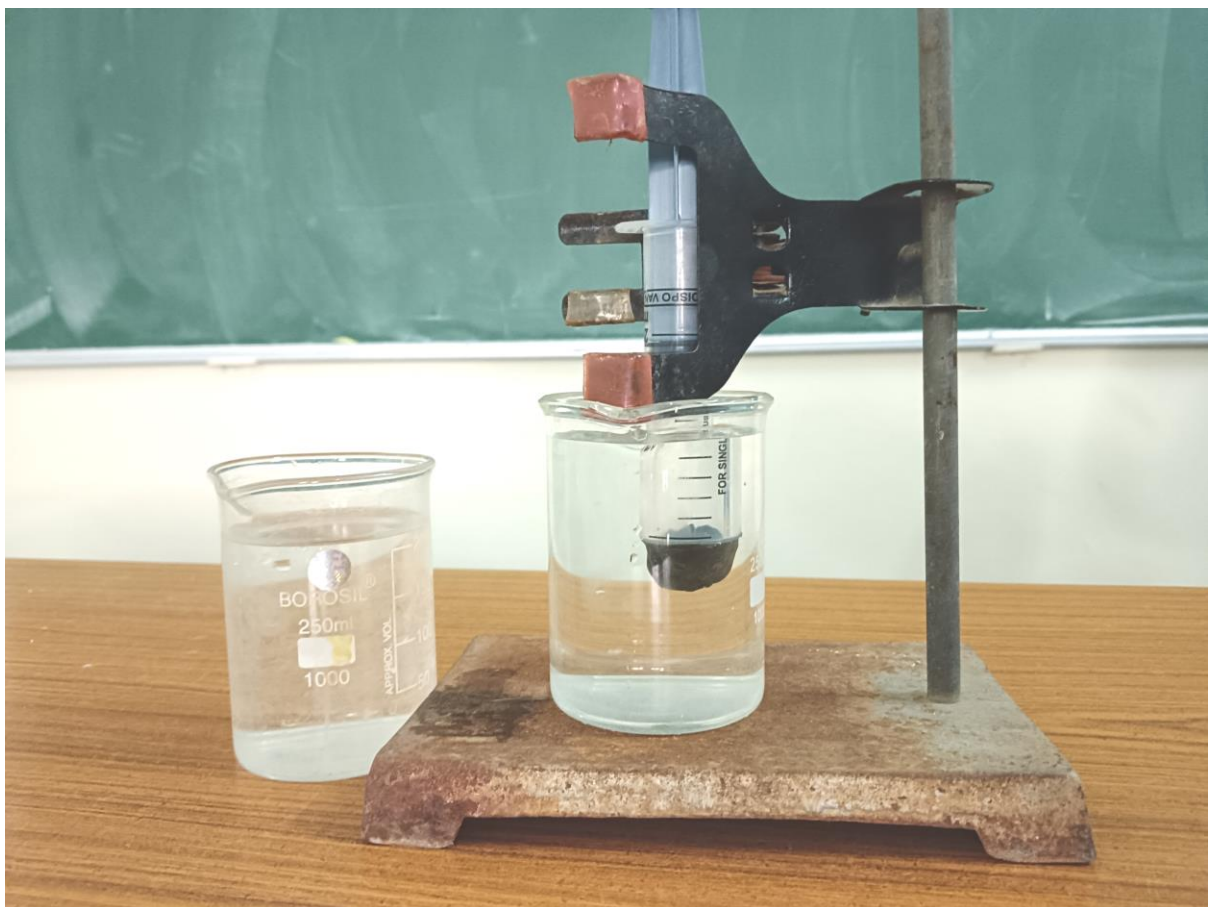
Topic: Constant Pressure Temperature Measurement

Subject: Engg Thermodynamics

Class: S.E. Mechanical Engg.

Tool Used: Demonstration

Setup Prepared and demonstrated by: Prof. Naresh Dhamane



Use of Innovative Teaching Methodology

Topic: Gears, Bearing Design

Subject: Design of Machine elements

Class: T.E. Mechanical Engg.

Tool Used: Models for couplings, springs, clutches, brakes

Models Maintained by: Prof. D.P.Yesane



NAME OF LAB - FLUID MECHANICS

EXPERIMENT NUMBER - 03

NAME OF EXPERIMENT - PYTHON PROGRAMMING OF FLUID SYSTEM

NAME OF STUDENT -

ROLL NUMBER -

BRANCH & YEAR -

ACADEMIC YEAR -

TERM - II

NUMERICAL EXAMPLE: (A1 BATCH ONLY)

Calculate the capillary rise in a glass tube of $(2.5+0.01*X)$ mm diameter when immersed vertically in (a) water and (b) mercury. Take surface tensions $\sigma = 0.0725$ N/m for water and $\sigma = 0.52$ N/m for mercury in contact with air. The specific gravity for mercury is given as 13.6 and angle of contact = 130°

```
print("INPUT OF PROGRAMME")
N = str(input("\nEnter Name of Student:"))
R = int(input("\nEnter Roll Number of Student:"))
B = str(input("\nBranch of Student:"))

d = float(input("Enter the value of Diamter of Tube"))
d = 2.5 * 0.001
sw = 0.0725
sm = 0.52
den = 1000
g = 9.81

h = (4*sw) / (den*g*d)

print("OUTPUT OF PROGRAMME")
print("\nName of Student:",N)
print("\nEnter Roll Number of Student:",R)
print("\nBranch of Student:",B)

print("\nCapillary Rise for Water is in meters is",h)

v = h*100

print("\nCapillary Rise for Water is in centimeters is",v)

cs = -0.642
den2 = 13600
hm = (4*sm*cs) / (den2*g*d)
```




```
print("\nCapillary Rise for Mercury is in meters is",hm)
```

```
vm = hm*100
```

```
print("\nCapillary Rise for Mercury is in centimeters is",vm)
```



INPUT OF PROGRAMME

Enter Name of Student:jj

Enter Roll Number of Student:12

Branch of Student:mech

Enter the value of Diamter of Tube2.5

OUTPUT OF PROGRAMME

Name of Student: jj

Enter Roll Number of Student: 12

Branch of Student: mech

Capillary Rise for Water is in meters is 0.011824668705402648

Capillary Rise for Water is in centimeters is 1.1824668705402648

Capillary Rise for Mercury is in meters is -0.004003597769382983

Capillary Rise for Mercury is in centimeters is -0.4003597769382983

