Yashoda Shikshan Prasarak Mandal's

Yashoda Technical Campus,Satara

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Faculty of Engineering
Department of Computer Science and Engineering

Academic Year 2024-25

Report
On
Continue Assessment Activity

Day & Date: Wednesday, 20 Nov 2024

Name of Activity: Problem Solving

Name of the Faculty Coordinator: Ms. S.R. Sankpal

Class & Division: - S.Y. B. Tech

Semester: - III

Name of subject: - Engineering Mathematics-III

Subject Code: - BTBS301

Total no of Students Present: - 148

CO and PO Mapped with activity: -
CO1, CO2, CO4, CO5
PO1-Engineering Knowledge
PO2-Problem analysis
PO4- Conduct investigations of complex problems
PO9- Individual and Team
PO12-Life-long learning

Rubrics of Activity: -
Stepwise solution of Example 10M
Student should solve example in given time 5M
Representation of Example 10M
Total 25M

Objectives:

1. Apply mathematical concepts and techniques to solve real-world engineering problems.
2. Develop problem-solving skills, critical thinking, and analytical reasoning in the context of engineering mathematics.
3. Foster collaboration and communication among students to tackle complex engineering problems.

Outcomes:

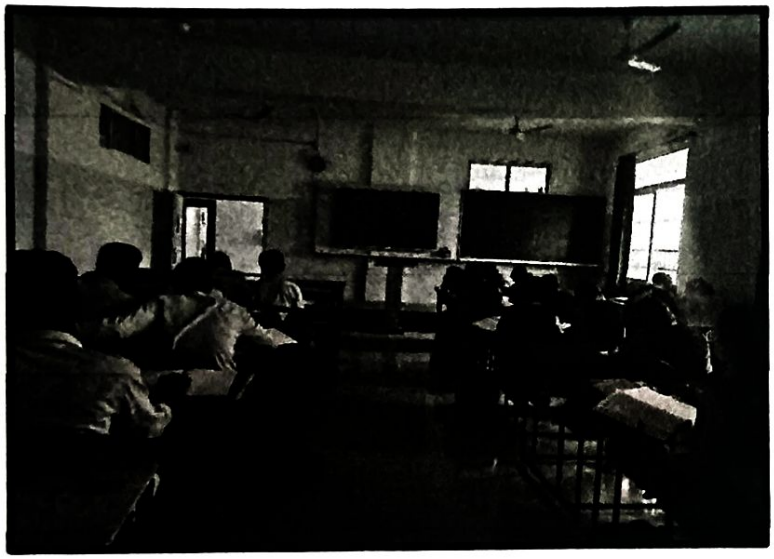
1. Students become more engaged and motivated to learn, as they see the relevance and importance of engineering mathematics.

2. Students develop a more creative and innovative mindset, exploring new approaches and solutions to engineering problems.

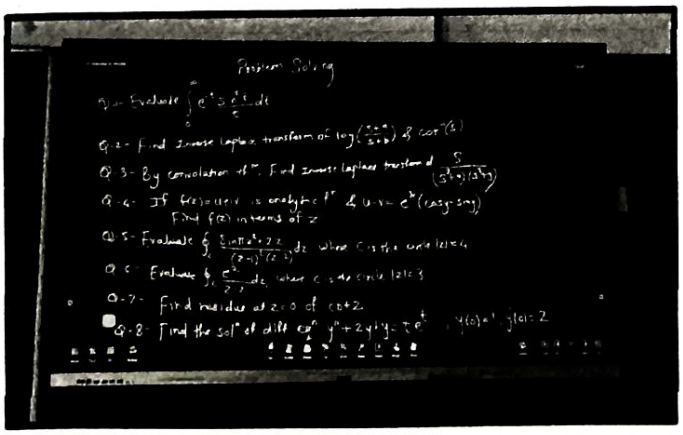
3.Students engage with difficult problems and found a way to solve it.

Photographs: -

1.



2.



Siddhi.
Subject Teacher

YSPM'S Yashoda Technical Campus
Faculty of Engg.(CSE)
Satara

HOD
H.O.D.
Computer Science & Engg.
YSPM'S Yashoda Technical Campus, Satara

Questions. (Problem solving)

Q. 1. Evaluate $\int_0^\infty e^{-t} \frac{\sin^2 t}{t} dt$.

20/25

$\longrightarrow$ Let $f(t) = \sin^2 t = \frac{1}{2}[1 - \cos 2t]$

$$L\{f(t)\} = L\{\sin^2 t\} = \frac{1}{2} L\{1 - \cos 2t\}$$

$$= \frac{1}{2}\left[\frac{1}{s} - \frac{1}{s^2+4}\right]$$

$$= F(s)$$

$$L\left\{\frac{f(t)}{t}\right\} = L\left\{\frac{\sin^2 t}{t}\right\} = \int_0^\infty F(s)\,ds$$

$$= \int_0^\infty \frac{1}{2}\left[\frac{1}{s} - \frac{s}{s^2+4}\right] ds$$

$$= \frac{1}{2}\left[\log s - \frac{1}{2}\log(s^2+4)\right]_s^\infty$$

$$= \frac{1}{2}\left[\log \frac{s}{\sqrt{s^2+4}}\right]_s^\infty$$

$$= -\frac{1}{2}\log \frac{s}{\sqrt{s^2+4}}$$

By the defin^n of laplace transform.

$$\int_0^\infty e^{-st}\left\{\frac{f(t)}{t}\right\} dt = \int_0^\infty e^{-st}\left\{\frac{\sin^2 t}{t}\right\} dt$$