



DTE Code: EN4139

Samridhi Sarwajanik Charitable Trust's
JHULELAL INSTITUTE OF TECHNOLOGY

An Autonomous Institute affiliated to RTM Nagpur University

Department of Mechanical Engineering

Off Koradi Road, Lonara, Nagpur - 441111.

E-Mail ID : admin@jtnagpur.edu.in Website : www.jtnagpur.edu.in

Vision: The Mechanical Engineering Department strives for making thorough professionals who are employable through quality education.



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Session: 2022-23
Preconception Check

Date and Time	15 JUL 2022, 01:00 am to 02:00 pm
Activity Name	Preconception Check
Subject	Engineering Thermodynamics
Class	Second Year
Activity Type	Preconception Check for subject Knowledge gain
Description	Preconception Check is a teaching method that allows learner to recall what they learnt in previous classes. It can be successfully used as a reflection during classroom teaching.
Objective	To check the students awareness, attentiveness and knowledge gaining capability
Outcome	Following are the outcomes that make 'Preconception Check' be more effective than traditional TL Method 1. Increase student engagement 2. Less Us, More Them 3. Improve Interaction with the students

Evidences

- Distribute the papers
- **Red and Green Cards**
- Complete the T/F assessment on your own.
- Raise Green Card for True
- Raise Red Card for False

Subject Teacher
Rahul Waghmare (ET)



Head of Department
Prof. Prakash V Dhopte



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Problem Based Learning

Date and Time	18 Mar 2023, 11:00 am to 12:00 pm
Activity Name	Problem Based Learning
Subject	CAD
Class	Final Year
Description	For generating numerical solution of real life or engineering problems. computational thinking can be opted. It is problem based learning process in which problem is formulated, mathematical model is developed or selected and suitable computational/numerical method is implemented to solve the problem. Solution obtained from developed programming logic is testing or validated by suitable means.
Evidences	1. Problem statement a. Determine the volumetric strain in thin cylindrical pressure vessel of given dimensions and material for a specified charging pressure. b. For 2-D stress condition, determine maximum normal and shear stresses alongwith orientation of planes on which they occur. Also transform the plane stress condition on inclined plane with given plane. 2. Problem Solving Steps 1. Understanding the problem/Problem Definition 2. Problem formulation 3. Apply suitable numerical/ computational method for problem solving 4. Development of programming logic or algorithm for numerical method 5. Develop and execute syntax/program in software 6. Validation of solution 7. Development of user friendly interface. 3. Program and Output <pre>function [sigma_mohr,tau_mohr,sigma_1,sigma_2,tau_1,tau_2,... ,center_circle,phi]=mohr(sigma_x,sigma_y,tau_xy,gridsize) phi=linspace(0,pi,gridsize); sigma_mohr=(sigma_x+sigma_y)/2+(sigma_x-sigma_y)/2*cos(2*phi)+... tau_xy*sin(2*phi); tau_mohr=-(sigma_x-sigma_y)/2*sin(2*phi)+... tau_xy*cos(2*phi); sigma_1=(sigma_x+sigma_y)/2+sqrt(((sigma_x-sigma_y)/2)^2+tau_xy^2); sigma_2=(sigma_x+sigma_y)/2-sqrt(((sigma_x-sigma_y)/2)^2+tau_xy^2); tau_1=sqrt(((sigma_x-sigma_y)/2)^2+tau_xy^2); tau_2=-tau_1; center_circle=(sigma_x+sigma_y)/2; hold on; plot(sigma_mohr,tau_mohr,'b'); end</pre>

Subject Teacher

Bhushan Deshmukh (CAD)

Head of Department

Prof. Prakash V Dhopte



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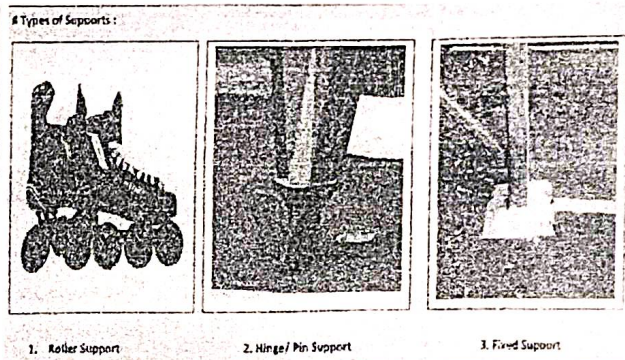
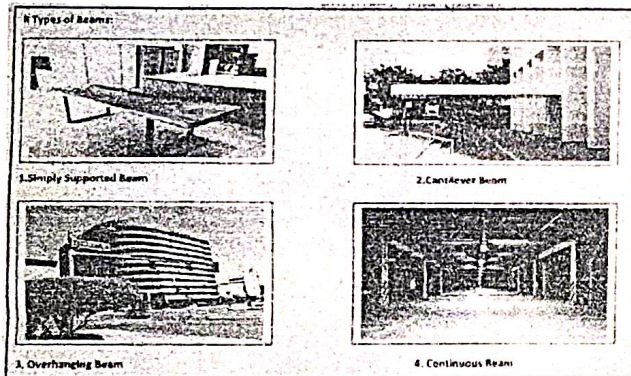
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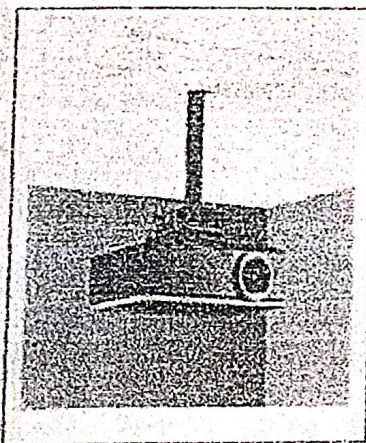
Survey

Date and Time	25 Jan 2022. 02:00 pm to 04:00 pm
Activity Name	Survey
Subject	MP
Class	Second Year
Activity Type	Survey of the components/system with respect to industry
Objective	To make the students work in team, enhancing their skills and knowledge about availability of components/systems.
Outcome	Student's ability to work in Team, the current products in market, their competence and costing w.r.t industry needs.

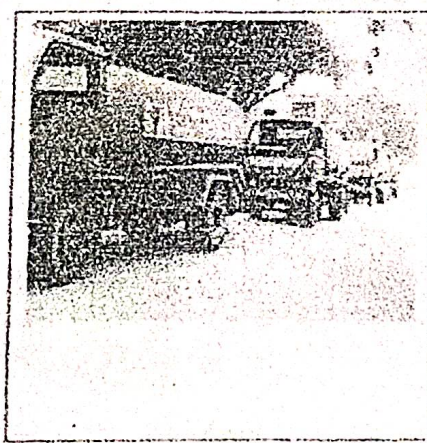
Evidences



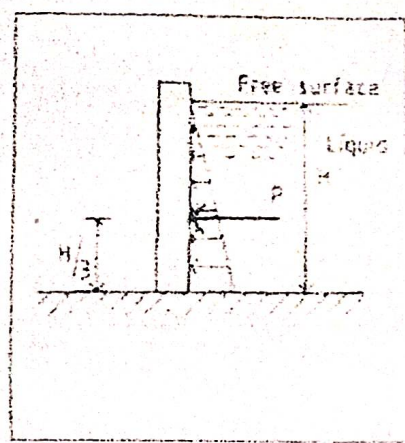
Types of Loading :



1. Point load



2. Uniformly Distributed Load (UDL)



3. Uniformly Varying Load (UVL)

Subject Teacher
Prakash Dhopte (IM)

Head of Department
Prof. Prakash V Dhopte



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Tactical to Practical

Date and Time	18 Mar 2023, 02:00 pm to 04:00 pm
Activity Name	Tactical to Practical
Subject	Ele. III: Advanced IC Engine
Class	Fourth Year
Description	It is a real life problem based TL Method in which large complex problem is divided into small sections. Initial steps will be fetching data from available parameters. Apply easy to use computer method (Numerical Method). Develop user friendly solution to problem.
Objective	To made students aware about numerical method adopted to solve complex engineering problems.
Outcome	The Tactical to Practical learning is more effective than traditional TL Method which have following results:- 1. Increase Engagement 2. Problem solving techniques 3. Improve knowledge 4. Improve interaction with the students

Evidences

1. Problem statement

An Otto cycle engine has a bore of 80 mm and stroke of 85 mm. the clearance volume of engine is 0.06 litres. The actual efficiency of engine is 22%.

Assume $\gamma = 1.4$, Determine:

1. Compression ratio
2. Air standard efficiency

Relative efficiency of the engine.

2. Algorithm development

1. Understanding of the problem.
2. Use of suitable numerical method
3. Development of algorithm
4. Program writing
5. Solution
6. Development of user friendly interface.

3. Solution

```

1  // Otto Cycle Efficiency and mean effective pressure
2  //
3  //
4  //
5  //
6  //
7  //
8  //
9  //
10 //
11 //
12 //
13 //
14 //
15 //
16 //

```

Subject Teacher
Anurag Karande (AIC)

Head of Department
Prof. Prakash V Dhopte



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Think-Pair-Share (TPS)

Date and Time	12 Feb 2023, 02:00 pm to 04:00 pm
Activity Name	Think-Pair-Share (TPS)
Subject	Ele. I: Power Plant Engineering
Class	Fourth Year
Description	Think-Pair-Share (TPS) is a collaborative learning strategy in which students work together to solve the problem or answer the question about an assigned reading. This technique requires students to (1) think individually about a topic or answer a question and (2) share ideas with classmates
Strategies	➤ Static and dynamic analysis ➤ Assign partners/change partners ➤ Give thinking time for a said topic ➤ Monitor discussion ➤ Call on random students during a share process of said topic ➤ Make sure all students are participating in discussion
Outcome	Student will:- 1. More Participation in classroom 2. more communication with class other students 3. get more opportunity to learn from each other

Evidences

Work-Sheet

Name _____		Date _____
THINK, PAIR, SHARE		
Question or topic _____		
What I think	What my partner thinks	What we will share

Sanjay
Subject Teacher
Sanjay Sajjanwar (PPE)

Prakash
Head of Department
Prof. Prakash V Dhopte



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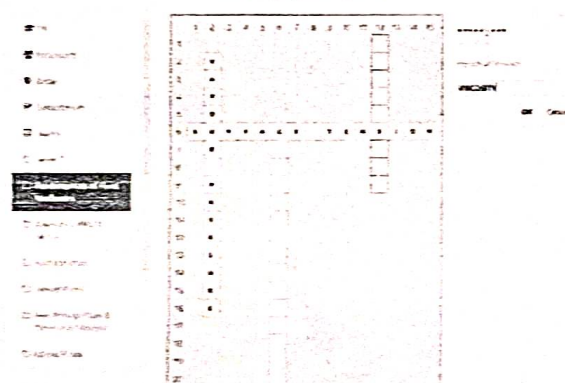
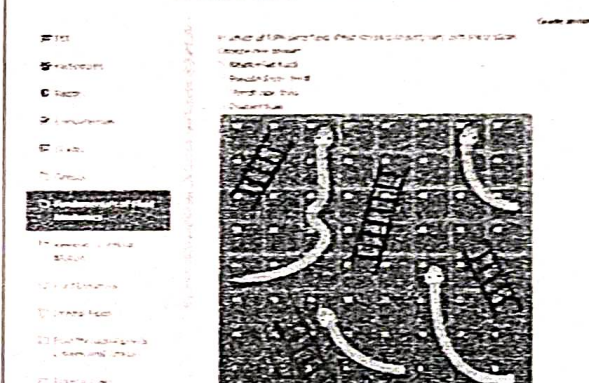
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Game Pedagogy

Date and Time	20 Feb 2023, 02:00 pm to 03:00 pm
Activity Name	Game Pedagogy
Subject	Energy Conversion II
Class	Third Year
Description	Pedagogy is a term that refers to both the art and the science behind how educators teach. In the context of game-based learning, pedagogy involves integrating the principles of effective teaching and learning with the unique features of games, such as interactive storytelling, problem-solving challenges, and immersive environments, to create engaging and compelling learning experiences.
Outcome	The game based learning is more effective than traditional TL Method which have following results:- 1. Increase Engagement 2. Motivate with no risk 3. Improve performance and knowledge 4. Improve interaction with the students

Evidences

Cross Word	Snakes & Ladder
	

Subject Teacher
Dr. Vandita Shahu (EC-II)

Head of Department
Prof. Prakash V Dhopte