

Mechanical Engineering Department

Academic Year – 2020-21	Class: F.E.
Semester – II	Date : 06/07/2021
CO: C01, C03, C04, C05,	PO: PO1, PO9, PO10, PO12

Innovative Teaching Methods

Title of Innovation method/activity: Innovative Teaching Learning Method (Miro Mind Map).

1. Name of Faculty: Ms. G. M. Shirsat
2. Subject: Engineering Graphics
3. Objective of Method:
 - I. To improve information recording
 - II. To shows how different facts and ideas are related
 - III. To enhances creative problem solving

4. Topic Covered through Activity

1. Basics of Engineering Graphics
2. Conic Sections (Ellipse, Parabola and Hyperbola)
3. Engineering Curves except conic sections
4. Principles of Projections
5. Orthographic Projections
6. Isometric Projections

5. Description of method with Benefits (8 – 10 lines):

Mind mapping is simply a diagram used to visually represent or outline information. It is a powerful graphic technique you can use to translate what's in your mind into a visual picture. Since mind mapping works like the brain does it allows you to organize and understand information faster and better.

Benefits:

- I. Mind mapping increases your creativity and productivity because it's an excellent tool to let you generate more ideas, identify relationships among the different data and information, and effectively improve your memory and retention.
- II. This activity allows you to quickly generate creative and even unique ideas in less time.
- III. By using a single page or space you can already place a huge amount of information and check its connections.
- IV. The use of colours, images, and keywords in mind mapping aids in enhancing your memory

and retention.

Roles and Responsibilities

- **Teacher**
 - Provide the study material.
 - Prepare assessment methodology.
 - Introduce basic concept, different Curves , Orthographic and Isometric Projections to students.
 - Introduce the MIRO platform for making effective Mind-Map by actually demonstrating how to apply the same on this platform

- **Student**
 - Actively participate in group and contribute by means of discussion, hand-out.
 - Go through all the material provided on topics
 - Once topic assigned, understand it and work accordingly.
 - After this each student should be paired with another student or a small group and discuss any doubt with his partner. Then students have to discuss individually within the group.
 - Draw the mind map on MIRO and submit the PDF/image on Google classroom

- **Group**
 - Form the group of members as per the guidelines by teachers.
 - Assign the points within the group to achieve the task within stipulated time period.

6. Assessment Rubrics

Assessment of Mind Map drawn on MIRO platform will be done according to Rubrics given below.

Criteria	Excellent	Good	Average	Poor
Structure	Mark- 4	Mark- 3	Mark- 2	Mark- 1
Exploratory	Mark- 4	Mark- 3	Mark- 2	Mark- 1
Relationships	Mark- 4	Mark- 3	Mark- 2	Mark- 1
Connections between Sections	Mark- 4	Mark- 3	Mark- 2	Mark- 1
Extent of Coverage	Mark- 4	Mark- 3	Mark- 2	Mark- 1

(A) Structure: Non-linear structure provides a complete picture of your ideas.

(B) Exploratory: Map shows complex thinking about the meaningful relationships between ideas, themes, and the framework.

(C) Relationships: Relative importance of ideas is indicated and both simple and complex relationships are mapped very effectively.

(D) Connections: Information is presented clearly and allows for a high level of understanding.

(E) Extent of Coverage: Map shows complex thinking about the meaningful relationships between ideas, themes, and the framework.

7. Evaluation sheet of attendee

Sr. No	Rol No.	Name of students	A 4M	B 4M	C 4M	D 4M	E 4M	Total 20	Target level
55	1	Kalaskar Aditya Govinda	4	4	3	4	3	18	Y
56	2	Kankariya Shrushti Kalpesh	4	4	3	4	3	18	Y
57	3	Karegaonkar Manish Sunil	4	4	3	4	3	18	Y
58	4	Kedar Siddhesh Vishwanath	4	4	3	4	3	18	Y
59	5	Keskar Om Mandar	4	4	4	4	4	20	Y
60	6	Khairnar Premroop Udaykumar	4	4	4	4	4	20	Y
61	7	Khairnar Samruddhi Mahesh	4	4	4	4	4	20	Y
62	8	Khemnar Siddhi Prakash	4	4	4	4	4	20	Y
63	9	Khoje Harshvardhan Ajay	4	4	4	4	4	20	Y
64	10	Kokani Deepak Uttamrao	4	4	4	4	4	20	Y
65	11	Kulkarni Kartiki Rajendra	AB	AB	AB	AB	AB	AB	AB
66	12	Kumar Rohit Kumar Chhajju Ram	AB	AB	AB	AB	AB	AB	AB
67	13	Kumar Varun Ashwini Kumar	4	4	4	4	4	20	Y
68	14	Kushare Chaitali Ganesh	4	4	4	4	4	20	Y
69	15	Mahajan Sagar Rajaram	4	4	4	4	4	20	Y
70	16	More Pratik Umesh	4	4	4	4	4	20	Y
71	17	Naik Tushar Vinod	4	4	4	4	4	20	Y
72	18	Narnaware Kunika Ratnakar	4	4	4	4	4	20	Y
73	19	Nemade Riya Pravin	4	4	4	4	4	20	Y
74	20	Pagare Om Sanjay	4	4	4	4	4	20	Y
75	21	Patil Kasturi Kiran	3	3	3	3	3	15	Y

76	22	Patil Suyog Dagadu	3	3	3	3	3	15	Y
77	23	Patil Umesh Randhir	3	3	2	3	2	13	Y
78	24	Gahiwal Tejas Devidas	3	3	2	3	2	13	Y
79	25	Gharate Tejaswini Hemant	AB	AB	AB	AB	AB	AB	AB
80	26	Ghuge Pranav Dnyaneshwar	AB	AB	AB	AB	AB	AB	AB
81	27	Ghule Pranay Balasaheb	AB	AB	AB	AB	AB	AB	AB
82	28	Hirani Krishna Hemant	AB	AB	AB	AB	AB	AB	AB
83	29	Jadhav Tejas Uttamrao	4	4	4	4	4	20	Y
84	30	Jadhav Yogini Dhanraj	4	4	4	4	4	20	Y
85	31	Jagtap Tanishka Devendra	4	4	4	4	4	20	Y
86	32	Kakad Atharva Manik	2	2	2	2	2	10	N
87	33	Kale Siddesh Sanjay	2	2	2	2	2	10	N
88	34	Kaloge Ashutosh Anil	2	2	2	2	2	10	N
89	35	Kapadnis Apurva Anant	2	2	2	2	2	10	N
90	36	Khambait Ajay Chandrakant	3	3	2	3	2	13	Y
91	37	Khambait Bhavik Bhagwan	AB	AB	AB	AB	AB	AB	AB
92	38	Kothiya Jaykumar Jagdish	3	3	2	2	2	12	Y
93	39	Magotra Saksham Magotra Ashwani Kumar	3	3	2	2	2	12	Y
94	40	Maurya Kajal Karamchand	3	3	2	2	2	12	Y
95	41	Mehetre Aman Ganesh	AB	AB	AB	AB	AB	AB	AB
96	42	Mhaisdhune Sahil Vilas	AB	AB	AB	AB	AB	AB	AB
97	43	Mhaske Gaurav Prakash	AB	AB	AB	AB	AB	AB	AB
98	44	Mundaware Lalit Latish	AB	AB	AB	AB	AB	AB	AB
99	45	Bhoi Darshana Sahebrao	4	4	3	4	3	18	Y
100	46	Chavan Lalit Sunil	AB	AB	AB	AB	AB	AB	AB
101	47	Davkar Samruddhi Shashank	4	4	3	4	3	18	Y
102	48	Dhawale Onkar Sarjerao	4	4	3	4	3	18	Y
103	49	Gundecha Prapti Sunil	3	3	2	3	2	13	Y
104	50	Khairnar Savi Vijay	AB	AB	AB	AB	AB	AB	AB
105	51	Naik Sanika Balasaheb	AB	AB	AB	AB	AB	AB	AB
106	52	Nalkar Anuja Anil	AB	AB	AB	AB	AB	AB	AB
107	53	Patil Mayuresh Somnath	3	3	2	2	2	12	Y
108	54	Kush Patel	3	3	2	2	2	12	Y

DIV C

Sr. No.	Roll No.	Name of students	A 4M	B 4M	C 4M	D 4M	E 4M	Total 20	Target level
1	1	Patil Vedant Sunil	4	4	3	4	3	18	Y
2	2	Patil Yashwant Uttam	4	4	3	4	3	18	Y
3	3	Pawar Aishwarya Avinash	4	4	3	4	3	18	Y
4	4	Pawar Kushal Bhagwat	AB	AB	AB	AB	AB	AB	AB
5	5	Pawar Sanket Vijayrao	AB	AB	AB	AB	AB	AB	AB
6	6	Pawar Shantanu Sanjay	4	3	3	3	3	16	Y
7	7	Pawar Vaishnavi Shrirang	4	3	3	3	3	16	Y
8	8	Potdar Ojaswini Anil	4	3	3	3	3	16	Y
9	9	Ramzan Sahil Mohammad	3	3	3	3	3	15	Y
10	10	Rane Umesh Virendra	4	4	3	3	3	17	Y

11	11	Sathe Prathamesh Shashank	4	4	3	3	3	17	Y
12	12	Shewale Pranjal Vijay	3	3	3	3	3	15	Y
13	13	Shriwastav Sayali Ratan	4	4	4	4	4	20	Y
14	14	Sonule Sumit Bajirao	AB	AB	AB	AB	AB	AB	AB
15	15	Sutrave Aishwarya Arun	4	4	4	4	4	20	Y
16	16	Takane Chetana Laxmikant	4	4	4	4	4	20	Y
17	17	Tandale Siddhi Mukesh	3	3	3	3	2	14	Y
18	18	Tarle Jajwalya Santosh	3	3	3	3	2	14	Y
19	19	Thombare Geeta Kishor	3	3	3	3	2	14	Y
20	20	Uphade Abhishek Sunil	3	3	3	3	2	14	Y
21	21	Vaishnav Pragati Sandip	4	4	3	4	3	18	Y
22	22	Vispute Prajwal Kishore	4	4	3	4	3	18	Y
23	23	Warde Vishal Ankush	4	4	3	4	3	18	Y
24	24	Pathan Imran Shakil	AB	AB	AB	AB	AB	AB	AB
25	25	Patil Harshali Jitendra	4	4	4	4	4	20	Y
26	26	Patil Pratik Yogesh	AB	AB	AB	AB	AB	AB	AB
27	27	Patil Yashwardhan Pramod	4	4	4	4	4	20	Y
28	28	Rajole Om Anil	4	4	4	4	4	20	Y
29	29	Randhir Pranjal Shashikant	AB	AB	AB	AB	AB	AB	AB
30	30	Salunke Janavhi Prakash	4	4	4	4	4	20	Y
31	31	Sangale Hemant Dattatray	4	4	4	4	4	20	Y
32	32	Sangle Sakshi Gorakshnath	4	4	4	4	4	20	Y
33	33	Shinde Rohit Somnath	AB	AB	AB	AB	AB	AB	AB
34	34	Shirsath Roshani Suresh	AB	AB	AB	AB	AB	AB	AB
35	35	Singh Arjun Mahy Pal	4	4	3	3	3	17	Y
36	36	Sonawane Abhishek Shriram	4	4	3	4	3	18	Y
37	37	Sonawane Bhuvanesh Dhanraj	AB	AB	AB	AB	AB	AB	AB
38	38	Suryawanshi Aniket Rajesh	AB	AB	AB	AB	AB	AB	AB
39	39	Tambe Rahul Kailas	AB	AB	AB	AB	AB	AB	AB
40	40	Tarle Akash Balasaheb	AB	AB	AB	AB	AB	AB	AB
41	41	Vasaikar Yogendra Prashant	AB	AB	AB	AB	AB	AB	AB
42	42	Velis Siddhant Dnyaneshwar	AB	AB	AB	AB	AB	AB	AB
43	43	Wagh Rushikesh Madan	AB	AB	AB	AB	AB	AB	AB
44	44	Nigal Sahil Anil	2	2	2	2	2	10	N
45	45	Pawar Rutik Sahebrao	AB	AB	AB	AB	AB	AB	AB
46	46	Shaikh Sajid Yusuf	4	4	3	3	3	17	Y
47	47	Shinde Prajwal Sunil	AB	AB	AB	AB	AB	AB	AB
48	48	Sonawane Saurabh Yadav	AB	AB	AB	AB	AB	AB	AB
49	49	Udamale Harshad Anil	AB	AB	AB	AB	AB	AB	AB
50	50	Uphade Ajinkya Uttamrao	AB	AB	AB	AB	AB	AB	AB
51	51	Uphade Nilesh Vishwas	AB	AB	AB	AB	AB	AB	AB
52	52	Patil Sarvesh Tushar	AB	AB	AB	AB	AB	AB	AB
53	53	Gangurde Shital	AB	AB	AB	AB	AB	AB	AB
54	54	Yuvraj Pagar	AB	AB	AB	AB	AB	AB	AB
Number Of Students Appeared For The Exam									69
Total Marks Scored By All Students									1166
Average Marks									16.89
Target Value									12

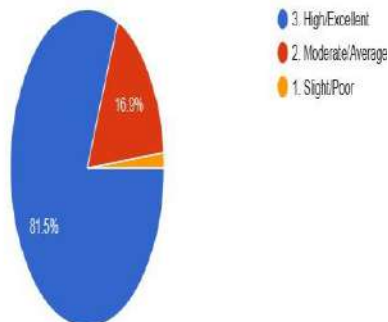
Number Of Students Scoring More Than Target Value	64
Percentage Of Students Scoring More Than Target Value	92.75

8. Impact Analysis

Questions	3 - High/ Excellent (%)	2 - Moderate/ Average (%)	1 - Slight/ Poor (%)
Q.1 Did you understand the cover and objective of the Mindmap by MIRO task?	81.5	16.9	1.5
Q.2 Do you find that methodology is helpful to cover the content of syllabus?	81.5	18.5	0
Q.3 Does this helps you for building a good team work?	83.1	16.9	0
Q.4 Does the content covered is relevant and helpful for life long learning	81.5	16.9	1.5
Q.5 Did you want us to conduct such activity again	72.3	26.2	1.5

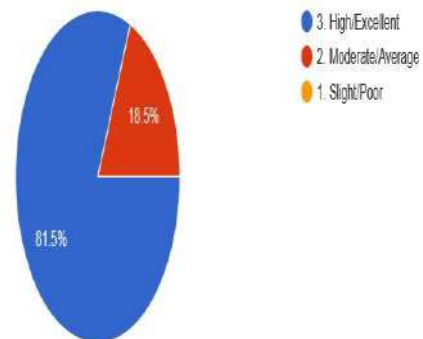
Q.1 Did you understand the cover and objective of the Mindmap by MIRO task?

65 responses



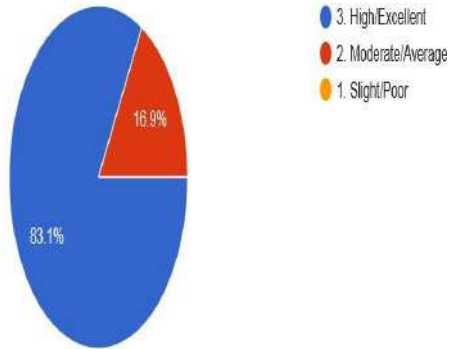
Q.2 Do you find that methodology is helpful to cover the content of syllabus?

65 responses



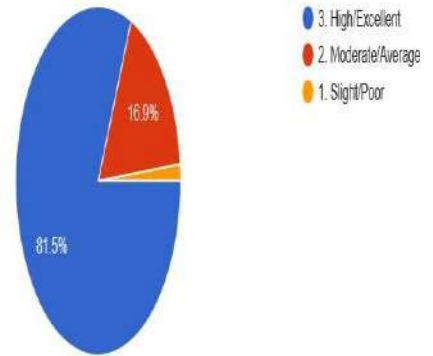
Q.3 Does this helps you for building a good team work?

65 responses



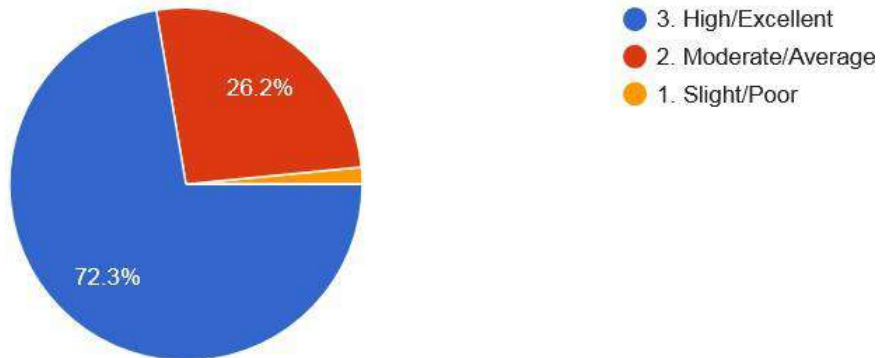
Q.4 Does the content covered is relevant and helpful for life long learning

65 responses

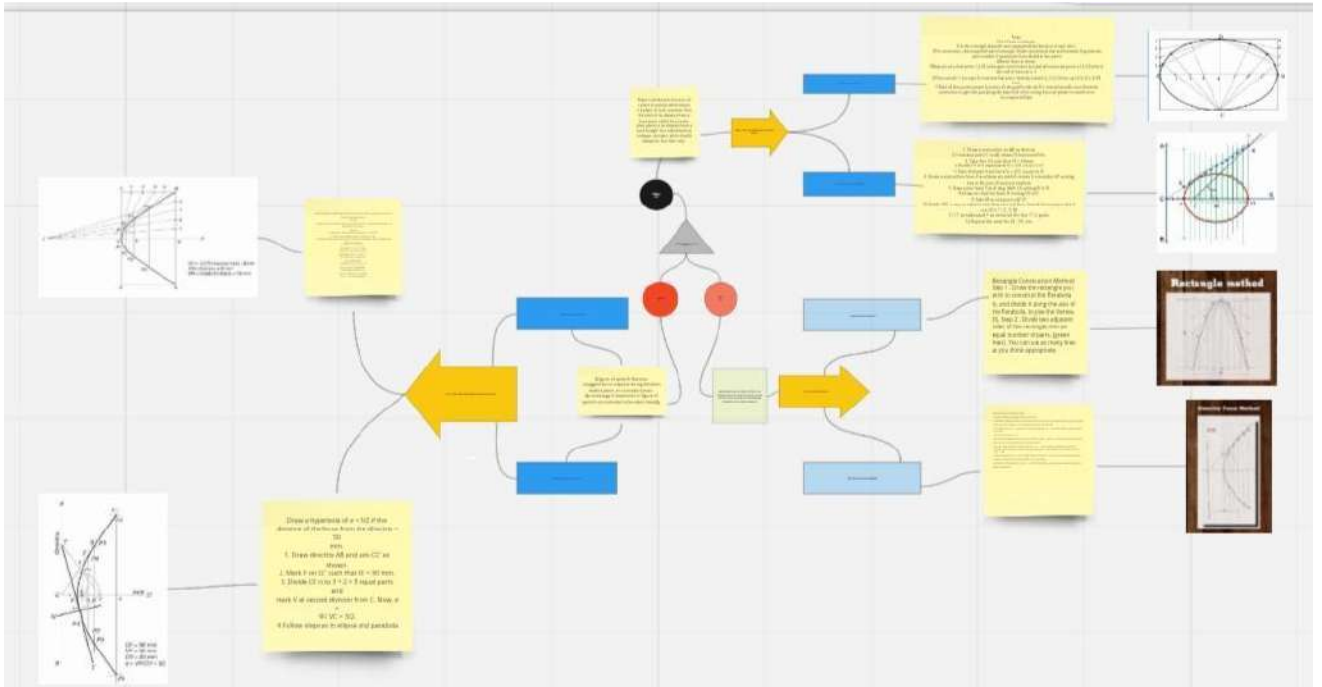


Q.5 Did you want us to conduct such activity again

65 responses



9. Activity Picture



Access your boards faster by installing the Miro app on your device.

miro Untitled

Frame 1

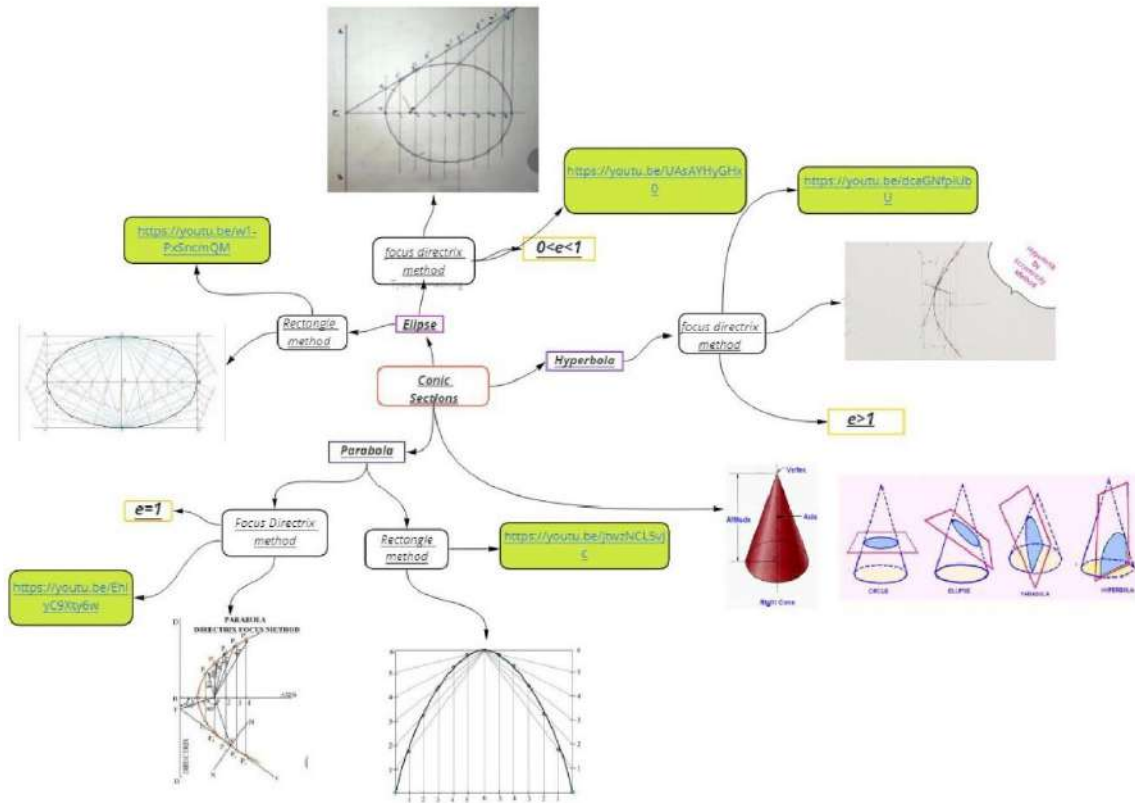
Orthographic projections

- Projection of plane**
 - Orthographic projection
 - Auxiliary projection
- Projection of line**
 - Orthographic projection
 - Auxiliary projection
- Projection of point**
 - Orthographic projection
 - Auxiliary projection

Sectional View: full sectional view, half sectional view, revised section, removed section.

Projection of Line:

- a line inclined to both HP and VP
- a line parallel to VP and inclined to HP
- a line inclined to VP and parallel to HP
- a line inclined to HP and parallel to VP
- hidden line



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10. For review and critique contact: e-mail address of faculty & HOD
shirsat.gavatri@kbtcoe.org, hod.mech@kbtcoe.org

Ms. G. M. Shirsat
 Subject In charge

Dr. V. C. Shewale
 H.O.D