



## **Mechanical Engineering Department**

Academic Year: 2020-21

Class: FE (Div D)

Course Outcome: CO1          Programme Outcome: PO1, PO2, PO7, PO9, PO10 and PO12

Date:07/03/2021

## **Innovative Teaching Method**

**Title of Innovative teaching method:** Crossword Puzzle

**1. Name of faculty:** Mr. R. M. Ghogare

**2. Subject:** SYSTEMS IN MECHANICAL ENGINEERING

**3. Objective of method:**

- I. Think individually and improve their problem solving skills.
- II. Improve their test skills.
- III. Recall information easily.
- IV. Increase their vocabulary.
- V. Develop critical thinking.

**4. Topic covered through activity:** ENERGY SOURCES AND THERMAL POWER PLANTS

**5. Description of method with benefits**

Students are advised to solve crossword puzzle on: Basics Energy, Energy Conversion and Power plants. Hints of puzzle are based on knowledge of power plant as per scope of syllabus

Benefits:

- I. It will increase vocabulary of students
- II. Crossword puzzle is advantageous in self-correcting method due to the length of each word and the overlap of each answer with other answers.
- III. It will help students to introduce students to different parts of power plant

**6. Roles and responsibilities:**

Teacher

- I. Introduce basic aspects of powerplant to students theoretically
- II. Ask them to go through virtual power plant visit to know more about different parts of power plant
- III. Provide crossword puzzle to students

IV. Provide crossword puzzle to students and also provide marks after assessment of crossword

Student

- I. Understand basics Energy, Energy conversions, power plant and its different essential parts.
- II. Attempt crossword puzzle and submit hard copy to subject teacher.

**7. Assessment tools:**

Assessment of following crossword puzzle will be done. Correct answer of each hint will give 1 mark.

**CROSS WORD PUZZLE ON ENERGY SOURCES AND THERMAL POWER PLANTS**

NAME-	
ROLL NO-	
DIVISION-	
SUBJECT-	

(CLUES ARE ON NEXT PAGE)

### Across

1. EQUIPMENT THROUGH WHICH RESIDUAL BURNT GASES ARE EXPELLED OUT
8. RESOURCES THAT ARE NOT REPLACEABLE AFTER THEY HAVE BEEN USED UP AND NEED TO BE CONSERVED
11. RATE AT WHICH WORK IS DONE
12. .... TOWER IS A HEAT REJECTION DEVICE THAT REJECTS WASTE HEAT TO THE ATMOSPHERE THROUGH THE COOLING OF A WATER STREAM TO A LOWER TEMPERATURE
13. ENERGY THAT COMES FROM HEAT
16. COMBINATION OF POTENTIAL AND KINETIC ENERGY
17. DEVICE THAT CONVERTS HEAT ENERGY INTO MECHANICAL ENRGY
20. ROLLER COASTER AT THE TOP HILL IS EXAMPLE OF ———— ENERGY

### Down

2. RATIO OF OUTPUT AND INPUT
3. EQUIPMENT WHERE STEAM LOSSES HEAT
4. WATER IN A GAS PHASE
5. ENERGY THAT IS STORED IN BONDDS
6. THE ABILITY TO DO WORK
7. HEAT PRODUCED BELOW THE EARTH SURFACE
9. IN A POWER PLANT, IT'S WHERE COAL IS BURNED
10. FORCE MULTIPLIED BY DISTANCE
14. DEVICE THAT CONVERTS MECHANICAL ENERGY INTO
15. A UNIT OF ELECTRIC POWER, EQUAL TO ONE JOULE OF WORK PER SECOND, AND NAMED AFTER AN INVENTOR
18. A BALL ROLLING DOWN THE HILL IS EXAMPLE OF ———— ENERGY
19. ROTATING MEMBER USED TO CONVERT POWER FROM ONE DEVICE TO ANOTHER

## 7. Evaluation sheet of Attendee

Roll NO	NAME OF STUDENT	MARKS OUT OF 20
1	AGALE SUMIT SHIVAJI	20
2	AHIRRAO MAYUR KISHOR	14
3	BAIRAGI ROHIT DIPAK	16
4	BAKLIWAL POORVITA MAHESH	20
5	BAVISKAR NACHIKET ARJUN	17
6	BENKE RUTIKA ARVIND	11
7	BHAMARE SURBHI MILIND	AB
8	BORSE SHLOK GANPAT	AB
9	DAWANGE ADITI BHAUSAHEB	13
10	DESHMUKH ATHARVA ANIL	AB
11	DESHMUKH MRUNMAYEE VINOD	15
12	DHAKE YUKTA HARSHAL	08
13	DHOKARE MANSI RAVINDRA	AB
14	DUKALE DEVIDAS BAPU	16
15	FEGADE ASHWINI TUSHAR	17
16	GANGURDE SAMIKSHA SAHEBRAO	18
17	GAWALE PRANJAL KAMLAKAR	16
18	GURADDI SHREYA ASHOK	18
19	HELTE MANISH BANSILAL	AB
20	INGALE SWANAND VASANT	20
21	KALUNGE SWAROOP DNYANESHWAR	19
22	KHETRE SARANG DIGAMBAR	20
23	AHIRE ABHISHEK PANDITRAO	18
24	BANKAR MEDHA SANDIP	18
25	BAWDHANKAR YUGANT RAKESH	AB
26	BHAMARE SUMIT JAGDISH	AB
27	BHAMARE TANVI MANOJ	12
28	BHAMBARE SHUBHAM ANANDA	20
29	BHOSALE TEJAS ANIL	20
30	BHOSALE VIRAJ MAHENDRA	AB

31	CHAUDHARI MOHIT PRAVIN	AB
32	CHAUDHARI SNEHA MANOJ	11
33	DASHPUTE ANUJA SANDEEP	18
34	DEORE NILESH DATTU	AB
35	DESHMUKH RAJ SUDHIR	20
36	DHAWALE RITU SHASHIKANT	AB
37	DIVATE SIDDHESH RAJENDRA	AB
38	DUSE NUPUR VIJAY	18
39	GAHIVADE MAYURI PRAMOD	14
40	GANGURDE NAMRATA SHANTARAM	11
41	AHER ROHAN VIJAY	AB
42	AHIRRAO SHREYAS SANJAY	AB
43	BADGUJAR VAISHNAVI JAGDISH	14
44	BAHARE PRATHAMESH RAJAN	20
45	BHADANGE AVINASH SANTOSH	14
46	BHAMARE RITESH ATUL	17
47	BHOSALE VINIT SATISH	16
48	BHUSNAR TUSHAR SUJIT	AB
49	BORGUDE SNEHAL ANANDRAO	AB
50	CHAUDHARI HARSH PAWAN	16
51	DEORE NACHIKET SAHEBRAO	17
52	DESHMUKH PRATIK RAO	18
53	DHATRAK CHAITALI SOMANTH	09
54	GAMANE RITESH PRAKASH	20
55	GHUMARE SHANTANU NANDKISHOR	18
56	HADPE HARSHAD BALKRUSHNA	17
57	MONICA JAYESH JADHAV	AB
58	RUSHIKESH DHABALE	20
59	OMKAR DHURJAD	20
NUMBER OF STUDENTS APPEARED FOR THE EXAM		42
TOTAL MARKS SCORED BY ALL STUDENTS		694

AVERAGE MARKS	16.52
TARGET VALUE	12
NUMBER OF STUDENTS SCORING MORE THAN TARGET VALUE	36
% OF STUDENTS SCORING MORE THAN TARGET VALUE	85.71
TARGET LEVEL	3

### 8. Impact analysis

Sr. No.	3-High/Excellent	2-Moderate /Average	1-Slight/Poor
1. Did you understand and cover the objective of the activity?	76.19 %	23.80 %	-
2. Do you find that methodology is helpful to cover the content beyond syllabus?	71.42 %	28.57%	-
3. Does this help you for building a good vocabulary and self-correcting method?	71.42 %	28.57%	-
4. Does the content covered are relevant and will be helpful as a Life-long learning?	61.90 %	38.09 %	-
5. Can you want to conduct such activity again?	76.19 %	23.80 %	-

### 9. Activity Picture



**10. Recorded Video Link:**

[https://drive.google.com/drive/folders/1qVoI2abUMt0CgY\\_H8vergfujQcZepjN0](https://drive.google.com/drive/folders/1qVoI2abUMt0CgY_H8vergfujQcZepjN0)

**11. For review and critique contact: e-mail address of faculty and HOD**

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Subject In charge



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Dr. A. B. Kakade  
NBA Coordinator



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