



MARATHA VIDYA PRASARAK SAMAJ'S
KARMAVEER ADV. BABURAO GANPATRAO THAKARE
COLLEGE OF ENGINEERING



Permanently Affiliated to Savitribai Phule Pune University Vide Letter No: CA/1542
& Approved by AICTE New Delhi Vide Letter No: 740-89-32 (E) ET/98
AISHE Code - C-41622

www.kbtcoe.org

Department of Civil Engineering

Innovative Teaching Method – Model Making and Presentation

Name of Faculty – Dr. M. P. Kadam

Academic Year– 2020-21

Name of Subject: – **Mechanics of Structure**

Class – SE

Semester I

Objectives of Methodology:

1. To make students get acquainted with fundamental knowledge required in the subject with the help of models/presentation.
2. To prepare students for self-learning.
3. To develop presentation skill

Details of Activity/Method:

Activity - Understand concepts of Mechanics of structure.

Model based on topics covered in syllabus of Mechanics of structure will be prepared by student by using available materials/sources and give a presentation on it.

Benefits of Method: -

1. It helps student to better understanding basic concept of topic covered in Structural Design -II
2. It helps student to share their ideas with classmate and builds oral communication skills.

Method: -

Monitor and support students as they work through the following in this method:

1. Ask students to make a model of any topic by using available material
2. Prepared model and present by an individually or in group
3. All students are asked to give presentation of prepared model.
4. Teacher examined the presentation of each student and asks questions related to topic and model.

Roles and Responsibilities

- **Teacher: -**

1. Suggest available material or resource for development of a model.
2. Provide the study material of different topics and appropriate guide lines at every stage of making models.
3. Remain available during the completion of task.
4. Prepare assessment methodology.

- **Student: -**

1. Go through all the material provided on model.
2. Once model is selected, understand it and discuss individually
3. Actively participate in presentation and contribute by means of discussion.

Assessment Tools & Rubrics: -

| Sr. No. | Rubrics | Marks |
|---------|---------------------------------|-------|
| 1 | Model preparation/ Presentation | 5 M |
| 2 | Timely submission | 5 M |
| 3 | Understanding of concept | 5 M |
| 4 | Presentation skill | 5 M |

| Roll No. | Name of Students | Model preparation/ Presentation | Timely submission | Presentation skill | Understanding of concept | Final Marks |
|-----------------|----------------------------|--|--------------------------|---------------------------|---------------------------------|--------------------|
| 1 | Adroja Jay Ashokbhai | 4 | 4 | 5 | 5 | 18 |
| 2 | Ahire krutika | 4 | 4 | 4 | 5 | 17 |
| 3 | Ahirrao Pratikshit Prakash | 4 | 4 | 4 | 4 | 16 |
| 5 | Avadhut Amol Arun | 4 | 5 | 4 | 4 | 17 |
| 6 | Avhad madhuri bajirao | 4 | 4 | 4 | 4 | 16 |
| 7 | Badhan Rohit Sanjay | 4 | 4 | 5 | 4 | 17 |
| 8 | Bagade Sejal Prashant | 4 | 4 | 4 | 5 | 17 |
| 10 | Barkale Rohit Nandu | 4 | 4 | 5 | 5 | 18 |
| 11 | Behere Mayur Nitin | 4 | 4 | 5 | 5 | 18 |
| 13 | Bhadane Pranjali Sanjay. | 4 | 4 | 5 | 5 | 18 |
| 14 | Bhavsar Sakshi Ravindra | 4 | 4 | 4 | 5 | 17 |
| 15 | Bodke Jeevan Digambar | 2 | 3 | 2 | 5 | 12 |
| 17 | Chavan Dhanashree Satish | 4 | 5 | 5 | 5 | 19 |
| 18 | Dashpute Hritik Hemant | 5 | 4 | 5 | 5 | 19 |
| 19 | Deore Sagar Sunil | -- | -- | -- | -- | -- |
| 20 | Dhikale kaushik tukaram | 4 | 4 | 5 | 5 | 18 |
| 21 | Dond Kartik Sunil | 4 | 4 | 5 | 5 | 18 |
| 22 | Gahiwad Dhaval Deepak | 4 | 4 | 5 | 5 | 18 |
| 23 | Gaikwad Rushikesh Bapu | 4 | 4 | 5 | 4 | 17 |
| 24 | Gavit Tanmay Arjun | 5 | 4 | 5 | 5 | 19 |
| 25 | Gawali Tejaswini Ramesh | 5 | 4 | 4 | 5 | 18 |
| 26 | Ingale Shweta Vasant | 4 | 5 | 5 | 5 | 19 |
| 27 | Jadhav kaushal Bharat | -- | -- | -- | -- | -- |
| 29 | Jawale Saurav Pramod | 4 | 4 | 5 | 4 | 17 |
| 30 | Katkade_Atharva_Padmakar | 4 | 4 | 4 | 5 | 17 |
| 31 | Khode Sai Chandrakant | 4 | 5 | 5 | 5 | 19 |
| 32 | Kochure Shrikant Vikas | 4 | 4 | 5 | 5 | 18 |
| 33 | Kudke Pratik Santosh | 5 | 5 | 4 | 4 | 18 |
| 34 | Lokhande Yash Hemant | -- | -- | -- | -- | -- |
| 35 | Mahewar Sarvesh Naresh | 5 | 5 | 4 | 4 | 18 |

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|----|----------------------------|----|----|----|----|----|
| 36 | Mali Rahul Rambhau | 4 | 4 | 5 | 5 | 18 |
| 37 | Malve Priyanka Mangesh | 5 | 4 | 5 | 5 | 19 |
| 38 | Mogal vedant | 4 | 4 | 5 | 5 | 18 |
| 39 | Mohite Gaurav Mahendra | -- | -- | -- | -- | -- |
| 40 | More rohini vikas | 5 | 4 | 5 | 5 | 19 |
| 41 | Nagpure kshitij nitin | 4 | 5 | 5 | 5 | 19 |
| 42 | Patil Dipak Suresh | -- | -- | -- | -- | -- |
| 43 | Patil Manish Dinesh | 4 | 5 | 5 | 5 | 19 |
| 44 | Patil Prithviraj Rajendra | 4 | 4 | 5 | 4 | 17 |
| 46 | Patil Ritu Prakash | 4 | 4 | 4 | 5 | 17 |
| 47 | Pawar Bhavana Dilip | 5 | 4 | 4 | 5 | 18 |
| 48 | Pawar shivraj harshvardhan | 4 | 5 | 5 | 5 | 19 |
| 49 | Randhir Nishant Anil | 5 | 5 | 4 | 5 | 19 |
| 50 | Salunke Yogesh Manoj | 4 | 4 | 4 | 4 | 16 |
| 51 | Sangale Vaishnavi Ramdas | 4 | 4 | 5 | 5 | 18 |
| 52 | Shelar Chetan Sanjay | 3 | 3 | 4 | 4 | 14 |
| 53 | Shelar vishal Sanjay | 3 | 3 | 4 | 4 | 14 |
| 54 | Shermale Roshan Kautik | 5 | 5 | 5 | 5 | 20 |
| 55 | Shirsath Onkar Ramdas | 3 | 4 | 4 | 4 | 15 |
| 56 | Sonar Khushal Kishor | 4 | 4 | 4 | 5 | 17 |
| 57 | Sonawane Sakshi Vijay | 5 | 5 | 5 | 5 | 20 |
| 58 | Sonawane Shubham Bhikaji | 4 | 4 | 4 | 5 | 19 |
| 59 | Sonawane Yugandhara Rahul | 5 | 4 | 4 | 5 | 18 |
| 60 | Suryawanshi Purva Rajesh | 5 | 5 | 5 | 5 | 20 |
| 61 | Ugale Sanket Ramkrushna | 3 | 4 | 4 | 4 | 15 |
| 62 | Vispute Tanay Deepak | 4 | 4 | 4 | 4 | 16 |
| 63 | Wagh Pranit Dinesh | 4 | 4 | 5 | 5 | 18 |
| 64 | Waklekar tejaswini Sanjay | 4 | 4 | 4 | 4 | 16 |
| 65 | Wani Kunal Barku | 4 | 4 | 4 | 4 | 16 |
| 66 | Bhadane Mayur Keda | 4 | 5 | 4 | 5 | 18 |
| 69 | Hiray Tushar Anil | 4 | 5 | 5 | 5 | 19 |
| 70 | Junagade Yash Hemant | 4 | 4 | 4 | 5 | 19 |

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|----|-----------------------------|----|----|----|----|----|
| 71 | Jadhav Prashant Dinkar | 4 | 4 | 5 | 4 | 17 |
| 72 | Bhamare dhiraj bharat | 4 | 5 | 5 | 5 | 19 |
| 73 | Sirame Ajay Maroti | 3 | 4 | 3 | 4 | 14 |
| 74 | Rathod Mansi Birbal | 4 | 4 | 4 | 4 | 16 |
| 75 | Thankar Abhishek Ganesh | 4 | 4 | 4 | 4 | 16 |
| 76 | Paithankar Himanshu Santosh | 4 | 4 | 5 | 4 | 17 |
| 77 | Pitlewar Parithoshika Anil | 4 | 5 | 5 | 5 | 19 |
| 78 | Nikam Shubham Sandip | 4 | 4 | 5 | 5 | 18 |
| 79 | Savkar Rakesh Hiranman | 3 | 4 | 4 | 4 | 15 |
| 80 | Suryawanshi kalyani vijay | 4 | 4 | 5 | 5 | 18 |
| 81 | Gujarathi Aaditya Rajendra | 4 | 5 | 4 | 4 | 17 |
| 82 | Salve Sakshi Milind | 4 | 4 | 4 | 4 | 16 |
| 83 | Bhagwat Vaishali Rajendra | 4 | 4 | 5 | 5 | 18 |
| 84 | Jadhav neha anil | 4 | 4 | 4 | 4 | 16 |
| 85 | Kuwar Pravin Ravji | 5 | 4 | 4 | 4 | 17 |
| 86 | Chavan Ruchi Rahul | 5 | 4 | 5 | 5 | 19 |
| 87 | Sanap Vaibhav Ramkrushna | 4 | 4 | 4 | 4 | 16 |
| 88 | Sanap Shubham Ramesh | 4 | 4 | 4 | 4 | 16 |
| 89 | Anjali Yuvraj watane | 2 | 2 | 3 | 4 | 11 |
| 90 | Kapure Bhavesh Manoj | 3 | 4 | 4 | 5 | 16 |
| 91 | Borase tanuja sunil | 4 | 4 | 5 | 4 | 17 |
| 92 | Ambekar Mandar Pandurang | 4 | 4 | 4 | 4 | 16 |
| 93 | Javalekar dhananjay hemant | -- | -- | -- | -- | -- |
| 94 | Patil Vishal Vijay | 4 | 4 | 4 | 5 | 17 |
| 95 | Shah Nikhil Shirish | -- | -- | -- | -- | -- |

Course Outcomes

| | | |
|-----|---|------------|
| | After the completion of course students will be able to: | BTL |
| CO1 | Understand concept of stress-strain and determine different types of stress, strain in determinate, indeterminate homogeneous and composite structures. | BT 3 |
| CO2 | Calculate shear force and bending moment in determinate beams for different loading conditions and illustrate shear force and bending moment diagram. | BT 3 |
| CO3 | Explain the concept of shear and bending stresses in beams and demonstrate shear and bending stress distribution diagram. | BT 3 |
| CO4 | Use theory of torsion to determine the stresses in circular shaft and understand concept of Principal stresses and strains. | BT 3 |
| CO5 | Analyze axially loaded and eccentrically loaded column. 6. Determine the slopes and deflection of determinate beams and trusses. | BT 3 |
| CO6 | Determine the slopes and deflection of determinate beams and trusses | BT 3 |

POs

| | |
|-----|---|
| PO1 | Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. |
| PO2 | Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. |
| PO3 | Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. |
| PO4 | Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. |
| PO5 | Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations. |

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|------|---|
| PO6 | The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. |
| PO8 | Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. |
| PO9 | Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. |
| PO10 | Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. |
| PO12 | Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change |

PSOs

| | |
|------|---|
| PSO1 | Graduates will apply fundamental knowledge, problem solving skills, engineering experimental abilities and design capabilities necessary for entering civil engineering career. |
| PSO2 | Graduates will demonstrate knowledge and techniques in engineering fields for effective management and professional development. |
| PSO3 | Graduates will apply technical and professional skills to be nationally competitive for employment/self-employment thereby benefit the society |

Evidences: Video Links:

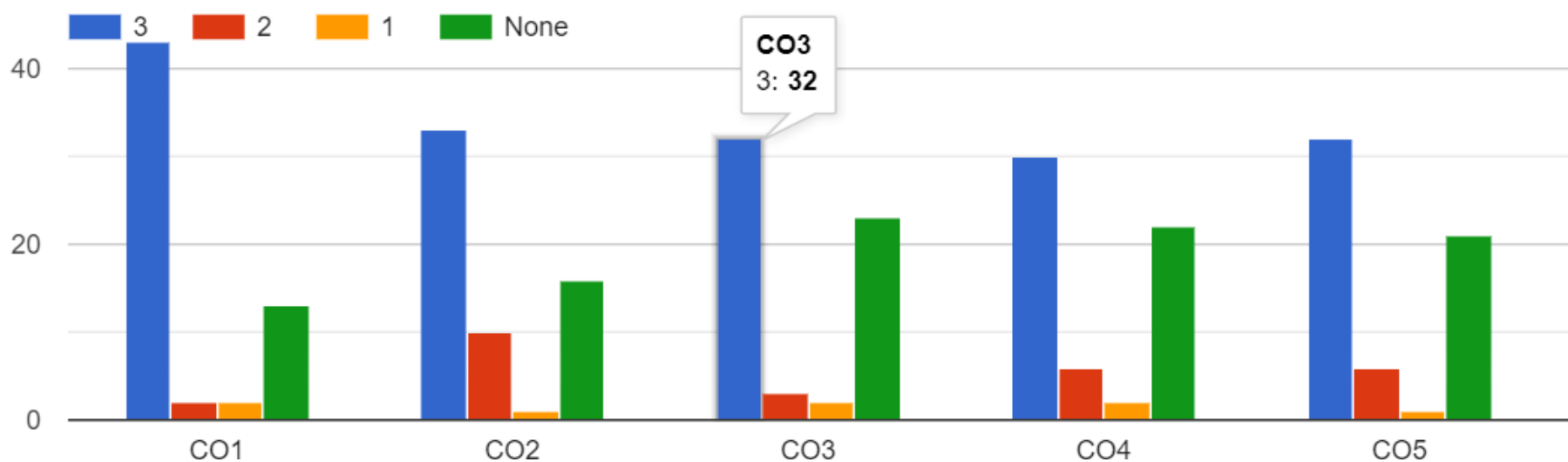
<https://classroom.google.com/u/0/g/tg/MTE4NzM0MTM4ODow/MzE2MjI0NTczODU3#u=MTE3MzOxNjEyOTM3&t=f>

<https://classroom.google.com/u/0/g/tg/MTE4NzM0MTM4ODow/MzE2MjI0NTczODU3#u=MTE3MzM1MTk3NTEz&t=f>

Feedback/Impact Analysis (Based on Students Feedback):

Course Outcome

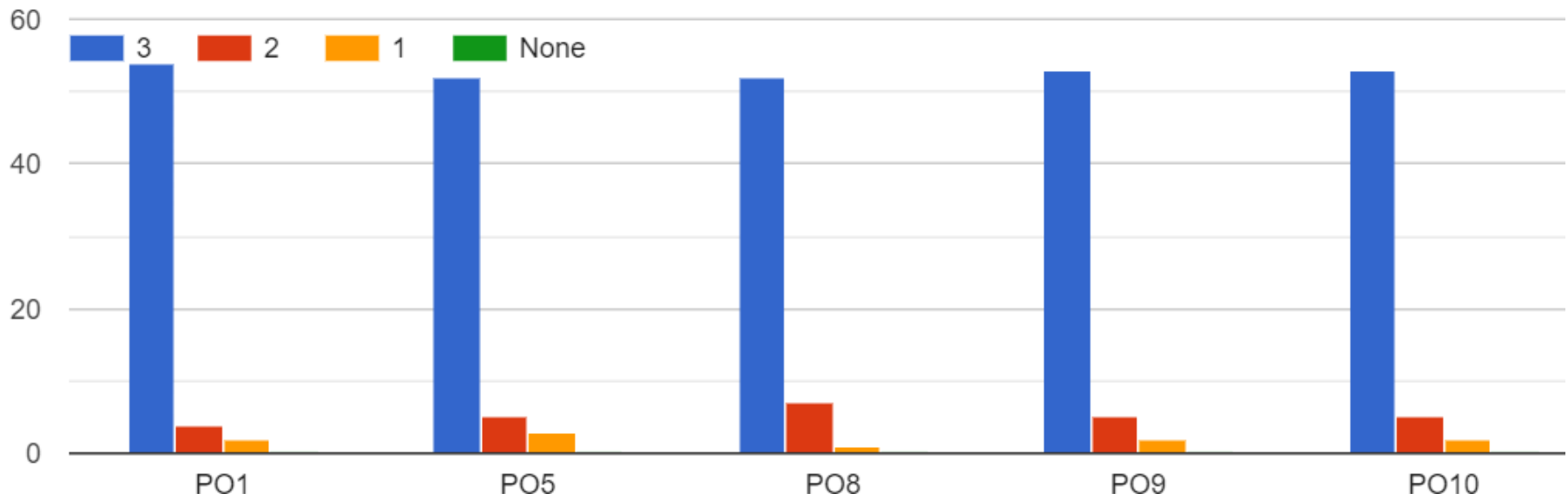
| | Course Outcome | CO1 | CO2 | CO3 | CO4 | CO5 | CO6 |
|----------|--|-------------|-------------|-------------|-------------|-------------|-------------|
| A | No. of Groups/Students Achieving CO | 47 | 42 | 37 | 38 | 39 | 36 |
| B | Total Rating | 135 | 120 | 104 | 104 | 109 | 102 |
| C | Average Rating (B/A) | 2.87 | 2.72 | 2.81 | 2.73 | 2.79 | 2.83 |



Program Outcome

| | Program Outcome | PO1 | PO5 | PO8 | PO9 | PO10 | PO12 |
|----------|--|------------|------------|------------|------------|------------|------------|
| A | No. of Groups/Students Achieving PO | 60 | 60 | 60 | 60 | 60 | 60 |
| B | Total Rating | 172 | 169 | 171 | 171 | 171 | 170 |

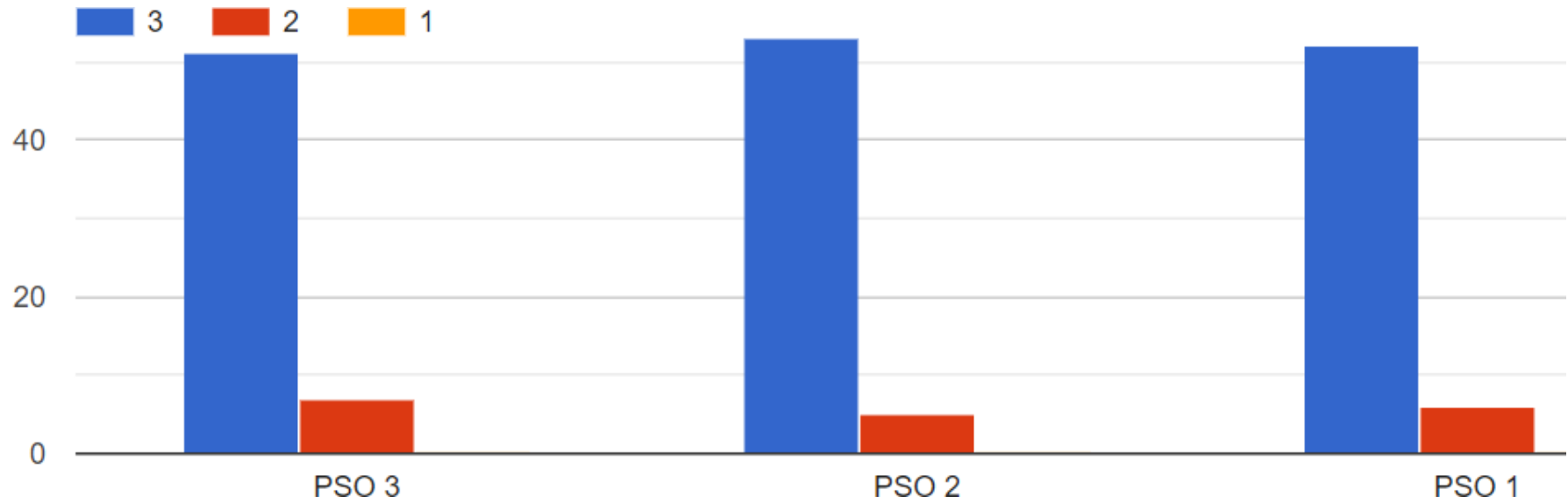
| | | | | | | | |
|----------|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| C | Average Rating (B/A) | 2.81 | 2.85 | 2.85 | 2.85 | 2.85 | 2.83 |
|----------|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|



Program Specific Outcome

| | Program Specific Outcome | PSO1 | PSO2 | PSO3 |
|----------|---|-------------|-------------|-------------|
| A | No. of Groups/Students Achieving PSO | 58 | 58 | 58 |
| B | Total Rating | 167 | 169 | 168 |

| | | | | |
|---|----------------------|------|------|------|
| C | Average Rating (B/A) | 2.87 | 2.91 | 2.89 |
|---|----------------------|------|------|------|

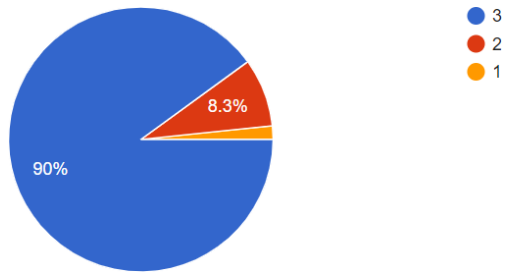


Impact Analysis for Methodology (Based on Students Feedback):

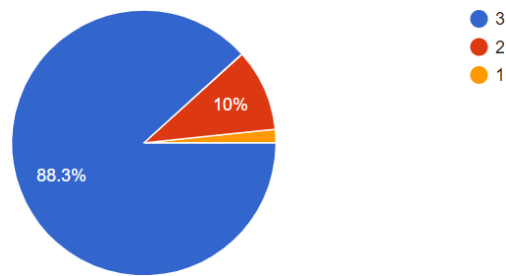
| Rating | Q1. Did you find the methodology helpful? | Q2. Is the content relevant? | Q3. Concept of the methodology. |
|--------|---|------------------------------|---------------------------------|
| | | | |

| | | | | |
|----------|-----------------------------|-------------|-------------|-------------|
| A | No. of Students | 22 | 22 | 22 |
| B | Total Rating | 61 | 63 | 59 |
| C | Average Rating (B/A) | 2.77 | 2.86 | 2.68 |

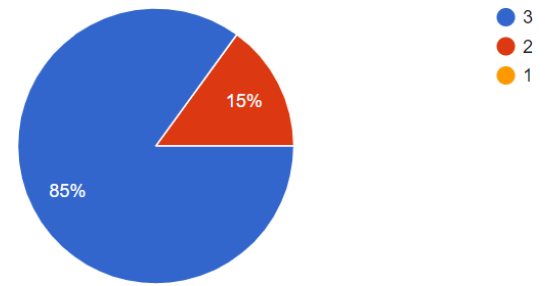
Q1. Did you find the methodology helpful?



Q2. Is the content relevant?



Q3. Concept of the methodology.



Link for Review and Critics: https://docs.google.com/forms/d/1_kDBev5ZLJetdFTAzGJiSHoEOfx2Xkvlm9c5eisTrwY/edit