INSTRUCTION: Using the following format, prepare a Teaching portfolio for any one of the courses taught. A core course with a large number of students is preferred. Retain the **blue** coloured headings as it is and enter your details in **black** coloured texts.

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Teaching Portfolio

1) Course Details:

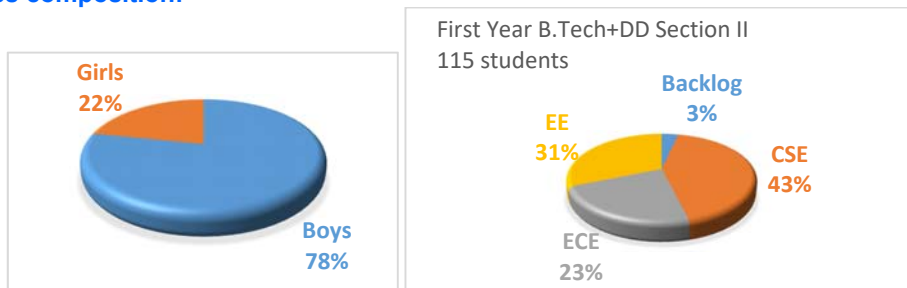**Name:** Mechanics **Code:** ME1L001 (L-T-P-C: 3-1-0-4)

One Text / Reference Book:
Vector Mechanics for Engineers: Statics and Dynamics – Ferdinand P. Beer, E. Russell Johnston, Jr. (TMH)

Course Content (only key topics):
Force systems; Equilibrium; Friction; Kinematics and Kinetics of particles; Properties of areas; Concept of stress and strain; Torsion; Flexural loading; Transformation of stress and strain; Combined loading; Column.

Class composition:

Girls 22%
Boys 78%

First Year B.Tech+DD Section II
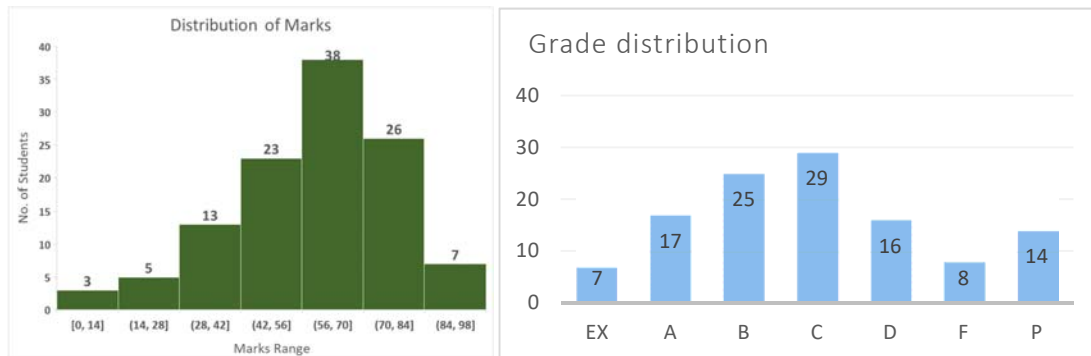115 students

Backlog 3%
EE 31%
CSE 43%
ECE 23%

2) Assessment format:
Assignments (10 marks); Two 1 hr tests (10 marks) – Open book; Mid-sem (30 marks) – Closed book; End-sem (50 marks) – Closed book.
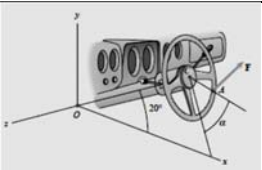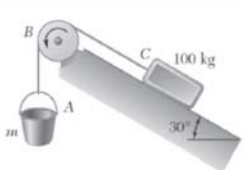
3) Attendance policy:
The students were told that attendance would be marked towards the end of each class. Latecomers (up to 5 min) were warned and marked. Students who were late by more than 5 min were not allowed to enter the class. The attendance was uploaded in ERP on a regular basis and students get email alerts if they were absent by more than 3-4 classes. The students having attendance less than 80% were debarred from writing Mid/End Semester examination.

4) Overall student performance and grading policy:

Distribution of Marks

Grade distribution

5) Up to 5 critical thinking level questions from assignments and examinations together with the marks, answering time and student performance:

Question	Time & Marks	Performance
The radius of the steering wheel is 200 mm. The distance from O to C is 1 m. The center C of the steering wheel lies in the x _ y plane. The driver exerts a force $F = 10i + 10j - 5k\ (N)$ on the wheel at A. If the angle $\alpha = 0$, what is the magnitude of the moment about the shaft OC? Draw a sketch to indicate the sense of the moment about the shaft.	15 min 10 marks	Give graphical distribution
Bucket A and block C are connected by a cable that passes over drum B. Knowing that drum B rotates slowly counter-clockwise and that the coefficients of friction at all surfaces are $\mu_s = 0.35$ and $\mu_k = 0.25$, determine the smallest combined mass m of the bucket and its contents for which block C will (a) remain at rest, (b) start moving up the incline, (c) continue moving up the incline at a constant speed.	20 min 10 marks	Give graphical distribution

6) Up to 5 most significant questions asked by students (give Roll no. and name):

Question	Student name & Roll no
How to understand the sign convention of bending of beams? Like we took a small element and assigned directions, but in a section of beam, how do we know which is positive from that element?	Deverasetty Sohan Kumar Subudhi 22ee01008
Mohr's Circle: Direction of shear stress to be taken as positive / negative and the same in diagram form	Atharva Atul Penkar 22cs02011
Bending of beam: Creating graphs for bending moment and shear stress	Bokka Pranavi Usha 22CS01051
State of plain stress problems are not understood.	Adarsh Dhakar 22CS01040
Statically determinate truss meaning?	Ayush Agrawal 22CS01001

7) Activities and fraction of class time spent on these (Reference - bookend lecture model):
Lecture Class: Generally, whenever a new topic was discussed, it was announced beforehand. After giving an introduction for about 10-12 min, 3-4 min were spared for mutual discussion and clarification of doubts, if any. The lecture continued for another 18-20 min. Doubts/queries, if any, were addressed and example problems were solved to know the applications of the discussed concept (10-15 min).
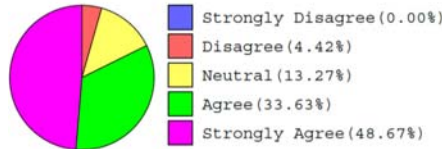**Tutorial Class:** Assignments related to the topics discussed in the preceding lecture classes were shared before the tutorial session. Four TAs are assigned with a group of 12-15 students each, who act as mentors, interact, and help them to understand concepts in a better way through closer interaction and problem-solving. They also interacted outside the class and remained connected using WhatsApp groups. Many times, the students were asked to solve new and challenging problems on the board, discuss the solution, and clear the doubts of other students.

8) Students' feedback:

Registration time perception:

Statement	The faculty handling the course teaches well.	The course contents are exciting.
Response	-	-

Perception at the end of the course:

Statement	The faculty handling the course taught well.	The course contents were exciting.
Response	 Strongly Disagree (0.00%) Disagree (4.42%) Neutral (13.27%) Agree (33.63%) Strongly Agree (48.67%) Total Responses:113	 Strongly Disagree (0.88%) Disagree (3.54%) Neutral (15.93%) Agree (51.33%) Strongly Agree (28.32%) Total Responses:113

Descriptive comments at the end of the course:

Aspects of the course and the teacher that need improvement

1. He could have been a little less strict in class and less strict in terms of attendance
2. a bit tougher tutorial questions
3. classes can be more interactive
4. More problems could have been solved in the classes.
5. The content can be a bit more advanced as most of the things were already taught to us in our previous classes.

What did I like most about the course and the teacher?

1. Teacher taught really well, showed real life examples of concepts being used
2. Course is tough but sir explained well and taught well and also take doubts from us and also gave time after class hours.
3. Course was exciting and Assignments provide the necessary preparation for exam
4. Mechanics turned out to be one of my favourite subjects this semester, which I did not expect. It was basically because of sir. He taught it so well. The concepts were crystal clear that is why enjoyed going to the classes. I like the way he keeps everything organized.
5. Mode of teaching is too good. Questions in tutorials are solid enough to improve the concept. PowerPoints and handouts are good enough to revise concept.

9) Identifying and dealing with students needing special attention

The students can check their attendance through their ERP login. If a student misses class for a week, the faculty advisors are informed and the student is asked to report the reason for absence. Four such students (2 CS and 2 EE students) were called through their friends and emails were sent. They were asked to report the reason for absence and counseled suitably. It was found that they were attending classes regularly afterward.

Four backlog students (3 CE students and 1 EE of 21 batch) registered for this course faced difficulty in attending classes due to an overlap in time table. One (CE student) of them had also medical issues and undergoing treatment. TAs took extra sessions whenever necessary to help them understand various topics.

10) Anything else

If available

11) Peer/Experts' feedback on teaching

12) Performance of students in the follow-on course

13) Performance of students in real life