

Innovations by the Faculty in Teaching and Learning

AY: 20-21

- 1) **Activity Name:** Student discussion on PM topics **Date:** 22/08/2020 **Subject & code:** Project Management 17ME564
Objective of activity: Function as a member in diverse team, communicate the concept and engage in independent /group learning
Course outcome: Students will be able to perform in a team and communicate through discussions how PLM / PDM system can be implemented in any company / organization.

Curriculum gap: To map other PO's such as PO9, 10 and 12 the student activity is planned through CO1.

CO-PO/PSO mapping															
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1									3	3		3			3

Description: OBE activity was conducted for V sem students of 2017 batch on 22/08/2020.

Students were given with real time case studies on project management concepts to make them realize how they are used in day to day basis in any company / organization. The case studies were assigned to a group of 4-5 students and 15 min was given to them to go through it. Later the students discussed among them self to understand how measurement & metrology concepts where implemented in a company. Further each group was called upon the stage to summarize about the given case study. Questions were asked by the student and me to check their understanding level about the case study given. Marks were awarded based on their performance.





Rubrics for attainment:

60% of the students scoring more than 80% of marks: 1
 70% of the students scoring more than 80% of marks: 2
 80% of the students scoring more than 80% of marks: 3

Rubrics for evaluation

Group discussion (10 marks)	Explanation on board (10 marks)	Questioners (5 marks)
Reading the case study individually and discussing in a team	Drawing the diagram / flow chart and explaining the concepts studied as a team work	Questions from the students and subject coordinator

Analysis:	
Total no of students participated	: 52
Total marks allotted	: 25
No of Students scoring 70%	: 10
No of Students scoring 80%	: 14
No of Students scoring 90%	: 16
No of Students scoring 100%	: 06
% of students scoring above 60%	: $46/52 * 100 = 88.4\%$

Since 88.4% of students have scored above 80%, PO attainment for the above activity is 3.

2) **Name of the activity:** Field study on job analysis

Date : 12/9/2019

Subject & Code: Human Resource Management & 17ME553

Objective of activity: To be able to communicate the concept of job description and job specifications

POs addressed: PO9, PO10

Rubrics for evaluation Job description 02 marks	Job specification 02 marks	Example 01 mark	Written Communication 05 marks
<ul style="list-style-type: none"> ☐ Job title ☐ Location ☐ Job summary ☐ Duties ☐ Machines, tools ☐ Supervision given and received ☐ Working conditions 	<ul style="list-style-type: none"> ☐ Education ☐ Experience ☐ Responsibilities ☐ Communication skills ☐ Training 	Example from a profession	Discussion on job description and job analysis with an example

- 3) Mrs.S Nithya Poornima Assistant Professor, Mechanical Engineering Department Organised a Flip Class for the course titled Financial Management (15ME743). The activity was based on Determinants of Working Capital Management. after the Fundamentals on determinants was given, the students were ready to process the information, explore the topic and generate ideas, individually. This activity enabled the student in case analysis, brainstorming, discussion, peer teaching, co-writing, and co-creating projects. The POs mapped are PO2, PO9, PO10 and PO12



Flip Class on Determinants of Working Capital Management

- 4) Mrs S.Nithya Poornima Assistant Professor, Department of Mechanical Engineering organised an OBE activity for the course Operation Management (18ME56). The activity was “Self-directed Blended Learning “on the topic Decision Making environment on 22nd September 2020. The main aspect of the activity was case study was given for them analyse the the importance of Decision Making. This session enabled them to understand the concept in a better perspective as they could analyse the processes. The POs mapped are PO9, PO10 and PO12
- 5) Mrs S.Nithya Poornima Assistant Professor, Department of Mechanical Engineering organised an OBE activity for the course Financial Management (18ME743). The activity was Flip class on the topic “Cash Budget” on 21th October 2020. The main aspect of the activity was enabled them to analyse the problems and solve independently. This session enabled them to understand the concept in a better perspective as they could solve independently. The POs mapped are PO9, PO10 and PO12
- 6) Mrs S.Nithya Poornima Assistant Professor, Department of Mechanical Engineering organised an OBE activity for the course Financial Management (18ME743). The activity was “Self-Directed Blended Learning Activity” on the topic “Ratio Analysis” on 26th November 2020. The main aspect of the activity was a Case study was shared for them to analyse Importance of Ratio Analysis The case study enabled them to understand the concept in a better perspective from industrial point of view. The POs mapped are PO9, PO10 and PO12
- 7) Mrs S.Nithya Poornima Assistant Professor, Department of Mechanical Engineering organised an OBE activity for the course Operation Management (18ME56). The activity was “think pair and share “on the topic MRPI, MRP II and ERP on 8th December 2020. The main aspect of the activity was a video on the topic was shown and a case study was given for them to pair and discuss to analyse the difference in the process. The video enabled them to understand the concept in a better perspective as they could visualise the processes. The POs mapped are PO9, PO10 and PO12

Link: <https://www.youtube.com/watch?v=hAaINQciTHo>

AY: 19-20

1) Course Name : Control Engineering

Course Code: 15ME73

Course Coordinator: K.Chandra Sekhara Reddy

Semester: VII (AY2019-20)

Objective: To understand the usage of the modern tool for transient response analysis and stability analysis

Course outcome: students will be able to use the modern tool for transient response analysis and stability analysis

Curricular gaps: From the curriculum PO1, PO2 are addressed through CO1 to CO5.

Therefore to map other POs PO5, PO9 and 12 the activity is planned through CO6

Name of the activity: Modern tool usage

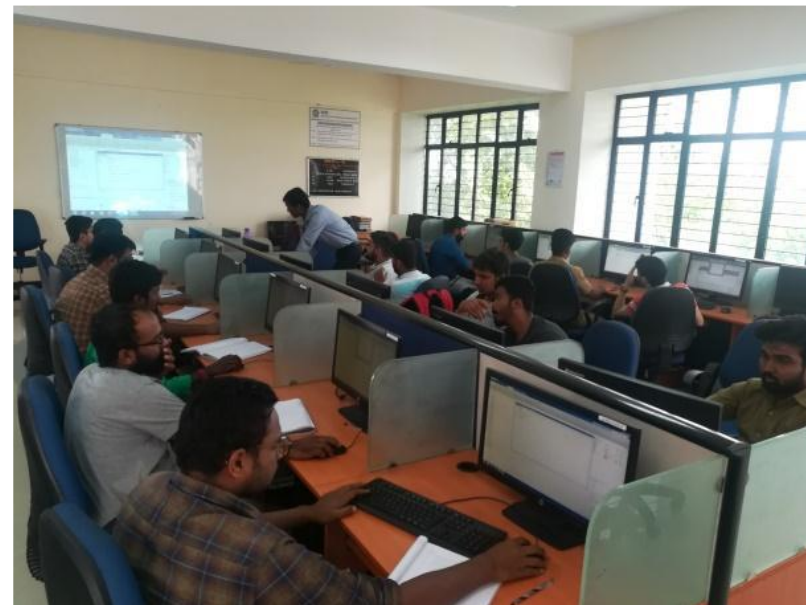
CO-PO/PSO Mapping:

CO-PO/PSO Mapping

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 6									3	3		3

Activity was conducted for VII semester students of 2016 batch. Students practised on MATLAB programming. The main aim of activity was to gain knowledge on modern tools usage in control systems. Also enabling the students to function effectively as an individual in coding.

Students as individuals practiced on the MATLAB software to study the time response and stability. The activity conducted in the electrical department lab with help of other faculty.



2) Activity Name: Student discussion on PM topics

Subject & code: Project Management 17ME564

Objective of activity: Function as a member in diverse team, communicate the concept and engage in independent /group learning

Course outcome: Students will be able to perform in a team and communicate through discussions how PLM / PDM system can be implemented in any company / organization.

CO-PO/PSO mapping															
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1									3	3		3			3

Description: OBE activity was done for V sem students of 2017 batch on 22/08/2019.

Students were given with real time case studies on success / failure of a project to make them realize how they are used in day to day basis in any company / organization. The case studies were assigned to a group of 4-5 students and 15 min was given to them to go through it. Later

the students discussed among them self to understand how project management concepts are implemented in a company. Further each group was called upon the stage to summarize about the given case study. Questions were asked by the student and me to check their understanding level about the case study given. Marks were awarded based on their performance.



Rubrics for attainment:

60% of the students scoring more than 80% of marks: 1
 70% of the students scoring more than 80% of marks: 2
 80% of the students scoring more than 80% of marks: 3

Rubrics for evaluation

Group discussion (10 marks)	Explanation on board (10 marks)	Questioners (5 marks)
Reading the case study individually and discussing in a team	Drawing the diagram / flow chart and explaining the concepts studied as a team work	Questions from the students and subject coordinator

Analysis:	
Total no of students participated	: 52
Total marks allotted	: 25
No of Students scoring 70%	: 08
No of Students scoring 80%	: 14
No of Students scoring 90%	: 16
No of Students scoring 100%	: 06
% of students scoring above 60%	: $44/52 * 100 = 84.6\%$

3) Name of the activity: Demo on Strain energy using spring mass system

Subject & Code: Design of Machine Elements – I, 17ME54

Objective of activity: To be able to understand the concept of strain energy and subsequently design the components for impact strength

POs addressed: PO2, PO9, PO10 and PO12

Diagram of Load v/s Deflection 03 marks	Description of diagram 02 marks	Derivation of equation of the form $U = \sigma AL/2E$ 05 marks
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Analysis:

Total number of students participated: 65

Total marks allotted: 10

Number of students scoring <70%: 03

Number of students scoring 70%: 03

Number of students scoring 80%: 03

Number of students scoring 90%: 13

Number of students scoring 100%: 43

Percentage of students scoring above 80%: $59/65 * 100 = 90.7\%$

Rubrics for attainment:

60% of students scoring more than 60% of marks: 1

70% of students scoring more than 60% of marks: 2

80% of students scoring more than 60% of marks: 3

PO attainment because of the above activity is 3

4) Demonstration on physical model of full journal bearing

Date:25/2/2019

Objective: To enhance the understanding capability of working of journal bearing as it is difficult to visualize the components and its functioning. The demonstration carried out is pertaining to CO1. The students will answer the questions individually after the demonstration of physical model. Hence it is satisfying PO9. As it is another way of learning the concept, it also satisfies PO12

Impact analysis of OBE activity (Quiz)

Total number of students: 61

Number of students scoring > 60%: 48

% of students scoring > 60%: 78.69%

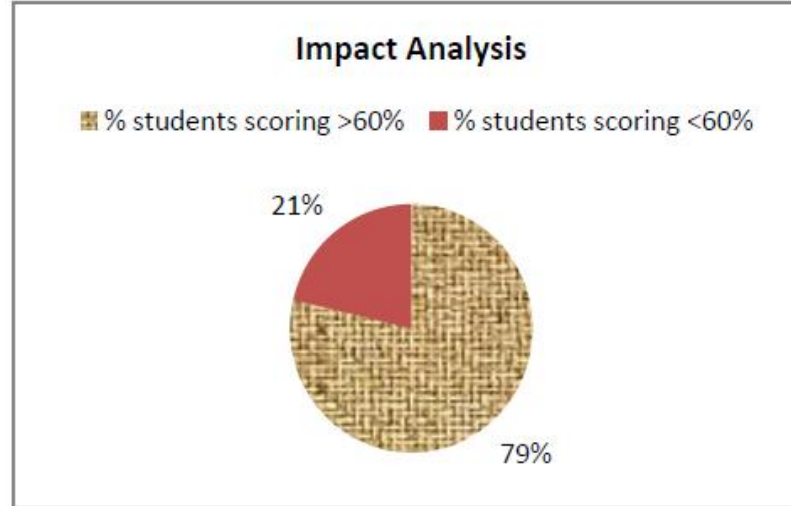
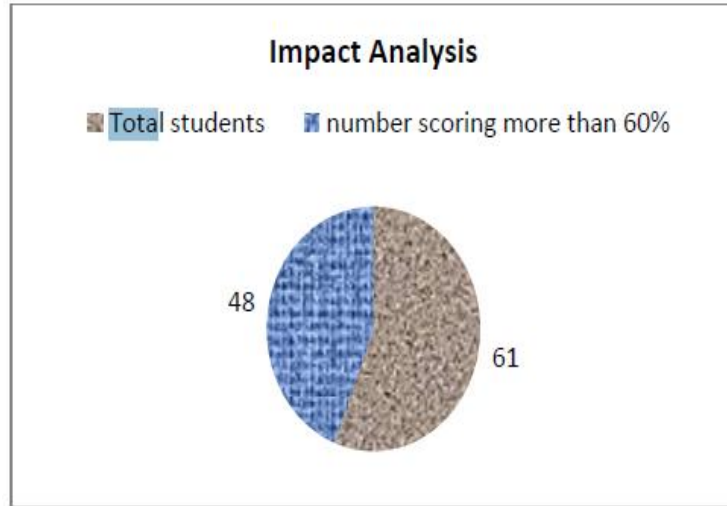
Rubrics for attainment:

50% of students scoring more than 60% of marks: 1

60% of students scoring more than 60% of marks: 2

70% of students scoring more than 60% of marks: 3

Sl no.	Objective	Tool used	Assessment method	Remarks
1	To enhance the understanding capability of working of journal bearing as it is difficult to visualize the components and its functioning	Physical model demonstration of journal bearing	Quiz	78.69% of students have understood the concept of functioning of journal bearing



5) Mr. O.Gurumurthy, Assistant Professor, Mechanical Engineering Department have carried out OBE activity for the course **Fluid Power Systems (15ME72)**. This is a demo on “**Fluid power systems and their components (hydraulic and pneumatic system)**” organized on 04/09/2019 for 7th Semester students.

Demo conducted for students to learn about the fundamental concepts and their important components of fluid power systems. Which includes both pneumatic (air) and hydraulic (liquid) systems. Both systems contain four basic components: reservoir/receiver, pump/compressor, valve, and cylinder/motor. Students learn background information about fluid power—both pneumatic and hydraulic systems—including everyday applications (bulldozers, excavators, automatic door control system, vehicle brakes)



Figure: Pneumatic and hydraulic kit demo.

- The above OBE activity was mapped to the Programme Outcomes, PO1 (Engineering Knowledge) and PO3 (Design of experiments).

AY: 18-19

1) Name of the activity : Student Seminar

Course Name: Total Quality Management

Course Code: 15ME664

Course Coordinator: K.Chandra Sekhara Reddy

Semester: VI (AY2018-19)

Objective: To enhance the oral and written communication skills and enable the students to function effectively as an individual.

Course outcome: students will be able to perform as an individual and communicate through seminar on various topics of course.

Curricular gaps: From the curriculum PO1, PO11 are addressed through CO1 to CO5.

Therefore to map other POs PO9, 10 and 12 the Student Seminar activity is planned through CO6

CO-PO/PSO Mapping : CO-PO/PSO Mapping												
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 6									3	3		3

Student seminar was conducted for VI semester students of 2016 batch. Students presented on various topics of the course. The main aim of seminar was to enhance their oral and written communication skills while presenting any topic. Also enabling the students to function effectively as an individual.

Students as individuals presented the seminar topic. The seminar presentation conducted in front of the course coordinator and other faculty. Their presentation evaluated based on the communication skills and report prepared by students. Marks were awarded based on their

performance. And the suggestions were given for the poor performers. From the presentation, students understood the importance of conveying the information very effectively.

Sl. No	USN	Name of the student	Effectiveness of individual work (10)	Presentation & Communication skills (10)	Queries (05)	Total (25)
1	1BY16ME003	ADITYA SINGH THAKUR	9	9	4	22
2	1BY16ME008	ANUPAM AJIT DESHPANDE	9	9	5	23
3	1BY16ME010	ARUN D	10	10	5	25
4	1BY16ME018	DEVARAJU G N	10	10	5	25
5	1BY16ME021	GOKUL DEEKSHITH G S	8	8	4	20
6	1BY16ME028	JASWANTH L G	9	9	4	22
7	1BY16ME036	MALEPATI NAGA SAI RITESH	8	8	4	20
8	1BY16ME069	KASHIF HUSSAIN	5	6	2	13
9	1BY16ME070	ABHISHEK S	8	8	4	20
10	1BY16ME071	CHETHAN H	6	6	3	15
11	1BY16ME072	LOKAMITHRA G	6	6	3	15
12	1BY16ME073	IARANAGOUDA	7	7	4	18
13	1BY16ME074	ARAVIND H L	8	8	5	21
14	1BY16ME075	TEJASWI K L	8	8	4	20
15	1BY17ME401	BHARATH P N	AB			
16	1BY17ME402	CHANDAN M	AB			
17	1BY17ME409	RAKSHITH C S	AB			

Rubrics for evaluation

PO Attainment >70%- 3 (High), 60-70%- 2(Moderate), 50%-60%-1(Low)

PO attainment			
POs	PO9	PO10	PO12
Attainment Percentage	71.43	71.43	71.43
Target level Achieved	3	3	3



2) Conduction of field study on job analysis Date:25/8/18

Objective: To gain hands on experience on job analysis and be able to communicate on job description and job specifications

The field survey carried out is pertaining to CO1. Students have to prepare questionnaire and interact with the industry person. Hence, it satisfies PO10. As students carried out the field study in a batch, it satisfies PO9. As this is another way of learning the concept, it satisfies PO12.

Impact analysis of OBE activity (Quiz)

Total number of batches: 05 batches of 04 students each (Total 20 students)

Number of batches scoring > 60%: 05

% of students scoring > 60%: 100%

Rubrics for attainment:

60% of students scoring more than 60% of marks: 1

70% of students scoring more than 60% of marks: 2

Sl no.	Objective	Tool used	Assessment method	Remarks
1	To gain hands on experience on job analysis which will help to enhance the understanding of job description and job specifications	Questionnaire	Interaction with executive	100% of students have understood the concept of job analysis

3) OBE activity (Student seminar)

Sem: V Course

Coordinator: Sriganesh.T.G

Course: Non Traditional Machining

Course code: 15ME554

As a part of outcome based education for the course “Non Traditional Machining” the students of fifth sem made individual presentation on various NTM topics.

Course outcome: Students will be able to perform as an individual and communicate through seminar on various topics of Non Traditional Machining.

Curriculum gap: To map other PO’s such as PO9, 10 and 12 the student activity is planned through CO6.

CO-PO/PSO mapping															
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO6									3	3		3			3



Description: Student seminar was conducted for V sem students of 2016 batch. Students presented seminar on various topics of the course. The main aim of the seminar was to enhance their communication skills while presenting any topic and also to function effectively as an individual. Students as individuals presented the seminar topic. Marks were awarded based on their performance.

PO/PSO attainment				
PO/PSO	PO 9	PO 10	PO 12	PSO 3
% attainment	80.9	80.9	80.9	80.9
Target level achieved	3	3	3	3

4) Conduction of field study on job analysis**Date:25/8/2018**

Objective: To gain hands on experience on job analysis and be able to communicate on job description and job specifications. The field survey carried out is pertaining to CO1. Students have to prepare questionnaire and interact with the industry person. Hence, it satisfies PO10. As students carried out the field study in a batch, it satisfies PO9. As this is another way of learning the concept, it satisfies PO12.

Impact analysis of OBE activity (Quiz)

Total number of batches : 05 batches of 04 students each(Total 20 students)

Number of batches scoring > 60% : 05

% of students scoring > 60% : 100%

Rubrics for attainment:

60% of students scoring more than 60% of marks : 1

70% of students scoring more than 60% of marks : 2

80% of students scoring more than 60% of marks : 3

Sl no.	Objective	Tool used	Assessment method	Remarks
1	To gain hands on experience on job analysis which will help to enhance the understanding of job description and job specifications	Questionnaire	Interaction with executive	100% of students have understood the concept of job analysis

5) Mrs S.Nithya Poornima organized a poster competition for the students of the fifth semester for the subject, Open elective” Automation and Robotics” as a part of blended learning on the topics of configuration of Robotics. Dr H.K.Govindaraju, HOD Mechanical encouraged the students and announced the best poster.



Students of V sem presenting poster

6) Mrs S.Nithya Poornima organised a video presentation for the students of the fifth sem for the subject, Open elective” Automation and Robotics” as a part of blended learning on the topics of Flexible manufacturing system there by enabling the students to have a clear working and operating Mechanism of FM system and its varieties



Students of V sem presenting a video on FMS

7) Mr Madhu M.C organised hands on training on soldering for students of first semester I section students on 3rd December 2018 .This activity was conducted in workshop. This was a part of Blended activity for the subject Elements of Mechanical Engineering



Hands on training on soldering