

 In Pursuit of Excellence	Lab Manual	SESSION:-2020-21
		SEM-3 rd

Faculty Details

Name of the Faculty: sandeepkumar

Designation: Assistant Professor

Department: Department of Mechanical Engineering

Course Details

Name of the Programme: B.Tech Batch: 2019-2023

Branch: Mechanical Engineering

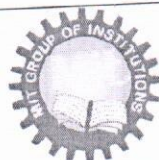
Semester: 3rd

Name of Subject: Material Testing lab

Subject Code: KME-352

Category of Course: Core Subject


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Course Scheme & Exam Scheme

SESSION:-2020-21

SEM-3rd

B.Tech. (Mechanical Engineering)

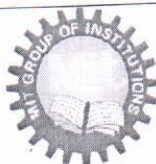
SEMESTER- III

Sl. No.	Subject Codes	Subject	Periods				Evaluation Scheme			End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	IE	PE		
1	KOE031-38 KAS302	Engg. Science Course Maths IV	3	1	0	30	20	50		100		150	4
2	KAS301/ KVE301	Technical Communication Universal Human Values	2	1	0								
			3	0	0	30	20	50		100		150	3
3	KME301	Thermodynamics	3	1	0	30	20	50		100		150	4
4	KME302	Fluid Mechanics & Fluid Machines	3	1	0	30	20	50		100		150	4
5	KME303	Materials Engineering	3	0	0	30	20	50		100		150	3
6	KME351	Fluid Mechanics Lab	0	0	2				25		25	50	1
7	KME352	Material Testing Lab	0	0	2				25		25	50	1
8	KME353	Computer Aided Machine Drawing-I Lab	0	0	2				25		25	50	1
9	KME354	Mini Project or Internship Assessment*	0	0	2			50				50	1
10	KNC301/ KNC302	Computer System Security/Python Programming	2	0	0	15	10	25		50			0
11		MOOCs (Essential for Hons. Degree)											
Total												950	22

*The Mini Project or internship (3-4 weeks) conducted during summer break after II semester and will be assessed during III semester.

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Course Outcome of Practical

SESSION:-2020-21

SEM-3rd

COURSE OUTCOMES

Once the student has successfully completed this course, he/she will be able:

CO1. To understand the principles and performance characteristics of different materials.

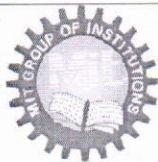
CO2. To measure various properties of materials.

CO3. To know about relation between crystal structure and properties.

CO4. To utilize the concept of mechanical integrity and failure in materials

CO5. To utilize the knowledge crystal structures for various materials and understand the defects in such structures.

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List of Experiment as per University

SESSION: -2020-21

SEM-3rd

1. Strength test of a given mild steel specimen on UTM with full details and stress versus strain plot on the machine.
2. Other tests such as shear, bend tests on UTM.
3. Impact test on impact testing machine like Charpy, Izod or both.
4. Hardness test of given specimen using Rockwell and Vickers/Brinell testing machines.
5. Spring index test on spring testing machine.
6. Fatigue test on fatigue testing machine.
7. Creep test on creep testing machine.
8. Experiment on deflection of beam, comparison of actual measurement of deflection with dial gauge to the calculated one, and or evaluation of young's modulus of beam.
9. Torsion test of a rod using torsion testing machine.
10. Study of NDT (non-destructive testing) methods like magnetic flaw detector, ultrasonic flaw detector, eddy current testing machine, dye penetrant tests.

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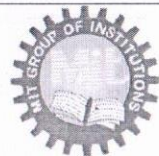
**List of Experiment with
enhancement by the Faculty
Member**

SESSION: -2020-21

SEM-3rd

1. Strength test of a given mild steel specimen on UTM with full details and stress versus strain plot on the machine.
2. Other tests such as shear bend tests on UTM.
3. Impact test on impact testing machine like Charpy, Izod or both.
4. Hardness test of given specimen using Rockwell machine.
5. Hardness test of given specimen using Vickerstesting machines.
6. Spring index test on spring testing machine.
7. Experiment on deflection of beam, comparison of actual measurement of deflection with dial gauge to the calculated one, and or evaluation of young's modulus of beam.
8. Comparison the hardness before and after heat treatment experiment.
9. Plastic mould preparation for small metallic specimen.
10. Prepare a specimen for micro structural examination by cutting, grinding, polishing and etching .

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Schedule of Practical List Performed

SESSION: -2020-21

SEM-3rd

S. No.	Name of Experiment	Mapping with Unit	CO Mapping	PO Mapping	PSO Mapping	Batch A Completion	Batch B Completion	Sign
1	Strength test of a given mild steel specimen on UTM with full details and stress versus strain plot on the machine.	I, II	CO1, CO2, CO4	PO1, PO4, PO12	PSO1, PSO2	22/08/20 29/08/20	22/08/20 29/08/20	
2	Other tests such as shear, bend tests on UTM.	I, II	CO1, CO2, CO4	PO1, PO4, PO12	PSO1, PSO2	02/09/20 16/09/20	02/09/20 16/09/20	
3	Impact test on impact testing machine like Charpy, Izod or both.	I, II	CO1, CO2, CO4	PO1, PO4, PO12	PSO1, PSO2	23/09/20	30/09/20	
4	Hardness test of given specimen using Rockwell machine.	I	CO1, CO2, CO3	PO1, PO4, PO5, PO12	PSO1, PSO2	30/09/20	23/09/20	
5	Hardness test of given specimen using Vickers testing machines.	I	CO1, CO2, CO3	PO1, PO4, PO5, PO12	PSO1, PSO2	14/10/20	21/10/20	
6	Spring index test on spring testing machine	I, II	CO1, CO2	PO1, PO2,	PSO1,	21/10/20	14/10/20	

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	polishing, and etching.			PO4, PO12	PSO2			
7	Experiment on deflection of beam, comparison of actual measurement of deflection with dial gaugeto the calculated one, and or evaluation of young's modulus of beam.	I, II	CO1, CO2, CO4	PO1, PO4, PO5, PO12	PSO 1, PSO2	28/10/20	11/11/20	
8	comparison the hardness before and after heat treatment experiment.	I, IV	CO2, CO3	PO1, PO2, PO4, PO12	PSO 1, PSO2	11/11/20	28/10/20	
9	plastic mould preparation for small metallic specimen.	II	CO1, CO2	PO1, PO2, PO4, PO12	PSO 1, PSO2	18/11/20	25/11/20	
10	prepare a specimen for micro structural examination by cutting, grinding, polishing and etching.	III	CO3, CO5	PO1, PO2, PO4, PO5, PO12	PSO 1, PSO2	25/11/20 02/12/20 09/12/20	18/11/20 09/12/20 02/12/20	

Name &  Sign. Of Faculty

 Sign. Of Reviewer

 Sign. Of HOD


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Course Name	Materials Engineering Lab
Course Code	KME-352
Batch	2018-22
Semester	3
Session	2019-20
L:T:P	0.0.2

Number of Students	37
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Sheet S1:	Define Course Outcomes (COs) using Revised Bloom's Taxonomy Set Targets for CO Attainment Mention Program Outcomes (given by NBA) Mention Program Specific Outcomes(PSO's) of Computer Science and Engineering
Sheet S2:	Mapping of COs with POs (CO-PO Correlation Matrix) Mapping of COs with PSOs (CO-PSO Correlation Matrix) Assessment Plan And Assessment Instruments/Tools
Sheet S3:	CO Attainment using Continuous Internal Examination (CIE)
Sheet S4:	CO Attainment using Semester End Examination (SEE)
Sheet S5:	CO Attainment and Analysis
Sheet S6:	PO Attainment and PSO Attainment
Sheet S7:	CO Attainment Gap and Closure of Quality Loop


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Course Name Materials Engineering Lab
 Course Code KME-352
 Batch 2018-22
 Semester 3
 Session 2019-20
 L:T:P 0.0.2

Course Outcomes(CO's)

Number of Course Outcomes

5

At the end of course, Students will be able to :

Course Code	CO		Course Outcomes(CO's)	Cognitive Levels
KME-352	CO1	KME-352.1	To understand the principles and performance characteristics of different materials.	Understand
	CO2	KME-352.2	To measure various properties of materials.	Apply
	CO3	KME-352.3	To know about relation between crystal structure and properties.	Apply
	CO4	KME-352.4	To utilize the concept of mechanical integrity and failure in materials	Understand
	CO5	KME-352.5	To utilize the knowledge crystal structures for various materials and understand the defects in such structures.	Apply

Targets for CO Attainments

Level	Marks
3	≥ 80%
2	≥ 60% and < 80%
1	< 60%

Aim is to attain level 3

Course Code	CO		% of students getting marks ≥ 80%
KME-352	CO1	KME-352.1	80
	CO2	KME-352.2	80
	CO3	KME-352.3	80
	CO4	KME-352.4	80
	CO5	KME-352.5	80

Program Outcomes (PO's)

Engineering Graduates will be able to :


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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.
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.
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
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.
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
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.

Program Specific Outcomes (PSO's)

Mechanical Engineering graduates will be able to

PSO1	identify and solve problems of thermal engineering, strength of materials, fluid mechanics, refrigeration & air conditioning, Design, dynamics of
PSO2	get fundamental knowledge and hand-on experience of different manufacturing processes, material testing techniques and CAD/CAM tooling to apply in various industries.
PSO3	learn quality and industrial management concepts, communication and soft skills along with other interdisciplinary subjects such as programming


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Course Name Materials Engineering Lab
Course Code KME-352
Batch 2018-22
Semester 3
Session 2019-20
L:T:P 0.0.2

CO-PO Mapping

Course Code	CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
KME-352	CO1 KME-352.1	3	3	3	3	3	2	2			2	1	3
	CO2 KME-352.2	3	3	3	3	3	2	2			2	1	3
	CO3 KME-352.3	3	3	3	3	3	2	2			2	1	3
	CO4 KME-352.4	3	3	3	3	3	2	2			2	1	3
	CO5 KME-352.5	3	3	3	3	3	2	2			2	1	3
Mapping Strength KME-352		3	3	3	3	3	2	2			2	1	3

CO-PSO Mapping

Course Code	CO	PSO1	PSO2	PSO3
KME-352	CO1 KME-352.1	2	2	2
	CO2 KME-352.2	2	2	2
	CO3 KME-352.3	2	2	2
	CO4 KME-352.4	2	2	2
	CO5 KME-352.5	2	2	2
Mapping Strength KME-352		2	2	2

Assessment using Continuous Internal Examination (CIE)


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High	Medium	Low
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Continuous Internal Evaluation	R1: Conduction (5 Marks)	Executed the Experiment/program with desired Input/output (5 Marks)	Partially executed the Experiment/program with Partial Input/output (1 - 4 Marks)	Experiment/program with desired Input/output was not executed (0 Marks)	Every Lab session
	R2: File record (5 Marks)	Completed Record was submitted (5 Marks)	Record was submitted but having minor mistakes (3 - 4 Marks)	Record was submitted but having major mistakes or not submitted at all (0 -2 Marks)	
	R3: Regularity (5 Marks)	Attended every lab session (5 Marks)	Attended lab sessions but missed few of them (3 - 4 Marks)	Not regular at all in labs (0 - 2 Marks)	
Internal lab Examination	R4: Execution (10Marks)				At the end of semester
	R5: Write-up (5 Marks)				
	R6: Viva voce (5 Questions 5 marks Each, i.e, 25 Marks)				

Lab Internal Examination is taken of 50 Marks and scaled to 10 marks

Assessment using Semester End Examination (SEE)

	SEE
Marks	25
CO1	Y
CO2	Y
CO3	Y
CO4	Y
CO5	Y


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Course Name
Course Code
Batch
Semester
Session
L:T:P

Materials Engineering Lab
KME-352
2018-22
3
2019-20
0.0.2

CO Attainment using Continuous Internal Examination (CIE)

			Lab Continuous Evaluation			Lab Internal Examination							Internal Marks	
			R1: Conduction	R2: File Record	R3: Regularity	R4: Execution	R5: Write-Up	R6: Viva Voce						
								CO1	CO2	CO3	CO4	CO5		
S.No.	Univ. Roll No.	Name	Max Marks	5	5	5	10	5	5	5	5	5	5	25
1	1808240001	AARAV SANKET		5	4	4	9	4	5	4	4	4	4	22
2	1808240003	ABHINEET BHARDWAJ		5	4	5	8	4	5	5	3	4	4	22
3	1808240004	ABHISHEK BHATNAGAR		4	5	5	9	5	4	5	5	5	5	24
4	1808240005	ABHISHEK SINGH		5	4	4	8	5	4	5	5	4	4	22
5	1808240006	AJAY KUMAR		5	4	4	8	4	4	4	5	5	5	22
6	1808240007	AMAN GAHLAUT		4	3	4	8	4	4	4	4	4	3	19
7	1808240008	ANMOL SAGAR		5	5	5	9	4	4	4	5	5	5	24
8	1808240009	APURV CHANDEL		4	4	4	8	4	3	4	3	3	4	19
9	1808240010	ARPIT TYAGI		4	3	4	8	4	5	5	5	5	5	20
10	1808240011	ATIGYA GARG		5	4	4	10	5	5	5	5	5	5	23
11	1808240012	DEEPAK PAL		5	4	5	9	4	4	5	5	5	5	23
12	1808240013	DEEPRANSH SINGH		5	4	5	10	5	5	5	5	5	5	24
13	1808240014	DEVISH KUMAR		5	4	5	10	5	5	5	5	5	5	24
14	1808240015	DHARMESH DHAWAN		5	4	5	10	5	5	5	5	5	5	24
15	1808240018	IBRAHIM KHAN		5	3	4	9	5	4	5	4	5	5	21
16	1808240019	KARTIK CHAUDHARY		5	4	4	9	4	5	4	5	4	5	22
17	1808240020	KRISHNA OMPRAKASH KASHYAP		4	3	4	8	4	4	4	4	5	4	19
18	1808240021	LAKSHAY KAUSHIK		5	4	5	10	5	5	5	5	5	5	24
19	1808240022	LOKENDRA		4	3	4	9	4	4	5	4	5	5	20
20	1808240023	MANJUL KUMAR		4	4	4	10	5	5	5	5	5	5	22
21	1808240025	MAYANK ANAND		4	4	5	8	4	4	5	4	4	3	21
22	1808240027	MOHD RAHIL		5	4	5	10	5	5	5	5	5	5	24
23	1808240028	MUSKAN BHATNAGAR		5	4	5	10	5	5	5	5	5	5	24
24	1808240029	NIPUN VASHISHTHA		5	4	5	10	5	5	5	5	5	5	24

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25	1808240030	PRANJAL CHAUDHARY	4	3	4	8	4	4	5	4	4	4
26	1808240031	RAHUL ANAND	4	4	4	8	4	3	4	3	3	3
27	1808240032	ROMESHWAR SARAN	5	4	5	10	5	5	5	5	5	5
28	1808240033	SAMAN ALI	5	4	5	10	5	5	5	5	5	5
29	1808240034	SAMYAK JAIN	4	4	4	9	4	4	4	5	5	5
30	1808240035	SHANTANU TIWARI	4	3	4	8	4	4	5	4	4	5
31	1808240036	SUDHEER KUMAR GAUTAM	4	4	4	9	4	4	3	4	4	5
32	1808240037	UDAY VARSHNEY	5	4	4	8	4	4	4	3	4	4
33	1808240038	YASIR MUMTAZ	5	4	5	10	5	5	5	5	5	5
34	1808210024	ANANT BANSAL	5	4	5	10	5	5	5	5	5	5
35	1900820409001	AMAN KUMAR	4	4	4	9	4	4	5	4	4	5
36	1900820409002	ANKIT PAL	4	3	4	9	4	4	3	4	4	4
37	1900820409003	MUNISH HUSSAIN SIDDIQUI	4	4	4	8	4	4	5	4	4	4

19
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24
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20

Course Code	CO	CO Attained (% of students getting $\geq 80\%$ marks)	CO Attained (On Scale of 3)
KME-352	CO1	83.78	2.51
	CO2	89.19	2.68
	CO3	78.38	2.35
	CO4	86.49	2.59
	CO5	86.49	2.59


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CO1					CO2					CO3					CO4					CO5				
Total Marks Obtained	Total Marks Attempted	>=80%	Level (3,2,1)	Y/N	Total Marks Obtained	Total Marks Attempted	>=80%	Level (3,2,1)	Y/N	Total Marks Obtained	Total Marks Attempted	>=80%	Level (3,2,1)	Y/N	Total Marks Obtained	Total Marks Attempted	>=80%	Level (3,2,1)	Y/N	Total Marks Obtained	Total Marks Attempted	>=80%	Level (3,2,1)	Y/N
10.2	11	92.73	3	Y	9.2	11	83.64	3	Y	9.2	11	83.64	3	Y	9.2	11	83.64	3	Y	9.2	11	83.64	3	Y
10.2	11	92.73	3	Y	10.2	11	92.73	3	Y	8.2	11	74.55	2	N	9.2	11	83.64	3	Y	9.2	11	83.64	3	Y
9.6	11	87.27	3	Y	10.6	11	96.36	3	Y	10.6	11	96.36	3	Y	10.6	11	96.36	3	Y	10.6	11	96.36	3	Y
9.2	11	83.64	3	Y	10.2	11	92.73	3	Y	10.2	11	92.73	3	Y	9.2	11	83.64	3	Y	9.2	11	83.64	3	Y
9	11	81.82	3	Y	9	11	81.82	3	Y	10	11	90.91	3	Y	10	11	90.91	3	Y	10	11	90.91	3	Y
8.6	11	78.18	2	N	8.6	11	78.18	2	N	8.6	11	78.18	2	N	8.6	11	78.18	2	N	7.6	11	69.09	2	N
9.6	11	87.27	3	Y	9.6	11	87.27	3	Y	10.6	11	96.36	3	Y	10.6	11	96.36	3	Y	10.6	11	96.36	3	Y
7.8	11	70.91	2	N	8.8	11	80	3	Y	7.8	11	70.91	2	N	7.8	11	70.91	2	N	8.8	11	80	3	Y
9.6	11	87.27	3	Y	9.6	11	87.27	3	Y	9.6	11	87.27	3	Y	9.6	11	87.27	3	Y	9.6	11	87.27	3	Y
10.6	11	96.36	3	Y	10.6	11	96.36	3	Y	10.6	11	96.36	3	Y	10.6	11	96.36	3	Y	10.6	11	96.36	3	Y
9.4	11	85.45	3	Y	10.4	11	94.55	3	Y	10.4	11	94.55	3	Y	10.4	11	94.55	3	Y	10.4	11	94.55	3	Y
10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y
10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y
10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y
9.2	11	83.64	3	Y	10.2	11	92.73	3	Y	9.2	11	83.64	3	Y	10.2	11	92.73	3	Y	10.2	11	92.73	3	Y
10.2	11	92.73	3	Y	9.2	11	83.64	3	Y	10.2	11	92.73	3	Y	9.2	11	83.64	3	Y	10.2	11	92.73	3	Y
8.6	11	78.18	2	N	8.6	11	78.18	2	N	8.6	11	78.18	2	N	9.6	11	87.27	3	Y	8.6	11	78.18	2	N
10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y
8.8	11	80	3	Y	9.8	11	89.09	3	Y	8.8	11	80	3	Y	9.8	11	89.09	3	Y	9.8	11	89.09	3	Y
10.4	11	94.55	3	Y	10.4	11	94.55	3	Y	10.4	11	94.55	3	Y	10.4	11	94.55	3	Y	10.4	11	94.55	3	Y
9	11	81.82	3	Y	10	11	90.91	3	Y	9	11	81.82	3	Y	9	11	81.82	3	Y	8	11	72.73	2	N
10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y
10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y
10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y
8.6	11	78.18	2	N	9.6	11	87.27	3	Y	8.6	11	78.18	2	N	8.6	11	78.18	2	N	8.6	11	78.18	2	N
7.8	11	70.91	2	N	8.8	11	80	3	Y	7.8	11	70.91	2	N	7.8	11	70.91	2	N	7.8	11	70.91	2	N
10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y

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10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y
9	11	81.82	3	Y	9	11	81.82	3	Y	10	11	90.91	3	Y	10	11	90.91	3	Y	10	11	90.91	3	Y
8.6	11	78.18	2	N	9.6	11	87.27	3	Y	8.6	11	78.18	2	N	8.6	11	78.18	2	N	9.6	11	87.27	3	Y
9	11	81.82	3	Y	8	11	72.73	2	N	9	11	81.82	3	Y	9	11	81.82	3	Y	10	11	90.91	3	Y
9	11	81.82	3	Y	9	11	81.82	3	Y	8	11	72.73	2	N	9	11	81.82	3	Y	9	11	81.82	3	Y
10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y
10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y	10.8	11	98.18	3	Y
9	11	81.82	3	Y	10	11	90.91	3	Y	9	11	81.82	3	Y	9	11	81.82	3	Y	10	11	90.91	3	Y
8.8	11	80	3	Y	7.8	11	70.91	2	N	8.8	11	80	3	Y	8.8	11	80	3	Y	8.8	11	80	3	Y
8.8	11	80	3	Y	9.8	11	89.09	3	Y	8.8	11	80	3	Y	8.8	11	80	3	Y	8.8	11	80	3	Y

No. of students scoring	3	31
	2	6
	1	0
Average		2.84

No. of students scoring	3	33
	2	4
	1	0
Average		2.89

No. of students scoring	3	29
	2	8
	1	0
Average		2.78

No. of students scoring	3	32
	2	5
	1	0
Average		2.86

No. of students scoring	3	32
	2	5
	1	0
Average		2.86


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Course Name Materials Engineering Lab
 Course Code KME-352
 Batch 2018-22
 Semester 3
 Session 2019-20
 L:T:P 0.0.2

CO Attainment using Semester End Examination (SEE)

S.No.	Univ. Roll No.	Name	Max Marks	SEE		
				25	>=80%	Level (3,2,1) Y/N
1	1808240001	AARAV SANKET	22	88	3	Y
2	1808240003	ABHINEET BHARDWAJ	22	88	3	Y
3	1808240004	ABHISHEK BHATNAGAR	24	96	3	Y
4	1808240005	ABHISHEK SINGH	23	92	3	Y
5	1808240006	AJAY KUMAR	22	88	3	Y
6	1808240007	AMAN GAHLAUT	20	80	3	Y
7	1808240008	ANMOL SAGAR	24	96	3	Y
8	1808240009	APURV CHANDEL	20	80	3	Y
9	1808240010	ARPIT TYAGI	21	84	3	Y
10	1808240011	ATIGYA GARG	24	96	3	Y
11	1808240012	DEEPAK PAL	23	92	3	Y
12	1808240013	DEEPRANSH SINGH	24	96	3	Y
13	1808240014	DEVISH KUMAR	24	96	3	Y
14	1808240015	DHARMESH DHAWAN	24	96	3	Y
15	1808240018	IBRAHIM KHAN	22	88	3	Y
16	1808240019	KARTIK CHAUDHARY	22	88	3	Y
17	1808240020	KRISHNA OMPRAKASH KASHYAP	20	80	3	Y
18	1808240021	LAKSHAY KAUSHIK	24	96	3	Y
19	1808240022	LOKENDRA	20	80	3	Y


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20	1808240023	MANJUL KUMAR	22	88	3	Y
21	1808240025	MAYANK ANAND	23	92	3	Y
22	1808240027	MOHD RAHIL	24	96	3	Y
23	1808240028	MUSKAN BHATNAGAR	24	96	3	Y
24	1808240029	NIPUN VASHISHTHA	24	96	3	Y
25	1808240030	PRANJAL CHAUDHARY	20	80	3	Y
26	1808240031	RAHUL ANAND	21	84	3	Y
27	1808240032	ROMESHWAR SARAN	24	96	3	Y
28	1808240033	SAMAN ALI	24	96	3	Y
29	1808240034	SAMYAK JAIN	23	92	3	Y
30	1808240035	SHANTANU TIWARI	21	84	3	Y
31	1808240036	SUDHEER KUMAR GAUTAM	20	80	3	Y
32	1808240037	UDAY VARSHNEY	22	88	3	Y
33	1808240038	YASIR MUMTAZ	24	96	3	Y
34	1808210024	ANANT BANSAL	24	96	3	Y
35	1900820409001	AMAN KUMAR	21	84	3	Y
36	1900820409002	ANKIT PAL	20	80	3	Y
37	1900820409003	MUNISH HUSSAIN SIDDIQUI	23	92	3	Y

No. of students scoring	3	37
	2	0
	1	0
Average		3

Course Code	CO	CO Attained (% of students getting $\geq 80\%$ marks)	CO Attained (On Scale of 3)
KME-352	CO1	100	3
	CO2	100	3
	CO3	100	3
	CO4	100	3
	CO5	100	3


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CO Attainment and Analysis

CO Attainment using Continuous Internal Examination (CIE)

Course Code	CO	CO Attained (% of students getting $\geq 80\%$ marks)	CO Attained (On Scale of 3)
KME-352	CO1	83.78	2.51
	CO2	89.19	2.68
	CO3	78.38	2.35
	CO4	86.49	2.59
	CO5	86.49	2.59

CO Attainment using Semester End Examination (SEE)

Course Code	CO	CO Attained (% of students getting $\geq 80\%$ marks)	CO Attained (On Scale of 3)
KME-352	CO1	100	3
	CO2	100	3
	CO3	100	3
	CO4	100	3
	CO5	100	3

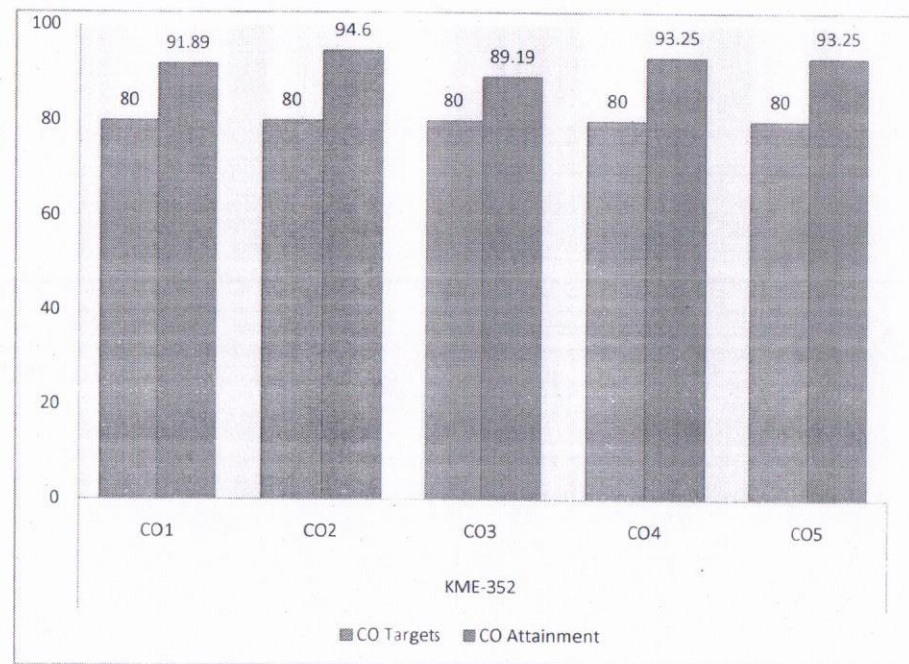
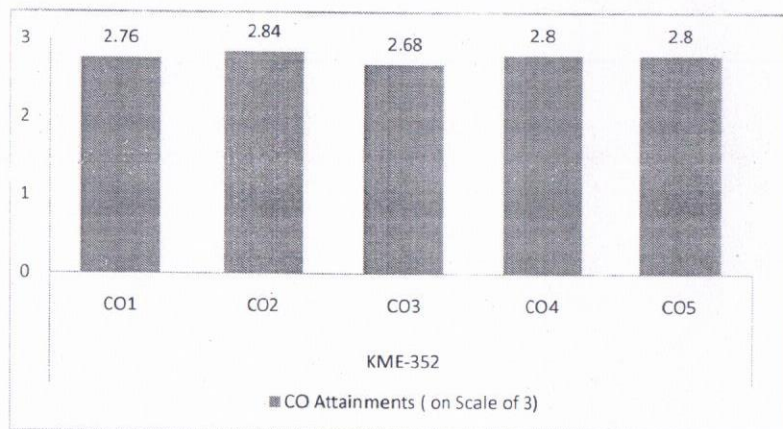
CO Attainment (CO)

Course Code	CO	CO Attained Using CIE (CO_CIE)	CO Attained using SEE (CO_SEE)	CO Attainment (CO = $0.5 \times \text{CO_CIE} + 0.5 \times \text{CO_SEE}$)	CO Attainment (On Scale of 3)
KME-352	CO1	83.78	100	91.89	2.76
	CO2	89.19	100	94.6	2.84
	CO3	78.38	100	89.19	2.68
	CO4	86.49	100	93.25	2.8
	CO5	86.49	100	93.25	2.8

Course Code	CO	CO Targets	CO Attainment	Y/N
KME-352	CO1	80	91.89	Y
	CO2	80	94.6	Y
	CO3	80	89.19	Y
	CO4	80	93.25	Y
	CO5	80	93.25	Y


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Course Code	CO	CO Attainment (On Scale of 3)
KME-352	CO1	2.76
	CO2	2.84
	CO3	2.68
	CO4	2.8
	CO5	2.8




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CO Attainment Gap

Course Code	CO	CO Targets	CO Attainment	CO Attainment Gap (Target - Attainment)
KME-352	CO1	80	91.89	-11.89
	CO2	80	94.6	-14.60
	CO3	80	89.19	-9.19
	CO4	80	93.25	-13.25
	CO5	80	93.25	-13.25

If Gap > 0 : Target not attained
 If Gap ≤ 0 : Target attained

Closure of Quality Loop

Course Code	CO	CO Targets	CO Attainment Gap	Action proposed to bridge the gap where targets are not achieved	Modification of targets where Achieved
KME-352	CO1	80	-11.89		Target increased to 100%
	CO2	80	-14.60		Target increased to 100%
	CO3	80	-9.19		Target increased to 100%
	CO4	80	-13.25		Target increased to 100%
	CO5	80	-13.25		Target increased to 100%