



POORNIMA

COLLEGE OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

CURRICULUM DELIVERY PLAN

OUTLINE-ODD SEM-2023-24



ISI-6, RIICO Institutional Area, Sitapura, Jaipur-302022 (Rajasthan)

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1 The Institution ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of Continuous Internal Assessment (CIA)

PCE is affiliated to RTU, Kota and follows the planned and prescribed curriculum of university. The Internal Quality Assurance Cell (IQAC) of PCE takes the responsibility of monitoring the effective delivery of the curriculum through a well-planned and documented process. To ensure effective curriculum delivery, a Curriculum Delivery Plan (CDP) is prepared by all PACs of the respective departments. A CDP includes detailed planning for preparation, verification, execution and adherence to all documents related to academic delivery of all courses. As per the directions received from IQAC, the Examination cell plans for the Continuous Internal Assessment. Examination cell then circulate CIA planning to the PAC. Examination cell sends all the CIE Data to Director's Office for the final approval before its submission to RTU. Detail outlines are as follows.

1. Director Office, PCE receives the curriculum from RTU, Kota through university website.
2. IQAC prepares institute academic calendar aligned with RTU academic calendar considering input received in last GC meeting and other stakeholders. IQAC forwards the Institute Academic Calendar to PAC (Program Assessment Committee) for identifying curriculum gaps and examination cell for CIE. PACs then prepares CDPs after consolidating the course specific planning received from the respective faculty members.
3. A CDP includes activities for gap abridgement which are proposed to be carried out by the faculty members.
4. IQAC also instructs PACs to prepare the department activity calendar. PACs receives approval of department activity calendars and CDPs from DABs before its final approval from IQAC.
5. IQAC also reviews the CDPs approved by DABs and gives suggestions/ approvals periodically. All the activities (SPL, Industrial visit, workshop etc.) planned are taken into consideration for the Department activity calendar after the approval from DABs.
6. Subject wise Course files are prepared by respective faculty, comprising of Syllabus, ABC analysis, Blown-Up, Deployment, Lecture notes, Zero Lecture, Tutorial and Assignment sheets, COs Statements, and Mapping with POs and PSOs.
7. Faculty frequently use ICT tools for more effective content delivery using PPTs, video lectures etc.
8. Student attendance is monitored by tutors and chief proctor office with help of SHARP ERP software. Attendance defaulters are regularly counseled through their tutors for improving their attendance.
9. Institute also conducts Annual Internal Academic Audit for the effectiveness of teaching-learning methodologies and the necessary actions are taken as suggested by the audit team.
10. Conferences, seminars, webinars, workshops, expert lectures, STTPs, and FDPs are organized throughout the year on the recent advances in the field of engineering.
11. Continuous Internal Assessment process includes Midterm exam, Tutorials, Assignments, Quizzes, presentation, Class Test, viva-voce etc.
12. As per the RTU examination scheme, mid semester examinations are conducted centrally by examination cell as per the planning & academic calendar and other assessments are conducted at departmental level.
13. All the evaluations are carried out by the faculty members which include COs-POs attainment, Gap identification & action taken for the fulfillment of gap.
14. Student feedback and attainment of COs-POs are reviewed by the PAC for any revision in planning & Delivery.
15. End term semester examinations are conducted by the RTU, Kota.

2 Vision & Mission Statements

2.1 Vision & Mission Statements of the Institute

Vision of Institution

To create knowledge-based society with scientific temper, team spirit and dignity of labor to face the global competitive challenges

Mission of Institution

To evolve and develop skill-based systems for effective delivery of knowledge so as to equip young professionals with dedication & commitment to excellence in all spheres of life

2.2 Vision & Mission Statements of the Program B. Tech. (Mechanical Engineering)

Vision and mission are the essential part of the growth of an institute, the vision and mission are as follows

2.2.1 Vision of Department

To be recognized for quality education in the field of Mechanical Engineering and identified for its innovation & excellence

2.2.2 Mission of Department

- To provide education that transforms students through rigorous teaching and thought process to fulfill the needs of the society and industry
- To collaborate with leading industry partners and other academic & research institutes around the world to strengthen the education and research ecosystem.
- To prepare students with life-long learning for their career by fostering in them the ethical & technical capabilities pertinent to mechanical & allied engineering.

2.2.3 PEO of the Department

Program Educational Objectives (PEOs)

1. **PEO 1:** Graduate will have Fundamental & multidisciplinary knowledge with an ability to analyze, design, innovates and handles the realistic problems.
2. **PEO 2:** Graduate will possess ethical conduct, sense of responsibility to serve society and protect the environment.
3. **PEO 3:** Graduate will have strong foundation in academics, leadership qualities and lifelong learning for a prosperous professional career.

2.2.4 Program Specific Outcome (PSOs)

PSO1. Design, analyze and innovate solutions to technical issues in Thermal, Production and Design Engineering.

PSO2. Exhibit the knowledge and skills in the field of Mechanical & Allied engineering concepts.

PSO3. Apply the knowledge of skills in HVAC&R and Automobile engineering.

2.3 Program Outcomes (PO)

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **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.
3. **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.
4. **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.
5. **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.
6. **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.
7. **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.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **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.
11. **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.
12. **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.

3 Department Academic & Administrative Bodies - Structure & Functions

3.1 Department Advisory Board (DAB)

3.1.1 Primary Objective

Department Advisory Board (DAB) of Department of Mechanical Engineering, PCE, Jaipur is formed to provide necessary suggestions for developing a structured approach for continuous improvement in curriculum delivery, planning and incorporation of Curricular, Extra and Co-Curricular activities needed to abridge the pre-identified curriculum gaps.

3.1.2 Roles & Responsibilities

1. Suggest improvement in academic plans and recommend standard practices/system for attainment of Program Educational Objectives, Program Outcomes, Program Specific Outcomes and Course Outcomes.
2. Provide guidelines for industry-institute interactions to bridge up curriculum/industry gap and suggest quality improvement initiatives to enhance employability.
3. Develop a structured Curriculum Delivery Plan, Department Academic Calendar and seek approval for them from Internal Quality Assurance Cell.
4. Incorporate suggestions received from Program Assessment Committee (PAC) by including proposed activities for bridging curricular gaps identified.
5. To identify and suggest thrust areas to conduct various activities (final year projects, training courses and additional experiments to meet PEOs, and propose necessary action plan for skill development of students, required for entrepreneurship development and quality improvement.

3.1.3 Department-Wise Composition

S. No.	Category	Nominated by	Name of Members	Address
1	Chairman, DAB-ME	Chairman, IQAC	Dr. Mahesh M. Bunde (Principal & Director, PCE)	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
2	Member Secretary	Chairman, DAB-ME	Dr. Narayan Lal Jain Professor & Head. ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
3	Faculty representative-1	Chairman, DAB-ME	Dr. Rajkumar Satankar Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
4	Faculty representative-2	Chairman, DAB-ME	Dr. Surendra Kumara Saini Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Faculty representative-3	Chairman, DAB-ME	Dr. Mukesh Kumar Didwania Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur

6	Faculty representative-4	Chairman, DAB-ME	Dr. Amit Kumar Mandal Associate Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Faculty representative-5	Chairman, DAB-ME	Dr. Akshay Jain Associate Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
8	Special Invitee	Chairman, DAB-ME	Dr. Rekha Nair Dean, First Year	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
9	Alumni Representative-1	Chairman, DAB-ME	Mr. Ashish Sonwal	Pinnacle Infotech Solution
10	Alumni Representative-2	Chairman, DAB-ME	Mr. Sudipt Sharma	Pinnacle Infotech Solution
11	Student Representative	Chairman, DAB-ME	Mr. Jatinder Kumar	ME, PCE, Final Year Student
12	Industry Representative	Chairman, DAB-ME	Mr. Ashok Joshi,	HR, Pinnacle Infotech Solution
13	Parents Representative-1	Chairman, DAB-ME	Mr. Gajendra Kumar Joshi	Panjab Keshri, Jaipur
14	Parents Representative-2	Chairman, DAB-ME	Mr. Mahipal Singh Yadav	Businessman Kalwad, Jaipur

3.1.4 Meeting Frequency & Objectives

Meeting No.	Meeting Code	Meeting Month-Week	Meeting Objective
1.	DAB-1	July First Week	<ul style="list-style-type: none"> Consideration of gaps and proposed activities by PAC last meeting to be implemented in DAC and CDP. Prepares final draft of CDP and DAC to be proposed in upcoming IQAC meeting
2.	DAB-2	September Second Week	<ul style="list-style-type: none"> Approval / Suggestions of proposals from last PAC Meeting. Revision of DAB Drafts for being proposed in upcoming GC
3	DAB-3	December First Week	<ul style="list-style-type: none"> Draft preparation for DAC and CDP for upcoming semester after considering inputs from PAC. Review Semester closure draft from PAC.
4.	DAB-4	April Last Week / May First Week	<ul style="list-style-type: none"> Draft of PCE Academic Calendar and CDP proposed Previous session closure with gaps and feedback. Completion of ATR-2 for current semester based on last GC sessions and compiling it with ATR-1

3.2 Program Assessment Committee

3.2.1 Primary Objective

The primary objective of Program Assessment Committee (PAC) is to identify, bridge and assess the gaps in Program's Curriculum received from university through attainment calculation.

3.2.2 Roles & Responsibilities

1. Identify gaps in curriculum laid down by university and propose activities for bridging identified gaps.
2. Implement academic plans and standard practices/system for attainment of Program Educational Objectives, Program Outcomes, Program Specific Outcomes and Course Outcomes.
3. Regular Monitoring of curriculum gap abridgement and course deployment practices through pre-defined methods.
4. Execute Industry-Institute Interactions to enhance the employability thereby meeting the industry standards and requirements.
5. Implement Curriculum Delivery Plan & Department Academic Calendar.

3.2.3 Department-Wise Composition

S. No.	Category	Nominated by	Name of Members	Address
1	Chairman, PAC	Chairman, IQAC / Head of Institution	Dr. Narayan Lal Jain Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
2	Faculty representative-1	Chairman, PAC-ME	Dr. Rajkumar Satankar Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
3	Faculty representative-2	Chairman, PAC-ME	Dr. Surendra Kumara Saini Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
4	Faculty representative-3	Chairman, PAC-ME	Dr. Amit Kumar Mandal Assoc. Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
5	Faculty representative-4	Chairman, PAC-ME	Dr. Mukesh Didwania Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
6	Faculty representative-6	Chairman, PAC-ME	Dr. Akshay Jain Assoc. Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur
7	Faculty representative-7	Chairman, PAC-ME	Mr. Kalpit Jain Asst. Professor, ME	Poornima College of Engineering, ISI-6, RIICO Inst. Area, Sitapura, Jaipur

3.2.4 Meeting Frequency & Objectives

Meeting No.	Meeting Code	Meeting Month-Week	Meeting Objective
1.	PAC-1	July Last Week	<ul style="list-style-type: none"> • Execution of Academic, Extra and Co-Curricular activities • Regular assessment of Academic, Extra and Co-Curricular activities • Regular calculation of attainments • Revision of Academics gaps • Prepared regular report of program for all assessment, attainment & gaps

2.	PAC-2	August Last Week	<ul style="list-style-type: none"> ● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
3.	PAC-3	September Last Week	<ul style="list-style-type: none"> ● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of academics gaps as previous attainment ● Assessment of activities required for being proposed in upcoming GC ● Submit report to Governing Council about previous semester & planning of next semester.
4.	PAC-4	November Third Week	<ul style="list-style-type: none"> ● Inclusion of suggestions for revising gaps ● Execution of Academic, Extra and Co-Curricular activities according to suggestions in GC ● Regular calculation of attainments ● Revision of academics gaps as previous attainment ● Regular assessment of Academic, Extra and Co-Curricular activities ● Identification and proposal of gaps and activities to be considered by DAB to prepare Department Academic Calendar and CDP for upcoming semester. ● Semester closure report draft to be prepared ● Elective proposals/CBCS
5.	PAC-5	January Last Week	<ul style="list-style-type: none"> ● Incorporation of suggestions from IQAC and DAB meetings in execution of Semester activities ● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
6.	PAC-6	March Last Week	<ul style="list-style-type: none"> ● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps
7.	PAC-7	April Second Week	<ul style="list-style-type: none"> ● Execution of Academic, Extra and Co-Curricular activities ● Regular assessment of Academic, Extra and Co-Curricular activities ● Regular calculation of attainments ● Revision of Academics gaps ● Prepared regular report of program for all assessment, attainment & gaps ● Draft preparation of Semester closure
8.	PAC-8	June Last Week	<ul style="list-style-type: none"> ● Report submission of Semester closure ● Identification and proposal of gaps and activities to be considered by DAB to prepare Department Academic Calendar and CDP for upcoming semester. ● Feedback of last IQAC and suggestions for new semester to be implemented in CDP and DAC ● Elective proposals/CBCS

4 List of Faculty Members

Sr. No.	Faculty Name	Emp.ID	Designation	Email ID	Mobile No.
1.	Dr. Narayan Lal Jain	6528	PROFESSOR	narayan.jain@poornima.org	9414728922
2.	Dr. Mukesh Didwania	1977	PROFESSOR	mukesh.didwania@poornima.org	9717420063
3.	Dr. Raj Kumar Satankar	6144	PROFESSOR	rajkumar.satankar@poornima.org	8561995290
4.	Dr. Surendra Kumar Saini	6375	PROFESSOR	surendra.kumar@poornima.org	7408719492
5.	Dr. Amit Kumar Mandal	3939	ASSOCIATE PROFESSOR	amit.mandal@poornima.org	9829708558
6.	Dr. Akshay Jain	6371	ASSOCIATE PROFESSOR	Akshay.jain@poornima.org	9685223729
7.	Mr. Sanjay Kumawat	3554	ASST PROFESSOR	sanjay.kumawat@poornima.org	9784384269
8.	Mr. Ajay Kumar Pagare	7510	ASST PROFESSOR	ajay.pagare@poornima.org	7583055777

5 Institute Academic Calendar

JULY 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31					1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

AUGUST 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

NOVEMBER 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER 2023						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
31					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30



POORNIMA

COLLEGE OF ENGINEERING

Affiliated to RTU, Kota • Approved by AICTE & UGC under 2(f)

ACADEMIC CALENDAR 2023-24^{*#}

ODD SEMESTER

JULY 2023

RTU THEORY EXAMINATION OF FIRST YEAR [EVEN SEM 2022-23]

AUGUST 2023

Practical Training [After II, IV, VI Sem.]
Celebration of Independence Day.

SEPTEMBER 2023

Monday 11 Commencement of Classes-Odd Semesters B. Tech. III/V/VII Sem.
Wednesday 06 to Saturday 16 Induction Program B.Tech. I Sem
Monday 18 Commencement of Classes-Odd Semesters B. Tech. I Sem.
Tuesday 05 Celebration of Teachers' Day & Activities under WISE
Friday 15 Engineers' Day
Friday 29 Blood Donation Camp

OCTOBER 2023

Monday 02, 2023 Annual Day KALANIDHI & Faculty Felicitation Program
Monday 16, 2023 Manthan- Inter-college Debate Competition
Wednesday 11, to Friday 13 First Mid Term Theory & Practical Exam for B.Tech VII Sem
Monday 16, to Saturday 21 First Mid Term Theory & Practical Exam for B.Tech V & III Sem

NOVEMBER 2023

Thursday 02, to Wednesday 08 First Mid Term Theory & Practical Exam for B.Tech I Sem
Tuesday 28 to Thursday 30 Second Mid-Term Theory & Practical Exam for B. Tech VII Sem
Thursday 30, 2023 Last Teaching Day for B.Tech VII Sem
Tuesday 28 to Tuesday, Dec. 05 Second Mid Term Theory & Practical Exam for B. Tech V & III Sem

DECEMBER 2023

As Per RTU Examination Schedule End-Term Practical Exams for B.Tech VII Sem
Tuesday 05 Last Teaching Day for B.Tech V & III Sem
As Per RTU Examination Schedule End-Term Practical Examination for B.Tech V & III Sem
Monday 18, to Saturday 23 Second Mid-Term Theory & Practical Exam for B.Tech I Sem
Saturday 23 Last Teaching Day for B.Tech I Sem

JANUARY 2023

As Per RTU Examination Schedule End-Term Practical Examination for B.Tech I Sem

**HOLIDAYS
IN
ODD SEMESTER**

- > Independence Day Celebration
- > Raksha Bandhan
- > Krishna Janmashtami
- > Vijayadashami
- > Diwali Break
- > Gurunanak Jayanti
- > Christmas
- > New Year

- 14 August, Monday - 15 August, Tuesday
- 30 August, Wednesday
- 7 September, Thursday - 9 September, Saturday
- 24 October, Tuesday
- 10 November, Friday - 14 November, Tuesday
- 25 November, Saturday - 27 November, Monday
- 23 December, Saturday - 25 December, Monday
- 01 January, Monday - 02 January, Tuesday

*Subject to revision as per RTU notifications

#For all Engineering Faculty and Students of PCE

6 Department Activity Calendar

Poornima College of Engineering, Jaipur					
Activity Calendar : Odd Semester - Session 2023-24					
(A) Academic Processes					
S. No.	Activity/ Process	B.Tech. I Sem.	B.Tech. III Sem.	B.Tech. V Sem.	B.Tech. VII Sem.
A11	Date of Registration & start of regular classes for students	Wednesday, September 06, 23	Monday, September 11, 23	Monday, September 11, 23	Monday, September 11, 23
A2	Orientation programme	Wednesday, September 06, 23 to Saturday, September 16, 23			
A3	Date of submission of question papers by faculty members to secrecy for 1st Mid-term	Monday,October 30, 23	Monday, October 09, 23	Monday, October 09, 23	Thursday, October 05, 23
A4	I Mid Term Theory & Practical Exam	Monday, November 03, 23 to Tuesday, November 21, 23	Monday, October 16, 23 to Monday, October 23, 23	Monday, October 16, 23 to Monday, October 23, 23	Wednesday, October 11, 23 to Friday, October 13, 23
A5	Showing evaluated answer books of 1st Mid-term exam to students in respective	Upto Monday, November 27, 23	Upto Saturday, October 28, 23	Upto Saturday, October 28, 23	Upto Saturday, October 21, 23
A6	Last date of submission of Evaluated Answer Books and Mark of First Mid-term Theory & Practical exam to Exam and Secrecy Cell respectively	Upto Thursday, November 30, 23	Upto Tuesday, October 31, 23	Upto Tuesday, October 31, 23	Upto Tuesday, October 31, 23
A7	Date of submission of question papers by faculty members to secrecy for 2nd Mid-term	Monday, January 03, 24	Tuesday, December 12, 2023	Tuesday, December 12, 2023	Monday, November 28, 2023
A8	Revision classes	To be declared later according to RTU Exam Schedule	Wednesday, January 17, 24, - January 25, 24	Wednesday, January 17, 24-Wednesday, January 20, 24	
A9	Last Teaching Day	Friday, January 12, 2024	Friday, December 15, 23	Friday, December 15, 23	Thursday, November 30, 2023
A10	2nd Mid-term theory & Practical Exams	Monday, January 08, 2024 to Thursday, January 18, 2024	Monday-Thursday, December 18- 28, 2023	Monday-Thursday, December 18- 28, 2023	Monday -Tuesday, December 04-December 12, 2023
A11	End-Term Practical Exams	Friday, January 19, 2024	Wednesday, January 03, 2024	Wednesday, January 03, 2024	Thursday, December 07, 2023
(B) Events and Activities					
B1	Alumni Session	6 Oct 2023 & 22 Nov 2023			
B2	Industrial Visit	2 Nov 2023 & 8 Nov 2023			
B3	Seminar/Webinar				
B4	Expert Talk	12 October 2023			
B5	FDP and STIP	29 September 2023			
B6	Akshay Urja Diwas (ME&EE)-20 Aug.	20 August 2023			
B7	Teachers Day Celebration-5 Sept.	05 September 2023			
B8	Hindi Diwas- 14 Sept.	14 September 2023			
B9	Engineers Day Celebration-15 Sept.	15 September 2023			
B10	Vishwakarma Jayanti (ME)-17 Sept.	17 September 2023			
B11	Gandhi Jayanti -2 Oct.	02 October 2023			
(C) Holidays					
C1	Independence Day	Monday, August 14, 2023-Tuesday, August 15, 2023			
C2	Raksha Bandhan	Wednesday, August 30, 2023			
C3	Shri Krishna Janmashtami	Thursday, September 07, 2023-Saturday, September 09, 2023			
C4	Vijay Dashmi	Tuesday, October 24, 2023			
C5	Diwali Break	Friday, November 10 -14, 2023			
C6	Guru Nanak Jayanti	Saturday, November 25, 2023-Monday, November 27, 2023			
C7	Christmas	Saturday, December 23, 2023-Monday, December 25, 2023			
"स्वच्छ भारत.. सम्पन्न भारत.."					

Teaching Scheme

7.1 RTU Teaching Scheme



RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Teaching & Examination Scheme

B.Tech. : Mechanical Engineering 2nd Year - III Semester

THEORY											
SN	Category	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	BSC	3ME2-01	Advance Engineering Mathematics-I	3	0	0	3	30	70	100	3
2	HSMC	3ME1-02/ 3ME1-03	Technical Communication / Managerial Economics and Financial Accounting	2	0	0	2	30	70	100	2
3	ESC	3ME3-04	Engineering Mechanics	2	0	0	2	30	70	100	2
4	PCC	3ME4-05	Engineering Thermodynamics	3	0	0	3	30	70	100	3
5		3ME4-06	Materials Science and Engineering	3	0	0	3	30	70	100	3
6		3ME4-07	Mechanics of Solids	3	1	0	3	30	70	100	4
			Sub Total	16	1	0					17
PRACTICAL & SESSIONAL											
7	PCC	3ME4-21	Machine drawing practice	0	0	3		60	40	100	1.5
8		3ME4-22	Materials Testing Lab	0	0	3		60	40	100	1.5
9		3ME4-23	Basic Mechanical Engineering Lab	0	0	3		60	40	100	1.5
10		3ME4-24	Programming using MATLAB	0	0	3		60	40	100	1.5
11	PSIT	3ME7-30	Industrial Training	0	0	1		60	40	100	1
12	SODE CA	3ME8-00	Social Outreach, Discipline & Extra Curricular Activities	0	0	0				100	0.5
			Sub- Total	0	0	13					7.5
			TOTAL OF III SEMESTER	16	1	13					24.5

L: Lecture, **T:** Tutorial, **P:** Practical, **Cr:** Credits

ETE: End Term Exam, **IA:** Internal Assessment

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

Scheme of 2nd Year B. Tech. (ME) for students admitted in Session 2021-22 onwards. Page 2



RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Teaching & Examination Scheme
B.Tech. : Mechanical Engineering
3rd Year –V Semester

THEORY											
SN	Category	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	ESC	SME3-01	Mechatronic Systems	2	0	0	3	30	70	100	2
2	PCC/PEC	SME4-02	Heat Transfer	3	0	0	3	30	70	100	3
3		SME4-03	Manufacturing Technology	3	0	0	3	30	70	100	3
4		SME4-04	Design of Machine Elements I	3	0	0	3	30	70	100	3
5		SME4-05	Principles of Management	2	0	0	3	30	70	100	2
6		Professional Elective I (any one)		3	0	0	3	30	70	100	3
		SME5-11	Steam Engineering								
		SME5-12	Automobile Engineering								
		SME5-13	Non Destructive Evaluation & Testing								
		Sub Total			16	0	0				16
PRACTICAL & SESSIONAL											
7	ESC	SME3-21	Mechatronic Lab	0	0	2	2	60	40	100	1
8	PCC	SME4-22	Heat Transfer lab	0	0	2	2	60	40	100	1
9		SME4-23	Production Engineering Lab	0	0	2	2	60	40	100	1
10		SME4-24	Machine Design Practice I	0	0	2	2	60	40	100	1
11	PSIT	SME7-30	Industrial Training	0	0	1	1	60	40	100	2.5
12	SODE CA	SME8-00	Social Outreach, Discipline & Extra Curricular Activities						100	100	0.5
		Sub- Total			0	0	9				7
		TOTAL OF V SEMESTER			16	0	9				23

L: Lecture, T: Tutorial, P: Practical, Cr: Credits

ETE: End Term Exam, IA: Internal Assessment

Office of Dean Academic Affairs
Rajasthan Technical University, Kota



RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Scheme & Syllabus

IV Year- VII & VIII Semester: B. Tech. (Mechanical Engineering)

Teaching & Examination Scheme

B.Tech.: Mechanical Engineering

4th Year – VII Semester

THEORY											
SN	Category	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	PEC	7ME5-11	I. C. Engines								
2		7ME5-12	Operations Research	3	0	0	3	30	120	150	3
3		7ME5-13	Turbomachines								
4	OE		Open Elective-I	3	0	0	3	30	120	150	3
			Sub Total	6	0	0		60	240	300	6
PRACTICAL & SESSIONAL											
5	PCC	7ME4-21	FEA Lab	0	0	3	3	45	30	75	1.5
6		7ME4-22	Thermal Engineering Lab II	0	0	3	3	45	30	75	1.5
7		7ME4-23	Quality Control Lab	0	0	2	2	30	20	50	1
8	PSIT	7ME7-30	Industrial Training *	1	0	0	1	75	50	125	2.5
9		7ME7-40	Seminar *	2	0	0	2	60	40	100	2
10	SODE CA		Social Outreach, Discipline & Extra Curricular Activities	0	0	0		0	25	25	0.5
			Sub- Total	3	0	8		255	195	450	9
			TOTAL OF VII SEMESTER	9	0	8		315	435	750	15

*for the purpose of counting teaching load

L: Lecture, **T:** Tutorial, **P:** Practical, **Cr:** Credits

ETE: End Term Exam, **IA:** Internal Assessment

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

Teaching Scheme of Odd Semester 2023-24

7.1 Marking Scheme

17

8 Department Load Allocation

POORNIMA COLLEGE OF ENGINEERING, JAIPUR										
DEPARTMENT OF MECHANICAL ENGINEERING										
Class Wise Load Allotment Session 2023-24 (ODD)										
Section	Subject Code	Subject Name	L	T	P	Batch Size	Total Load	Tutorial Load	Lab Load	Faculty
A	3ME4-07	Mechanics of Solids	3	1	0	1	3	1	0	Dr. Raj Kumar Satankar
A	3ME2-01	Advance Engineering Mathematics-I	3	1	0	1	3	1	0	Dr. Shilpi Jain
A	3ME4-06	Materials Science and Engineering	3	0	0	1	3	0	0	Dr. Surendra Kumar Saini
A	3ME4-05	Engineering Thermodynamics	3	1	0	1	3	1	0	Dr. Amit Mandal
A	3ME3-04	Engineering Mechanics	3	0	0	1	3	0	0	Dr. Ajay Pagare
A	3ME1-02	Technical Communication	2	0	0	1	2	0	0	Dr. Shalini Shah
A	3ME4-22	Materials Testing Lab	0	0	2	1	0	0	2	Dr. Surendra Kumar Saini
A	3ME4-23	Basic Mechanical Engineering Lab	0	0	2	1	0	0	2	Dr. Amit Mandal
A	3ME4-21	Machine Drawing Practice	0	0	2	1	0	0	2	Dr. Mukesh Didwania
A	3ME4-24	Programming using MAT LAB	0	0	2	1	0	0	2	Dr. Raj Kumar Satankar
A	3ME4-30	Industrial training/ NSP Project or Seminar	0	0	2	1	0	0	2	Dr. Mukesh Didwania Dr. Surendra Kumar Saini
A	5ME4-02	Heat Transfer	3	1	0	1	3	1	0	Dr. Amit Kumar Mandal
A	5ME5-12	Automobile Engineering	3	0	0	1	3	0	0	Dr. Mukesh Didwania
A	5ME3-01	Mechatronic Systems	3	0	0	1	3	0	0	Dr. Akshay Jain
A	5ME4-03	Manufacturing Technology	3	0	0	1	3	0	0	Dr. Surendra Kumar Saini
A	5ME4-04	Design of Machine Elements I	4	0	0	1	4	0	0	Mr. Sanjay Kumawat
A	5ME4-05	Principles of Management	3	0	0	1	3	0	0	Dr. Ajay Pagare
A	5ME3-21	Mechatronic Lab	0	0	2	1	0	0	2	Dr. Akshay Jain
A	5ME4-22	Heat Transfer lab	0	0	2	1	0	0	2	Dr. Amit Kumar Mandal
A	5ME4-23	Production Engineering Lab	0	0	2	1	0	0	2	Dr. Surendra Kumar Saini


A	5ME4-24	Machine Design Practice I Lab	0	0	2	1	0	0	2	Mr. Sanjay Kumawat
A	5ME7-30	Industrial training/ NSP Project	0	0	2	1	0	0	2	Dr. Ajay Pagare/Dr. Akshay Jain
A	7ME5-11	I. C. Engines	4	0	0	1	4	0	0	Dr. Narayan Lal Jain
A	7ME4-21	FEA Lab	0	0	2	3	0	0	6	Mr. Sanjay Kumawat
A	7ME4-22	Thermal Engineering Lab-II	0	0	2	3	0	0	6	Dr. Amit Mandal
A	7ME4-23	Quality Control Lab	0	0	2	3	0	0	6	Dr. Akshay Jain
A	7ME7-30/ 7ME7-Project	Industrial Training (2Hr) / Project Stage-I (1Hr)	3	0	0	2	6	0	0	Dr. Ajay Pagare/Dr. Amit Mandal
A	7ME7-40	Seminar	2	0	0	2	4	0	0	Dr. Mukesh Didwanaia
A	7ME6-60.1	Finite Element Analysis	3	0	0	1	3	0	0	Dr. Raj Kumar Satankar
A	7ME6-60.2	Quality Management	3	0	0	1	3	0	0	Dr. Akshay Jain

9 Time Table

9.1 Orientation Time Table

Poornima College of Engineering Department of Mechanical Engineering Orientation Time Table - Even Sem-2022-23 -2nd Year Venue:- AB-05							
Day/ Date	Time						
	1 08:00 AM-09:00 AM	2 09:00 AM-10:00 AM	3 10:00 AM-11:00 PM	4 11:00 PM-11:50 PM	5 11:50 PM-12:50 PM	6 12:50 PM-01:50 PM	7 01:50 PM-02:50 PM
16 August 2022	Tutor Interaction & Registration Dr. Surendra Kumar Saini	Department Visit Dr. Surendra Kumar Saini	3ME7-30 Industrial Training Dr. Raj Kumar Satankar & Dr. Surendra Kumar Saini	LUNCH	Zero Lecture 3ME4-23 Basic Mechanical Engineering Lab Mr. Kalpit Jain	Zero Lecture 3ME4-24 Programming using MATLAB Dr. Raj Kumar Satankar	Zero Lecture 3ME1-02 Technical Communication Ms. Shalini Shah
17 August 2022	Department Presentation/ HOD Interaction Dr. Narayan Lal Jain	Zero Lecture 3ME4-06- Materials Science and Engineering Dr. Surendra Kumar Saini	MOOC/ Certification Courses by Dr. Amit Mandal	LUNCH	Zero Lecture 3ME3-04-Engineering Mechanics Dr. Raj Kumar Satankar	3ME4-21 Machine Drawing Practice Lab NF-01	Zero Lecture 3ME4-22 Materials Testing Lab Dr. Surendra Kumar Saini Zero Lecture
18 August 2022	Literature Survey, Review & Writing Research Paper Dr. Amit Mandal	Placement & GATE Mr. Kalpit Jain	NSP Project Dr. Raj Kumar Satankar & Dr. Surendra Kumar Saini	LUNCH	Zero Lecture 3ME4-05- Engineering Thermodynamics Dr. Narayan Lal Jain	Zero Lecture 3ME4-07- Mechanics of Solids NF-01	Zero Lecture 3ME2-01-Advance Engineering Mathematics-I NF-MATHS

9.2 Academic Time Table II Year

 DEPARTMENT OF MECHANICAL ENGINEERING ME 2ND YEAR							
	1 08:00 - 09:00AM	2 09:00 - 10:00AM	3 10:00 - 11:00AM	LUNCH 11:00 - 11:50AM	4 11:50AM - 12:50PM	5 12:50 - 01:50PM	6 01:50 - 02:50PM
Mo	I-3 CRT 2ND YEAR DR. SURENDRA SAINI 1B05,2105 CRT	I-3 CRT 2ND YEAR I-3 2nd year 2105 CRT,1B04		I O N D I	3ME4-06 MATERIAL SCIENCE AND ENGINEERING DR. SURENDRA SAINI 1B04	3ME4-07 MECHANICS OF SOLIDS DR. RAJ KUMAR SATANKAR 1B04	3ME4-05 ENGINEERING THERMODYNAMICS DR. AMIT MANDAL 1B04
Tu	3ME4-23 BASIC MECHANICAL ENGINEERING LAB DR. AM / ATI 1B08 VIB LAB	3ME4-06 MATERIAL SCIENCE AND ENGINEERING DR. SURENDRA SAINI 1B04	3ME4-07 MECHANICS OF SOLIDS DR. RAJ KUMAR SATANKAR 1B04		3ME2-01 MATH TUTE DR. SHILPI JAIN (MATHS) 1B04	3ME3-04 ENGINEERING MECHANICS DR. AJAY PAGARE 1B04	3ME4-07 MECHANICS OF SOLIDS -TUTE DR. RAJ KUMAR SATANKAR 1B01 MST LAB
We	3ME4-22 MATERIALS TESTING LAB DR.SS / SKS 1B01 MST LAB		3ME4-05 ENGINEERING THERMODYNAMICS DR. AMIT MANDAL 1B04		3ME2-01 ADVANCE ENGINEERING MATHEMATICS DR. SHILPI JAIN (MATHS) 1B04	3ME3-04 ENGINEERING MECHANICS DR. AJAY PAGARE 1B04	3ME7-30 INDUSTRIAL TRAINING NSP DR.NLJ / ATI / DR.SS 1B04,1B01 MST LAB
Th	3ME4-05 ENGINEERING THERMODYNAMICS TUTE DR. AMIT MANDAL 1B01 MST LAB	3ME2-01 ADVANCE ENGINEERING MATHEMATICS DR. SHILPI JAIN (MATHS) 1B04	3ME3-04 ENGINEERING MECHANICS DR. AJAY PAGARE 1B04		3ME1-02 TECHNICAL COMMUNICATION MS. SHALINI SHAH (HM) 1B04	3ME4-05 ENGINEERING THERMODYNAMICS DR. AMIT MANDAL 1B04	3ME4-07 MECHANICS OF SOLIDS DR. RAJ KUMAR SATANKAR 1B04
Fr	3ME2-01 ADVANCE ENGINEERING MATHEMATICS DR. SHILPI JAIN (MATHS) 1B04	3ME4-24 MAT LAB DR. RKS / CMS 1B13 COMPUTER LAB	3ME4-06 MATERIAL SCIENCE AND ENGINEERING DR. SURENDRA SAINI 1B04		3ME4-21 MACHINE DRAWING PRACTICE DR. AP / CMS 1B13 COMPUTER LAB,1002_CIVIL DWG LAB		3ME1-02 TECHNICAL COMMUNICATION MS. SHALINI SHAH (HM) 1B04
Sa	3ME4-23 BASIC MECHANICAL ENGINEERING LAB-S DR. AM / ATI 1B08 VIB LAB		3ME7-30 IND. TRAINING/NSP-S DR.MD / DR.SS / ATI 1B02 LAB/CLASS,1B01 MST LAB		3ME7-30 IND. TRAINING/NSP-S DR.MD / DR.SS / ATI 1B02 LAB/CLASS,1B01 MST LAB	3ME4-24 MAT LAB-S DR. RKS / CMS 1B13 COMPUTER LAB	
	MR. SANJAY KUMAWAT (TIME TABLE COORDINATOR)			DR. NARAYAN LAL JAIN (HOD-ME-PCE)		DR. MAHESH BUNDELE (DIRECTOR-PCE)	

Academic Time Table III Year


DEPARTMENT OF MECHANICAL ENGINEERING

ME 3RD YEAR

ODD SEM 2023-24 VERSION 2.0
w.e.f 18 SEP. 2023

	1 08:00 - 09:00AM	2 09:00 - 10:00AM	3 10:00 - 11:00AM	LUNCH 11:00 - 11:50AM	4 11:50AM - 12:50PM	5 12:50 - 01:50PM	6 01:50 - 02:50PM
Mo	SME4-02 HEAT TRANSFER TUTE DR. AMIT MANDAL 1B01 MST LAB	SME4-03 MANUFACTURING TECHNOLOGY DR. SURENDRA SAINI 1B05	SME3-21 MECHATRONICS LAB DR. AKSHAY JAIN 1B08 LAB	I C O N D I T I O N A L D A Y	SME5-12 AUTOMOBILE ENGINEERING DR. MUKESH DIDWANA 1B05	SME4-02 HEAT TRANSFER DR. AMIT MANDAL 1B05	SME03-01 MECHATRONICS SYSTEMS DR. AKSHAY JAIN 1B05
Tu	SME4-22 HEAT TRANSFER LAB DR.MD / NS 1B12 HT/THERMAL LAB		SME4-04 DESIGN OF MACHINE ELEMENTS-I MR. SANJAY KUMAWAT 1B05		I-3 CRT 3RD YEAR DR. AKSHAY JAIN 1B05,2105 CRT	I-3 CRT 3RD YEAR I-3 3rd year-A 2105 CRT,1B05	
We	SME4-02 HEAT TRANSFER DR. AMIT MANDAL 1B05	SME4-05 PRINCIPLE OF MANAGEMENT DR. AJAY PAGARE 1B05	SME4-04 DESIGN OF MACHINE ELEMENTS-I MR. SANJAY KUMAWAT 1B05		SME5-12 AUTOMOBILE ENGINEERING DR. MUKESH DIDWANA 1B05	SME4-03 MANUFACTURING TECHNOLOGY DR. SURENDRA SAINI 1B05	SME03-01 MECHATRONICS SYSTEMS DR. AKSHAY JAIN 1B05
Th	SME4-05 PRINCIPLE OF MANAGEMENT DR. AJAY PAGARE 1B05	SME4-04 DESIGN OF MACHINE ELEMENTS-I MR. SANJAY KUMAWAT 1B05	SME4-03 MANUFACTURING TECHNOLOGY DR. SURENDRA SAINI 1B05		SME7-30 INDUSTRIAL TRAINING NSP DR. AP / DR.NLJ / SKS 1B05,1B08 VIB LAB	SME4-23 PRODUCTION ENGINEERING LAB DR.SS / ATI 1B09 PP LAB	
Fr	SME4-05 PRINCIPLE OF MANAGEMENT DR. AJAY PAGARE 1B05	SME03-01 MECHATRONICS SYSTEMS DR. AKSHAY JAIN 1B05	SME4-04 DESIGN OF MACHINE ELEMENTS-I MR. SANJAY KUMAWAT 1B05		SME5-12 AUTOMOBILE ENGINEERING DR. MUKESH DIDWANA 1B05	SME4-24 MACHINE DESIGN PRACTICE -I MR.SKT / SKS 1B02 LAB/CLASS	SME4-02 HEAT TRANSFER DR. AMIT MANDAL 1B05
Sa	SME4-24 MACHINE DESIGN PRACTICE -I-S MR.SKT / NS 1B02 LAB/CLASS		SME7-30 INDUSTRIAL TRAINING NSP-S DR. AP / DR. AKJ / SKS 1B05,1B09 PP LAB		SME7-30 INDUSTRIAL TRAINING NSP-S DR. AP / DR. AKJ / SKS 1B05,1B09 PP LAB	SME3-21 MECHATRONICS LAB-S DR. AKSHAY JAIN 1B08 LAB	
	MR. SANJAY KUMAWAT (TIME TABLE COORDINATOR)			DR. NARAYAN LAL JAIN (HOD-ME-PCE)	DR. MAHESH BUNDELE (DIRECTOR-PCE)		

Academic calendar IV Year



DEPARTMENT OF MECHANICAL ENGINEERING

ME 4TH YEAR

ODD SEM 2023-24 VERSION 2.0

w.e.f 18 SEP. 2023

	1 08:00 - 09:00AM	2 09:00 - 10:00AM	3 10:00 - 11:00AM	LUNCH 11:00 - 11:50AM	4 11:50AM - 12:50PM	5 12:50 - 01:50PM	6 01:50 - 02:50PM
Mo	OPEN ELCTIVE OPEN ELCTIVE-4 4TH-A+B	7ME7-30 INDUSTRIAL TRAINING DR. AP / DR. AM / SKS 1B02 LAB/CLASS, 1B08 VIB LAB		I O N D I	7ME4-23 QUALITY CONTROL LAB DR. AKJ / SKS 1B09 PP LAB	7ME5-11 I.C. ENGINE DR. NARAYAN LAL JAIN 1B02 LAB/CLASS	7ME7-PROJECT DR. AP / MR.SKT / ATI 1B01 MST LAB
Tu	OPEN ELCTIVE OPEN ELCTIVE-4 4TH-A+B	7ME4-21 FEA LAB MR.SKT / CMS 1B02 LAB/CLASS	7ME5-11 I.C. ENGINE DR. NARAYAN LAL JAIN 1B01 MST LAB		7ME7-PROJECT DR. AP / MR.SKT / ATI 1B09 PP LAB	7ME4-24 THERMAL ENGINEERING LAB-II DR. AM / NS 1B12 HT/THERMAL LAB	
We	OPEN ELCTIVE OPEN ELCTIVE-4 4TH-A+B	7ME5-11 I.C. ENGINE DR. NARAYAN LAL JAIN 1B02 LAB/CLASS	7ME7-40 SEMINAR DR.MD / CMS / DR. RKS 1B13 COMPUTER LAB		7ME4-24 THERMAL ENGINEERING LAB-II DR. AM / NS 1B12 HT/THERMAL LAB	7ME4-21 FEA LAB MR.SKT / CMS 1B02 LAB/CLASS	
Th	OPEN ELCTIVE OPEN ELCTIVE-4 4TH-A+B	7ME5-11 I.C. ENGINE DR. NARAYAN LAL JAIN 1B01 MST LAB	7ME7-40 SEMINAR DR.MD / CMS / MR.SKT 1B02 LAB/CLASS		7ME7-40 SEMINAR DR.MD / CMS / MR.SKT 1B02 LAB/CLASS	7ME4-23 QUALITY CONTROL LAB DR. AKJ / SKS 1B08 VIB LAB	
Fr	-----	-----	-----		-----	-----	-----
Sa	-----	-----	-----		-----	-----	-----
	MR. SANJAY KUMAWAT (TIME TABLE COORDINATOR)		DR. NARAYAN LAL JAIN (HOD-ME-PCE)		DR. MAHESH BUNDELE (DIRECTOR-PCE)		

10 Course Outcome Attainment Process:

10.1 Course Outcome Attainment Process

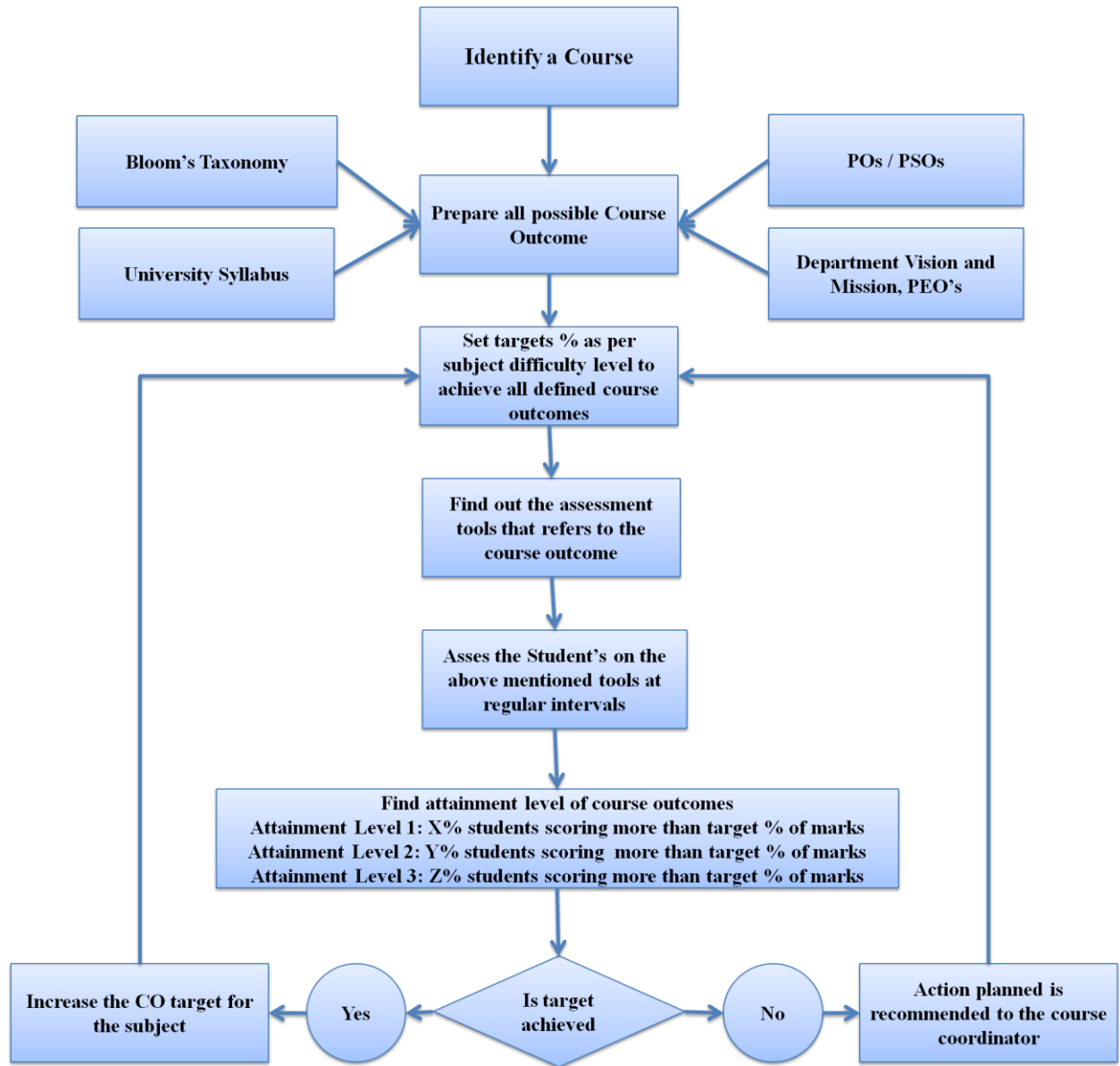


Figure. Course Outcome Attainment Process

10.2 List of CO & CO mapping with PO

0				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PO15
1	3ME1-02	Technical Communications	CO1	Explain the fundamentals characteristics and structure of	2	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Apply the fundamentals of technical writing to prepare the professional	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Analyse the professional documents in grametical perspective	-	2	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Prepare report, artical, research	2.5	2	2	-	-	-	2	2	3	-	2	-	-	-
2	3ME2-01	Advanced Engineering Mathematics	CO1	Understanding the concept of num	1	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO2	Explain numerical methods to find	2	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Apply the appropriate technology	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Analyze the Fundamentals of the f	-	3	-	-	-	-	-	-	-	-	-	-	-	-
			CO5	Solve differential equations involv	-	-	3	-	-	-	-	-	-	-	-	-	2	-
3	3ME3-04	Engineering Mechanics	CO1	Explain the Statics and Dynamic forces in Mechanical System	2	-	-	-	-	-	-	-	-	-	-	3	2	-
			CO2	Apply the motion characteristics of a body subjected to a System of	3	-	-	-	-	-	-	-	-	-	-	3	2	-
			CO3	Analyse the equilibrium and motion of various Mechanical systems and	-	3	-	-	-	-	-	-	-	-	-	3	2	-
			CO4	Evaluate the engineering problems of statics and dynamics systems	-	-	2	-	-	-	-	-	-	-	-	3	2	2
4	3ME4-05	Engineering Thermodynamics	CO1	Describe the basic concept of the	2	-	-	-	-	-	-	-	-	-	-	3	2	3
			CO2	Apply the basic concepts of therm	3	-	-	-	-	-	-	-	-	-	-	3	2	3
			CO3	Analyze the thermodynamic powe	-	3	-	-	-	-	-	-	-	-	-	3	2	3
			CO4	Evaluate the various thermodyn	-	2	-	-	-	-	-	-	-	-	-	3	2	3
5	3ME4-06	Material Science And Engineering	CO1	Describe the various mechanical properties and the testing methods	2	-	-	-	-	-	-	-	-	-	-	3	2	2
			CO2	Identify general crystal structures and engineering materials on the	3	-	-	-	-	-	-	-	-	-	-	3	2	2
			CO3	Analyze the iron carbon equilibrium diagram and the phase	-	2	-	-	-	-	-	-	-	-	-	2	2	-
			CO4	Justify the isothermal transformation diagrams and heat treatment	-	-	2	-	-	-	-	-	-	-	-	2	2	-
6	3ME4-07	Mechanics of Solids	CO1	Explain basic concepts of stress, strain, torsion, bending and strain	2	-	-	-	-	-	-	-	-	-	-	2	2	2
			CO2	Apply the concept of stresses and strain, theories of failure, bending & torsion on different types of loading	3	-	-	-	-	-	-	-	-	-	-	3	2	2
			CO3	Analyze the stresses in snats, cylindrical and sperical thin wall pressure vessels, long and short	-	2	-	-	-	-	-	-	-	-	-	3	2	2
			CO4	Evaluate the deformation of materials and stresses in principal plane by analytical & graphical method	-	3	-	-	-	-	-	-	-	-	-	3	2	-
7	3ME4-21	Machine Drawing Practice	CO1	Draw & illustrate simple mechanical parts & their assembly using fundamental Engineering Drawing	2	-	-	-	-	-	-	-	-	-	-	3	2	2
			CO2	Apply the Geometrical Limits & tolerances using BIS Codes to Machine Parts drawipos & their	3	-	-	-	-	-	-	-	-	-	-	3	2	2
			CO3	Analyze dimensioning, sectioning and development of views of complex feature components & improve their technical	-	3	-	-	-	-	-	-	2	-	-	3	2	2
			CO4	Create 2D and 3D drafting of components using CAD software &	-	-	3	-	2	-	-	-	-	-	-	3	2	2
8	3ME4-22	Material Testing Lab-I	CO1	Explain the crystal structrure of engin	2	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO2	Apply the basic concepts of material science for material testings through	3	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO3	Identify mechanical properties of engineering materials through	-	2	-	-	-	-	-	-	-	-	2	2	2	-
			CO4	Compare the micro-structures and mechanical properties of metallic	-	3	-	-	-	-	-	-	-	-	-	2	2	-
9	3ME4-23	Basic Mechanical Engineering Lab	CO1	Explain the various component and working of the machines like	2	-	-	-	-	-	-	-	-	-	-	2	2	2
			CO2	Identify the various types of Washing Machine, AC, Refrigerator	-	2	-	-	-	-	-	-	-	-	-	2	2	2
			CO3	Analyse the basic engineering concepts in the equipments like	-	3	-	-	-	-	-	-	-	-	-	2	2	2
			CO4	Write and present the report on	-	-	-	-	-	-	2	2	2	-	2	-	-	-
10	3ME4-24	Programming Using MATLAB	CO1	Apply Basic commands, built-in functions, applications of MATLAB	3	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO2	Analyse the mathematical problems encountered in Mechanical	-	2	-	-	-	-	-	-	-	-	-	2	2	-
			CO3	Design and Develop code for problems involving different types of	-	-	3	-	3	-	-	-	-	-	-	2	2	-
			CO4	Execute the coding for evaluation and simulation of problems in	-	-	-	-	2	-	-	2	2	-	-	2	2	-
					3.00	2.00	3.00	-	2.50	-	-	2.00	2.00	-	-	2.00	2.00	2.00

11	3ME7-30	Industrial Training	CO1	Relating the real time applications to the mechanical engineering	-	3	-	-	-	-	-	-	-	2	2	-	1		
			CO2	Develop the problem solving approach by developing projects in	-	-	3	-	2	-	-	-	2	-	2	2	-	2	
			CO3	Build skills to be working as a team member and become employable.	-	-	-	-	-	-	-	3	-	-	-	-	3	2	
			CO4	Create a well organized report employing elements of technical	-	-	-	-	-	-	2	-	3	-	3	-	2	1	
					-	3.00	3.00	-	2.00	-	-	2.00	2.50	3.00	2.00	2.33	2.00	2.50	1.50
12	4ME1-03	Managerial Economics and Financial Accounting	CO1	Describe the fundamental concepts of Economics and Financial	-	-	-	-	-	1	-	-	-	2	3	-	-	-	1
			CO2	Calculate the domestic product, national product and elasticity of price on demand and supply	-	2	-	-	-	-	-	-	-	3	-	-	-	-	1
			CO3	Draw the cost graphs and revenue graphs and forecast the impact of change in price in various perfect as	3	-	2	-	2	-	-	-	-	-	-	-	-	-	1
			CO4	Compare the financial statements to interpret the financial position of the firm and evaluate the project investment decisions.	-	3	-	2	-	-	-	-	-	-	3	-	-	1	-
					3.00	2.50	2.00	2.00	2.00	1.00	-	-	-	2.00	3.00	-	-	1.00	1.00
13	4ME2-01	Data Analytics	CO1	Apply statistical tools for different types of problems in Data Analytics.	2	-	-	-	-	-	-	-	-	-	-	2	2	-	
			CO2	Analyze sample data and interpret the same for given problem.	-	2	-	-	-	-	-	-	-	-	-	2	2	-	
			CO3	Formulate data analysis problems by selecting appropriate analysis	-	3	-	-	-	-	-	-	-	-	-	2	2	-	
			CO4	Evaluate complex engineering	-	-	2	-	-	-	-	-	-	-	-	2	2	-	
					2.00	2.50	-	-	-	-	-	-	-	-	-	2.00	2.00	-	
14	4ME3-04	Digital Electronics	CO1	Explain the concepts of electronics components like Diodes, BJT,	2	-	-	-	-	-	-	-	-	-	-	-	2	-	
			CO2	Apply the concepts of electronics to	3	-	-	-	-	-	-	-	-	-	-	-	-	-	
			CO3	Analyse the performance parameters	-	3	-	-	-	-	-	-	-	-	-	-	-	-	
			CO4	Design and develop the application b	-	-	-	-	-	-	-	-	-	-	-	-	2	-	
					2.50	3.00	-	-	-	-	-	-	-	-	-	-	2.00	-	
15	4ME4-05	Fluid Mechanics and Fluid Machines	CO1	Explain the basic principles of fluid mechanics and its application	2	-	-	-	-	-	-	-	-	-	-	-	3	2	-
			CO2	Apply the concept of pressure, Flow characteristics and theory of rota-	3	-	-	-	-	-	-	-	-	-	-	-	3	2	-
			CO3	Analyse basic equation of fluid statics and fluid dynamics	-	3	-	-	-	-	-	-	-	-	-	-	3	2	-
			CO4	Evaluate the work done and efficiencies of pump and turbines	-	-	2	-	-	-	-	-	-	-	-	-	3	2	-
					2.50	3.00	2.00	-	-	-	-	-	-	-	-	3.00	2.00	-	
16	4ME4-06	Manufacturing Processes	CO1	Describe the principle and applications of Manufacturing	2	-	-	-	-	-	-	-	-	-	-	2	2	-	
			CO2	Apply the concepts of manufacturing processes to develop a product.	3	-	-	-	-	-	-	-	-	-	-	2	2	-	
			CO3	Identify the possible defects in manufacturing processes and their	-	2	-	-	-	-	-	-	-	-	-	2	2	-	
			CO4	Analyse the various processing parameters of manufacturing	2	3	-	-	-	-	-	-	-	-	-	-	2	2	-
					2.33	2.50	-	-	-	-	-	-	-	-	-	2.00	2.00	-	
17	4ME4-07	Theory of Machines	CO1	Explain the basic principles of machines, mechanisms & its	2	-	-	-	-	-	-	-	-	-	-	-	3	2	2
			CO2	Solve the basic problems on various fundamental machine mechanisms	3	-	-	-	-	-	-	-	-	-	-	-	3	2	1
			CO3	Evaluate the various mechanisms and motion of various mechanical	-	2	-	-	-	-	-	-	-	-	-	-	3	2	3
			CO4	Analyse the terms, laws and concepts related with machines,	-	-	2	-	-	-	-	-	-	-	-	-	3	2	3
					2.50	2.00	2.00	-	-	-	-	-	-	-	-	3.00	2.00	2.25	
18	4ME3-21	Digital Electronics Lab	CO1	Explain the various types of logic gates, digital ICs, Boolean algebra	2	-	-	-	-	-	-	-	-	-	-	-	-	-	
			CO2	Identify the digital circuits in electronics systems	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Analysis of the combinational and sequential circuits using digital ICs.	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Design of the various arithmetic a	-	-	3	-	-	-	-	-	-	-	-	-	-	2	-
					2.25	2.33	2.50	-	-	-	-	-	-	-	-	3.00	2.00	2.25	
19	4ME4-22	Fluid Mechanics Lab	CO1	Determine the various fluid parameters for venturimeter,	2	-	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO2	Apply the concepts of fluid mechanics theorems for its	3	-	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO3	Determine various parameter and losses in flow pipes.	-	2	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO4	Analyse the characteristic curves drawn through experimental data of	-	3	-	-	-	-	-	-	-	-	-	-	2	2	-
					2.50	2.50	-	-	-	-	-	-	-	-	-	2.00	2.00	-	
20	4ME4-23	Production Practise Lab	CO1	Explain the working principle of general machine tools such as	2	-	-	-	-	-	-	-	-	-	-	2	2	-	
			CO2	Apply the knowledge of the machining to perform operations on	3	-	-	-	-	-	-	-	-	-	-	2	2	-	
			CO3	Prepare the tool layout for capston	-	2	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO4	Analyse the moulding sand properties like moisture content,	-	3	-	-	-	-	-	-	2	-	-	2	2	2	-
					2.50	2.50	-	-	-	-	-	-	2.00	-	-	2.00	2.00	2.00	-

21	4ME4-24	Theory of Machines Lab	CO1	Explain the basic mechanism of Mechanical elements and systems.	2	-	-	-	-	-	-	-	-	-	-	2	2	2
			CO2	Demonstrate the models of steering mechanism, cam followers.	3	-	-	-	-	-	-	-	-	2	2	2		
			CO3	Analyse the velocity acceleration diagram, coefficient of friction and	-	2	-	-	-	-	-	-	-	2	2	2		
			CO4	Evaluate theoretical and experimental parameter of gyroscope, governors.	-	-	2	-	-	-	2	2	-	-	2	2	2	
					2.50	2.00	2.00	-	-	-	2.00	2.00	-	-	2.00	2.00	2.00	
22	5ME3-01	Mechatronic Systems	CO1	Explain the basic fundamentals and applications of Mechatronic systems	2	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO2	Apply the concept of sensors, actuators, pneumatic & hydraulic	3	-	-	-	-	-	-	-	-	-	-	2	2	
			CO3	Analyse the role of controls and modeling in mechatronics.	-	2	-	-	-	-	-	-	-	-	-	2	-	
			CO4	Design Instrumentation and Data Acquisition system for automation.	-	3	-	-	-	-	-	-	-	-	2	2	2	
					2.50	2.50	-	-	-	-	-	-	-	-	2.00	2.00	2.00	
23	5ME4-02	Heat Transfer	CO1	Explain the concept of heat transfer and its different modes conduction.	2	-	-	-	-	-	-	-	-	-	-	2	2	2
			CO2	Apply the concept of heat transfer to calculate the heat transfer	3	-	-	-	-	-	-	-	-	-	2	2	2	
			CO3	Analyze the heat transfer parametrs	-	2	-	-	-	-	-	-	-	-	3	2	2	
			CO4	Design the Heat exchangers for suitable applications.	-	-	2	-	-	-	-	-	-	-	2	2	2	
					2.50	2.00	2.00	-	-	-	-	-	-	-	2.25	2.00	2.00	
24	5ME4-03	Manufacturing Technology	CO1	Explain different types of machining and finishing processes and their	2	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO2	Apply the machining process concepts in assessing the	3	-	-	-	-	-	-	-	-	-	-	2	-	
			CO3	Analyse the machining processes in calculation of the forces acting	-	2	-	-	-	-	-	-	-	-	-	2	-	
			CO4	Design the process of machining to develop a industrial product using	-	-	2	-	2	-	-	-	-	-	2	2	-	
					2.50	2.00	2.00	-	2.00	-	-	-	-	-	2.00	2.00	-	
25	5ME4-04	Design of Machine Elements-I	CO1	Explain fundamentals of mechanical components design subjected to static loading based on material &	2	-	-	-	-	-	-	-	-	-	-	3	-	-
			CO2	Apply the basic design concept to design various Mechanical components, such as joints, beam,	3	-	-	-	-	-	-	-	-	-	3	2	2	
			CO3	Analyse the problems of various machine members which are subjected to different loading	-	3	-	-	-	-	-	-	-	-	3	2	2	
			CO4	Evaluate the design stresses & parameters of mechanical components like beam, shaft, joints,	-	-	3	-	-	-	-	-	-	-	3	2	2	
					2.50	3.00	3.00	-	-	-	-	-	-	-	3.00	2.00	2.00	
26	5ME4-05	Principles of Management	CO1	Explain the different concepts of management.	2	-	-	-	-	-	-	-	-	2	-	-	2	-
			CO2	Apply the concepts of the management on the functions and	3	-	-	-	-	-	-	-	-	2	-	-	2	-
			CO3	Analyse the function of management for leading, organising, planning,	-	2	-	-	-	-	-	-	-	-	-	2	-	
			CO4	Prepare a leadership profile using c	-	-	2	-	-	-	-	-	2	-	-	2	-	
					-	-	3	-	-	-	-	-	2	2	-	-		
					2.50	2.00	2.00	-	-	-	-	-	2.00	2.00	-	-	2.00	-
27	5ME5-12	Automobile Engineering	CO1	Explain various parts, their mechanism and functions of	2	-	-	-	-	-	-	-	-	-	-	-	2	3
			CO2	Identify the Gear boxes, brakes, clutches and drives for specific	3	-	-	-	-	-	-	-	-	-	-	2	3	
			CO3	Analyse the various automobile systems like wheel and tyre, steering, suspension, electrical,	-	2	-	-	-	-	-	-	-	-	-	2	3	
			CO4	Evaluate the various parameter of automobile systems.	-	-	2	-	-	-	-	-	-	-	-	2	3	
					2.50	2.00	2.00	-	-	-	-	-	-	-	-	2.00	3.00	
28	5ME5-11	NDET	CO1	Describe NDT methods used for evaluation of materials	2	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO2	Apply the various inspection processes in accordance with the	3	-	-	-	-	-	-	-	-	-	-	2	-	
			CO3	Analyze various defect occurs in materials and select the appropriate	-	2	-	-	-	-	-	-	-	-	2	2	-	
			CO4	Identify the effect of Regenerative	-	3	-	-	-	-	-	-	-	-	2	2	-	
					2.50	2.50	-	-	-	-	-	-	-	-	2.00	2.00	-	
29	5ME3-21	Mechatronics Lab	CO1	Explain the fundamental knowledge of Transducers, mobile robot, PLC	2	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO2	Apply the knowledge of programming for mobile robots as	3	-	-	-	-	-	-	-	-	-	-	2	-	
			CO3	Analyse the programming parameters for PLC and MAT Lab	-	2	-	-	-	-	-	-	-	-	-	2	-	
			CO4	Develop a mini project with integra	-	-	3	-	-	-	2	2	2	2	2	-	2	2
					2.50	2.00	3.00	-	-	-	-	2.00	2.00	2.00	2.00	2.00	-	
30	5ME4-22	Heat Transfer Lab	CO1	Apply the concepts of conduction, convection and radiation heat	3	-	-	-	-	-	-	-	-	-	-	-	2	2
			CO2	Compare the Effectiveness in Parallel and Counter Flow Heat	-	2	-	-	-	-	-	-	-	-	-	2	2	
			CO3	Analyse the rates of heat transfer for different materials and	-	3	-	-	-	-	-	-	-	-	2	2	2	
			CO4	Evaluate the importance and validity of engineering assumptions through	-	-	3	-	-	-	-	-	-	-	2	2	2	
					3.00	2.50	3.00	-	-	-	-	-	-	-	2.00	2.00	2.00	

31	5ME4-23	Production Engineering Lab	CO1	Apply the principle of metrology for measuring various parameters like Analyzing the force generated on the workpiece during various	2	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO2	Testing the learning and skills of measurement and metrology to Create mini project using various	-	2	-	-	-	-	-	-	-	-	-	2	2	-
			CO3		-	-	-	-	-	-	2	2	2	-	2	2	2	-
			CO4		2.50	2.25	3.00	-	3.00	-	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00
32	5ME4-24	Machine Design Practice - I	CO1	Explain the material properties, manufacturing considerations, ISO standards for selection of materials, selection of the material and acquire skill of finding resisting areas against failure of designing under static load to various machine elements the efficient design criteria related with manufacturing, production, strength and stiffness, synthesis of simple mechanical elements using modern tools and compile the results with help of mini project in team.	2	-	-	-	-	-	-	-	-	-	-	3	2	-
			CO2		-	3	-	-	-	-	-	-	-	-	-	3	2	-
			CO3		-	-	3	-	-	-	-	-	-	-	-	3	2	-
			CO4		-	-	-	-	2	2	-	-	2	-	-	2	3	2
33	5ME7-30	Industrial Training	CO1	Relating the real time applications to the mechanical engineering	2.00	3.00	3.00	-	2.00	2.00	-	-	2.00	-	-	2.00	3.00	2.00
			CO2	Develop the problem solving approach by developing projects in Build skills to be working as a team member and become employable.	-	3	-	-	2	-	-	2	-	2	2	2	-	1
			CO3	Create a well organized report employing elements of technical	-	-	-	-	-	-	-	3	-	-	-	-	3	2
			CO4		-	-	-	-	-	-	2	-	3	-	3	-	2	-
34	6ME3-01	Measurement and Metrology	CO1	Describe the measuring concept and working principle of metrological	-	3.00	3.00	-	2.00	-	-	2.00	2.50	3.00	2.00	2.33	2.00	1.67
			CO2	Identify the appropriate measuring device and method as per their	3	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO3	Apply metrological concept for measuring engineering parameters. Evaluate various parameters of measurement in Instrumentation and Metrological Engineering.	-	2	-	-	-	-	-	-	-	-	-	-	2	-
			CO4		-	2	-	-	-	-	-	-	-	-	-	-	2	-
35	6ME4-02	CIMS	CO1	Describe the importance and scope CIM in fabrication/ manufacturing	3.00	2.00	-	-	-	-	-	-	-	-	-	-	2.00	2.00
			CO2	Explain and compare the different components of CIM.	2	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Apply modern tools in manufacturing industry for automation i.e.	2	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO4	Create program for various parts made by CNC machine.	3	-	-	-	3	-	-	-	-	-	-	-	2	-
36	6ME4-03	Mechanical Vibrations	CO1	Explain the fundamentals of mechanical vibrations, sound and	-	-	3	-	-	-	-	-	-	-	-	-	3	2
			CO2	Apply different methods to formulate the equation of motion for free	2.33	-	3.00	-	3.00	-	-	-	-	-	-	-	3.00	2.00
			CO3	Analyse and compute the natural frequencies and mode shapes of 2	2	-	-	-	-	-	-	-	-	-	-	-	2	-
			CO4	Evaluate the natural frequency of vibrations of continuous system.	3	-	-	-	-	-	-	-	-	-	-	-	2	-
37	6ME4-04	Design of Machine Elements-II	CO1	Explain the fundamentals on designing of machine elements subjected to variable load.	2.50	2.00	2.00	-	-	-	-	-	-	-	-	-	-	2.00
			CO2	Apply the basic design concept to design Shaft, IC Engine components, bolts, springs, rope and belt drives and other	2	-	-	-	-	-	-	-	-	-	-	-	3	2
			CO3	Analyse and solve the problems of components when designed for variable stresses, considering stress concentration, fatigue and combined	3	-	-	-	-	-	-	-	-	-	-	-	3	2
			CO4	Evaluate the design, stresses & parameters of mechanical components like beam, shaft, bolts, bearings, IC Engine Components.	-	3	-	-	-	-	-	-	-	-	-	-	3	2
38	6ME4-05	Quality Management	CO1	Describe the basic concept of Quality Management.	-	-	2	-	-	-	-	-	-	-	-	-	3	2
			CO2	Implement the process to meet desired needs within limits using	2.50	3.00	2.00	-	-	-	-	-	-	-	-	-	3.00	2.00
			CO3	Identify the technique of Design of experiments to solve engineering	-	2	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Analyze the concept of Quality Assurance, Acceptance sampling	-	3	-	-	-	-	-	-	-	-	-	-	2	3
39	6ME4-21	CIMS Lab	CO1	Explain the concept of G & M codes and cutting tool path of CNC	2.50	2.50	-	-	-	-	-	-	-	-	-	-	2.00	2.25
			CO2	Write the CNC programming using G codes and M codes	2	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO3	Analyse the Tool Path for different	3	-	-	-	2	-	-	-	-	-	-	-	-	-
			CO4	Develop program for parts made by	-	3	-	-	-	-	-	-	-	-	-	2	2	-
40	6ME4-22	Vibration Lab	CO1	Explain various aspects of mechanical vibrations and their	-	-	3	-	-	-	-	-	-	-	-	-	-	-
			CO2	Apply the concept of vibration to m	2.50	3.00	3.00	-	2.00	-	-	-	-	-	-	-	2.00	2.00
			CO3	Analyse the different mechanical properties like moment of inertia,	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			CO4	Evaluate the frequency of simple and compound pendulum, damped	-	2	-	-	-	-	-	-	-	-	-	-	2	-

41	6ME4-23	Machine Design Practice - II	CO1	Apply the knowledge of machine design principles to solve various problems related to fatigue Loading.	3	-	-	-	-	-	-	-	-	-	-	3	-	-
			CO2	Evaluate & Compare mechanical components (Bolts, Shaft, Bearings, IC Engine Components, Gears etc.) under variable stresses	-	2	-	-	-	-	-	-	-	-	-	3	2	2
			CO3	Analyze Fatigue life cycle & failure criteria of IC engine and other mechanical components	-	3	-	-	-	-	-	-	-	-	-	3	2	2
			CO4	Synthesize mechanical components (Shaft, IC Engine components, springs, rope and belt drives, Gear etc.) using data book and document	-	-	2	-	-	-	-	2	2	2	-	2	3	2
					3.00	2.50	2.00	-	-	-	-	2.00	2.00	2.00	-	2.00	3.00	2.00
42	6ME4-24	Thermal Engineering Lab I	CO1	Explain the working of I C Engines, Boilers and automobile systems	2	-	-	-	-	-	-	-	-	-	-	-	2	2
			CO2	Apply the basics of thermal engine	3	-	3	-	-	-	-	-	-	-	-	-	2	2
			CO3	Analyse the valve timing diagram of single cylinder diesel engines and	-	2	-	-	-	-	-	-	-	-	-	2	2	2
			CO4	Write a term paper on advanced thermal technology and present it in	-	-	3	-	-	-	-	2	2	2	-	2	-	2
					2.50	2.00	3.00	-	-	-	-	2.00	2.00	2.00	-	2.00	2.00	2.00
43	6ME5-11	Refrigeration and Air Conditioning (Elective-1)	CO1	Explain the fundamentals of refrigeration and air-conditioning	2	-	-	-	-	-	-	-	-	-	-	-	2	3
			CO2	Apply the basics of refrigeration and	3	2	-	-	-	-	-	-	-	-	-	-	2	3
			CO3	Identify the suitable refrigeration and air conditioning systems as per the	-	3	-	-	-	-	-	-	-	-	-	2	2	2
			CO4	Design the refrigeration and air-conditioning system for various	-	-	3	-	-	-	-	-	-	-	-	3	2	3
					2.50	2.50	3.00	-	-	-	-	-	-	-	-	-	2.50	2.00
44	6ME5-12	Non Conventional Machining Methods (Elective-2)	CO1	Explain the various non conventional machining methods.	2	-	-	-	-	-	-	-	-	-	-	-	2	2
			CO2	Apply the principle and mechanics of metal removal for non conventional	3	-	-	-	-	-	-	-	-	-	-	-	2	2
			CO3	Identify the non conventional machining methods for real time	-	2	-	-	-	-	-	-	-	-	-	-	2	2
			CO4	Analyse the process parameters of non conventional machining	-	3	-	-	-	-	-	-	-	-	-	2	2	2
					2.50	2.50	-	-	-	-	-	-	-	-	-	2.00	2.00	2.00
45	7ME5-11	I. C. Engines	CO1	Explain the fundamental concepts and working of I C engine systems	3	-	-	-	-	-	-	-	-	-	-	-	2	2
			CO2	Identify fuel metering, fuel supply, lubricating and Ignition systems for I	-	2	-	-	-	-	-	-	-	-	-	-	2	2
			CO3	Analyze the performance, emission and combustion characteristics of I	-	3	-	-	-	-	-	-	-	-	-	2	2	2
			CO4	Evaluate the fuel mixture ratio for	-	-	2	-	-	-	-	-	-	-	-	-	2	2
					3.00	2.50	2.00	-	-	-	-	-	-	-	-	2.00	2.00	2.00
46	7ME5-13	Turbo Machine	CO1	Explain the fundamentals concepts of turbomachines	2	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO2	Apply the basic concepts of turbomachines to solve real time	3	-	-	-	-	-	-	-	-	-	-	2	2	-
			CO3	Analyze the basic principles of gas turbines through velocity triangles	-	2	-	-	-	-	-	-	-	-	-	2	2	-

11 Course File Sample

Outcome Based Process Implementation Guidelines for Faculty

11.1 Labelling your course file

- **Name of faculty:**
- **Class- SEM:**
- **Branch:**
- **Course Code:**
- **Course Name:**
- **Session:**

11.2 List of Documents:

- 1. Vision & Mission Statements of the Institute**
- 2. Vision & Mission Statements of the Department**
- 3. List of PEO, PSO and PO of department**
- 4. Personal Time Table**
- 5. RTU Syllabus**
- 6. Document as per point no. 1-4 in guidelines**
- 7. Course Plan**
- 8. Document as per point no 6-12 in guidelines**
- 9. Document for CO Assessment Stage 1: As per point no 13, up to 13.2.5**
- 10. Document for CO Assessment Stage 2: As per point no 13, up to 13.2.5, with comparison to previous**
- 11. Document for CO Assessment Stage 3: As per point no 13, up to 13.2.5, with comparison to previous**
- 12. Document for CO Attainment through RTU Component: Previous RTU Result: point no. 13.3 upto 13.3.2**
- 13. Document for PO attainment through RTU Component: Previous RTU Result: point no. 13.4 upto 13.4.2**
- 14. Document for Overall Attainment of PO through CO: As per point no 13.5**
- 15. Document for last three years (Repeat process from 6-14 above): Comparative data should be included in course file**
- 16. Lecture Notes**
- 17. Copy of Assignments questions given from time to time**
- 18. Copy of Tutorial Sheets given (if applicable)**
- 19. RTU Question Papers with answer**
- 20. Internal Assessment Question Papers with answer from time to time**
- 21. Topics covered beyond syllabus- References**
- 22. Details of any other activity and its assessment through rubric be included**
- 23. Mapping department level/ focus activities with your COs**

12 Outcome Based Process Implementation Guidelines for Faculty

Course CO-PO, Preparation, Assessment Formats

Academic Session: 2021-2022

Class:

Semester:

Name of the Faculty:

Subject:

Subject Code:

This document is meant as guidelines for implementing Outcome based education system as a part of NBA process.

- 1. Vision & Mission of Department: Statement and Mapping with Institute Mission** Here you have to include department mission & vision statements and show mapping of keywords with institute mission.
- 2. Program Educational Objectives (PEOs): Statement and Mapping with Department Vision & Mission**
Here you have to include department PEO statements and show mapping of keywords with department vision & mission.
- 3. Program Specific Outcome (PSOs): Statement and Mapping with Department Vision & Mission**
Here you have to include department PSO statements and show mapping of keywords with department vision & mission.
- 4. Program Outcome (POs): Statement and Mapping with PEO and PSO**
Here you have to include PO statements and show mapping of keywords with department PEOs & PSOs.
- 5. Course Plan (Deployment):**

(Please write how you intend to cover the contents: i.e., coverage of Units by lectures, guest lectures, design exercises, solving numerical problems, demonstration of models, model preparation, or by assignments, etc.), **for example**

- coverage of Units by lectures**
- design exercises**
- demonstration of models**
- by assignments**

Lecture No.	Lect. No.	Topics, Problems, Applications	CO/LO	Target Date of Coverage	Actual Date of Coverage	Ref. Book/Journal with Page No.
1.	1	Introduction of OS	CO1	12/07/2019	12/07/2019	T1 Page 121 - 126
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						

Example T1: Principles of OS, By Ramesh Soni, Tata MGHill, Edition 2019

6. **Course Outcomes:** Look for strong mapping of course with specific PO (2-3). Define Generic Course Outcomes (max 4 to 6) using Blooms Taxonomy. (In case of Lab Course define generic Lab Outcomes LO and refer CO as LO in this document).

- i. **3CSA101.1(CO1)-**
- ii. **3CSA101.2(CO2)-**
- iii. **3CSA101.3(CO3)-**
- iv. **3CSA101.4(CO4)-**
- v. **3CSA101.5(CO5)-**

7. CO-PO-PSO Mapping: Mapping Levels: 1- Low, 2- Moderate, 3-Strong

First try to find out 2-3 PO those are strongly related to your subject contents. Go through the contents and try to formulate 4-5 Course Outcome as per bloom taxonomy. Map each CO with PO and PSO as above. While mapping please rethink if you map any PO with 3, it means you are planning to deliver the contents of that level and you will also examine the students at that level.

CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1															
CO2															
CO3															
CO4															
CO5															

7.1 PO Strongly Mapped: (Example):

○ PO2: Write full statement with keywords highlighted ○ PO3: Write full statement with keywords highlighted ○ PO4: Write full statement with keywords highlighted

7.2 PO Moderately Mapped: (Example)

○ PO1: Write full statement with keywords highlighted
○ PO11: Write full statement with keywords highlighted

7.3 PO Low Mapped: (Example)

○ PO12: Write full statement with keywords highlighted

7.4 PSO Strongly Mapped: (Example)

○ PSO 1 : Write full statement with keywords highlighted

7.5 PSO Moderately Mapped: (Example)

○ PSO 2: Write full statement with keywords highlighted

6.6 PSO Low Mapped: (Example)

○ PSO 3: Write full statement with keywords highlighted

8. Rules for CO/LO Attainment Levels: (Targets)

All the courses of your department should be divided into three categories A-Most Difficult course, B-Medium level of Difficulty, C- Low level of Difficulty –(Easy)
According to difficulty level, you can decide specific range for CO attainment targets for Continuous assessment from the following table.
Remember that targets for internal assessment should be higher.

Course Category	Level 3	Level 2	Level 1
A	60 % of students getting > 60% marks	50-60 % of students getting > 60% marks	40-50 % of students getting > 60% marks
B	80 % of students getting > 60% marks	60-80 % of students getting > 60% marks	40-60 % of students getting > 60% marks
C	90 % of students getting > 60% marks	70-90 % of students getting > 60% marks	40-70 % of students getting > 60% marks

9. End Term RTU Component: CO Attainment Levels

All the courses of your department should be divided into three categories A-Most Difficult course, B-Medium level of Difficulty, C- Low level of Difficulty –(Easy)
According to difficulty level and the results of past 3-5 years, you can decide specific range for CO attainment targets for RTU component from the following table.

Course Category	Level 3	Level 2	Level 1
A	50 % of students getting > 60% marks	40-50 % of students getting > 60% marks	30-40 % of students getting > 60% marks
B	60 % of students getting > 60% marks	40-60 % of students getting > 60% marks	30-40 % of students getting > 60% marks
C	80 % of students getting > 60% marks	60-80 % of students getting > 60% marks	40-60 % of students getting > 60% marks

For the specific CO/LO attainment levels of your respective course please use the above tables as reference according your subject difficulty level and prepare following table.

S. No.	Course Type	Attainment Level=1	Attainment Level=2	Attainment Level=3
1	Theory Courses Mid Semester Exams			
2	Theory Courses University Exam			
4	Practical Courses – Internal Exams			
5	Practical Courses - University Exam			
6	Assignments/Unit Test			
7.	Any other			

10. CO wise Assessment Activities (as Mentioned in Session Plan):

You can plan for each CO, activities/ assessment tools to be conducted/ used for its achievement.
Use X to those you select for specific CO. Remove all unused columns.

	Activities															
CO	Pre Mid I Test	Post Mid I Test	Quiz 1	Quiz 2	Pre Mid II Test	Post Mid II Test	Assignment 1	Assignment 2	Workshop	Seminar	Project	Training	Discussion	Mid 1	Mid 2	Ind. visit
CO1																
CO2																
CO3																
CO4																
CO5																
CO6																

In case of Lab course some activities are as follows:

LO	Internal Practical exams	Laboratory Tests	Viva	Records	Project Presentation	Project Evaluation	External practical exams
LO1							
LO2							
LO3							
LO4							

11. CO wise Assessment Activities:

Based on CO-PO mapping, determine targets for each CO as average of targets of all relevant POs.

CO	PO												Avg.	PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	CO Targets	PSO1	PSO2	PSO3
CO1																
CO2																
CO3																
CO4																
CO5																

12. Activity wise Assessment Tools:

This gives you generalized view of different direct and indirect tools those can be used for assessment / achievement of CO/PO. (Decide which tools are required for assessing a particular CO/LO and in reference to Course A, B, C difficulty level).

Sr. No.	Activity	Assessment Method	Tools	Weightage Marks	Recommendation
1.	Pre-Mid Term 1	Direct	Marks	10	For CO
2.	Post-Mid Term 1	Direct	Marks	10	For CO
3.	Quiz 1	Direct	Marks	10	For CO
4.	Quiz 2	Direct	Marks	10	For CO
5.	Pre Mid Term 2	Direct	Marks	10	For CO
6.	Post Mid Term 2	Direct	Marks	10	For CO
7.	Mid Term 1	Direct	Marks	20	For CO
8.	Mid Term 2	Direct	Marks	20	For CO
9.	Assignment 1	Direct	Marks	10	For CO
10.	Assignment 2	Direct	Marks	10	For CO
11.	Workshop	Indirect	Rubrics	5	For LO
12.	Seminar/ SPL	Indirect	Rubrics	5	For CO/LO
13.	Project (Mini or NSP)	Indirect	Rubrics	20	For LO
14.	Discussion	Indirect	Rubrics	5	For LO
15.	Training	Indirect	Rubrics	20	For LO
16.	Industrial Visit	Indirect	Rubrics	20	For LO
17.	Or any other activity	Direct/ Indirect	Marks/ Rubrics	any	For LO
18.					
Note that for every rubrics you need to decide assessment criteria, range of marks or weightage – above values are indicative					

13. CO Assessment Process:

After every activity (Ideally as per above table): (Frequency of Assessment- Can be taken as monthly). So the assessment can be for all activities held during the month. Do the following.

13.1 Attainment of COs**13.1.1 Attainment Table for CO1: 3CSA101.1**

CO1: 3CSA101.1: Attainment Table (Columns) As Applicable CO wise-Monthly

Student	Pre Mid I Test 10	Quiz 1 10	Assignment 10	Quiz 1 10	WS 10	Training 10	Total (60)	% 0f Marks	Level of Attainment
Name1									3
Name2									2
Name 3									1
Name 4									2
Name 5									1
Name 6									2
----									--
-----									--
	No. of Students attained level 3=					% of Students Attained Level 3=			
	No. of Students attained level 2=					% of Students Attained Level 2=			
	No. of Students attained level 1=					% of Students Attained Level 1=			
	Target Achieved= ? (Check Level 3 % attainment -If No Find Gap)								
	Mark X for absent- Take avg. of all present								

(Repeat it for all other COs, (CO2 – CO5))

13.1.2 CO-Gap Identifications

COs	CO 1	CO 2	CO 3	CO4	CO5
Target					
Achieved					
Gap					

13.1.3 Gaps Identified:

Describe what the reasons for gaps are

- i.
- ii.

Overall CO Attainment Table: Example

COs	CO 1	CO 2	CO 3	CO4	CO5	Co6
Attainment level as per rules set	3	1	3	3	3	3
Average CO attainment through internal assessment	2.67					

13.1.4: Activities Decided to bridge the gap

Please do analyze whether you could get improvement through activities decided and conducted for improvements. Reason should be noted why / how it is improved or not.

13.2 Attainment of POs & PSO:

13.2.1 Target-Expected Attainment of PO by attainment of CO- Put all mappings of 3, 2 and 1. Based on CO-PO mapping, determine targets for each PO as average of targets of all relevant COs.

CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
3CSA101.1															
3CSA101.2															
3CSA101.3															
3CSA101.4															
3CSA101.5															
Obtain Average-PO/PSO Targets	Targets	Targets	Targets	Targets	Targets	Targets	Targets	Targets	Targets	Targets	Targets	Targets	Targets	Targets	Targets

13.2.2 Attainment of POs & PSO through CO as Continuous Evaluation:

Put all attainment values of CO as per mappings with 3, 2, 1 as evaluated in 13.1.1 (Frequency- Monthly)

CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
3CSA101.1															
3CSA101.2															
3CSA101.3															
3CSA101.4															
3CSA101.5															
Obtain Avg. PO/PSO Attainment	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved	Achieved

13.2.3 PO Gap Identification:

	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Targets															
Achieved															
Gap															

13.2.4 Gaps Identified:

Describe what the reasons for gap (for PO) are.

-
-

13.2.5 Activities Decided to bridge the gap

Please do analyze whether you could get improvement through activities decided and conducted for improvements. Reason should be noted why / how it is improved or not.

Repeat whole process after one month, Two months, and three months. Plot bar chart for improvement in CO, PO & PSO. (Every month)

13.3 Attainment of CO through RTU Exam:

This may be possible for previous semester results so overall attainment. If faculty is changed, data will be evaluated by concerned faculty who taught and handed over to current faculty. If faculty not available, then current faculty will do the same.

Attainment of CO: 3CSA101: Subject:			
Student	RTU Marks (80)	% Of Marks	Level of Attainment
Name1			3
Name2			2
Name 3			1
Name 4			2
Name 5			1
Name 6			2
----			--
-----			--
No. of Students attained level 3=		% of Students Attained Level 3=	
No. of Students attained level 2=		% of Students Attained Level 2=	
No. of Students attained level 1=		% of Students Attained Level 1=	
CO Attainment = ? (Check Level 3 % attainment -If No Find Gap)			
Mark X for absent- Take avg. of all present			

13.3.1 Attainment of CO through RTU Component:

CO: Course Code: Course Name					
Target					
Achieved					
Gap					

13.3.1 Gaps for CO attainment through RTU Component:

Analyze RTU Question paper with respect to COs formulated, contents delivered and students examined, find out reasons for gaps

- i.
- ii.

13.3.2 Action to be taken:

Prepare recommendations for improvement in planning & teaching for gaps identified.

13.4 Attainment of PO through CO (RTU) Component

Put RTU Results as per target achieved only and mapping level, in following table

Attainment of PO through CO (RTU) Component															
CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
3CSA101															

Attainment of PO through CO (RTU) Component															
3CSA101	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Targets															
Achieved															
Gap															

13.4.1 Gaps in PO through CO from RTU component:

Analyze RTU Question paper with respect to COs formulated & mapped, contents delivered and students examined, find out reasons for gaps

Describe what are the reasons for gap

- i.
- ii.

13.4.2 Action to be taken:

Prepare recommendations for improvement in planning & teaching for gaps identified.

13.5 Overall Attainment of PO & PSO: Through Continuous Assessment & RTU

While combining attainment through Continuous evaluation and RTU component, following weightage be considered.

1. Internal Assessment – Total weightage- 40 %
2. RTU Component ----- Weightage – 60 %

Put all attainments in the following table and compute.

13.5.1: Table 1

Student	RTU Component			Internal Assessment			Total (A+B)	Level of Attainment
	RTU Marks (80)	% of Marks	60% Weightage X6/100 (A)	Overall CO (-----)	% of Marks	Weightage X4/100 (B)		
Name1								3
Name2								2
Name 3								1
Name 4								2
Name 5								1
Name 6								2
----								--
-----								--
No. of Students attained level 3= % of Students Attained Level 3=								
No. of Students attained level 2= % of Students Attained Level 2=								
No. of Students attained level 1= % of Students Attained Level 1=								
PO Attainment = ? (Check Level 3 % attainment -If No Find Gap)								
Mark X for absent- Take avg. of all present								

OR

13.5.2: Table 2

Student	RTU			Internal CO1/ Activity 1 (Weightage %)			Internal CO2/ Activity 2 (Weightage %)			Internal CO3/ Activity 3 (Weightage %)			Total (A+B+C+D)	Level of Attainment
	RTU Marks (80)	% of Marks	60% Weightage X-----/100 A	Overall CO (-----)	% of Marks	Weightage X--/100 B	Overall CO (-----)	% of Marks	Weightage X--/100 C	Overall CO (-----)	% of Marks	Weightage X--/100 D		
Name1														3
Name2														2
Name 3														1
Name 4														2
Name 5														1
Name 6														2
----														--
-----														--

No. of Students attained level 3= Attained Level 3=	% of Students
No. of Students attained level 2= Attained Level 2=	% of Students
No. of Students attained level 1= Attained Level 1=	% of Students
PO Attainment = ? (Check Level 3 % attainment -If No Find Gap)	
Mark X for absent- Take avg. of all present	

13.5.3: Overall PO & PSO Attainment through Course:

Put Overall PO & PSO attainment as per mapping 3,2,1 above:

Attainment of Overall PO for Session 2018-2019															
CO	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
3CSA101															
PO Attainment															

13.5.4: Overall Gaps for Attainment of PO and PSO from the Course

Put Overall PO & PSO targets & attainment as per mapping 3,2,1 above:

Attainment & Gap of Overall PO Session -----															
3CSA101	PO												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Targets															
Achieved															
Gap															

13.5.5. Overall Gaps for Course taught:

Go through all gaps identified above and summarize. Describe what the reasons are.

-
-

13.5.6 Action to be taken:

Prepare recommendations for improvement in planning & teaching (Internal & RTU) for gaps identified. Decide Activities to be conducted to bridge the gaps in COs.

Repeat whole process after One year before, Two year before, and three year before. Plot bar charts for Continuous improvements check in CO, PO & PSO. (Every Year).

13 File Formats

13.1 List of File Formats

- i. Front Page of Course File
- ii. ABC Analysis Format
- iii. Blown-up Format
- iv. Deployment Format
- v. Zero Lecture Format
- vi. Tutorial Format
- vii. Assignment Format
- viii. Lecture Note Format
- ix. Mid Term Question Paper Format
- x. Mid Term Practical Exam Format
- xi. Evaluation Sheets Format
- xii. Activity Report Format

13.2 Front Page of Course File



POORNIMA
COLLEGE OF ENGINEERING

TEACHING MANUAL

COURSE: _____
SEMESTER: _____
SUBJECT: _____
SUB. CODE: _____

CONTENT: PGC Syllabus, Blown-up, Deployment, Zero Lectures,
Detailed lecture notes with cover page, Tutorial/Home-Assignment Sheets

SESSION: 20 ____ - ____

NAME OF FACULTY: _____
DEPARTMENT: _____
CAMPUS: _____

13.3 ABC Analysis Format



POORNIMA

COLLEGE OF ENGINEERING

Department of Mechanical Engineering

Even Semester 2021-22

ABC Analysis

Course: B. Tech.

Name of Faculty: XYZ

Class/Section: 3rd Year/A

Name of Subject: DME-II

Date: 10/01/2022

Subject Code: 6ME4-04

Sr. No.	Category A (Hard topics)	Category B (Topics with average hardness level)	Category C (Easy to understand topics)	Preparedness for "A" topics
1	Bolts subjected to variable stresses.	Goodman line, Soderberg line, Design of machine members subjected to combined, steady and alternating stresses. Design for finite life, Design of Shafts under Variable Stresses,	Variable load, loading pattern, endurance stresses, Influence of size, surface finish, notch sensitivity and stress concentration.	PPT & Notes
2	Design of IC Engine parts: Piston, Connecting rod, Crank shaft	-----	-----	PPT & Notes
3	Design of IC Engine components: Piston, Cylinder, Connecting Rod and Crank Shaft.	Design of helical compression, tension, torsional springs, springs under variable stresses.	Design of belt, rope and pulley drive system,	SPL & PPT
4	Design and force analysis of spur, helical, bevel and worm gears, Bearing reactions due to gear tooth forces.	Design of gear teeth: Lewis and Buckingham equations, wear and dynamic load considerations.		PPT
5	Design of Sliding and Journal Bearing: Methods of lubrication, hydrodynamic, hydrostatic, boundary etc. Minimum film thickness and thermal equilibrium.	Selection of anti-friction bearings for different loads and load cycles, Mounting of the bearings, Method of lubrication.		SPL & PPT

13.4 Blown-up Format



POORNIMA

COLLEGE OF ENGINEERING

BLOWN UP SYLLABUS

Campus: PCE Course: B.Tech.		Class/Section: VI th sem./A	Date:06/01/2022
Name of Faculty: XYZ		Name of Subject: DME-II	Code: 6ME4-04
Sr. No.	Topic as per Syllabus	BLOWN UP TOPICS (Upto 10 Times Syllabus)	
1	PART-1 FATIGUE CONSIDERATION IN DESIGN		
	1.1 Review of Fatigue (Loading pattern)	1.1.1 Types of load 1.1.2 What is fatigue? 1.1.3 Fatigue curve 1.1.4 Endurance limit	
	1.2 Factor affecting endurance limit	1.2.1 Surface finish factor 1.2.2 Size factor 1.2.3 Reliability factor 1.2.4 Temperature factor	
	1.3 Notch sensitivity & Stress concentration	1.3.1 factor of safety 1.3.2 stress concentration 1.3.3 stress concentration curve 1.3.4 notch sensitivity 1.3.5 theoretical stress concentration factor	
	DESIGN OF MACHINE MEMBER		
2	1.4 Goodman, Soderberg line, Design of machine member under steady, Variable and alternating stress, Design for variable stresses	1.4.1 Goodman line, Soderberg line, Gerber parabola method 1.4.2 Design under axial, bending and torsional stress 1.4.3 Mean and variable stress 1.4.4 Design for combined stress 1.4.5 Numerical approach for the design of member	
	1.5 Design for finite life	1.5.1 Requirement of finite life design 1.5.2 Goodman approach toward finite life 1.5.3 Numerical approach for finite life design	
	PART-2 DESIGN OF I.C ENGINE PARTS		
	2.1 Design of I.C Engine Piston	2.1.1 What is Piston and its importance? 2.1.2 Different materials used for the piston. 2.1.3 Effect of materials on the Piston design 2.1.4 Calculation of various pressure and inertia forces	

13.5 Deployment Format



POORNIMA

COLLEGE OF ENGINEERING

SYLLABUS DEPLOYMENT

Campus: PCE		Course: B.Tech.		Class/Section: VI th sem./A		Date: 05/01/2022	
Name of Faculty: XYZ		Name of Subject: DME-II		Code: 6ME4-04			
S.No.	TOPIC AS PER BLOWNUP SYLLABUS	LECT . NO.	CO/LO	Target Date of Coverage	Actual Date of Coverage	Teaching method	Ref. Book/Journal with Page No.
1	ZERO LECTURE	L-1	CO1	11/01/2022	11/01/2022	PPT	Machine design by V.B Bhandari & R. S Khurmi
2	<u>Introduction to Unit :1</u> Introduction of the lecture 1.1.1 Types of load 1.1.2 What is fatigue 1.1.3 Fatigue curve 1.1.4 Endurance limit Conclusion of the lecture Brief of next lecture	L-2	CO1	12/01/2022	12/01/2022	Chalk/ Board	Machine design by V.B Bhandari & R. S Khurmi Page No 34-38
3	Introduction of the lecture 1.2.1 Surface finish factor 1.2.2 Size factor 1.2.3 Reliability factor 1.2.4 Temperature factor Conclusion of the lecture Brief of next lecture	L-3	CO1	14/01/2022	14/01/2022	Chalk/ Board	Machine design by V.B Bhandari & R. S Khurmi Page No 44-52
4	Introduction of the lecture 1.3.1 Factor of safety 1.3.2 Stress concentration 1.3.3 Stress concentration curve Conclusion of the lecture Brief of next lecture	L-4	CO1,2	16/01/2022	16/01/2022	Chalk/ Board	Machine design by V.B Bhandari & R. S Khurmi Page No 58-62
5	Introduction of the lecture 1.3.4 Notch sensitivity 1.3.5 Theoretical stress concentration factor Conclusion of the lecture Brief of next lecture	L-5	CO1	17/01/2022	17/01/2022	Chalk/ Board	Machine design by V.B Bhandari & R. S Khurmi Page No 73-82
6	Introduction of the lecture 1.4.1 Goodman line, Soderberg line, Gerber parabola method the design of member	L-6	CO1,2	18/01/2022	18/01/2022	Chalk/ Board	Machine design by V.B Bhandari & R. S Khurmi Page No 82-88

13.6 Zero Lecture Format



POORNIMA
COLLEGE OF ENGINEERING

ZERO LECTURE

Session: 20 - (Sem.)

Campus: Course: Class/Section:

Name of Faculty:

Zero Lecture

1). Name of Subject: Code:

2). Self-Introduction:

a). Name:

b). Qualification:

c). Designation:

d). Research Area:

e). E-mail Id:@poornima.org

f). Other details: Information about areas of proficiency/ expertise such as subject taught, laboratory taken, Member of Professional body, Academic Proficiency, Book Authored, Paper published in National and International Conference/Journals etc.

3). Introduction of Students:

a). Records of students in 12th

Sr. No.	Average result of 12 th	Name of student scored highest marks	Marks 60% above (No. of students)	Marks between 40%-60% (No. of students)	English Medium Students (No.)	Hindi Medium Students (No.)	No. of Hostellers	No. of Day Scholar

b). Name of 05 best students based on previous results:,,,,

4). Instructional Language: -%English;% Hindi (English not less than 60%)

5). Introduction to subject: - (Pl. separate out subject specific matter and general matter valid for all subjects and group/place them appropriately)

a). Relevance to Branch:

b). Relevance to Society:

c). Relevance to Self:

d). Relation with laboratory:

e). Connection with previous year and next year:

6). Syllabus of Poornima Group of Colleges, Jaipur

a). Unit Name:

b). ABC analysis (RGB method) of unit & topics

7). Books/ Website/Journals & Handbooks/ Association & Institution:

a). Recommended Text & Reference Books and Websites:

S. No.	Title of Book	Authors	Publisher	Cost (Rs.)	No. of books in Library
Text Books					
T1					
T2					
T3					
Reference Books					
R1					
R2					
R3					
Websites related to subject					
1					
2					

b). Journals & Handbooks: - To give information about different Journals & Handbooks available in library related to the subject and branch.

c). Associations and Institutions: - To give information about different Associations and Institutions related to the subject and branch.

8). Syllabus Deployment: -

a). Total weeks available for academics (excluding holidays) as per Poornima Foundation calendar-

Semester	
No. of Working days available (Approx.)	
No. of Weeks (Approx.)	

- Total weeks available for special activities (as mentioned below)- 02 weeks (Approx.)

Note: Individual faculty must calculate the exact no. of lectures available according to time table etc. after consultation with HOD.

b). Special Activities (To be approved by HOD & Dean & must be mentioned in deployment):

- Open Book Test- Once in a semester
- Quiz - Once in a semester
- Special Lectures (SPL)- Minimum 10% of total no. of lectures including following
 - Smart Class by the faculty, who is teaching the subject
 - SPL by expert faculty at PGC level
 - SPL by expert from industry/academia (other institution)
- Revision classes (Solving Important Question Bank):- 1 class before Mid Term and 2 classes before End Term Exam

c). Lecture schedule per week

i). University scheme (L+T+P) = ...+....+.....

Sr. No.	Name of Unit	No. of lectures	Broad Area	Degree of difficulty (High/Medium/Low)	Text/ Reference books
1.					
2.					
3.					
4.					
5.					

d). Introduction & Conclusion: Each subject, unit and topic shall start with introduction & close with conclusion. In case of the subject, it is Zero lecture.

e). Time Distribution in lecture class: - Time allotted: 60 min.

- First 5 min. should be utilized for paying attention towards students who were absent for last lecture or continuously absent for many days + taking attendance by calling the names of the students and also sharing any new/relevant information.

- ii. Actual lecture delivery should be of 50 min.
- iii. Last 5 min. should be utilized by recapping/ conclusion of the topic. Providing brief introduction of the coming up lecture and suggesting portion to read.
- iv. After completion of any Unit/Chapter a short quiz should be organized.
- v. During lecture student should be encouraged to ask questions.

Note: Pl. ensure that each student is having Lecture Note Book. Also, write on the black board day and date, name of the teacher, name of subject with code, unit and lecture no. and topics to be covered at the beginning of each lecture and ensure that students write in lecture note book. Ask students to leave 4/5 pages blank for copying the note from fellow students in case of their absenteeism.

9). Tutorial: - An essential component of Teaching- Learning process in Professional Education.

Objective: - To enhance the recall mechanism.

To promote logical reasoning and thinking of the students.

To interact personally to the students for improve numerical solving ability.

a). *Tutorial processing:* - Tutorial sheet shall be provided to each students

Ist Phase: - It is consisting of questions to be solved in the class assignment session in test mode on perforated sheet given in tutorial notebook and to be collected & kept by respective faculty for review & analysis (20 minutes).

IInd Phase: - Indicating/Initializing the weak issues/ drawback and Evaluating and providing the grade. Making a group with good student for assisting the weak students to explain/solve questions by every student on plain papers given in tutorial note book (20 minutes).

IIIrd Phase: - Solving/ explaining difficulties of lecture class and providing the new home assignment (20 minutes). To be done in tutorial note book.

b). *Home assignment shall comprise of two parts:*

Part (i) Minimum essential questions, which are to be solved and submitted by all with in specified due date.

Part (ii) Other important questions, which may also be solved and submitted for examining and guidance by teacher.

10). Examination Systems:

A. FOR ALL THEORY COURSES:-

a. Continuous Internal Evaluation (CIE)	20%
-Assignment / Project / Papers / Essays / Class Participation	10%
-Quiz / Class Test (Announced / Unannounced)	5%
- Attendance and Discipline	5%
b. Mid Semester Exams (MSE) – Two	20%
c. End Semester Exam (ESE) - One	60%
TOTAL	100 %

B. FOR ALL PRACTICAL (LABORATORY) COURSES:-

a. Continuous Internal Evaluation (CIE)	40%
-Performance (Lab Record, Viva,)	30%
-Attendance and Participation in laboratory work	10%
b. Mid Semester Exam (MSE)– Two	20 %
c. End Semester Exam (ESE) - One	40%
TOTAL	100 %

11). Any other important point:

Place & Date:

Name of Faculty with Designation

13.7 Lecture Note Front page Format



POORNIMA

COLLEGE OF ENGINEERING

LECTURE NOTES

Campus: Course: Class/Section: Date:
Name of Faculty: Name of Subject: Code:
Date (Prep.): Date (Del.): Unit No.: Lect. No:

OBJECTIVE: To be written before taking the lecture (Pl. write in bullet points the main topics/concepts etc., which will be taught in this lecture)

IMPORTANT & RELEVANT QUESTIONS:

FEED BACK QUESTIONS (AFTER 20 MINUTES):

OUTCOME OF THE DELIVERED LECTURE: To be written after taking the lecture (Pl. write in bullet points about students' feedback on this lecture, level of understanding of this lecture by students etc.)

REFERENCES: Text/Ref. Book with Page No. and relevant Internet Websites:

13.7.1 Detailed Lecture Note Format-1



POORNIMA
COLLEGE OF ENGINEERING

DETAILED LECTURE NOTES

Campus: Course:

Class/Section:

Date:

Name of Faculty:

Name of Subject:

Code:

13.7.2 Detailed Lecture Note Format-2



POORNIMA
COLLEGE OF ENGINEERING

DETAILED LECTURE NOTES

PAGE NO.

13.8 Assignment Format



POORNIMA

COLLEGE OF ENGINEERING

Assignment Sheet-1

Campus: PCE **Course:** B.Tech.

Class/Section: III

Date:

Name of Faculty: SKT

Name of Subject: Design Machine of Machine Element-II **Code:** 6ME4-04

Date of Preparation:

Scheduled Date of Submission:

Q. No.	Questions	COs	POs	PSOs
1	Discuss influence of size, surface, reliability and modifying factor on endurance limit of material.	CO1	PO2	PSO1
2	Discuss various methods of mitigation of stress concentration.	CO1	PO2	PSO1
3	Define the following terms used in design of machine elements (i) Size Factor (ii) Notch Sensitivity (iii) Surface Finish Factor	CO1	PO2	PSO1
4	What do you mean by stress concentration? How do you take it into consideration in case of components subjected to dynamic loads?	CO1	PO2	PSO1
5	Explain difference between Soderberg, Goodman and Gerber criteria in detail.	CO1	PO2	PSO1
6	What is physical significance of notch sensitivity factor being one of zero.	CO1	PO2	PSO1
7	What is fluctuating stresses? Draw stress-time curves for different fluctuating stresses.	CO1	PO2	PSO1
8	What is endurance strength? Draw S-N diagram and list various factors affecting it.	CO1	PO2	PSO1
9	Draw and describe Goodman and Soderberg diagram.	CO1	PO2	PSO1
10	Explain modified Goodman diagram for bending stresses.	CO1	PO2	PSO1

13.9 Tutorial Format



POORNIMA
COLLEGE OF ENGINEERING

TUTORIAL SHEET

TUTORIAL SHEET		SHEET No.....	
Campus: Course: Class/Section:		Date:	
Name of Faculty: Name of Subject:		Code:	
Date of Tut. Sheet Preparation:.....		Scheduled Date of Tut.:.....Actual Date of Tut. :.....	
Name of Student:.....Scheduled & Actual Date of H.A. Submission:.....&.....			
FIRST 20 MT. CLASS QUESTIONS	Questions	CO	PO
2 HRS. SOLVABLE HOME ASSIGNMENT (H.A.) QUESTIONS			
OTHER IMPORTANT QUESTIONS			

13.10 Mid Term/ End Term Practical Question Paper Format

POORNIMA COLLEGE OF ENGINEERING, JAIPUR

III B.TECH. (VI Sem.)

SET- A

FIRST MID TERM PRACTICAL EXAMINATION 2021-22

Code: 6ME4-23 Category: PCC Subject Name: MACHINE DESIGN PRACTICE-II
(BRANCH – MECHANICAL ENGINEERING)

Max. Time: 60 Minutes

Max. Marks: 22 + 8 (Viva) = 30

NOTE: - All questions are compulsory. Use of Design Data Book is allowed.

Q. No.	Question	Marks	LO	PO
Q.1				
Q.2				
Q.3				

POORNIMA COLLEGE OF ENGINEERING, JAIPUR

III B.TECH. (VI Sem.)

SET- B

FIRST MID TERM PRACTICAL EXAMINATION 2021-22

Code: 6ME4-23 Category: PCC Subject Name: MACHINE DESIGN PRACTICE-II
(BRANCH – MECHANICAL ENGINEERING)

Max. Time: 60 Minutes

Max. Marks: 22 + 8 (Viva) = 30

NOTE: - All questions are compulsory. Use of Design Data Book is allowed.

Q. No.	Question	Marks	LO	PO
Q.1				
Q.2				
Q.3				

13.11 Mid Term Theory Question Paper Format

II B.TECH. (III Sem.)

POORNIMA COLLEGE OF ENGINEERING, JAIPUR

Roll No. _____

SECOND MID TERM EXAMINATION 2021-22

Code: 3CE2-01 Category: PCC Subject Name-ADVANCE ENGINEERING MATHEMATICS -I
(BRANCH – CIVIL ENGINEERING)

Max. Time: 2 hrs.

Course Credit: _____

Max. Marks: 60

NOTE:- Read the guidelines given with each part carefully.

Course Outcomes (CO):

At the end of the course the student should be able to:

CO1:

CO2:

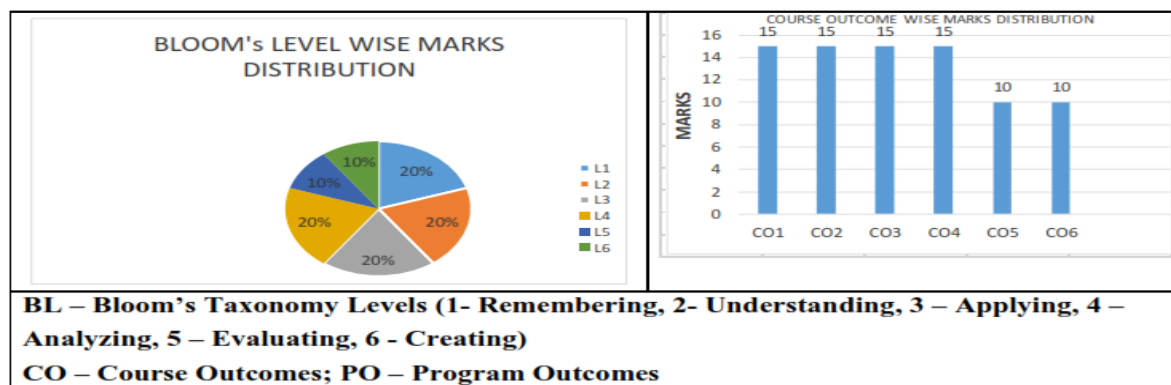
CO3:

CO4:

CO5:

CO6:

PART - A: (All questions are compulsory) Max. Marks (10)					
		Marks	CO	BL	PO
Q.1		2			
Q.2		2			
Q.3		2			
Q.4		2			
Q.5		2			
PART - B: (Attempt 4 questions out of 6) Max. Marks (20)					
Q.6		5			
Q.7		5			
Q.8		5			
Q.9		5			
Q.10		5			
Q.11		5			
PART - C: (Attempt 3 questions out of 4) Max. Marks (30)					
Q.12		10			
Q.13		10			
Q.14		10			
Q.15		10			



13. List of Important Links

<u>List of Important Links</u>		
Sr. No.	Link	Particulars
1	https://www.rtu.ac.in/index/	Rajasthan Technical University
2	http://www.pce.poornima.org	Institute Website
3	http://www.pce.poornima.org/Downloads.html	Format of Students & Employees
4	https://www.turnitin.com/login_page.asp?lang=en_us	Plagiarism Checker
5	http://pcelibrary.poornima.org/	PCE Digital Library
6	https://ndl.iitkgp.ac.in/	National Digital Library of India (NDLI)
7	https://swayam.gov.in/	SWAYAM MOOCs platform
8	https://www.vlab.co.in/	Virtual Labs
9	https://spoken-tutorial.org/	Spoken Tutorial
10	https://fossee.in/	FOSSEE (Free/Libre and Open Source Software for Education)
11	https://www.sih.gov.in/	Smart India Hackathon
12	https://www.swayamprabha.gov.in/	32 high quality educational channels through DTH on 24X7 basis.
13	https://ieeexplore.ieee.org/Xplore/home.jsp.You	IEEE All Society Periodicals Package
14	https://booksc.org/	Link for Free for book and articles
15	https://jgateplus.com/home/	J-gate Plus (JOURNALS -GATE) subscriptions
16	http://www.delnet.nic.in/	Developing Library Network
17	https://dst.rajasthan.gov.in/content/dst-gov/en/home.html	Department of Science & Technology, Government of Rajasthan
18	https://ipindia.gov.in/index.htm	Official website of Intellectual Property India
19	http://pce.poornima.org/Downloads.html	Academic Formats Word File
Note:- Required Credentials can be taken from Respective Department Heads		