PACE Institute of Technology&Sciences

SELF ASSESSMENT REPORT(TIER - I) FOR Mechanical Engg.

Part A : Institutional Information

1 Name and Address of the Institution

PACE Institute of Technology&Sciences,
NH-5,Near valluramma temple ,valluru village tangutur mandal,prakasam district ,andhra pradesh,pin-523272

2 Name and Address of Affiliating University

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

3 Year of establishment of the Institution:

2008

4 Type of the Institution:

○ Institute of National Infortance	◉ Autonomous
○ University	○ Any other(please specify)
○ Deemed University	

5 Ownership Status:

○ Central Government	☐ Trust
○ State Government	☑ Society
○ Government Aided	☐ Section 25 Company
○ Self financing	☐ Any Other(Please Specify)

6 Other Academic Institutions of the Trust/Society/Company etc., if any

Name of Institutions	Year of Establishment	Programs of Study	Location

7 Details of all the programs being offered by the Institution under consideration:

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
MECHANICAL ENGINEERING	UG	2010	2010	60	Yes	60	Not accredited (specify visit dates, year)	10/11/2017	12/11/2017	Yes	4

Sanctioned Intake for Last Five Years for the MECHANICAL ENGINEERING

Academic Year	Sanctioned Intake
2022-23	60
2021-22	60
2020-21	60
2019-20	120
2018-19	120
2017-18	120

8 Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Civil Engg.
2	Under Graduate	Engineering & Technology	Computer Science & Engg.
3	Under Graduate	Engineering & Technology	Electronics & Communication Engg.
4	Under Graduate	Engineering & Technology	Mechanical Engg.
5	Under Graduate	Engineering & Technology	Electrical and Electronics Engineering

9 Total number of employees

A. Regular* Employees (Faculty and Staff):

Items	2022-23		2021-22		2020-21	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering (Male)	210	223	208	215	206	226
Faculty in Engineering (Female)	76	83	76	82	63	67
Faculty in Maths, Science & Humanities teaching in engineering program (Male)	51	55	54	58	58	61
Faculty in Maths, Science & Humanities teaching in engineering program (Female)	27	30	24	26	20	22
Non-teaching staff (Male)	125	135	130	138	119	126
Non-teaching staff (Female)	55	63	40	50	24	27

B. Contractual* Employees (Faculty and Staff):

Items	2022-23		2021-22		2020-21	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering (Male)	0	0	0	0	0	0
Faculty in Engineering (Female)	0	0	0	0	0	0
Faculty in Maths, Science & Humanities teaching in engineering Programs (Male)	0	0	0	0	0	0
Faculty in Maths, Science & Humanities teaching in engineering Programs (Female)	0	0	0	0	0	0
Non-teaching staff (Male)	0	0	0	0	0	0
Non-teaching staff (Female)	0	0	0	0	0	0

10 Total number of Engineering students:

Engineering and Technology- UG	☑ Shift1	☐ Shift2
Engineering and Technology- PG	☑ Shift1	☐ Shift2
Engineering and Technology- Polytechnic	☐ Shift1	☑ Shift2
MBA	☑ Shift1	☐ Shift2
MCA	☐ Shift1	☐ Shift2

Engineering and Technology- UG Shift-1

Course Name	2022-23	2021-22	2020-21
Total no. of Boys	2813	2675	2394
Total no. of Girls	1708	1505	1372
Total	**4521**	**4180**	**3766**

Engineering and Technology- PG Shift-1

Course Name	2022-23	2021-22	2020-21
Total no. of Boys	41	54	82
Total no. of Girls	35	34	43
Total	**76**	**88**	**125**

Engineering and Technology- Polytechnic Shift-2

Course Name	2022-23	2021-22	2020-21
Total no. of Boys	659	609	567
Total no. of Girls	171	124	118
Total	**830**	**733**	**685**

Engineering and Technology- MBA Shift-1

Course Name	2022-23	2021-22	2020-21
Total no. of Boys	164	155	166
Total no. of Girls	100	89	113
Total	**264**	**244**	**279**

11 Vision of the Institution:

Our vision is to impart futuristic technical education to transform the students into technically superior, ethically strong, and self-disciplined to serve the nation as a valuable resource.

12 Mission of the Institution:

M1	To inculcate quality education by implementing innovative teaching-learning methods and state-of-the-art facilities.
M2	To enrich the intellectual know-how, credibility, and integrity of the students to necessitate industry.
M3	To recognize as scholarly and influential leaders in engineering education and to develop human power with creativity and passion for the advancement of future nations.

13 Contact Information of the Head of the Institution and NBA coordinator, if designated:

Head of the Institution	
Name	Dr. G V K Murthy
Designation	Principal
Mobile No.	9703020577
Email ID	principal@pace.ac.in

NBA Coordinator, If Designated

Name	Dr. T R Chaitanya
Designation	Professor in Dept. of CSE
Mobile No.	9581456542
Email ID	chaitanya_tr@pace.ac.in

PART B: Criteria Summary

Critera No.	Criteria	Total Marks	Institute Marks
1	VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES	50	50.00
2	PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES	100	100.00
3	COURSE OUTCOMES AND PROGRAM OUTCOMES	175	175.00
4	STUDENTS' PERFORMANCE	100	72.01
5	FACULTY INFORMATION AND CONTRIBUTIONS	200	177.99
6	FACILITIES AND TECHNICAL SUPPORT	80	80.00
7	CONTINUOUS IMPROVEMENT	75	75.00
8	FIRST YEAR ACADEMICS	50	44.13
9	STUDENT SUPPORT SYSTEMS	50	50.00
10	GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES	120	120.00
	Total	**1000**	**944**

Part B : Criteria Summary

1 VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES (50)

Total Marks 50.00

1.1 State the Vision and Mission of the Department and Institute (5)

Total Marks 5.00

Institute Marks : 5.00

Vision of the institute	Our vision is to impart futuristic technical education to transform the students into technically superior, ethically strong, and self-disciplined to serve the nation as a valuable resource.
Mission of the institute	**M1** To inculcate quality education by implementing innovative teaching-learning methods and state-of-the-art facilities. **M2** To enrich the intellectual know-how, credibility, and integrity of the students to necessitate industry. **M3** To recognize as scholarly and influential leaders in engineering education and to develop human power with creativity and passion for the advancement of future nations.
Vision of the Department	The department strives to create engineering professionals having sound technical knowledge with creative approach, who are competent to pursue diverse and successful careers in modern society.
Mission of the Department	**Mission No.** / **Mission Statements** M1 To impart quality education to the students and enhancing their skills to make them competitive in Mechanical Engineering. M2 To enhance technical skills and knowledge of the students to match the global needs particularly with higher studies, entrepreneurship and industry. M3 To develop the students as career competitors by utilizing the skill and excellency in the field of design, manufacturing and thermal engineering. M4 To make the students to learn effective technical communication skills to face intellectual and ethical career challenges after graduation.

1.2 State the Program Educational Objectives (PEOs) (5)

Total Marks 5.00

Institute Marks : 5.00

PEO No.	Program Educational Objectives Statements
PEO1	To provide students with a foundation in mathematical, scientific and engineering fundamentals necessary to formulate, solve and analyze engineering problems and to prepare them for graduate studies.
PEO2	To inculcate students in machine design, product manufacturing and thermal engineering by adopting experimental, analytical and numerical techniques.
PEO3	To prepare the students for successful careers in higher studies, industry and entrepreneurship that meets the needs of Indian and multi-national organizations.
PEO4	To provide opportunity for students to work as part of teams on multi-disciplinary projects.

1.3 Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (15)

Total Marks 15.00

Institute Marks : 15.00

The Vision, Mission and PEO statements are displayed in various places enabling clear dissemination among internal stakeholders (i.e., Management, Staff members, and Students) and external stakeholders (i.e. Parents, Employers, Alumni… etc). These are explained to stakeholders at different interactive sessions.

Adequacy in respect of publication & dissemination

The department Vision, Mission and PEO statements are available on the college website.

The department magazine which includes Vision, Mission and PEO statements that are disseminated to all stakeholders and placed on the website for clear understanding. The lab manuals and course files also contain all these statements.

The Vision, Mission and PEO statements are displayed in the HoD Chamber, staff rooms, classrooms, laboratories, department library, corridors, and notice boards in order to spread the statements to stakeholders easily.

Process of dissemination among stakeholders

Students: An awareness program is conducted at the time of the induction program for the students to make them aware of the Vision, Mission, and PEO statements. Students are continuously motivated towards the achievement of Vision.

Staff: Newly joined staff members will be inducted Vision, Mission, and PEO statements of the department. Existing staff guides the new staff to achieve the Vision through continuous improvement.

Parents: The Vision, Mission and PEO statements are explained clearly to parents during the induction program.

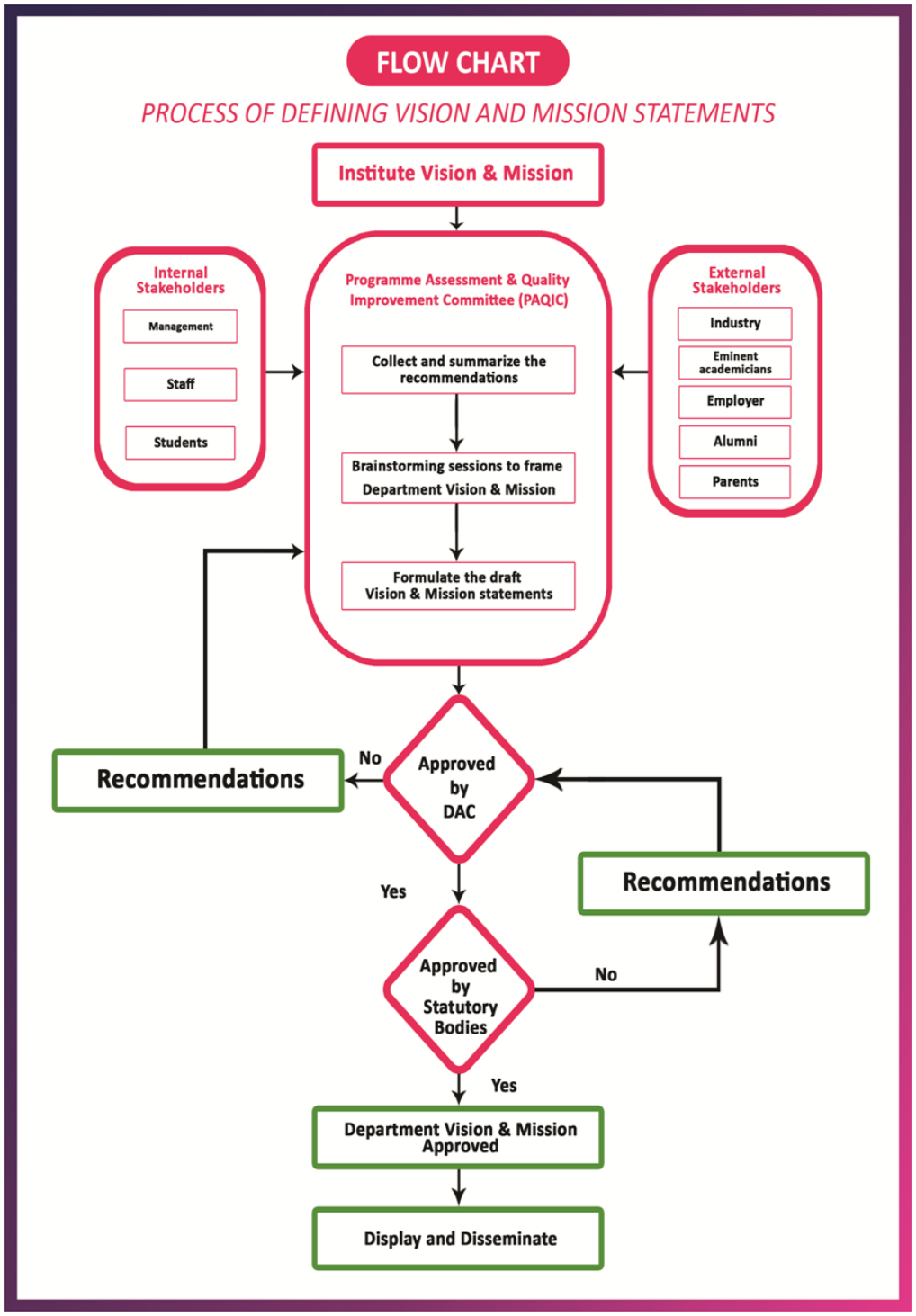
Alumni Members: The Vision, Mission and PEO statements are explained to alumni members during alumni meetings, organized at regular intervals.

Employers: When employers visit the campus for campus placements or when the placement cell approaches the employers for placement activity, the department brochure contains the Vision, Mission and PEO statements will be shared to them during company visits by placement officer.

1.4 State the process for defining the Vision and Mission of the Department, and PEOs of the program (15) Total Marks 15.00

Institute Marks : 15.00

The Process involved in defining the Vision and Mission of the Department



The Department's vision and mission are found through a consultative process involving the stakeholders, faculty of the department, and the Advisory Board members.

1.Department Vision is a derivative component of institute Vision. Department Mission statements express the steps to achieving the department's Vision.

2.The internal (i.e: Management, Staff members, Students) and external stakeholders (i.e: Parents, Employers, Alumni etc) are involved in framing or reframing the Vision and Mission of the department.

3.Programme Assessment and Quality Improvement Committee (PAQIC) collects and summarizes all the stakeholders' recommendations, referring to the department Vision and Mission of reputed institutions, professional bodies, and national and international organizations. The PAQIC will also look into areas to be addressed and resources availability.

4.Discussions and brainstorming sessions will be made among the PAQIC members to arrive at draft Vision and Mission statements.

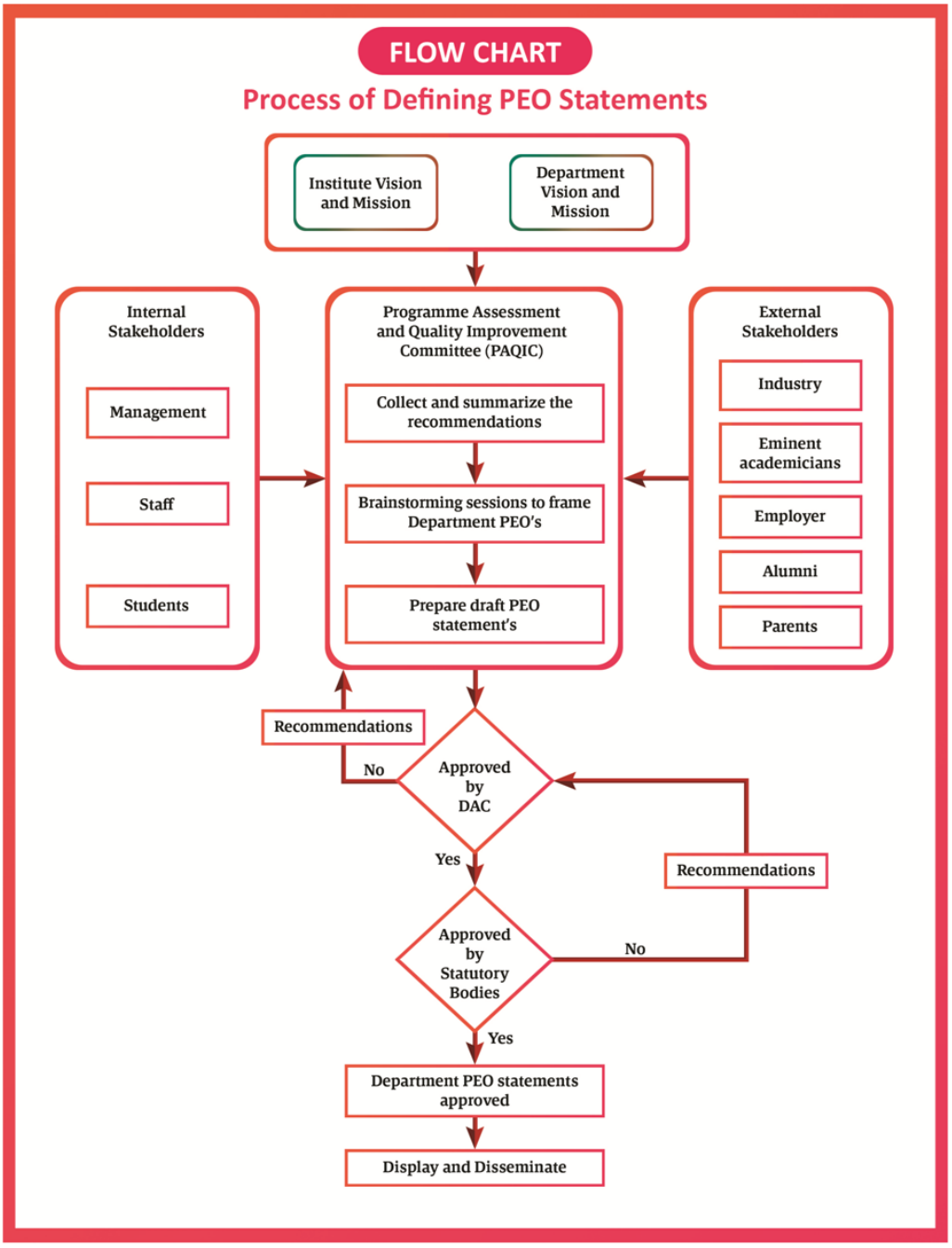
5.The PAQIC will take this forward to the Department Advisory Committee members for suggestions and PAQIC will incorporate all feasible recommendations.

6.The accepted views are analyzed and reviewed to check the consistency with the Vision and Mission of the institute.

7.The department Vision and Mission statements will be presented to the statutory bodies for final approval.

8.The approved Vision & Mission statements will be disseminated among all stakeholders.

The process involved in defining the PEOs of the program



The Program Educational Objectives are established through a consultation process involving the core constituents such as students, alumni, industry, faculty, and employers. The PEOs are established through the following process steps:

1. Program Educational Objectives (PEOs) describe the career and professional accomplishments that the program is preparing graduates to achieve after 3-5 years of completing the program.
2. Department PEO statements are a derivative component of the institute Vision, Mission and department Vision, Mission.
3. The internal (i.e. Management, Staff members, Students) and external stakeholders (i.e. Parents, Employers, Alumni.. etc) are involved in framing or reframing the PEOs of the department.
4. Alumni, Employer suggestions, and employment opportunities available in present and future are considered for framing the PEO statement.
5. Discussions and brainstorming sessions will be made among the PAQIC members to frame PEO statements.
6. The PAQIC send the PEO statements to DAC members for approval.
7. DAC verifies the correlation between the PEOs and Mission statements.
8. After making the feasible modifications suggested by DAC, the Mission statements are passed to statutory committees for approval.
9. The approved PEO statements are disseminated to all stakeholders.

1.5 Establish consistency of PEOs with Mission of the Department (10) Total Marks 10.00

Institute Marks : 10.00

PEO1 With M1	M1 imparts quality education to the students and enhancing their skills. Hence, PEO1 highly correlates with M1.
PEO1 with M2, M3 & M4	M2, M3& M4 highlights Technical skills, Knowledge, Technical Communication Skills and Ethics of the students. Therefore, PEO1 Moderately correlates with M2, M3 &M4.
PEO2 with M1& M3	M1 & M3 are utilized to develop wide knowledge, practical skills on design, manufacturing and thermal engineering to the students and also enhancing their Skills, to make them career competitors in Mechanical Engineering. Therefore, PEO2 highly correlates with M1 &M3.
PEO2 with M2	M2 enhance the technical skills and knowledge of the students to meet the global needs on higher studies, entrepreneurship and industry, Hence, PEO2 moderately correlates with M2.
PEO2 with M4	M4 focuses on learning effective technical communication skills and Ethics. Hence, PEO2 correlates low with M4.
PEO3 with M2 & M3	M2 &M3 imparts technical skills and knowledge of the students by utilizing the centre of excellence in the field of design, manufacturing and thermal engineering. Hence, PEO3 highly correlates with M2 & M3.
PEO3 with M1 & M4	MI&M4 highlights in quality education, effective technical communication skills and ethics. Therefore, PEO3 moderately correlates with M1 & M4.
PEO4 with M2 & M4	M2 & M4 focuses on technical skills, knowledge and effective technical communication skills to match the global needs. Therefore, PEO4 Highly correlates with M2 & M4.
PE04 with M3	M3 develops the students as career competitors by utilizing the skills and excellency in the field of design, manufacturing and thermal engineering. Hence, PEO4 moderately correlates with M3.
PEO4 with M1	M1 imparts the quality education to the students and enhancing their skills to make them competitive in mechanical engineering. Hence, PEO4 correlates low with M1

PEO Statements	M1	M2	M3	M4
To provide students with a foundation in mathematical, scientific and engineering fundamentals necessary to formulate, solve and analyze engineering problems and to prepare them for graduate studies.	3	2	2	2
To inculcate students in machine design, product manufacturing and thermal engineering by adopting experimental, analytical and numerical techniques.	3	2	3	1
To prepare the students for successful careers in higher studies, industry and entrepreneurship that meets the needs of Indian and multi-national organizations.	2	3	3	2
To provide opportunity for students to work as part of teams on multi-disciplinary projects.	1	3	2	3

2 PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES (100)

Total Marks 100.00

2.1 Program Curriculum (30)

Total Marks 30.00

2.1.1 State the process for designing the program curriculum (10)

Institute Marks : 10.00

2.1.1 State the process for designing the program curriculum (10)

- PACE Institute of Technology and Sciences (PACEITS) is an AUTONOMOUS Institute Accredited by NAAC 'A' Grade. The B.Tech Mechanical Engineering program curriculum is framed in accordance with AICTE/UGC/APSCHE/JNTUK..
- Department of Mechanical Engineering follows a perspective model of discussion forum which preambles the high-level constitution of internal and external stakeholders for the introduction, innovation, and revision of the syllabi.
- The syllabus is framed with extensive emphasis on Employability Skills, Entrepreneurial Skills and Life Long Learning.
- The Feedback on the curriculum is collected from various stakeholders.
- The Faculty Members, Academic peers, Industry Experts, Students and Alumni forms the constitution of Board of Studies (BoS). The feedback from the members of BoS is envisaged in the design of Curriculum.
- The amendment passed by BoS is sent for approval to Academic Council, a statutory body constituted by the Institute. The Academic Council passes a resolution to accept or modify the amendment passed by BoS.
- The curriculum preserves the balance in the composition of Basic Sciences, Engineering Sciences, Humanities and Social Sciences, Professional Core, Professional Electives and Open Electives and their distribution is as per the model curriculum of AICTE and Andhra Pradesh State Council of Higher Education (APSCHE) guidelines.

Factors considered for Curriculum Design:

The Curriculum is designed to ensure that the students to have the required domain knowledge and skills for employability. The factors taken into consideration for designing the program curriculum are:

- Model curriculum prescribed by AICTE/UGC/APSCHE/JNTUK.
- Department Vision and Mission.
- Twelve Program Outcomes (POs) recommended by NBA.
- Program Specific Outcomes (PSOs).
- Suggestions from stake holders.

The program curriculum is designed based on the broad guidelines of the institute keeping in view of AICTE/UGC/APSCHE/JNTUK directives and program specific criteria to meet the requirements of POs, PSOs and PEOs of the Department. The previous curriculum is found in the design of new curriculum by consulting Industry persons, parents, alumni, and students. Technological developments constitute important criteria while designing the program curriculum.

The Program Assessment and Quality Improvement Committee (PAQIC) and faculty members design the course content to meet out the requirement of COs. The individual courses are then discussed specifically for their outcomes in the department advisory committee (DAC) meetings. The committee points out the deficiencies of the curriculum keeping in view the various inputs and returns the same to the faculty for review. Once the DAC is satisfied with the contents of the curriculum, it is submitted to the program specific Board of Studies (BoS) meeting. The BoS evaluates the curriculum in terms of POs, PSOs and PEOs, and various inputs. The BoS submits the same to the PAQIC, chaired by the HOD. Again the curriculum is subjected to evaluation so that the contents fulfill all the statutory requirements, else it is again returned for review. Finally, the program curriculum is submitted to the Academic Council (AC), which is the highest academic body of the institute.

- The process of framing the program curriculum is shown in the Figure 2.1.1.a

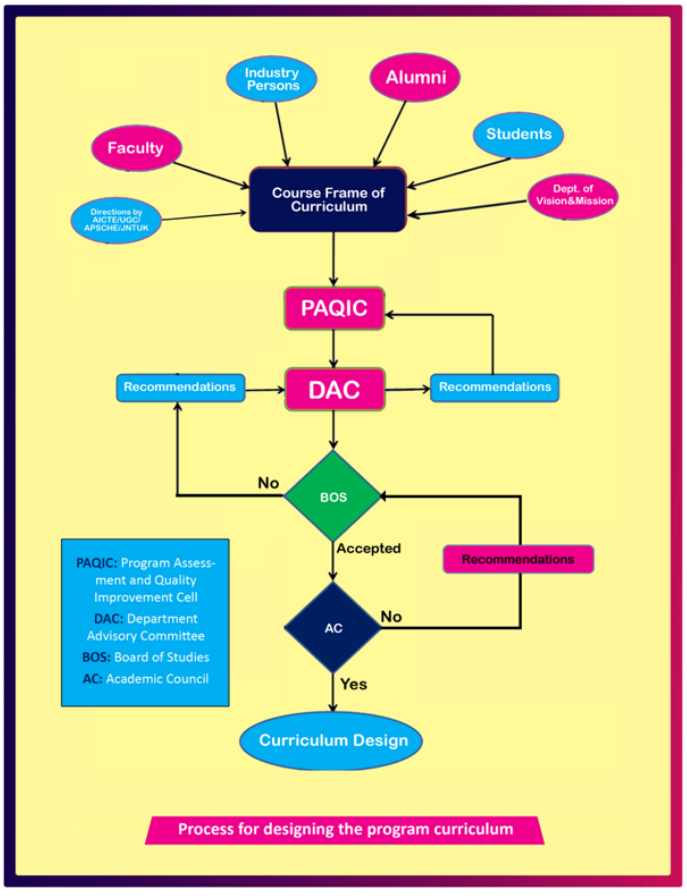


Figure 2.1.1.a: Process involved in the design of the program curriculum

Table 2.1.1a: Regulations implemented as per the academic year

S.No.	Regulation	Implemented Academic Year
1	R18	2018-19
2	R21	2021-22

Table 2.1.1b: Functions and Responsibilities of Competent Authorities

S.No.	Names of academic and administrative bodies	Functions and responsibilities

1	**Academic Council**	The Academic Council is the highest academic body which decides and advices on all academic matters. Academic proposals of BoS from each department are scrutinized and approved with or without modifications by the academic council. It also recommends/advise the Governing Body on proposals for new programme of study and other academic matters. • Scrutinize and approve the proposals with or without modification of the Boards of Studies with regard to courses of study, academic regulations, curricula, syllabi and modifications thereof, instructional and evaluation arrangements, methods, procedures relevant there to etc., provided that where the Academic Council differs on any proposal, it will have the right to return the matter for reconsideration to the Board of Studies concerned or reject it, after giving reasons to do so. • Implement the orders issued time to time by the State Government and the affiliating University in the admission of students to different programs of study offered by the college. • Make regulations for sports, extra-curricular activities, and proper maintenance and functioning of the playgrounds and hostels. • Frame regulations in consistent with university norms to conduct examinations and initiate measures for improving the quality of teaching, students' evaluation and advisory system in the College. • Encourage faculty members to undertake sponsored research, industrial consultancy, continuing education and related activities. • Recommend to the Governing Body proposals for institution of new programs study. • Recommend to the GB the institution of scholarships, fellowships, prizes and medals, and to frame regulations for the award of the same. • Advise the GB on suggestions pertaining to academic affairs made by it. • Perform such other functions as may be assigned by the Governing Body.
2	**Board of Studies**	• Prepare syllabi for various courses keeping in view the objectives of the institute, interest of the stakeholders and national requirement, for consideration and approval of the Academic Council. • Suggest methodologies for innovative teaching and evaluation techniques. • Suggest panel names to the Academic Council for appointment as paper setters, evaluators, examiners etc. • Coordinate research, teaching, extension and other academic activities in the department/college • Elaborate discussions on starting new courses, programs etc.
3	**Department Advisory Committee (DAC)**	• The DAC interacts and maintains liaison with stakeholders • The DAC is chaired by HOD who receives the report of the DAC and monitors the progress of the program. • The Committee develops and recommends new or revised goals and objectives of the program. • Based on the inputs received from PAC, the committee reviews and analyzes the gap between curriculum and industry requirements and gives necessary feedback or advice actions. • Recommends MOOCs courses like NPTEL, spoken tutorial, etc, FDP, STTPs/ Guest Lectures monitoring, Budget proposal and Lab facilities. • Review on student feedback.
4	**Program Assessment Quality Improvement Commitee (PAQIC)**	• Track the results of Program Outcomes (POs), Program Specific Outcomes (PSOs) and Program Educational Objectives (PEOs), and plan the steps required to achieve POs, and PSOs • Evaluates program effectiveness and proposes necessary changes for continuous improvement • Prepares periodic reports on program activities, progress status or other special reports for management key stake holders. • Review on Exit Survey, Alumni Survey, and Employer Survey. • Motivates the faculty and students towards attending workshops, developing projects, working models, paper publications and records. • Interact with stakeholders and DAC to facilitate the achievement of POs, PSOs, and maintain track record and current status. • Program Assessment Committee meets periodically to review the program and submits report to Department Advisory Committee.

2.1.2 Structure of the Curriculum (5)

Institute Marks : 5.00

ID	Course Code	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Total Hours	Theory Credits	Practical Credits	Total Credits
1	P18HST01	English-I	3	0	0	3	3	0	3
2	P18BST01	Mathematics-I	3	0	0	3	3	0	3
3	P18BST06	Engineering Chemistry	3	0	0	3	3	0	3
4	P18EST01	Basic Electrical & Electronics Engineering	3	0	0	3	3	0	3
5	P18EST03	C Programming for problem Solving	3	0	0	3	3	0	3
6	P18HSL01	English language communication skills lab	0	0	3	3	0	1.5	1.5
7	P18BSL04	Engineering Chemistry Lab	0	0	3	3	0	1.5	1.5
8	P18ESL01	Basic Electrical & Electronics Engineering Lab	0	0	3	3	0	1.5	1.5
9	P18ESL03	C-Programming for problem solving Lab	0	0	3	3	0	1.5	1.5
10	P18MCT01	Induction Program	3	0	0	3	0	0	0
11	P18HST02	English-II	3	0	0	3	3	0	3
12	P18BST02	Mathematics -II	3	0	0	3	3	0	3
13	P18BST04	Engineering Physics	3	0	0	3	3	0	3
14	P18EST05	Python Programming	3	0	0	3	3	0	3
15	P18EST02	Engineering Graphics	1	0	3	4	2.5	0	2.5
16	P18BSL02	Engineering Physics Lab	0	0	3	3	0	1.5	1.5
17	P18ESL04	Python Programming Lab	0	0	3	3	0	1.5	1.5
18	P18ESL02	Engineering Workshop	0	0	3	3	0	1.5	1.5
19	P18MCT02	Environmental Science	3	0	0	3	0	0	0
20	P18BST07	Mathematics -III	3	0	0	3	3	0	3
21	P18EST04	Engineering Mechanics	3	1	0	4	4	0	4
22	P18MET01	Thermodynamics	3	0	0	3	3	0	3
23	P18MET02	Metallurgy & Material Science	3	0	0	3	3	0	3
24	P18MET03	Fluid Mechanics & Hydraulic Machines	3	0	0	3	3	0	3
25	P18MET04	Computer Aided Machine Drawing	3	0	0	3	3	0	3
26	P18MEL01	Metallurgy Lab	0	0	3	3	0	1.5	1.5
27	P18MEL02	Fluid Mechanics & Hydraulic Machinery Lab	0	0	3	3	0	1.5	1.5
28	P18MCT03	Professional Ethics and Human Values	2	0	0	2	0	0	0
29	P18BST09	Mathematics-IV	3	0	0	3	3	0	3
30	P18MBO02	Managerial Economics & Financial Analysis	3	0	0	3	3	0	3
31	P18MET05	Production Technology	3	0	0	3	3	0	3
32	P18MET06	Thermal Engineering –I	3	0	0	3	3	0	3
33	P18MET07	Mechanics of Solids	3	1	0	4	4	0	4
34	P18MEL03	Production Technology Lab	0	0	3	3	0	1.5	1.5
35	P18MEL04	Thermal Engineering Lab	0	0	3	3	0	1.5	1.5
36	P18MEL05	Mechanics of Solids Lab	0	0	3	3	0	1.5	1.5
37	P18MCT05	Indian Constitution	2	0	0	2	0	0	0
38	P18MET08	Theory of Machines	3	0	0	3	3	0	3
39	P18MET10	Metal Cutting & Machine Tools	3	0	0	3	3	0	3
40	P18MET11	Design of Machine Elements - I	3	0	0	3	3	0	3
41	P18MET12	Thermal Engineering –II	3	0	0	3	3	0	3

42	P18MEEXX	Professional Elective-I	3	0	0	3	3	0	3
43	P18XXOXX	Open Elective-I	3	0	0	3	2	0	2
44	P18MEL06	Machine Tools Lab	0	0	3	3	0	1.5	1.5
45	P18MEL07	Dynamics of machinery lab	0	0	3	3	0	1.5	1.5
46	P18MEI01	Internship	0	0	0	0	0	2	2
47	P18MCT08	Design Thinking for Innovation	0	0	4	4	0	2	2
48	P18MET13	Instrumentation & Control Systems	3	0	0	3	3	0	3
49	P18MET14	Heat & Mass Transfer	3	0	0	3	3	0	3
50	P18MET15	Design of Machine Members-II	3	0	0	3	3	0	3
51	P18MET16	Metrology & Measurements	3	0	0	3	3	0	3
52	P18MEEXX	Professional Elective-II	3	0	0	3	3	0	3
53	P18MEM01	Mini Project	0	0	4	4	0	2	2
54	P18MEL08	Metrology & ICS Lab	0	0	3	3	0	1.5	1.5
55	P18MEL09	Mathematical Modeling Lab	0	0	3	3	0	1.5	1.5
56	P18MEL10	Heat Transfer Lab	0	0	3	3	0	1.5	1.5
57	P18MCT09	Biology	2	0	0	2	0	0	0
58	P18MET17	CAD/CAM	2	0	0	2	2	0	2
59	P18MET18	Finite Element Methods	2	1	0	3	3	0	3
60	P18MET19	Design Of Hydraulics And Pneumatics	3	0	0	3	3	0	3
61	P18MET20	Mechatronics	3	0	0	3	3	0	3
62	P18MEEXX	Professional Elective Course-III	3	0	0	3	3	0	3
63	P18MEEXX	Professional Elective Course-IV	3	0	0	3	3	0	3
64	P18MEL11	Simulation Lab	0	0	3	3	0	1.5	1.5
65	P18MEL12	Mechatronics Lab	0	0	3	3	0	1.5	1.5
66	P18MCT14	Employability Skills	2	0	0	2	0	0	0
67	P18MET21	Advanced Automobile Technology	3	1	0	4	4	0	4
68	P18XXOXX	Open Elective-II	2	0	0	2	2	0	2
69	P18MEP01	Project	0	0	12	12	0	6	6
		Total	**129**	**4**	**80**	**213**	**119.5**	**40.5**	**160.0**

2.1.3 State the components of the curriculum (5)

Institute Marks : 5.00

Course Components	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of credits
Basic Sciences	13.13	24.00	21
Engineering Sciences	13.44	29.00	22
Humanities and Social Scie	4.69	9.00	7
Program Core	51.25	100.00	82
Program Electives	7.5	12.00	12
Open Electives	2.5	5.00	4
Project(s)	5	16.00	8
Internships/Seminars	1.25	0.00	2
Any other (Please specify)	1.25	18.00	2
Total number of Credits			**160**

2.1.4 State the process used to identify extent of compliance of the curriculum for attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure I (10)

Institute Marks : 10.00

All the courses that are offered under the curriculum contribute to the attainment of POs & PSOs. The number of courses varying from six and above contributes to each of the POs attainment indicating the balance in the curriculum.

Program Outcomes and Program Specific Outcomes:

Program outcomes statements are directly adapted from the NBA manual which are common to all the programs. Program Specific Outcomes (PSOs) beyond the twelve POs are formulated based on the contemporary skills and competencies in line with the industry requirements.

The curriculum of our program was developed to fulfil the all the program outcomes and program specific outcomes.

PO-1	Engineering Knowledge of students was developed by the professional core courses, basic sciences courses.
PO-2	Problem analysis skills were developed by core courses and practiced while doing the internships, skill oriented courses and applied during the project works.
PO-3	Design/development of solutions skills were development by core courses, and practice them in internships and applied during projects works.
PO-4	Conduct investigation of complex problems were developed by the projects and mini projects and many of the core courses.
PO-5	Modern tool usage was developed by applying them in projects and mini projects. Students also practicethose skills while they attending internships.
PO-6	Engineering and Society skill was developed by the mandatory course and induction program, ethics...etc.
PO-7	Environment and Sustainability skill was developed by the mandatory courses and induction program, ethics...etc.
PO-8	Ethics was developed by the project works, mandatory courses like ethics.
PO-9	Individual and team work was developed by the course like project work, internships, skill oriented courses.
PO-10	Communication was developed by the course like English, soft skill courses, projects, internships.
P0-11	Project management and finance skills was developed by the course like projects, internships.
P0-12	Life-long learning was developed by the courses like project work, internships, skill oriented courses.
PSO-1	Promotes the technical knowledge, skills and attitude for the requirement of industry and society towards Mechanical Engineering.
PSO-2	Facilitates to plan,design,develops and tests an energy efficient manufacturing system for required engineering applications.
PSO-3	Nurtures the students towards advanced design and analysis tools for mechanical system.

Tabel 2.1.4.a: List of PO'S and PSO'S

A detailed matrix is prepared by mapping of all courses in the program with POs and PSOs along with their level of correlation: 1 (low), 2 (medium) and 3 (high). The process of measuring the attainment of POs and PSOs through COs is demonstrated and properly documented in criteria 3. If POs and PSOs are not attained as per the specified target levels, then corrective measures will be taken to fill the curriculum gap.

Table 2.1.4.b: Details of course code allocation for R-18 regulation

CODE	NAME OF THE COURSE	CODE	NAME OF THE COURSE
I SEMESTER		**II SEMESTER**	
C101	English-I	C110	English-II
C102	Mathematics-I	C111	Mathematics-II
C103	Engineering Chemistry	C112	Engineering Physics
C104	Basic Electrical & Electronics Engineering	C113	Python Programming
C105	C Programming for problem Solving	C114	Engineering Graphics
C106	English language communication skills Lab	C115	Engineering Physics Lab
C107	Engineering Chemistry Lab	C116	Python Programming Lab
C108	Basic Electrical & Electronics Engineering Lab	C117	Engineering Workshop
C109	C-Programming for problem solving Lab	C118	Environmental Science

CODE	NAME OF THE COURSE	CODE	NAME OF THE COURSE
III SEMESTER		**IV SEMESTER**	
C201	Engineering Mechanics	C210	Mathematics-IV
C202	Thermodynamics	C211	Production Technology
C203	Metallurgy & Material Science	C212	Thermal Engineering –I
C204	Mathematics-III	C213	Mechanics of Solids
C205	Fluid Mechanics & Hydraulic Machines	C214	Managerial Economics & Financial Analysis

C206	Computer Aided Machine Drawing	C215	Mechanics of Solids Lab
C207	Metallurgy Lab	C216	Production Technology Lab
C208	Fluid Mechanics & Hydraulic Machinery Lab	C217	Thermal Engineering Lab
C209	Professional Ethics and Human Values	C218	Constitution of India

CODE	NAME OF THE COURSE	CODE	NAME OF THE COURSE
V SEMESTER		VI SEMESTER	
C301	Theory of machines	C309	Instrumentation & Control Systems
C302	Metal Cutting & Machine Tools	C310	Heat and Mass Transfer
C303	Design of Machine Members - I	C319	Automation in Manufacturing
C304	Thermal Engineering –II	C311	Design of Machine Members-II
C318	Operations Research	C312	Metrology & Measurements
C320	Industrial Engineering & Management	C313	Metrology & ICS Lab
C305	Machine Tools Lab	C314	Heat Transfer Lab
C306	Dynamics of Machinery Lab	C315	Mathematical Modelling Lab
C307	Internship	C316	Mini Project
C308	Design Thinking	C317	Biology

CODE	NAME OF THE COURSE	CODE	NAME OF THE COURSE
VII SEMESTER		VIII SEMESTER	
C401	CAD /CAM	C408	Advanced Automobile Technology
C402	Finite Element Methods	C415	IPR& Patents
C411	Refrigeration & Air Conditioning	C409	Project Work
C412	Renewable Sources of Energy		--
C403	Design of Hydraulics & Pneumatics		--
C413	Nano Technology		--
C414	Power Plant Engineering		--
C404	Mechatronics		--
C405	Simulation Lab		
C406	Mechatronics Lab		
C407	Employability Skills		--

Table 2.1.4.c: Mapping of courses with POs and PSOs for R-18 regulation

Course	PO 1	PO2	PO3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
I SEMESTER														
C101	-	-	-	-	-	-	-	-	2.00	2.33	-	2.00	-	-
C102	2.60	2.80	-	-	-	-	-	-	-	-	-	-	1.00	-
C103	1.40	1.60	2.20	-	-	-	-	-	-	-	-	1.80	2.60	1.80
C104	1.80	1.00	1.00	-	-	1.50	1.00	1.00	1.00	-	-	-	3.00	1.00
C105	3.00	2.80	2.60	2.60	2.60	-	-	-	-	2.00	1.50	1.00	2.40	2.40
C106	1.00	-	2.00	-	-	-	2.00	-	2.00	1.00	1.00	3.00	2.00	-
C107	3.00	-	-	3.00	2.00	-	-	-	-	-	-	-	-	1.00
C108	1.80	1.00	1.00	-	-	1.50	1.00	1.00	1.00	-	-	-	3.00	1.00
C109	3.00	3.00	-	3.00	2.00	2.00	2.00	-	-	-	-	2.00	2.50	2.83
II SEMESTER														
C110	1.00	2.00	-	2.00	2.00	2.00	1.00	-	1.50	2.50	-	2.00	3.00	-
C111	1.35	1.46	-	-	-	-	-	-	-	-	-	-	0.52	-
C112	1.56	1.14	1.04	0.52	0.52	1.04	0.52	-	-	-	-	0.83	1.04	0.52
C113	2.80	2.80	2.80	2.00	2.40	1.75	-	-	-	-	-	1.60	1.75	1.60
C114	2.60	3.00	2.40	2.00	3.00	-	-	-	-	-	-	3.00	3.00	2.00
C115	3.00	2.00	2.00	2.00	-	-	-	-	-	-	-	1.50	1.50	1.00
C116	3.00	2.80	2.80	1.33	1.50	1.50	-	-	-	-	-	1.40	2.00	1.50
C117	3.00	3.00	3.00	3.00	3.00	-	-	-	-	-	-	2.00	3.00	2.67

C118	3.00	1.00	1.00	-	-	1.00	1.00	2.00	-	-	-	1.00	-	-
III SEMESTER														
C201	3.00	3.00	3.00	2.50	2.33	-	-	-	-	-	-	2.00	3.00	2.00
C202	3.00	3.00	2.50	2.25	-	-	-	-	-	-	-	1.50	3.00	2.33
C203	2.80	3.00	2.20	2.67	-	-	-	-	-	-	-	2.67	3.00	2.00
C204	2.60	2.60	-	-	-	-	-	-	-	-	-	-	2.60	1.80
C205	3.00	3.00	2.60	2.50	-	-	-	-	-	-	-	2.33	3.00	2.00
C206	3.00	3.00	2.00	3.00	2.50	-	-	-	-	-	-	2.00	3.00	2.00
C207	3.00	3.00	3.00	2.00	2.00	-	-	-	-	-	-	3.00	3.00	2.50
C208	3.00	3.00	2.00	2.33	2.00	-	-	-	-	-	-	-	3.00	2.00
C209	2.80	2.00	-	-	-	1.67	-	-	2.00	1.50	2.50	2.00	3.00	3.00
IV SEMESTER														
C210	2.60	2.80	-	-	-	-	-	-	-	-	-	-	2.60	1.80
C211	3.00	3.00	2.25	2.00		-	-	-	-	-	-	2.00	2.67	2.67
C212	3.00	3.00	2.25	2.00	-	-	-	-	-	-	-	2.00	2.00	2.00
C213	3.00	3.00	2.80	2.25	-	-	-	-	-	-	-	2.33	3.00	2.33
C214	2.40	1.67	-	-	-	1.33	-	-	2.00	2.50	2.50	2.00	2.00	3.00
C215	3.00	3.00	2.75	2.33	2.00	-	-	-	-	-	-	3.00	3.00	2.00
C216	3.00	3.00	3.00	2.00	2.00	-	-	-	-	-	-	3.00	3.00	2.67
C217	3.00	3.00	3.00	2.00	2.00	-	-	-	-	-	-	2.00	3.00	1.50
C218	1.67	2.00	2.00	2.00	2.00	2.00	-	-	1.00	1.00	-	-	3.00	3.00
V SEMESTER														
C301	3.00	3.00	3.00	2.00	-	-	-	-	-	-	-	2.00	-	2.50
C302	3.00	3.00	2.00	2.50	-	-	-	-	-	-	-	1.67	2.80	2.50
C303	1.40	3.00	3.00	2.75	2.00	-	-	-	-	-	-	2.00	1.75	1.50
C304	3.00	3.00	2.00	1.60	-	-	-	-	-	-	-	1.00	2.75	2.75
C318	2.80	2.80	2.60	2.00	2.00	-	-	-	-	-	-	2.50	3.00	1.75
C320	3.00	3.00	3.00	2.00	2.67	-	-	-	-	-	-	-	3.00	2.00
C305	2.67	2.50	2.67	2.00	2.00	3.00	2.00	3.00	2.00	2.00	2.00	2.00	3.00	2.33
C306	2.00	2.00	2.00	2.00	2.00	2.00	-	-	1.00	1.00	-	-	2.00	3.00
C307	3.00	3.00	3.00	2.00	-	-	-	-	-	-	-	2.00	-	2.50
C308	3.00	3.00	2.00	2.50	-	-	-	-	-	-	-	1.67	2.80	2.50
VI SEMESTER														
C309	2.60	3.00	2.80	2.80	-	-	-	-	-	-	-	2.50	2.40	1.40
C310	3.00	3.00	2.50	2.33	-	-	-	-	-	-	-	-	-	2.00
C319	3.00	2.40	2.20	1.60	-	-	-	-	-	-	-	2.00	-	-
C311	3.00	2.80	2.80	3.00	-	-	-	-	-	-	-	3.00	3.00	2.67
C312	3.00	3.00	2.40	2.50	2.00	-	-	-	-			2.00	3.00	2.00
C313	3.00	3.00	2.20	2.20	2.00	-	-	-	-	-	-	3.00	3.00	2.00
C314	3.00	2.50	2.00	2.00	2.25	-	-	-	-	-	-	2.33	3.00	2.00
C315	3.00	3.00	2.67	2.67	3.00	3.00	2.50	3.00	2.00	2.00	2.00	2.50	3.00	2.00
C316	1.00	2.00	3.00	-	-	-	-	-	-	-	-	-	2.67	-
C317	2.60	3.00	2.80	2.80	-	-	-	-	-	-	-	2.50	2.40	1.40
VII SEMESTER														
C401	3.00	3.00	3.00	2.40	-	-	-	-	-	-	-	2.60	-	-
C402	3.00	3.00	3.00	2.00	-	-	-	-	-	-	-	1.00	3.00	2.00
C411	3.00	3.00	2.80	2.40	-	-	-	-	-	-	-	2.60	3.00	3.00
C412	3.00	3.00	3.00	2.00	-	-	-	-	-	-	-	1.00	3.00	2.00
C403	3.00	3.00	2.80	2.40	-	-	-	-	-	-	-	2.60	3.00	3.00
C413	3.00	3.00	2.20	2.20	2.00	-	-	-	-	-	-	3.00	3.00	2.00
C414	3.00	3.00	2.50	2.33	-	-	-	-	-	-	-	-	-	2.00
C404	3.00	2.80	2.80	2.40	-	3.00	2.00	-	1.50	-	-	1.67	1.50	1.50
C405	3.00	3.00	2.50	3.00	3.00	-	-	-	-	-	-	2.00	3.00	1.50
C406	3.00	2.50	2.50	2.00	2.00	-	-	-	-	-	-	2.00	3.00	1.67
C407	2.00	2.00	2.00	2.00	-	-	-	-	1.00	1.00	-	-	3.00	3.00
VIII SEMESTER														
C408	3.00	2.00	2.33	2.00	3.00	-	-	-	-	-	1.80	2.50	2.00	1.50
C415	3.00	3.00	2.00	2.50	-	-	-	-	-	-	-	1.67	2.80	2.50
C409	2.75	2.00	2.75	2.75	3.00	3.00	3.00	1.00	2.00	2.00	2.00	2.50	3.00	2.00
Number of Courses mapped	**69**	**67**	**60**	**57**	**31**	**16**	**11**	**6**	**14**	**12**	**7**	**55**	**61**	**61**

Number of courses mapped to each PO and PSO

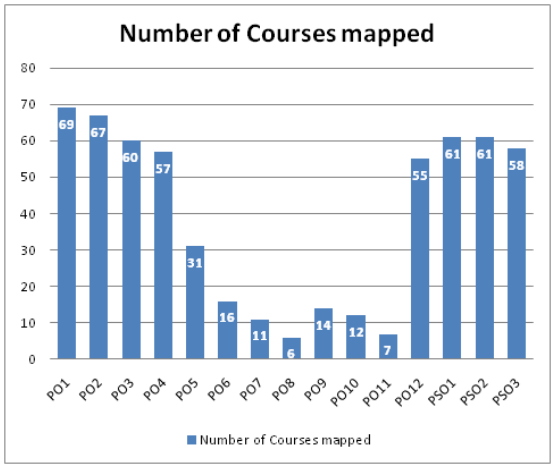


Figure 2.1.4.b: Number of courses mapped to each PO and PSO for R-18 regulation

The following is the flow diagram of process used extent of compliance of the curriculum for attaining the program outcomes and program specific outcomes.

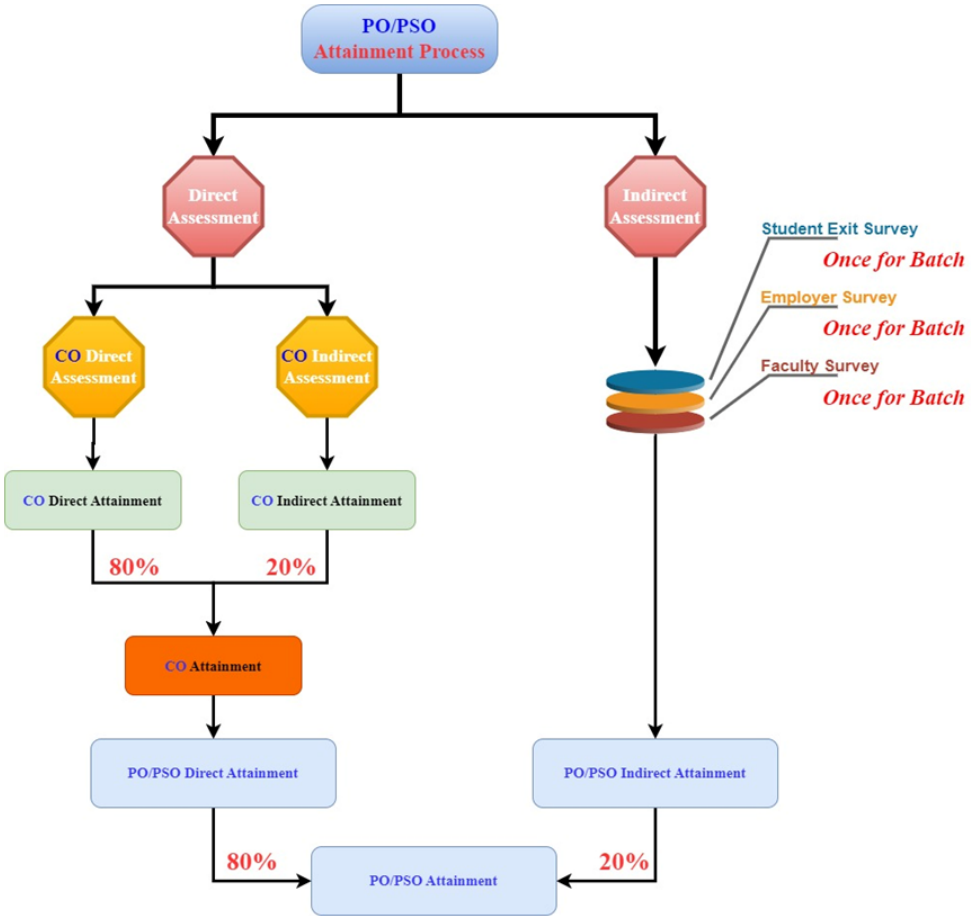


Figure 2.1.4.a: Flow diagram of curriculum for attaining the PO'S and PSO'S

2.2 Teaching-Learning Processes (70) Total Marks 70.00

2.2.1 Describe Processes followed to improve quality of Teaching & Learning (15)

Institute Marks : 15.00

2.2 Teaching-Learning Processes (70)

2.2.1 Describe Processes followed to improve quality of Teaching & Learning (15)

The quality improvement in teaching and learning of the department is achieved through a well-defined system of an academic procedure, which is given below:

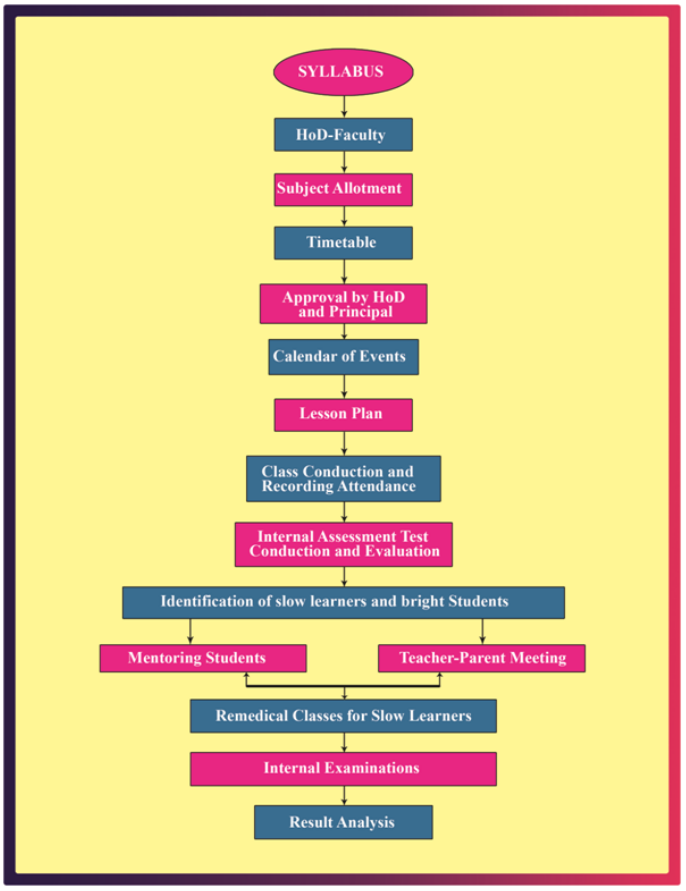


Figure 2.2.1.a: Flow diagram of teaching and learning process

The quality of teaching and learning process is improved through the following :

PLANNING:

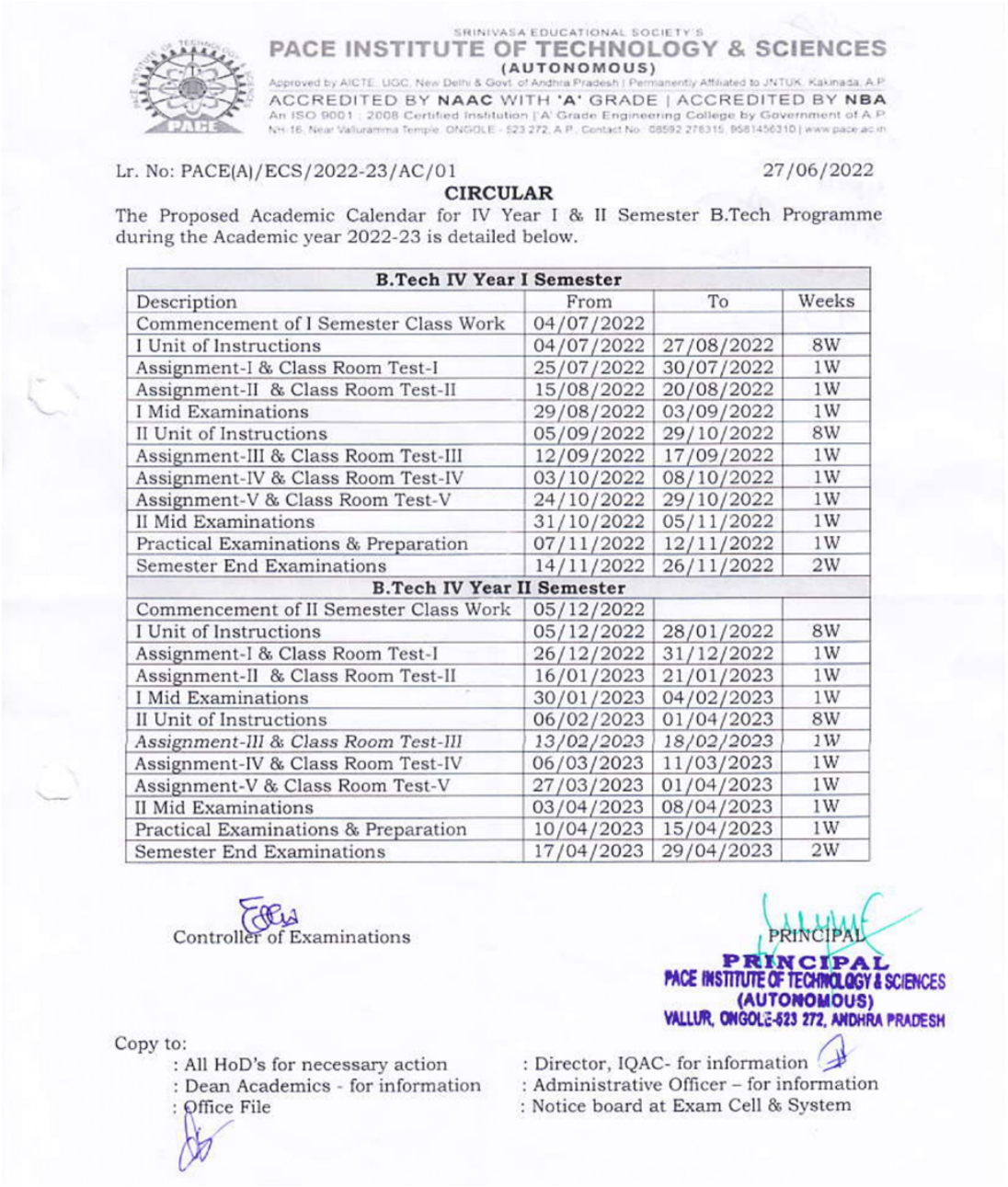
A. ADHERENCE TO ACADEMIC CALENDAR

In the beginning of every academic year, the college Dean of Academics prepares well planned academic calendar and distribute it to all faculty members and students.

The academic calendar consists of:

- Date of commencement of the academic session
- Duration of semester
- Commencement of Continuous Internal Evaluation (CIE) test
- Last instruction day
- Preparation period and practical exam
- Commencement of practical and semester end examinations(SEE)

Figure 2.2.1b: Shows the Sample copy of academic calendar of the college



SRINIVASA EDUCATIONAL SOCIETY'S
PACE INSTITUTE OF TECHNOLOGY & SCIENCES
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Lr. No: PACE(A)/ECS/2022-23/AC/01 27/06/2022

CIRCULAR

The Proposed Academic Calendar for IV Year I & II Semester B.Tech Programme during the Academic year 2022-23 is detailed below.

B.Tech IV Year I Semester			
Description	From	To	Weeks
Commencement of I Semester Class Work	04/07/2022		
I Unit of Instructions	04/07/2022	27/08/2022	8W
Assignment-I & Class Room Test-I	25/07/2022	30/07/2022	1W
Assignment-II & Class Room Test-II	15/08/2022	20/08/2022	1W
I Mid Examinations	29/08/2022	03/09/2022	1W
II Unit of Instructions	05/09/2022	29/10/2022	8W
Assignment-III & Class Room Test-III	12/09/2022	17/09/2022	1W
Assignment-IV & Class Room Test-IV	03/10/2022	08/10/2022	1W
Assignment-V & Class Room Test-V	24/10/2022	29/10/2022	1W
II Mid Examinations	31/10/2022	05/11/2022	1W
Practical Examinations & Preparation	07/11/2022	12/11/2022	1W
Semester End Examinations	14/11/2022	26/11/2022	2W
B.Tech IV Year II Semester			
Commencement of II Semester Class Work	05/12/2022		
I Unit of Instructions	05/12/2022	28/01/2022	8W
Assignment-I & Class Room Test-I	26/12/2022	31/12/2022	1W
Assignment-II & Class Room Test-II	16/01/2023	21/01/2023	1W
I Mid Examinations	30/01/2023	04/02/2023	1W
II Unit of Instructions	06/02/2023	01/04/2023	8W
Assignment-III & Class Room Test-III	13/02/2023	18/02/2023	1W
Assignment-IV & Class Room Test-IV	06/03/2023	11/03/2023	1W
Assignment-V & Class Room Test-V	27/03/2023	01/04/2023	1W
II Mid Examinations	03/04/2023	08/04/2023	1W
Practical Examinations & Preparation	10/04/2023	15/04/2023	1W
Semester End Examinations	17/04/2023	29/04/2023	2W

Controller of Examinations

PRINCIPAL
PRINCIPAL
PACE INSTITUTE OF TECHNOLOGY & SCIENCES
(AUTONOMOUS)
VALLUR, ONGOLE-523 272, ANDHRA PRADESH

Copy to:
: All HoD's for necessary action
: Dean Academics - for information
: Office File
: Director, IQAC- for information
: Administrative Officer – for information
: Notice board at Exam Cell & System

Figure 2.2.1b: Sample copy of academic calendar of the college

In addition to the Institute academic calendar the department also prepares the event wise calendar, gives the schedules of the program, like FDPs, workshops, Guest lectures and seminars etc. to be conducted in the department. Figure 2.2.1c show that department event calendar.

Table 2.2.1.a Event Calender

SRINIVASA EDUCATIONAL SOCIETY'S
PACE INSTITUTE OF TECHNOLOGY & SCIENCES
(AUTONOMOUS)
Approved by AICTE, Accredited by NBA & NAAC(A Grade), Recognized under 2(f) & 12(B) of UGC
Permanently Affiliated to JNTUK, Kakinada, A.P., An ISO 9001:2008 Certified Institution
NH-16, Near Valluramma Temple, ONGOLE - 523 272, A.P., INDIA, Ph: 08592 278315, 9581456310 | www.pace.ac.in
INTERNAL QUALITY ASSURANCE CELL (IQAC)

Event Calender for I-Sem of A.Y 2022-2023

Month	Week	Events
August	1st week	1.Programme on Employability
		2. Programme on Entrepreneurship
		3. MOU's with industry
		4. Hobby club activities
		5. Value-added courses
		6. Faculty Self Appraisal(API)
	2nd week	1. Industry Interactions
		2. EDP activities
		3. NPTEL (Staff & Students)
		4. Mentoring by senior Students
		5. Classes by senior students to juniors
		6. Industrial Visits
		7. IIC
	3rd week	1. Journal publications by Staff & student(Scopus indexed only)
		2. Guest Lectures organized
		3. Student professional chapter activities

		4. Product Development
		5. Patents
	4th week	1. ICT, APSSDC, APITA
		2. Women Empowerment activities (Professional &General)
		3. Academic & Administrative Audit (AAA)
		4. MSME
		5. NSS/NCC
		6. Faculty mentoring
September	1st week	1. Workshops/Seminars on Intellectual Property Rights (IPR)
		2. Bridge courses, Yoga, Meditation, Personal Counselling
		3. Programme on Career Guidance
		4.Short Term Course, Faculty Development Programme
	2nd week	1. EDP activities
		2. Guest Lectures
		3. Student professional chapter activities
		4. Spoken Tutorials
	3rd week & 4th week	1. FDPs (One week program only) Organized
		2. Workshops(One week program only)
		3. International conferences
		4. Seminars
		5. Professional body activities
		6. Women Empowerment activities (Professional &General)
October	1st week & 2nd week	1. Student Certifications on skills
		2. Women Empowerment activities (Gender Equality)
		3. Guest lectures
		4. Parent meeting
		5. Product Development
	3rd week & 4th week	1. Patents
		2. Internships
		3. Activities for promotion of universal Values and Ethics
		4. Innovation competitions
November	1st week & 2nd week	1. Industry consultancy
		2. Virtual Labs
		3. Unnath bharat abhiyan
		4. Programme on Career Guidance
	3rd week & 4th week	5. Spoken Tutorials
		6. Mentoring by senior Students
		7. Programme on skill development

Subject Allocation:

The department adopts a well-defined process for course allotment to see that workload is distributed properly.

Lecture Plan:

- Course allocation is made before the commencement of every semester based on the competencies and choice of the faculty members.
- Once the courses are allocated, faculty prepares a lecture plan indicating the topics covered lecture wise based on the course objectives and course outcomes.
- The module coordinator looks after the delivery of the course content and supervises preparation of question papers to improve the quality of the question paper.

Table 2.2.1.b: List of modules and relevant courses for core engineering subjects of MECHANICAL curriculum

S.No	Name of the Module	Relevant courses	Name of Module Coordinator
1	Thermal Engineering	• Thermodynamics • Thermal Engineering –I • Thermal Engineering –II • Heat and Mass Transfer • Refrigeration & Air Conditioning	Dr. G Sai Prasad
2	Manufacturing Technology	• Additive Manufacturing • Foundry Technology • Metrology & Measurements • Production Technology • Metal Cutting & Machine Tools • Automation in Manufacturing • Foundry Technology	Dr.S.Vishwanath
3	Materials Science	• Metallurgy & Material Science • Material Handling • Powder Metallurgy • Nano Technology	Dr.G.Kondaiah
4	CAD/CAM	• Computer Aided Machine Drawing • Auto CAD • CATIA • Ansys	P. Kiran Babu

5	Machine Design	• Design of Machine Members-I • Engineering Mechanics • Fluid Mechanics & Hydraulic Machines • Mechanics of Solids • Theory of machines • Design of Hydraulics & Pneumatics • Design of Machine Members-II	G. E. Babu

B. PEDAGOGICAL INITIATIVES

Information Technology being a rapidly changing field which requires continuous learning to be updated in the particular profession and the pedagogies play an important role in development of the content. Faculty members use various pedagogical methods for effective teaching learning process as given below:

- Chalk and White board
- Power point presentation
- Experimental Learning
- Project based learning
- Learning Management System (Moodle)
- Seminars/Workshops/Conferences/Industrial visits
- Technical Training Programmes through Training & Placement Cell (T&P)
- MOOCs Courses -Swayam NPTEL, Coursera, Udemy, etc
- Interactive learning

Implementation

The implementation of teaching-learning mechanism is carried out based on the following different activities. Some of the pedagogical implementation methods are given below:

Google Meet/ Zoom Online Classes:

During COVID-19 pandemic, the class work is conducted through online in various platforms such as Google Meet/Zoom and which were very effectively used for every course of the program. The faculty can upload course plans, e-Books, course materials, video lectures, question banks, etc in this platform. The online assessment tests are conducted through Microsoft teams.

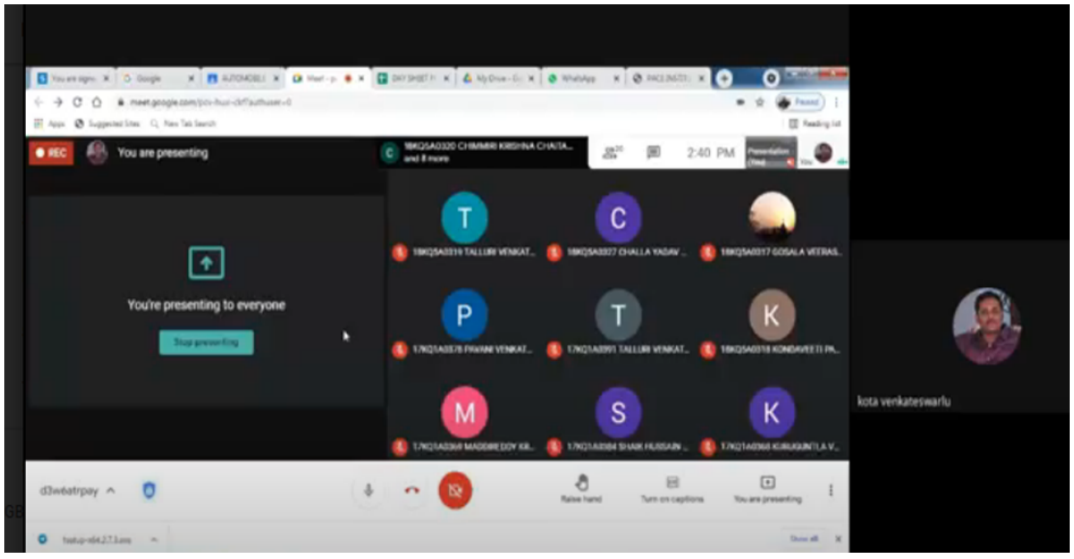

Figure 2.2.1.c: Screenshot of the online class conducted in Google Meet

Experimental learning:

- To improve the quality of learning, curriculum of laboratory courses is developed in such a manner to emphasize the concepts learned in theoretical subjects.
- In each semester, two or three laboratory courses are conducted and most of these courses are related to theoretical subjects.
- Both hardware and software based laboratories are equipped with necessary infrastructure to facilitate effective conduction of the experiments in the laboratory.
- Faculty members are assigned for each practical session to assist the students in conducting experiments.
- For the laboratory sessions, detailed instruction manuals are provided for each laboratory course.
- Students are also advised to study the theory and the procedure to conduct the experiment before the laboratory session.
- Students conduct the experiments and record the observations in the observation book. After completion of the experiment, students are encouraged to discuss about results obtained from the experiment.
- The observations are verified by faculty and record books are evaluated.
- As part of testing the learning process, viva-voce is conducted in each laboratory session.

Project based learning:

- The main project work and mini project is carried out by students in VIII & V Semesters respectively.
- Students in each section are divided into batches consisting of 3-5 students.
- Each batch selects their guide according to the research area of the faculty members.
- Problem identification is done based on the existing solutions collected from literature survey and also identifies the constraints to the problems.

Learning Management System (Moodle):

The college encourages teaching & learning through LMS tool, such as Moodle. Each Department has a Moodle coordinator, who maps the students, courses and faculty at the beginning of the semester in Moodle. Lesson plan, syllabus, assignments, lab manuals and extra material are shared with the students through Moodle. Quiz is conducted through Moodle.

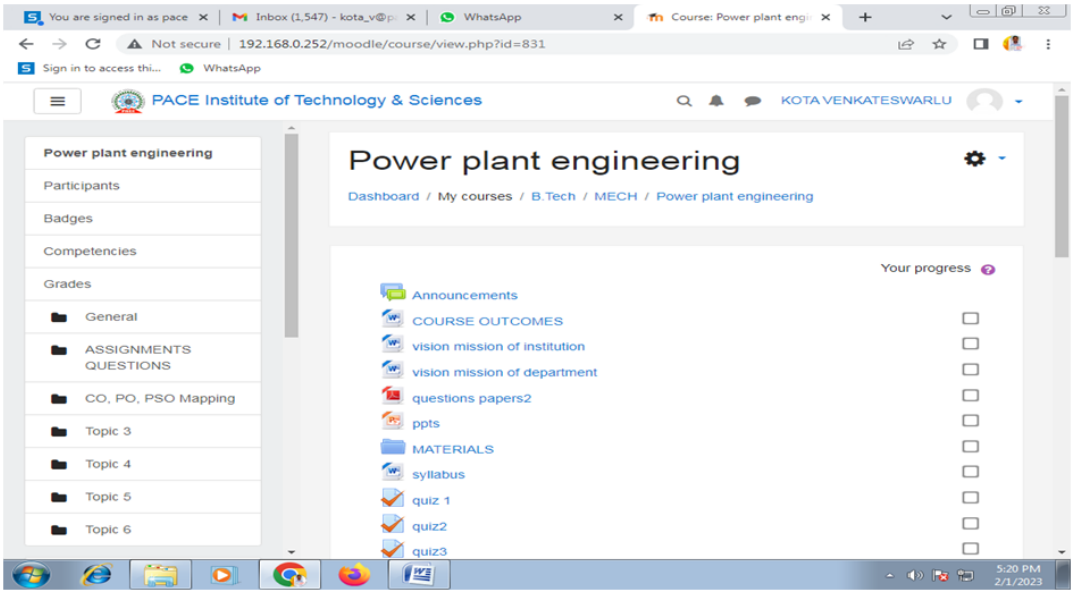

Figure 2.2.1.d: Screenshot of the PACE Moodle

Invited Lectures:

The department interacts with the industry and academic experts to deliver Guest lectures/ Seminars/Workshops to students on latest technologies and tools.

- The department has various Student Chapters like IEI Student Branch, ISTE Student's Forum (ISF) and ISTE chapter. These chapters conduct various technical events to the students regularly
- The guest lectures by resource persons from industry, academic and research institutions are frequently arranged by the department
- Students are also encouraged to present technical papers at conferences and exhibit their projects in project competitions

Figure 2.2.1.e: Practical Work Shop on "3-D PRINTING"

Figure 2.2.1.f: Practical training on "MY STORY MY MOTIVATION"

Table 2.2.1.c: List of events organized under Professional societies/ chapters of the Department

2022-23					
S.No	**Name of the Programme/ Seminar/Workshop**	**Name of the Resource Person and Organization**	**Organised by**	**Date/s of the event**	**No. of Participants**
1	Light-weight Materials for Automotive and Aerospace application: Challenges and opportunities.	Dr. Jagannatham (IIIT Madras)	IEI	24/05/2022	109
2	My story Motivational Session by Successful Innovation	Dr. Gujjala Raghavendra (NIT Warangal, Telengana.)	ISTE	30/12/2022	145
3	Ed-talk to help you choose the right universities and career path in US.	Dr. Venkata Charan Kantumuchu (Global Quality Director at Electrex, inc., South Hutchinson, Kansas, United States.)	IEI	31/12/2022	46
2021-22					
S.No	**Name of the Programme/ Seminar/Workshop**	**Name of the Resource Person and Organization**	**Organised by**	**Date/s of the event**	**No. of Participants**
1	Research Innovation and Ranking	Dr.G. Ramesh, Assistant Professor, Dept.of Metallurgical and Materials RGUKT, IIIT, AP)	ISTE	02/08/2021	48
2	Casting Technology	K.Chirenjeevi (Indian Metal Works, Addanki)	IEI	20/12/2021	49
3	Process of Innovation Development and Techonology Readiness level and Communication of Lab Technologies	Dr. M. Suresh Kumar, Professer RKGUT ,Idupulapayai,AP	ISTE	11/03/2022	220
2020-2021					
S.No	**Name of the Training Programme/ Seminar/Workshop**	**Name of the Resource Person and Organization**	**Organised by**	**Date/s of the event**	**No. of Participants**

1	Advanced Metal Casting Technology	Mr. K.Chirenjeevi (Indian Metal Works, Addanki)	ISTE	27/1/2021	180
2	Modern Future Technology in Automobile and Mechanical Engineers	Dr. Ravi Rajesh (School of Aerospace and Auto Mobile Engineering	ISTE	29/01/2021	169
3	Mechanical Designer Carrier Guidence	Mr. Balakrishna Battu (Associated with Dover INDIA pvt.ltd)	ISTE	16/02/2021	224
4	Interaction with A Successful Entrepreneur	Mr. Prasad M.P (President of Agnito insights , Chennai)	IEI	01/03/2021	190
5	Work shop on Process Design and Development-Prototyping	Mr. K.Chirenjeevi (Indian Metal Works, Addanki)	IEI	09/04/2021	107
6	One day Workshop on Effective Article Writing	Dr. Gujjala Raghavendra (NIT Warangal, Telengana.)	IEI	28/06/2021	90
7	Future Mechanical Career Pathways Interaction	Mr. Saichand Mandhalapu (Sr. Design Engineer,TATA Motors,Pune)	ISTE	26/06/2021	85
8	Metallurgy of Iron and Steel	Dr. K.Santhy, (HOD, Dept. of Metallurgical and Materials and Engineering, Indus University, Ahmedabad)	ISTE	01/07/2021	84

Technical Training Programmes through Training & Placement Cell:

- Technical training refreshes the basics which will be helpful for placement activities
- Specially designed training (soft skills, communication skills) is given to students regularly by the Training & Placement cell

Table 2.2.1.d: List of industrial trainings for A.Y 2022-2023

S.no	Name of the program	Date	Organized by	Beneficiary
1	DXC TRAINING	26-06-2022 to 13-07-2022	Inhouse	19KQ-BATCH
2	TCSTRAINING	14-07-2022 to 13-08-2022	Inhouse	19KQ-BATCH
3	TECH MAHINDRA TRAINING	10-09-2022 to 21-09-2022	Inhouse	19KQ-BATCH
4	Deloitte TRAINING	12-12-2022 to 28-12-2022	Inhouse	19KQ-BATCH
5	OSI DIGITAL & THRMO FISHER TRAINING	31-12-2022 to 06-01-2023	Inhouse	19KQ-BATCH
6	[24].7 ai	06-02-2023 TO 11-02-2023	Inhouse	19KQ-BATCH
7	TOLL PLUS	17-02-2023 TO 22-02-2023	Inhouse	19KQ-BATCH

Table 2.2.1.e: List of industrial trainings for A.Y 2021-2022

S.no	Name of the program	Date	Organized by	Beneficiary
1	TCS & WIPRO TRAINING	06-10-2021 to 19-10-2021	Inhouse	18KQ-BATCH
2	MINDTREE TRAINING	21-10-2021 to 30-10-2021	Inhouse	18KQ-BATCH
3	QUEST GLOBAL TRAINING	01-11-2021 to 16-11-2021	Inhouse	18KQ-BATCH

4	HCL TRAINING	17-11-2021 to 16-12-2021	Inhouse	18KQ-BATCH
5	INFYTQ& HACK WITH INFYTRAINING	06-12-2021 to 07-01-2022	Inhouse	19KQ-BATCH
6	HEXAWARETRAINING	21-04-2022 to 02-05-2022	Inhouse	19KQ-BATCH

Table 2.2.1.f: List of industrial trainings for A.Y 2020-2021

S.no	Name of the program	Date	Organized by	Beneficiary
1	T CS NQTTRAINING	01-10-2020 to 20-10-2020	Inhouse	17KQ-BATCH
2	HEXAWARETRAINING	01-11-2020 to 10-11-2020	Inhouse	17KQ-BATCH
3	APTROID TRAINING	15-11-2020 to 20-11-2020	Inhouse	17KQ-BATCH
4	TEK SYSTEMS TRAINING	01-12-2020 to 10-12-2020	Inhouse	17KQ-BATCH
5	WIPRO TRAINING	18-12-2020 to 28-01-2021	Inhouse	17KQ-BATCH
6	GLOBAL EDGE TRAINING	15-02-2021 to 19-02-2021	Inhouse	17KQ-BATCH
7	INFYTQTRAINING	10-02-2021 to 17-04-2021	Inhouse	18KQ-BATCH
8	MPHASISTRAINING	01-07-2021 to 10-07-2021	Inhouse	18KQ-BATCH

Table 2.2.5.g: List of industrial trainings for A.Y 2019-2020

S.no	Name of the program	Date	Organized by	Beneficiary
1	EMBEDDED UR TRAINING	01-07-2019 to 08-07-2019	Inhouse	16KQ-BATCH
2	TCS TRAINING	22-07-2019 to 02-08-2019	Inhouse	16KQ-BATCH
3	MIND TREE TRAINING	06-09-2019 to 11-09-2019	Inhouse	16KQ-BATCH
4	WIPRO COMPANY SPECIFIC TRAINING	11-10-2019 to 17-10-2019	Inhouse	16KQ-BATCH
5	CTS SPECIFIC TRAINING	13-11-2019 to 22-11-2019	Inhouse	16KQ-BATCH
6	INFYTQ TRAINING	27-01-2020 to 10-02-2020	Inhouse	17KQ-BATCH
7	INFYTQ TRAINING	13-02-2020 to 24-02-2020	Inhouse	17KQ-BATCH

C. METHODOLOGIES TO SUPPORT WEAK STUDENTS AND ENCOURAGE BRIGHT STUDENTS

The department has a well-defined process of monitoring, guiding and assisting weak students. The students who secure below 50% marks in any subject in their I-Mid-Term examination are identified and considered as academically weak students. Students who secure above 70% marks in their I-Mid-term examination in all subjects are considered as academically bright students. Weak students are given counselling for the career guidance. Bright students are encouraged to take up new challenges, like participating in events like quiz, paper presentation, mini projects and technical fests, placement training.

Mentoring:

- The purpose of mentoring system is to monitor the student with regard to their academic and professional well-being.
- Every mentor regularly monitors the internal and external marks obtained by students and guide them for improvement in case of poor performance.
- Mentors also identify the core competencies of the students and guide them to make a better professional.
- Students are allowed to approach the mentor for both academic & personal problems.

Assistance for weak students:

- Mentors regularly follow their progress and counsel them to attend the classes regularly
- Motivated the weak students to attend remedial classes and help them to better understand the subject
- Students' attendance and performances are intimated to parents.
- Counselling is given to the students by subject handling faculty, Class teacher and HOD if necessary
- Discussion on important questions and question bank is arranged
- Remedial classes are conducted for weak students to improve

Support for average students:

- Encourage students to attempt MOOCs and other certification courses
- Assigning seminar presentations to improve their presentation skills etc.
- Motivate them to participate in workshops, seminars, paper presentations and other co-curricular activities

Encouraging bright students:

- To take up mini/major projects to enrich them technically skilled
- Motivate them to attend conferences, project expos and other co-curricular activities
- Encourage students to attend competitive examinations, like GATE, CAT etc.
- Involve bright students for peer tutoring the weak students.

The following flow chart is used to support weak students and encourage bright students

Figure 2.2.1.g: The process used for encouraging bright students and assisting weak students

D.QUALITY OF CLASSROOM TEACHING

In the teaching-learning process, the lectures are delivered by the faculty member through a set of teaching aids and adopting various teaching methods.

Course Plan:

In the teaching learning process, the course plan plays a vital role. It is prepared by each faculty member handling their respective courses two weeks prior to the commencement of every semester. The course plan for each of the course is scrutinized by the PA&QIC under the guidance of the Head of the Department.

All faculty members maintain the attendance diary and evaluation book for the course that they handle. The course plan contains the following details.

- Course plan includes course outcomes, teaching aids, teaching methods, learning outcomes, and mapping of outcomes and learning resources that can be effectively utilized for the best delivery.
- Based on the course plan, the delivery is recorded accordingly in the attendance diary and evaluation book and reviewed by the Head of the Department.
- The teaching-learning process is evaluated based on the data recorded in the attendance diary and evaluation book.
  - Vision & Mission of the Institute
  - Vision & Mission of the Department
  - PEOs, POs & PSOs
  - Syllabus of the Course
  - Course Outcome vs. PO, PSO Mapping
  - Academic Calendar
  - Individual Time Table
  - Lesson Plan
  - Student Nominal Roll
  - Student Attendance Register
  - Course Material
  - Question Bank
  - Assignment Questions
  - Class Room Test Questions
  - CIE Exam Question Paper
  - Sample Photocopy of CIE Answer Scripts (Best, Moderate, Worst)
  - Course Evaluation Procedure (Internal & External)
  - CIE Exam Performance
  - List of Slow & Advanced Learners
  - Remedial Classes for Slow learners
  - Model/Previous Year Question Paper
  - Gap Analysis & Content Beyond Syllabus
  - Course End Survey
  - Course Attainment Sheet

Every faculty in the department strictly follows the plan and procedure to ensure the quality of teaching in the class room.

E. CONDUCT OF EXPERIMENTS (OBSERVATION IN LAB)

Student's carryout extra experiments beyond the specified list. All laboratories have adequate equipment/kits/components. Detailed instruction manuals are provided to the students. The observations are checked and verified by faculty and record books are maintained systematically. Two/Three faculty members and one Lab technician are assigned for each practical session.

F. CONTINUOUS ASSESSMENT IN LABORATORY

Continuous assessment system is also implemented for assessment of laboratory work. Students are instructed to maintain individual Laboratory assessment records. These records are checked and verified by faculty member before the commencement of each experiment. Viva voce is conducted for the students in order to test their knowledge in the experiment. The internal assessment marks are allotted based on Rubrics and the average marks is considered for awarding final internal assessment work.

Table 2.2.1e: Allocation of internal laboratory marks for R18 regulation

S. No	Internal	Marks	External	Marks
1	Internal Lab Examination	10		
2	Record	05		
3	Day to day Work	20	External Lab Exam	60
4	Viva-Voce	05		
	Total Marks	40		

G. STUDENT'S FEEDBACK OF TEACHING LEARNING PROCESS AND ACTION TAKEN

To improve the teaching learning process the feedback from the student is obtained every semester for every course. Common feedback system is designed at the institutional level for all the years by considering all the dimensions of the teaching-learning process. The feedback is collected through online portal in middle of the every semester in all courses. Feedback is analysed by senior Professors along with the Head of the Department. After analysis, all comments written by the students in the feedback forms will be communicated to the respective faculty members along with their feedback level. Thereby teacher can know their strengths, weaknesses and improve their teaching skills accordingly.

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INTERNAL QUALITY ASSURANCE CELL(IQAC)

Department of Mechanical Engineering

Feedback of students on faculty (Theory course faculty)

A.Y: 2022-23 Year & Sem: III-II Branch& Sec:MECH

IQAC conducts and records students' feedback on faculty to monitor the performance and interest in academic and other activities. So, rate the below questionnaires to the best of your knowledge.

Rate 0-4:

4 (Very Good)	3(Good)	2 (Average)	1(Poor)	0 (Very Poor)

Sl. No	Particulars	Course-1	Course- 2	Course- 3	Course-4	Course-5
	Course name					
1.	Syllabus of the subject					
2.	Subject knowledge of the faculty					
3.	Time sense of the faculty (class punctuality, syllabus coverage....etc)					
4.	Communication skills of the faculty (in terms of articulation and comprehensibility)					
5.	Accessibility of the faculty in and out of the class (includes availability of the teacher to motivate further study and discussion outside class)					
6.	Usage of ICT tools by faculty (Projectors, Online tools .... etc)					
7.	Class controlling by the faculty					
8.	Any other remarks					

Figure 2.2.1.h.i: Feedback format used for the faculty on teaching & learning

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INTERNAL QUALITY ASSURANCE CELL(IQAC)

Department of Mechanical Engineering

Feedback on faculty by students (Lab course faculty)

A.Y: 2022-23 **Year & Sem: III-II** **Branch & Sec:MECH**

Phase:I

Rate 0-4:

4 (Very Good)	3(Good)	2 (Average)	1(Poor)	0 (Very Poor)

Sl. No	Particulars	Lab -1	Lab - 2	Lab - 3
	Lab name			
1.	Lab experiments/ programs relation to real world			
2.	Knowledge of the faculty on the lab experiments/ programs			
3.	Helping students in conducting experiments/ programs			
4.	Takes interests in conduct of labs with viva, virtual labs, group discussions etc....			
5.	Regular checking of lab observations and records			
6.	Any other remarks			

Figure 2.2.1.h.ii: Feedback format used for the faculty on teaching & learning

2.2.2 Quality of end semester examination, internal semester question papers, assignments and evaluation (15) Institute Marks : 15.00

2.2.2 Quality of end semester examination, internal semester question papers, assignments and evaluation (15)

A. PROCESS FOR INTERNAL SEMESTER QUESTION PAPER SETTING AND EVALUATION AND EFFECTIVE PROCESS IMPLEMENTATION

Initiatives:

The examination process / Setting of quality question papers aims to measure the intellectual skills accomplished by the students as per Revised Bloom's Taxonomy levels

- Remembering
- Understanding
- Applying
- Analyzing
- Evaluating
- Creating

Assessing the performance of students over a well-distributed interval of time within the semester through continues evaluation.

Implementation Details:

Internal Examinations

- The internal examination question papers are prepared by the faculty involved in delivering the course for all sections
- Question papers are prepared in a manner to cover all the COs of that particular course and Revised Bloom's Taxonomy will also be followed in question paper setting.
- The Department conducts five assignment tests,five Class Room Tests and two sessional tests in a semester for all courses: one at the middle and the other at the end of semester for theory courses as per the R-18 regulation.
- After completion of tests, the evaluated answer scripts are distributed to the students and an opportunity is given to the students to verify and the changes are rectified before the marks statement is finalized.

Semester End Examinations

- For each course of the program, semester end examination is conducted.
- The Controller/Coordinator of Examinations identifies the panel of question paper setters from premier institutes like NITs, State Universities, and Autonomous Colleges.
- The question papers are also scrutinized by the subject expert to ensure all questions were set from course syllabus and to identify insufficient data or typographical mistakes, if any in the question paper.

Evaluation:

As per the R-18 regulations, each theory course is evaluated for 100 marks, distributed into 40 marks for internal assessment and 60 marks for semester end examination.

Internal Examinations

- Every theory course consists of 5 units and for each course the internal assessment is done for 40 marks.
- The internal evaluation is based on two cycle tests conducted in each semester. The 40 internal marks are awarded as sum of 80**%** of the best cycle and **20%** of the least cycle examinations, where each cycle of examination contains the distribution as shown in Table 2.2.2a.

Table 2.2.2.a: Distribution of internal Marks for theory course

S.No	Type of examination	Max Marks
1	Descriptive test	20
2	Objective test	10
3	Assignment test and CRT	10
Total Marks		**40**

- Each descriptive test question paper contains 4 questions one from each unit covering syllabus from 2.5 units (first 2.5 units for first cycle and remaining 2.5 units for second cycle). The student has to answer all the 4 questions (4X5M=2**0M**).The descriptive examination is conducted for 2 hour duration.
- Online Objective type test question paper contains 20 objective questions for 10 marks (20 X 1/2 M = 10M) covering the syllabus from 2.5 units. The Objective Examination is conducted for 20 minutes duration along with descriptive test.
- The evaluation for laboratory class work consists of,

Table 2.2.2.b: Distribution of internal Marks for Laboratory course

Parameter	Marks
Day-to-Day work	20
Internal test	10
Record	05
Viva-Voce	05
Total	**40**

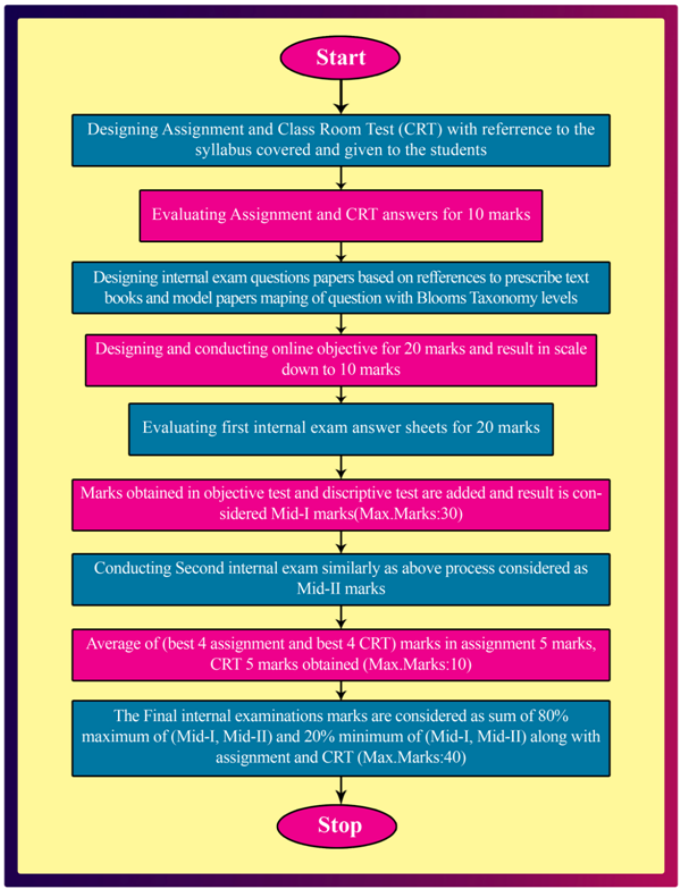

Figure 2.2.2.a: Process of internal evaluation systems

Semester End Examinations

- The valuation of answer booklets of the semester end examination is done by conducting the spot valuation by inviting the valuators from nearby Autonomous institutions
- For each course, a detailed key (solutions cum scheme of valuation) is prepared by one of the internal faculties, who has taught the subject in the current semester
- In order to get uniformity in the valuation process, the normalization system is adopted
- According to this system:
- All the valuators sit together to discuss and finalize a common scheme of valuation at the beginning of the assessment
- The Chief examiner picks one answer script, randomly for every 10 answer scripts and valuate the script
- The Chief examiner compares valuated marks with previous allotted marks and finalize the marks based on the probable deviation.
- If marks deviation exceeds then the Chief examiner advices the valuator to re-valuate the scripts.
- Revaluation of answer scripts is available, based on the students request.

B. PROCESS TO ENSURE QUESTIONS FROM OUTCOMES/LEARNING LEVELS PERSPECTIVE

- For all UG courses, internal question papers are scrutinized by the Pre-Exam Committee (PEC). The committee will verify whether the question papers which are prepared by the concerned faculty members according to the blooms taxonomy (BT) and course outcomes (COs). The committee will also give their suggestions and directions to ensure quality of question papers and evaluation scheme. The PEC approves the question papers in respect of Continuous Internal Evaluation tests. Students who answered a particular question is taken into consideration and average of all students marks is taken for CO-PO attainment.
- The Pre-Exam Committee (PEC) is formed with HOD and Senior faculty members of the department.
- The Committee ensures the quality of internal question papers, based on the course outcomes with proper blooms taxonomy levels.

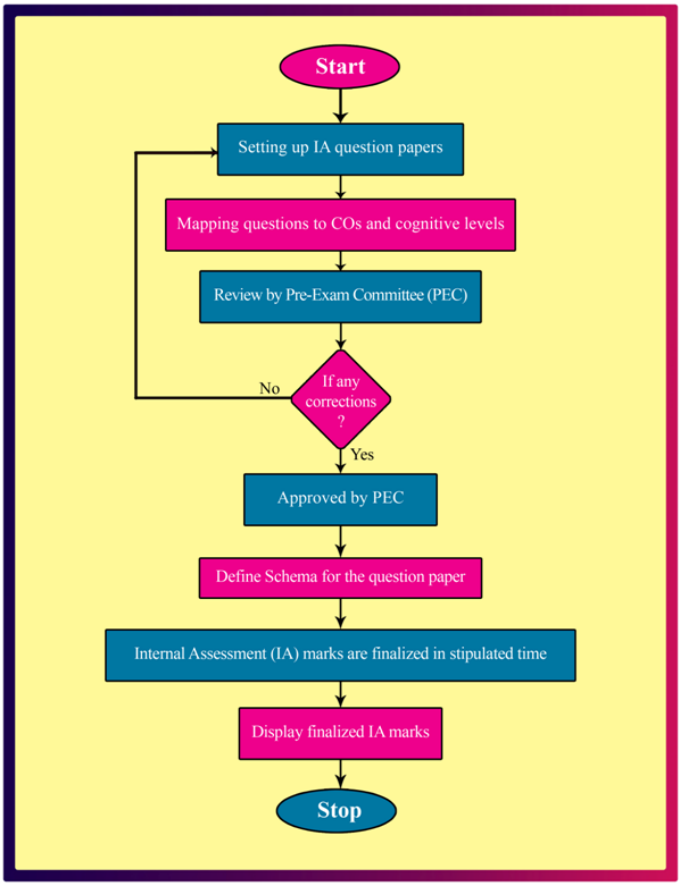

Figure 2.2.2.b: Flow chart of process for internal examination question paper setting and evaluation

C. Evidence of COs coverage in mid-term tests (5)

- The faculty members of concerned courses are instructed to give question papers with proper mapping of COs and Blooms taxonomy levels.
- The Sample Mid Exam Question paper is given below.

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DEPARTMENT OF MECHANICAL & ENGINEERING

IV B.Tech I Semester – Descriptive Examination-I

POWER PLANT ENGINEERING (Only for ME Branch)

(Professional Elective – IV)

Subject Code: **P18MEE15** Academic Year: 2022-23 R18 Regulation

Time: 2 hours Date of Exam: 05/09/2022 Max Marks: 20

*Answer **all** the questions. All Questions carry equal marks* (**4X5=20M**)

Q.No	Questions	Marks	BL	CO
1	Enumerate and Explain the steps involved in Coal handling?	5 M	L4	1
2	What is the importance of dust collector in a thermal power plant system? Explain the working of a cyclone dust collector	5 M	L3	1
3	Explain with a neat sketch of open cycle gas turbine power plant. And write the advantages and disadvantages.	5 M	L3	2
4	What are the various factors to be considered in selecting the site for hydro electric power plants?	5 M	L3	3

Table 2.2.2.c: Mid Examination Question Paper

D. Quality of conduct Assignment and its relevance to COs (5)

- To conduct Assignment, the faculty members of concerned courses will give four (4) questions from each unit. A student shall submit five assignments with Viva Voce to the concerned faculty from all five units. Each question in the assignment will be mapped with CO and blooms taxonomy level.

- The Assignment shall be evaluated by the concerned faculty. The average of best four assignment marks shall be considered for awarding 5 marks.
- The feedback is given to the students after evaluation and answer scripts were given to the students for the verification. It impacts the students to improve their performance in further examinations.
- The Sample Assignment Questions are given below for one assignment.

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DEPARTMENT OF MECHANICAL & ENGINEERING

Assignment Questions

AY : 2022 – 23 **Dt: 12/08/2022**

Name of the subject : Power Plant Engineering **Branch: MECH** **Year / sem : IV / I**

Q.No	Questions	Marks	BL	CO
1	With a neat sketch explain the working of steam power plant?	1M	L2	1
2	Enumerate and explain the steps involved in Coal handling?	1M	L2	1
3	Write advantages and Disadvantages of Steam Power Plant?	1M	L1	1
4	Explain the types and need for Energy Audit?	1M	L2	1

Table 2.2.2.d: Sample copy of Assignment Paper

Impact Analysis

- The Examination Scrutinizing Committee of the department analyzes the quality of question papers.
- The above process ensures that question papers are framed by considering all COs into account.
- Question papers are framed as per Bloom's taxonomy levels.
- The desired COs, POs and PSOs of each course are attained through adopting the above stated quality initiatives in question paper settings and assignments.

2.2.3 Quality of student projects (20) Institute Marks : 20.00

The department follows standard procedures to ensure that students carry out a quality project and the major project work is carried out by the students in VIII Semester and Mini project in V Semester inR18regulations. Students are encouraged to do project work on real world examples.

A. IDENTIFICATION OF PROJECTS AND ALLOCATION METHODOLOGY TO FACULTY MEMBERS

Project Group formation:

- The students are categorised into batches based on their performance in the previous examinations.
- Each team or project batch consists of 3-5 students.
- Project batches are formed such that each batch has students with varying academic merit.

Identification of the Guide:

- Each batch selects their guide according to their area of interest and the research and competency of the faculty members.
- Project identification is done based on student's innovative ideas in consultation with supervisor.
- The lists of previous year projects are available to the students in the department library and central library to ensure no repetition of project work in selecting the present project work.
- The students take guidance from their guides while finalizing the problem.

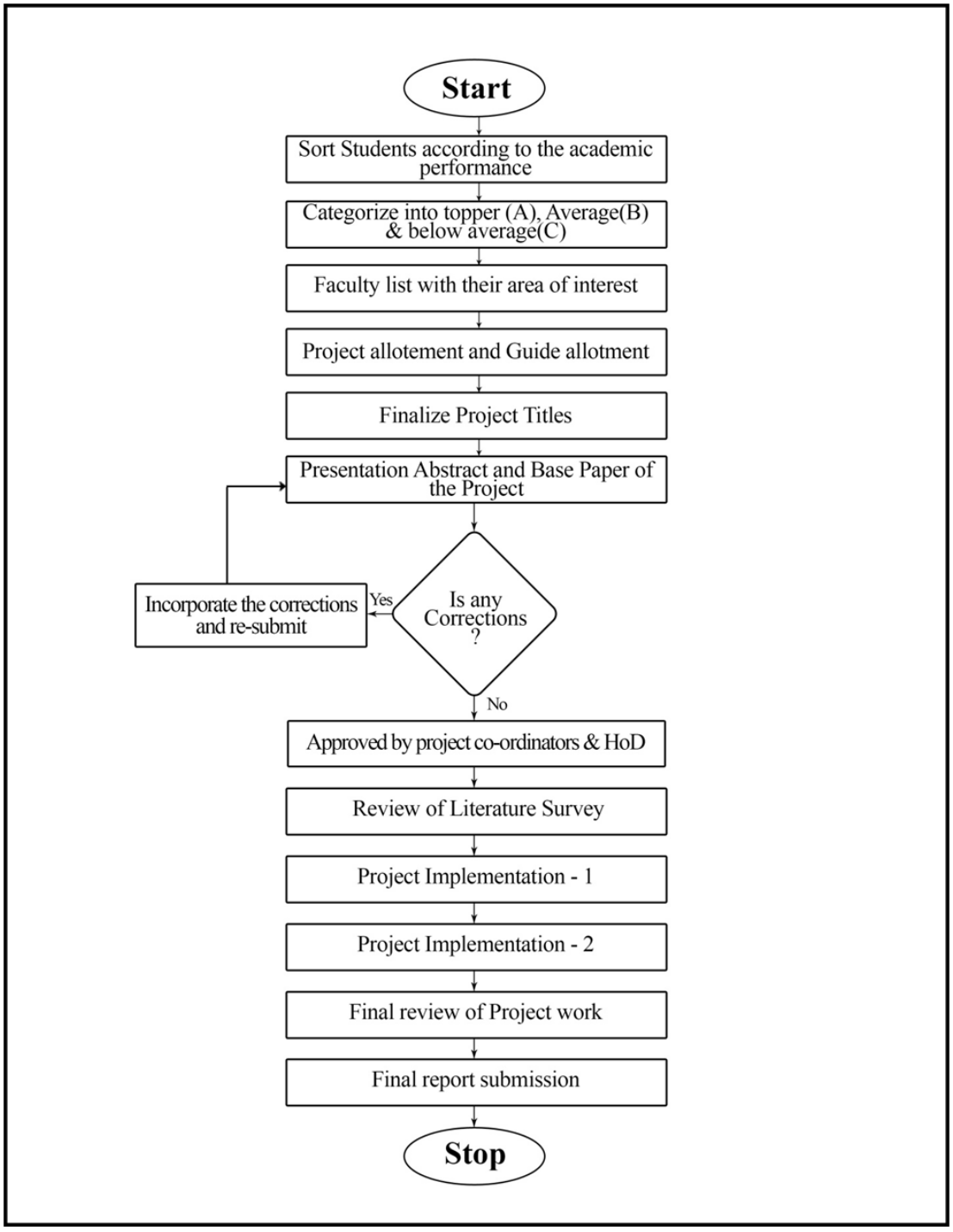

Figure2.2.3.a: The process used for project group formation, Guide allocation and Project Completion

B.TYPES AND RELEVANCE OF THE PROJECTS AND THEIR CONTRIBUTION TOWARDS ATTAINMENT OF POs AND PSOs

Table 2.2.3.a: List of various categories of student projects and their relevance with POs and PSOs

A. Y	Broad area of the project	No. of projects	Mapping POs	Mapping PSOs

2020-21	COMPOSITE MATERIALS	5	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9, PO10,PO11,PO12	PSO1,PSO2
	MACHINE DESIGN	11	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9, PO10,PO11,PO12	PSO1,PSO2
	MANUFACTURING	4	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9, PO10,PO11,PO12	PSO1,PSO2
	ROBOTICS	2	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9, PO10,PO11,PO12	PSO1,PSO2
2019-20	COMPOSITE MATERIALS	9	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9, PO10,PO11,PO12	PSO1,PSO2
	MACHINE DESIGN	7	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9, PO10,PO11,PO12	PSO1,PSO2
	MANUFACTURING	5	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9, PO10,PO11,PO12	PSO1,PSO2
2018-19	COMPOSITE MATERIALS	5	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9, PO10,PO11,PO12	PSO1,PSO2
	MACHINE DESIGN	11	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9, PO10,PO11,PO12	PSO1,PSO2
	MANUFACTURING	4	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9, PO10,PO11,PO12	PSO1,PSO2
	ROBOTICS	2	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9, PO10,PO11,PO12	PSO1,PSO2

C. PROJECT RELATED TO INDUSTRY

The students are allowed to do the project in the industry, based on the opportunity got from industry.

D. PROCESS FOR MONITORING AND EVALUATION

According to R-18 Regulations:

- Major project is evaluated for total of 200 marks. Out of 200 marks for the project work, 80 marks are for Internal Evaluation consisting of literature review,contribution,innovation,presentation and viva-voice. The assessment of the project report and 120 marks for the external evaluation.
- Mini Project is evaluated for total of 100 marks. Out of 100 marks, 30 for Mini project report, 25 marks for innovation, 25 marks for presentation and 20 marks for Viva voce .

Internal Evaluation

- The department forms Project Review Committee (PRC) every year and it consists of Head of the department as Chair, senior faculty members and project coordinator as members.
- A project coordinator is appointed by the Head of the Department who is responsible for planning, scheduling and execution of all activities related to the project.
- The project coordinator instructs the students to select the project domain and submit the synopsis to concern guide adhering to the timelines decided by the HOD.
- Department encourages the students to carry out in-house projects and required support is provided through continuous hands-on trainings by internal as well as external experts.
- The students are asked to meet their respective guides regularly and asked to explain the progress in their project.
- Project reviews are conducted regularly by the PRC of the department in the presence of respective guide to check the status of the projects and time to time assessment is done for all the projects.
- Project teams have to submit the project report in the prescribed format given by the department.

The Reviews of projects is done as follows:

The performance of a student in a project survey shall be evaluated based on the following parameters:

Parameter	**Marks**
Literature Review	15
Presentation	15
Viva Voce	10
Total	**40**

Two Project Implementation Reviews are evaluated based on the following parameters:

Parameter	**Marks**
Contribution	10
Innovation	10
Presentation	10
Viva Voce	10
Total	**40**

External evaluation

- An end semester project, viva voce is conducted with the panel of internal and external examiners. The external examiner from other institution is appointed by the Chief Controller of Examinations.

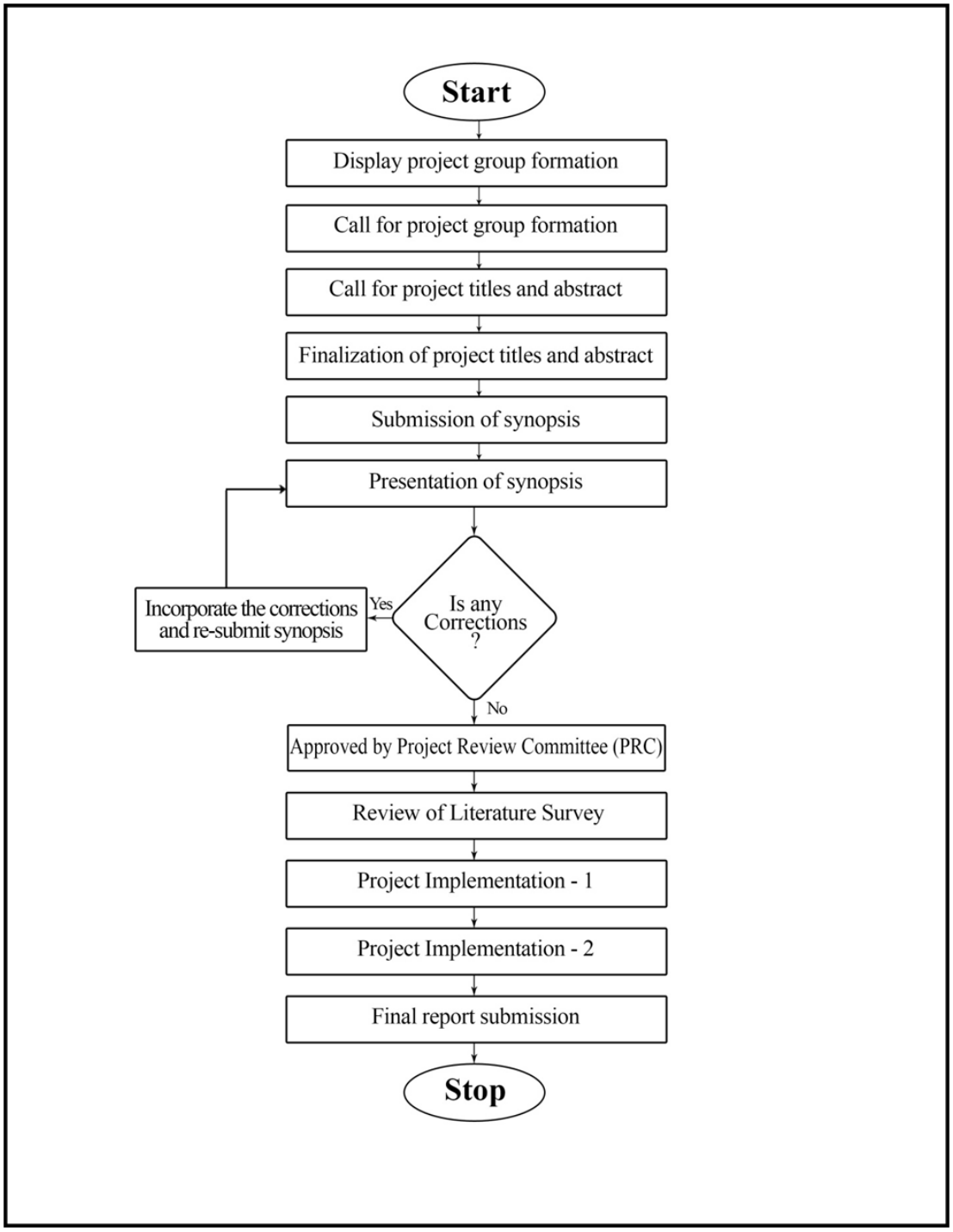

Figure 2.2.3.b: Process for defining the student projects approval and evaluation.

E. PROCESS TO ASSESS INDIVIDUAL AND TEAM PERFORMANCE

Project reviews are conducted by PRC along with respective guide as per the schedule and presentation should be given by all team members according to their division of project work. The performance of the individual and team of the project is assessed at the time of presentation in reviews by considering the following criteria.

The performance of the individual is assessed by considering the following criteria:

- Communication.
- Confidence in the project work.
- Attainment of individual scope of work.
- Overall contribution of the project accomplishment.

The performance of the project team is assessed by considering the following criteria:

- Knowledge of the members contribution towards the project.
- Coordination in consolidating the work.
- Time management.

F. QUALITY OF COMPLETED PROJECTS/ WORKING PROTOTYPES

Project Review Committee (PRC) ensures the quality of the student projects based on the following criteria.

- Review of literature and related studies.
- Innovativeness and creativity.
- Implementation strategies.
- Presentation skills.
- Impact on society.

1. The students will demonstrate the working prototype models during the internal and external project reviews.
2. Outcomes of the projects are encouraged to be published as a paper in conference / journals.
3. Students are encouraged to publish their project work in reputed journals/conferences.

Table 2.2.3.e: Best projects of the students

2021-2022

S. No	Title of the project	Students	Area of the Project	Project Guide	PO	PSO
1	FABRICATION OF VOICE ENABLED WHEEL CHAIR	METTAM RAJU BANKA NARESH GUNTAKA SRIKANTH REDDY PALLA VENKATA SRI VARDHAN ONTELA NAGA CHAITANYA	Manufacturing	Dr.G.Kondaiah	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,P O10,PO11, PO12	PSO2
2	Analysis Of Noise Reduction In Rotor Blade Using Composite Material	TALLURI NAVEEN GOLLA CHANDU SIRIMALLA GEOGE BABU PONUGUBATI NAVEEN SWARNA VINAY BABU	Composite Materials	Mr K.Venkateswarlu	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,P O10,PO11, PO12	PSO2
3	Automatic Vehicle Detection With Electromagnetic Breaking System	VALLEPU CHANDU MEDA SRINU VINJAMURI AKHIL BABU NEELAM RAMACHANDRA JANUMALA RATNA SUNDARAM	Machine Design	Mr A. SAI PRASAD	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,P O10,PO11, PO12	PSO2
4	Carbon Epoxy Fiber Composite And To Investigate Its Mechanical Properties	YEDDU TARUNTEJA ADUSUMALLI SAI RITHEESH MEDABALIMI AJAY CHANDRA SAMANTHAPUDI RAMAKRISHNA RAJU PENUMATSA PRUDHVI YEDDU TARUNTEJA	Composite Materials	Mr Y SRINIVASA REDDY	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,P O10,PO11, PO12	PSO2

2020-2021

S. No	Title of the project	Students	Area of the Project	Project Guide	PO	PSO
1	Fabrication And Testing Of Epoxy Resin Based Glass Fibre Coconut Fibre Composites Using Hand Layup Method	TALLURI VENKATA NAVEEN CHILAKALA ADI BABU SHAIK KALESHA KOTHIMERLA RAKESH SHAIK RASOOL	Composite Materials	MR R.Ajay Kumar	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,P O10,PO11, PO12	PSO2
2	Modal Analysis of aircraft propeller with isotropic and Orthotropic Materials	CHALLA YADAV KRISHNA GANDRA VISHNUVARDHAN REDDY SHAIK MOHAMMED APEEJ MENDA CHAITANYA KUMAR PATTI VENKATARAO	Composite Materials	MR. K.Venkateswarlu	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,P O10,PO11, PO12	PSO2
3	Investigation of Mechanical Properties of Coconut fiber	KAKI MAHESH BABU CHIMMIRI KRISHNA CHAITANYA PERIKE VINOSKUMAR CHEPARTHI VENKATA NARAYANA CHITTEM REDDY SAI KUMAR	Composite Materials	MR K.Suresh Babu	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,P O10,PO11, PO12	PSO2
4	Experimental performance of DI Diesel Engine fueled by Waste plastic Oil Blended with Diesel	DUGGI HARSHAVARDHAN PARIMI RAKESH SHAIK SAMIULLA MALUROTHU PREM KUMAR	Thermal	MR. Y.Srinivasa Reddy	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,P O10,PO11, PO12	PSO2

2019-2020

S. No	Title of the project	Students	Area of the Project	Project Guide	PO	PSO
1	CHARACTERIZATION OF ALUMINA NANAO POWDER FOR ADDITIVE MANUFACTURING	A. DURGA POOJITH B.THANUJA P. NAGA LAKSHMI G. CHARAN N. GANESH	Nano-Technology	Shri. M. Vijayan	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,P O10,PO11, PO12	PSO2
2	COMPARE THE EXPERIMENTAL INVESTIGATION AND ANALYTICAL VALUES OF FIBER METAL LAMINATES BY USING ANSYS	T.AVINASH M .VICTOR BABU S.SUBRAMANYAM S.MAHENDRA G.NAGESWARARAO	Manufcturing	Mr. K.PURUSHOTHAMAN	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,P O10,PO11, PO12	PSO2

3	Experimental Investigation of Performance of DI Diesel Engine Fueled with Camphor-Soybean Oil Blends	G. MANI KANTA REDDY P. IMMANIYELU P.JAYANTH BABU P.ANIL KUMAR NAIDU S. RAKESH	Thermal	Mr. A.Saiprasad	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,PO10,PO11, PO12	PSO2
4	DESIGN AND ANALYSIS OF SOLAR WATER HEATER BY USING PLM CONCEPT	CH.RAJAREDDY SK.SALMAN B.CHANDRA SEKHAR M.RISHI KUMAR K.NAGA SUBRAMANYAM	Machine Design	Dr.M.Sreenivasan	PO1, P02,PO3, PO4,PO5,PO6, PO7,PO8,PO9,PO10,PO11, PO12	PSO2

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G.EVIDENCE OF PAPERS PUBLISHED /AWARD RECEIVED BY PROJECT

- Students are encouraged to publish paper of their innovative project work in Conferences/journals.
- Students are encouraged to attend the National or International Conferences to gain more ideas of their projects.

Table 2.2.3.f: Paper publications based on the project

2021-22					
S.No	**Name of the Student**	**Title of the Project**	**Name of the Journal/ Conference**	**Organized By**	**Date/ ISSN No**
1	Kaja.Venkata Radhakrishna	Railway Wheel Condition Diagnoses with the Assistance of ANFIS Technique	Design Engineering	Design Engineering	ISSN: 0011-9342
2	Appala Anil	Solving Job Shop Scheduling Problem With The Aid Of Evolution Of Cub To Predator (ECP)	International Journal of Advanced Research in Engineering and Technology (IJARET)	IAEME	ISSN: 0976-6499

2.2.4 Initiatives related to industry interaction (10) Institute Marks : 10.00

2.2.4 Initiatives related to industry interaction (10)

Industry interactions help the students to acquire the practical knowledge. So in order to improve the technical abilities, various industrial activities are carried out. To promote Industry-Institute Interaction, the following initiatives are being undertaken by the department:

INITIATIVES

- An expert from Industry is nominated as member in the Board of Studies who takes an active role in the Curriculum design.
- Campus Recruitment Training (CRT) programs organized by Training & Placement (T & P) cell
- Conduct of Technical Workshops jointly with Industries.
- Value added courses in collaboration with Industries.
- Invited lectures by Industrial Experts.
- Industry Sponsored Laboratories
- Industrial tours

IMPLEMENTATION DETAILS

Memorandum of Understanding with Industries:

The institution has MOUs with various industries to strengthen the relationships for mutual benefit by way of exchanging the expertise. MOUs are done with an emphasize on Internship, Project Work for Students, Industrial Visits, Students specific Training and Faculty Development Programs.

Table 2.2.4.a: List of Industries with which the Institute has entered into MOUs for the department of MECHANICAL

S. NO	Name of the Company/Organization/Industry	Date of MOU Signed	Valued Period	No of Years
1	Srinivas Nagar Addanki.Prakasam(Dist.) A.P, India-523 260	11/01/2020	13-09-2023	3 Year
2	VandanaComplex,KR Puram,Bangalore-560036	23/11/2018	31-08-2023	5 years
3	No.1,First Floor, Ramaswamy Street, West Tambaram,Chennai-15	07/12/2018	11/02/2023	5 years
4	Sy.No.97,Industrial Estate,Kurnool Road,Ongole-523 002 Prakasm(Dist),A.P	07/12/2018	01/12/2023	5 years
5	Mr.M.PRADEEP KUMAR, THE PROPRIETOR *FOR* SRI PRASANNANJANEYA CRANES, NORTH BYPASS ROAD, DESU PLAZA, ONGOLE,PRAKASAM DISTRICT.	10/12/2018	06/12/2023	5 years
6	5/425/c,Desu piaza , North Byepass, Ongole, Prakasam Dt.A.P.	12/10/2018	17/02/2023	5 years

A. INDUSTRY INVOLVEMENT IN THE PROGRAM DESIGN AND CURRICULUM

The Industry involvement in the Program design and Curriculum is required to bridge the gap between industry and institute. By partial delivery of courses at the institution is also required to prepare the students for employment. The department is appointing industrial experts as members of Board of Studies to involve in designing the program. The list of invited industrial experts who were involved in design of curriculum and syllabi of the programme is listed below.

Table 2.2.4.b: List of invited industrial experts involved in curriculum design

S.No	Name of the Expert	Designation	Organization
1	Dr.N.Saravanan	Member	Technology Innovation Sustainability and MTA Mahindra Chennai.

B. INDUSTRY INVOLVEMENT IN PARTIAL DELIVERY OF ANY REGULAR COURSES FOR STUDENTS

Guest lectures by industrial experts are one of the best practices which help the student to know about recent trends in industries related to their courses. The effectiveness of course delivery by the industry expert is monitored for improvement in students knowledge on different latest technologies.

Table 2.2.4.c: Invited lectures organized by the Department of Mechanical by Industry persons

Academic Year	Name of the Resource Person	Name of the Organization	Topics covered in	Target participants	
2021-22	Mr. K.Chirenjeevi	Founder and CEO India Metals	Casting Technology	II MECH	
	Dr.G. Ramesh	Dept.of Metallurgical and Materials	Research Innovation and Ranking	III MECH	
2020-21	Mr. K.Chirenjeevi	Founder and CEO India Metals	Advanced Metal Casting Technology	IV MECH	
	Dr. Ravi Rajesh	School of Aerospace and Auto Mobile Engineering	Modern Future Technology in Automobile and Mechanical Engineers	IV MECH	
2019-20	Dr. K.Santhy	HOD, Dept. of Metallurgical and Materials and Engineering, Indus University, Ahmedabad	Metallurgy of Iron and Steel	III and IV MECH	

D. IMPACT ANALYSIS OF INDUSTRY INSTITUTE INTERACTION

- The students of Mechanical department have shown keen interest to participate in guest lectures, workshops and training offered by different industries. It helps to acquire industrial knowledge to identify and solve real time problems.
- Students picked up what they learnt at the workshops to implement their own mini project and also final year projects.
- The effectiveness of this practice can be assessed by the great response of the participants of the workshops/ trainings and App development competitions. Students implement their learning in final year projects.
- Students get more exposure to show their entrepreneurial spirit and project-based thinking.
- By guest lectures delivered by the experts from industry and alumni, awareness is created on the latest developments and trends of the industry by which the students can plan for their placement activities.

2.2.5 Initiatives related to industry internship/summer training (10) Institute Marks : 10.00

2.2.5 Initiatives related to industry internship/summer training (10)

INITIATIVES:

- Internship is a part of the curriculum. The students are encouraged to take up internship programs during their semester break for 2 to 4 weeks. The students who fail to get internship from the industry, the department will arrange practical training program by industry experts for those students.
- Students are encouraged to attend summer training or internships
- The department encourages students to take up implant training during summer holidays in various prestigious organizations like Metal Works , Industries, Automobile, etc.

IMPLEMENTATION:

A. INDUSTRY INTERNSHIP/SUMMER TRAINING

The students are encouraged to take up internship programs and summer trainings during their semester break. Faculty members give them guidelines, suggestions, scope and contact details of the internship. They also help the students by interacting with the industrial experts, providing the students recommendation letters and of the necessary supports.At the end of every semester or in vacation time, the students are allowed to carry out summer training in the organization to get practical exposure to the technologies implemented in industries.

Table 2.2.5.a:List of Summer internships attended by the students

AC.YEAR	No.of Students	No.of Industries	Industry details
2021-22	66	04	Pioneer Honda Motors, Swathi Sri Plastic Industres, Indian Metal Works, Eliyaz Automobile Engineering,
2020-21	88	02	Indian Metal Works, Engineering Staff College Of India
2019-20	95	02	Indian Metal Works, Prakasam Milk Producer Company Limited.

Assessment for Internship:

Internship/training of the student shall be assessed for 100 marks for R18 Regulation. After the completion of internship the student shall submit a certificate and a report to the Project Review Committee (PRC) for Evaluation and to conduct a Viva-Voce Examination.

Table 2.2.5.b: Weightage of marks for Internship for R18

S. No.	External	Marks
1	Internship Report	50
2	Presentation	30
3	Viva voce	20
	Total Marks	100

B. INDUSTRIAL TOURS

- Industrial visits give greater clarity about the importance of MECHANICAL concepts. The students will practically experience these concepts
- Industrial tours are organized for students to provide an insight into the technology used in industries.
- Learning from textbooks, lectures and other study material does not suffice for holistic learning. Practical and hands-on learning is essential for better understanding the processes
- As the faculty from MECHANICAL department accompanied the students during the industrial tour, the industrial visit helps the faculty to correlate between theoretical and practical learning.

Table 2.2.5.c: List of Industrial Tours

AC.YEAR	No.of Students	No. of Tours	Details
2021-22	62	1	Indian Metals Addanki Srinivas Nagar, Chinakothapalli, Addanki, Prakasam-523260, Andhra Pradesh, India
2020-21	85	1	Sri Lakshmi Ganapathi Engineering Works Plot Nos: 9 - 14 & 17 - 24, Industrial Estate, Sultanabad Tenali, Andhra Pradesh 522201
2019-20	115	1	Swathisri Plastic Industries India Pvt. Ltdsouth By-Pass Road Junction, Swathi Nagar, ONGOLE -523001 Prakasam District. A.P

C. IMPACT ANALYSIS

The following is the impact analysis observed on Industry Institute interactions

- Knowledge gained during internship program helped the students to implement in their project work.
- This internship program will be helpful in obtaining jobs
- The students' technical skills are improved.
- Students have an edge in the job market
- The students placement percentage has improved
- Students gain valuable work experience.
- Students gain the basic skills needed for the development of real world projects.

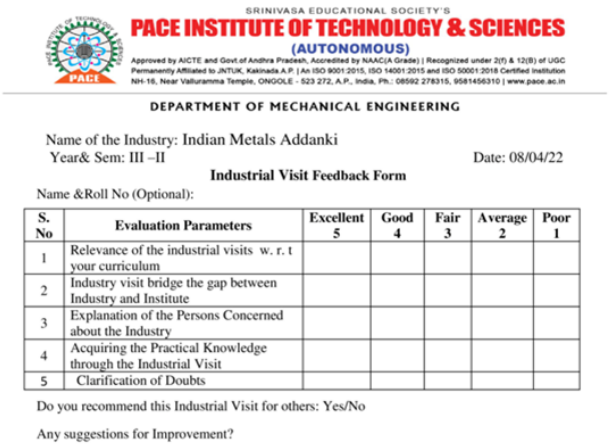
Table 2.2.5.d: Impact of internships/ Industrial tours in improving the strengths of POs & PSOs.

Event	Mapping POs	MappingPSOs
Internships	P02,PO3,PO4,PO5,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2

Practical Training	P02,PO3,PO4,PO5,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2

D. STUDENT FEEDBACK ON INITIATIVE

- Every student of the department submits a feedback on the industrial interactions during visits, training programs and internships, soon after the completion of the same.
- The feedbacks obtained from the students are used effectively in strengthening the industrial relations of the department and also to guide the successor batches. The following Figure 2.2.5a shows the student feed back during industrial visit.
- The feedback also explores the content to be revised in curriculum to bridge the gap between academics and industry



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DEPARTMENT OF MECHANICAL ENGINEERING

Name of the Industry: Indian Metals Addanki

Year& Sem: III –II Date: 08/04/22

Industrial Visit Feedback Form

Name &Roll No (Optional):

S. No	Evaluation Parameters	Excellent 5	Good 4	Fair 3	Average 2	Poor 1
1	Relevance of the industrial visits w. r. t your curriculum					
2	Industry visit bridge the gap between Industry and Institute					
3	Explanation of the Persons Concerned about the Industry					
4	Acquiring the Practical Knowledge through the Industrial Visit					
5	Clarification of Doubts					

Do you recommend this Industrial Visit for others: Yes/No

Any suggestions for Improvement?

Figure 2.2.5.1: Student feedback

3 COURSE OUTCOMES AND PROGRAM OUTCOMES (175) Total Marks 175.00

Define the Program specific outcomes

:

PSO1	Promotes the technical knowledge, skills and attitude for the requirement of industry and Society towards Mechanical Engineering.
PSO2	Facilitates to plan, design, develops and tests an energy efficient manufacturing system for required engineering application.
PSO3	Nurtures the students towards advanced design and analysis tools for mechanical system.

3.1 Establish the correlation between the courses and the Program Outcomes (POs) & Program Specific Outcomes (25) Total Marks 25.00

Institute Marks : 25.00

No. of Core Courses : 6	**C2 :** 2	**C3 :** 2	**C4 :** 2

Note : Number of Outcomes for a Course is expected to be around 6.

Course Name :	C2 03	Course Year :	2019-2020

Course Name	Statements
C2 03.1	Acquire the knowledge related to the structure and properties of materials and crystal systems
C2 03.2	Recognize the phase diagrams of various alloys.
C2 03.3	Understand the properties of ferrous materials and their engineering applications.
C2 03.4	Acknowledge the basic concepts of Heat treatment processes and their applications.
C2 03.5	Gain knowledge on nonferrous materials, composite materials and basic steps involved in the Powder Metallurgy process.

Course Name :	C2 13	Course Year :	2019-2020

Course Name	Statements
C2 13.1	Apply the fundamental concepts of stress, strain and analyze the stresses on inclined planes for solids.
C2 13.2	Analyze and design the shear force and bending moment diagrams for various types of beams under different loads.
C2 13.3	Compute the bending stress and shear stress induced in the beams for various cross sections.
C2 13.4	Interpret the slope and deflection of beams by Double Integration method and Macaulay's method.
C2 13.5	Evaluate the stresses and deformation in thin, thick cylinders and spherical shells.

Course Name :	C3 04	Course Year :	2020-2021

Course Name	Statements
C3 04.1	Know the basic knowledge of various types of Boilers and Draught.
C3 04.2	Analyze the functions of various steam nozzles.
C3 04.3	Explain the flow, velocity diagram in steam turbines.
C3 04.4	Apply different methods which are involved in working of steam condensers and Gas turbines.
C3 04.5	Describe the working principles of jet propulsion and rockets.

Course Name :	C3 09	Course Year :	2020-2021

Course Name	Statements
C3 09.1	Apply practical knowledge in principle of measurement and functions of various instruments for measuring application.
C3 09.2	Develop an idea in various instruments used for temperature measurements and pressure measurement.
C3 09.3	Measure the various instruments used for measurement of flow, speed and vibration.
C3 09.4	Examine the various devices for humidity measurement and stress strain gauges.
C3 09.5	Apply the practical skill in measurement of torque, force and functions of control systems.

Course Name :	C4 01	Course Year :	2021-2022

Course Name	Statements
C4 01.1	Demonstration knowledge of computer, components of computer, storage devices, output and input devices.
C4 01.2	Design geometric, surface modelling CAD applications.
C4 01.3	Write the CNC part programming.
C4 01.4	Prepare in the area of GT concepts and CAPP concepts.
C4 01.5	Apply the knowledge in the specific area of FMS and computer aided Quality control.

Course Name :	C4 08	Course Year :	2021-2022

Course Name	Statements
C4 08.1	Understand fundamental Concepts of automobiles body, chassis and transmission systems.
C4 08.2	Demonstrate the Working Principle and Functions of various Steering and Breaking Systems.
C4 08.3	Demonstrate the Working Principle and Components of Electrical and Hybrid Vehicle.
C4 08.4	Apply the Knowledge in Electrical and Hybrid Vehicle Drives.
C4 08.5	Examine the Student Knowledge in Battery Charging and Testing in Electrical Vehicles.

Course Articulation Matrix :

1 . course name : C203

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C203.1	Acquire the	3	3	2	3	-	-	-	-	-	-	-	2
C203.2	Recognize	3	3	2	2	-	-	-	-	-	-	-	3
C203.3	Understand	2	3	2	-	-	-	-	-	-	-	-	-
C203.4	Acknowledg	3	3	3	-	-	-	-	-	-	-	-	3
C203.5	Gain knowl	3	3	2	3	-	-	-	-	-	-	-	-
Average		**2.80**	**3.00**	**2.20**	**2.67**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.67**

2 . course name : C213

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C213.1	Apply the fu	3	3	3	3	-	-	-	-	-	-	-	2
C213.2	Analyze an	3	3	3	2	-	-	-	-	-	-	-	3
C213.3	Compute th	3	3	3	2	-	-	-	-	-	-	-	2
C213.4	Interpret the	3	3	3	2	-	-	-	-	-	-	-	-
C213.5	Evaluate th	3	3	2	-	-	-	-	-	-	-	-	-
Average		**3.00**	**3.00**	**2.80**	**2.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.33**

3 . course name : C304

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C304.1	Know the b	3	3	-	1	-	-	-	-	-	-	-	1
C304.2	Analyze the	3	3	2	2	-	-	-	-	-	-	-	1
C304.3	Explain the	3	3	2	2	-	-	-	-	-	-	-	1
C304.4	Apply differ	3	3	2	2	-	-	-	-	-	-	-	1
C304.5	Describe th	3	3	-	1	-	-	-	-	-	-	-	1
Average		**3.00**	**3.00**	**2.00**	**1.60**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.00**

4 . course name : C309

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C309.1	Apply pract	2	3	2	2	-	-	-	-	-	-	-	3
C309.2	Develop an	3	3	3	3	-	-	-	-	-	-	-	2
C309.3	Measure th	3	3	3	3	-	-	-	-	-	-	-	-
C309.4	Examine th	3	3	3	3	-	-	-	-	-	-	-	-
C309.5	Apply the p	2	3	3	3	-	-	-	-	-	-	-	-
Average		**2.60**	**3.00**	**2.80**	**2.80**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.50**

5 . course name : C401

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C401.1	Demonstrat	3	3	3	3	-	-	-	-	-	-	-	2
C401.2	Design geo	3	3	-	2	-	-	-	-	-	-	-	2
C401.3	Write the C	3	3	3	3	-	-	-	-	-	-	-	3
C401.4	Prepare in t	3	3	3	2	-	-	-	-	-	-	-	3
C401.5	Apply the k	3	3	-	2	-	-	-	-	-	-	-	3
Average		**3.00**	**3.00**	**3.00**	**2.40**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.60**

6 . course name : C408

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C408.1	Understand	3	-	-	-	-	-	-	-	-	-	1	-
C408.2	Demonstrat	3	-	2	-	-	-	-	-	-	-	2	2
C408.3	Demonstrat	3	2	-	2	-	-	-	-	-	-	2	-
C408.4	Apply the K	3	-	3	-	3	-	-	-	-	-	2	3
C408.5	Examine th	3	2	2	2	-	-	-	-	-	-	2	-
Average		**3.00**	**2.00**	**2.33**	**2.00**	**3.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.80**	**2.50**

1 . Course Name : C203

Course	PSO1	PSO2	PSO3
C203.1	3	2	2
C203.2	-	-	2
C203.3	3	1	1
C203.4	3	2	-
C203.5	3	3	-
Average	**3.00**	**2.00**	**1.67**

2 . Course Name : C213

Course	PSO1	PSO2	PSO3
C213.1	3	3	3
C213.2	-	-	-
C213.3	3	2	-
C213.4	-	-	3
C213.5	3	2	-
Average	**3.00**	**2.33**	**3.00**

3 . Course Name : C304

Course	PSO1	PSO2	PSO3
C304.1	3	3	2
C304.2	2	2	-
C304.3	-	3	1
C304.4	3	-	1
C304.5	3	3	2
Average	**2.75**	**2.75**	**1.50**

4 . Course Name : C309

Course	PSO1	PSO2	PSO3
C309.1	3	1	1
C309.2	2	1	1
C309.3	2	2	1
C309.4	2	1	1
C309.5	3	2	1
Average	**2.40**	**1.40**	**1.00**

5 . Course Name : C401

Course	PSO1	PSO2	PSO3
C401.1	-	-	2
C401.2	-	-	1
C401.3	-	-	2
C401.4	-	-	2
C401.5	-	-	2
Average	**0**	**0**	**1.8**

6 . Course Name : C408

Course	PSO1	PSO2	PSO3
C408.1	-	1	1
C408.2	-	2	1
C408.3	2	2	1
C408.4	2	1	1
C408.5	2	-	1
Average	**2.00**	**1.50**	**1.00**

Program Articulation Matrix :

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	2.0	2.33	PO11	2.0
C102	2.6	2.8	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C103	1.4	1.6	2.2	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.8
C104	1.8	1.0	1.0	PO4	PO5	1.5	1.0	1.0	1.0	PO10	PO11	PO12
C105	3.0	2.8	2.6	2.6	2.6	PO6	PO7	PO8	PO9	2.0	1.5	1.0
C106	1.0	PO2	2.0	PO4	PO5	PO6	2.0	PO8	2.0	1.0	1.0	3.0
C107	3.0	PO2	PO3	3.0	2.0	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C108	1.8	1.0	1.0	PO4	PO5	1.5	1.0	1.0	1.0	PO10	PO11	PO12
C109	3.0	3.0	PO3	3.0	2.0	2.0	2.0	PO8	PO9	PO10	PO11	2.0
C110	1.0	2.0	PO3	2.0	2.0	2.0	1.0	PO8	1.5	2.5	PO11	2.0
C111	1.35	1.46	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C112	1.56	1.14	1.04	0.52	0.52	1.04	0.52	PO8	PO9	PO10	PO11	0.83
C113	2.8	2.8	2.8	2.0	2.4	1.75	PO7	PO8	PO9	PO10	PO11	1.6
C114	2.6	3.0	2.4	2.0	3.0	PO6	PO7	PO8	PO9	PO10	PO11	3.0
C115	3.0	2.0	2.0	2.0	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.5
C116	3.0	2.8	2.8	1.33	1.5	1.5	PO7	PO8	PO9	PO10	PO11	1.4
C117	3.0	3.0	3.0	3.0	3.0	PO6	PO7	PO8	PO9	PO10	PO11	2.0
C118	3.0	1.0	1.0	PO4	PO5	1.0	1.0	2.0	PO9	PO10	PO11	1.0
C201	3.0	3.0	3.0	2.5	2.33	PO6	PO7	PO8	PO9	PO10	PO11	2
C202	3.0	3.0	2.5	2.25	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.5
C203	2.8	3.0	2.2	2.67	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.67
C204	2.6	2.6	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C205	3.0	3.0	2.60	2.50	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.33
C206	3.0	3.0	2.0	3.0	2.5	PO6	PO7	PO8	PO9	PO10	PO11	2
C207	3.0	3.0	3.0	2.0	2.0	PO6	PO7	PO8	PO9	PO10	PO11	3
C208	3.0	3.0	2.0	2.33	2.0	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C209	2.8	2.0	PO3	PO4	PO5	1.67	PO7	PO8	2	1.5	2.5	2
C210	2.6	2.8	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.6
C211	3.0	3.0	2.25	2.0	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.0
C212	3.0	3.0	2.25	2.0	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.00
C213	3.0	3.0	2.8	2.25	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.33
C214	2.4	1.67	PO3	PO4	PO5	1.33	PO7	PO8	2	2.5	2.5	2
C215	3.0	3.0	2.75	2.33	2.00	PO6	PO7	PO8	PO9	PO10	PO11	3.00
C216	3.0	3.0	3.0	2.0	2.0	PO6	PO7	PO8	PO9	PO10	PO11	3.00
C217	3.00	3.00	3.00	2.00	2.00	PO6	PO7	PO8	PO9	PO10	PO11	2.00
C218	1.67	2.0	2.0	2.0	2.0	2.0	PO7	PO8	1.0	1.0	PO11	PO12
C301	3.00	3.00	3.00	2.00	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.00
C302	3.00	3.00	2.00	2.5	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.67
C303	1.4	3.00	3.00	2.75	2.00	PO6	PO7	PO8	PO9	PO10	PO11	2.00
C304	3.00	3.00	2.00	1.60	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.00
C305	2.8	2.8	2.6	2.0	2.0	PO6	PO7	PO8	PO9	PO10	PO11	2.5
C306	3.0	3.0	3.0	2.0	2.67	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C307	2.67	2.50	2.67	2.00	2.00	3.00	2.00	3.0	2.00	2.00	2.00	2.00
C308	2	2	2	2	2	2	PO7	PO8	1	1	PO11	PO12
C309	2.6	3.0	2.8	2.8	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.5
C310	3.00	3.00	2.50	2.33	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C311	3	2.4	2.2	1.6	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2
C312	3.00	2.8	2.8	3.0	PO5	PO6	PO7	PO8	PO9	PO10	PO11	3.0
C313	3.0	3.0	2.4	2.5	2.0	PO6	PO7	PO8	PO9	PO10	PO11	2.0
C314	3	3	2.2	2.20	2.0	PO6	PO7	PO8	PO9	PO10	PO11	3.0
C315	3	2.5	2.00	2.00	2.25	PO6	PO7	PO8	PO9	PO10	PO11	2.33
C316	3.0	3.0	2.67	2.67	3.0	3.0	2.5	3.0	2.0	2.0	2.0	2.5
C317	1.00	2.00	3.00	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2
C401	3	3.0	3.0	2.4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.6

C402	3.0	3.0	3.0	2.0	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1
C403	3.0	3.0	2.8	2.4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.6
C404	3.0	2.8	2.8	2.4	PO5	3.0	2.0	PO8	1.5	PO10	PO11	1.67
C405	3.0	3.0	2.5	3.0	3.0	PO6	PO7	PO8	PO9	PO10	PO11	2.0
C406	3	2.5	2.5	2.0	2.0	PO6	PO7	PO8	PO9	PO10	PO11	2.0
C407	2	2	2	2	PO5	PO6	PO7	PO8	1	1	PO11	PO12
C408	3.0	2.0	2.33	2.0	3.0	PO6	PO7	PO8	PO9	PO10	1.8	2.5
C409	2.75	2.0	2.75	2.75	3.0	3.0	3.0	1.0	2.0	2.0	2.0	2.5

Course	PSO1	PSO2	PSO3
C101	PSO1	PSO2	3.0
C102	1.0	PSO2	PSO3
C103	2.6	1.8	2.8
C104	3.0	1.0	PSO3
C105	2.4	2.4	3.0
C106	2.0	PSO2	PSO3
C107	PSO1	1.0	1.0
C108	3.0	1.0	PSO3
C109	2.5	2.83	PSO3
C110	3.0	PSO2	PSO3
C111	0.52	PSO2	PSO3
C112	1.04	0.52	1.56
C113	1.75	1.6	2.8
C114	3.0	2.0	1.5
C115	1.5	1.0	2.0
C116	2.0	1.5	3.0
C117	3	2.67	2.0
C118	PSO1	PSO2	1.0
C201	3	2	2
C202	3.00	2.33	2.33
C203	3.0	2.0	1.67
C204	2.6	1.8	2.8
C205	3.0	2.0	1.67
C206	3	2	2
C207	3	2.5	2.0
C208	3	2	2
C209	3	3	PSO3
C210	2.6	1.8	2.8
C211	2.67	2.67	2.00
C212	2	2	2
C213	3.0	2.33	3.0
C214	2.0	3.0	PSO3
C215	3	2	1.67
C216	3.0	2.67	1.33
C217	3.00	1.50	2.00
C218	3	3	PSO3
C301	PSO1	2.5	2.00
C302	2.8	2.5	2.25
C303	1.75	1.5	1.25
C304	2.75	2.75	1.50
C305	3.00	1.75	1.25
C306	3	2	2
C307	3.0	2.33	2.67
C308	2	3	PSO3
C309	2.4	1.4	1
C310	PSO1	2	2

C311	PSO1	PSO2	2.0
C312	3.00	2.67	2.50
C313	3	2	2
C314	3.0	2.0	2.0
C315	3.0	2.0	1.33
C316	3.0	2.0	2.0
C317	2.67	PSO2	1
C401	PSO1	PSO2	1.8
C402	3.0	2.0	2.0
C403	3.0	3.0	2.8
C404	1.5	1.5	1.75
C405	3	1.5	1
C406	3.0	1.67	2.0
C407	3.0	3.0	PSO3
C408	2.0	1.5	1.0
C409	3.0	2.0	2.0

3.2 Attainment of Course Outcomes (75) Total Marks 75.00

Institute Marks : 10.00

3.2. Attainment of course outcome (75)

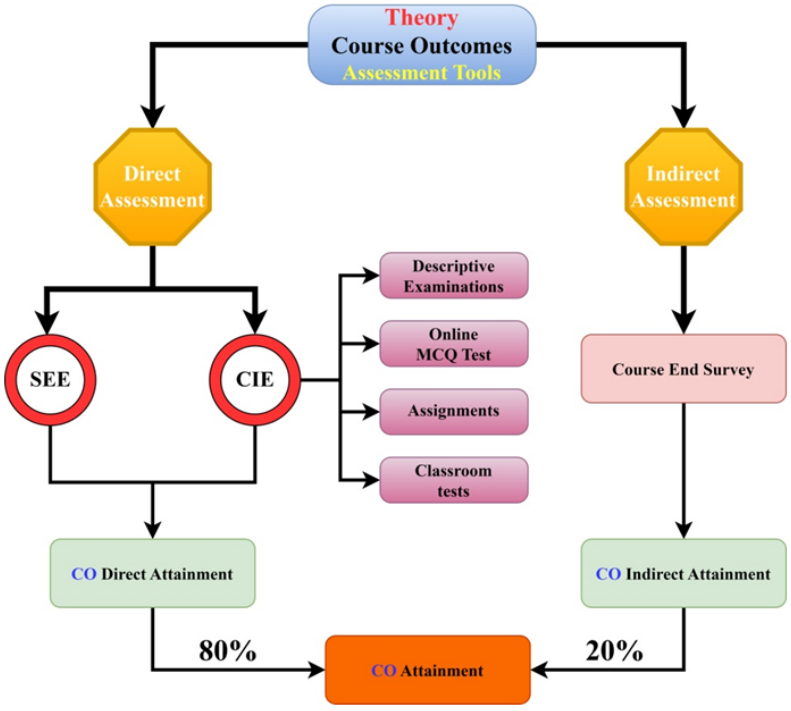
For the Evaluation of attainments CO's both direct and indirect assessment methods are used. The 80% weightage is considered for direct assessment which includes internal assessments (like Mid-examinations, Assignments, Classroom tests, Day to Day Evaluations, etc) and Semester end examinations. The remaining 20% weightage is based on course-end survey.

Internally developed excel spreadsheets are used for direct assessment. Feedback forms based on CO's were framed for each class and the feedback was taken from students for indirect assessment.

CO attainment process

The curriculum comprises of various types of courses like Theory Courses, Laboratory Courses, Mini-Project, Internship and Mandatory courses.

Theory Attainment Process



Theory:

Mid-Examinations: Two mid-examinations are conducted for each semester. Mid-examinations serve to encourage students to keep up with course content covered. The Mid examination is of 120 minutes for 20 marks. The questions are framed in such a way that they should map Bloom's taxonomy, whereas each question is mapped to the respective course outcomes, which was evaluated based on the set attainment levels. The Multiple choice questions of 10 marks is also evaluated in both mid's of each course.

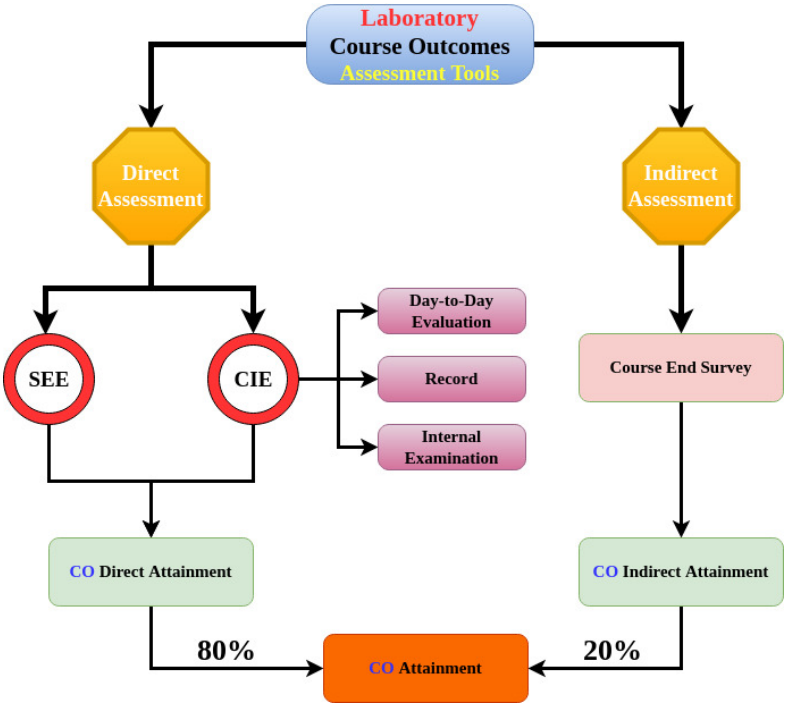
Assignments: Students are assigned course-related work and their submissions are evaluated on the basis of work quality. A total of 5 assignments are given per course where each assignment carries 5 Marks.

Classroom Test: Students are assigned course-related work and their class room performance is evaluated. A total of 5 classroom tests are given per course where each test carries 5 Marks.

Semester-End Examination: The semester-end examination is 180 minutes duration of 60 marks and covers the entire syllabus of the course. The questions are framed in such a way that they should satisfy Bloom's taxonomy, where as each question is mapped to the concurred course outcomes of the course. The CO's are evaluated based on the set attainment levels.

All direct assessment such as Mid-examinations, Assignments, Classroom test &Semester end examinations covers 80% of weightage and Indirect assessmentconsists of a course-end survey which comprises 20% of weightage.

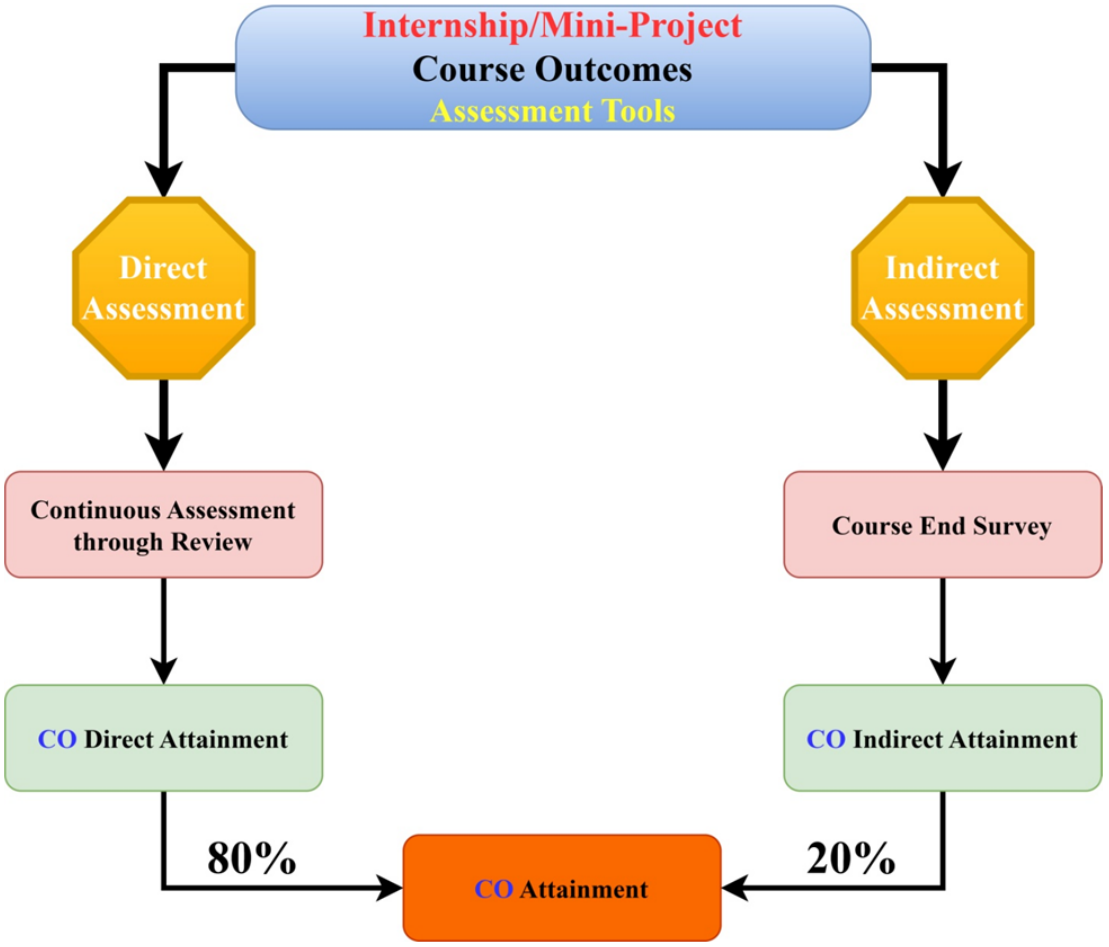
Laboratory Attainment Process:



Laboratory Courses:

For a total of 100 marks, continuous internal evaluation is 40 marks which comprises mainly day-to-day evaluation (20marks), Record (5marks), Internal Examinations (15marks) and Semester end examinations of 60 marks which cover 80% weightage of laboratory assessment and remaining 20% weightage for course end survey.

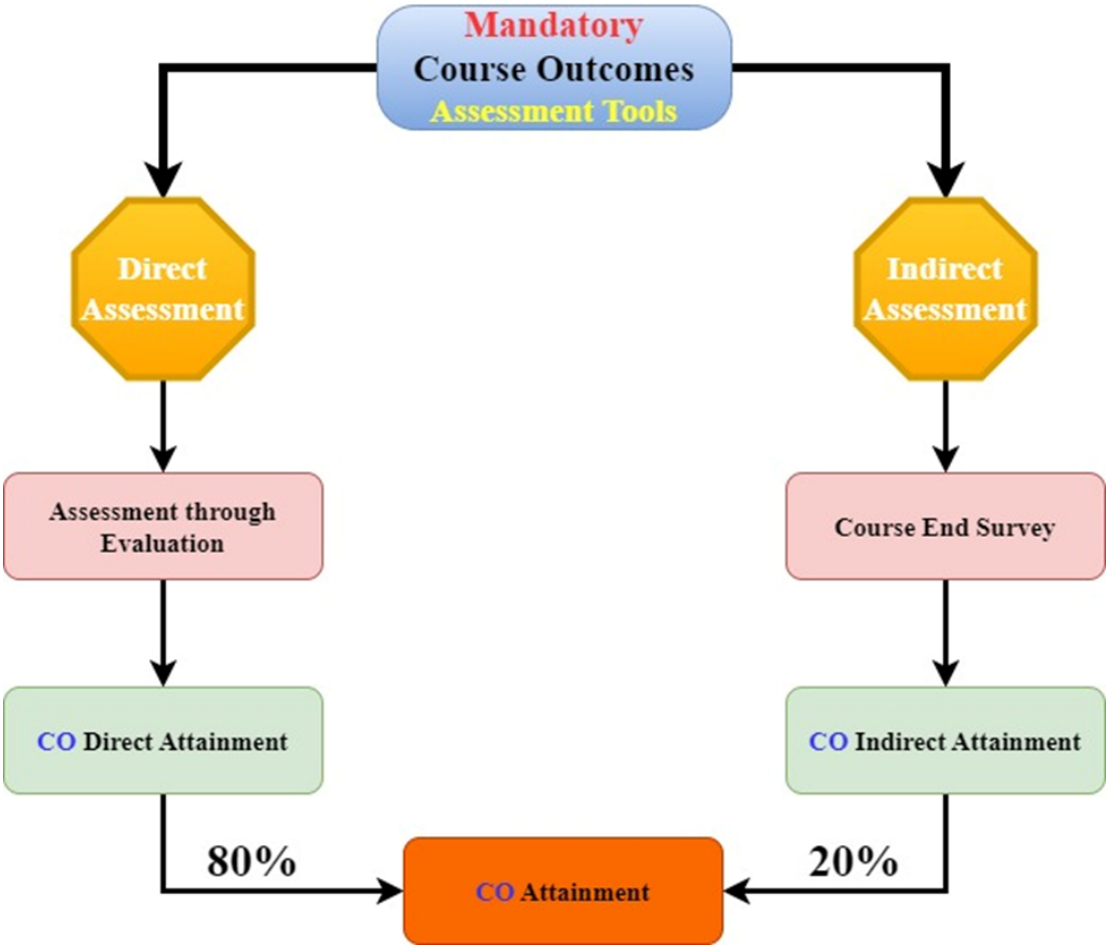
Internship/Mini-Project Attainment Process:



Internship/Mini-Project Courses:

As per curriculum internship/mini project course rubrics are assessed on internal examination procedures for 100 marks which carries 80% weightage and course end survey carries 20% weightage.

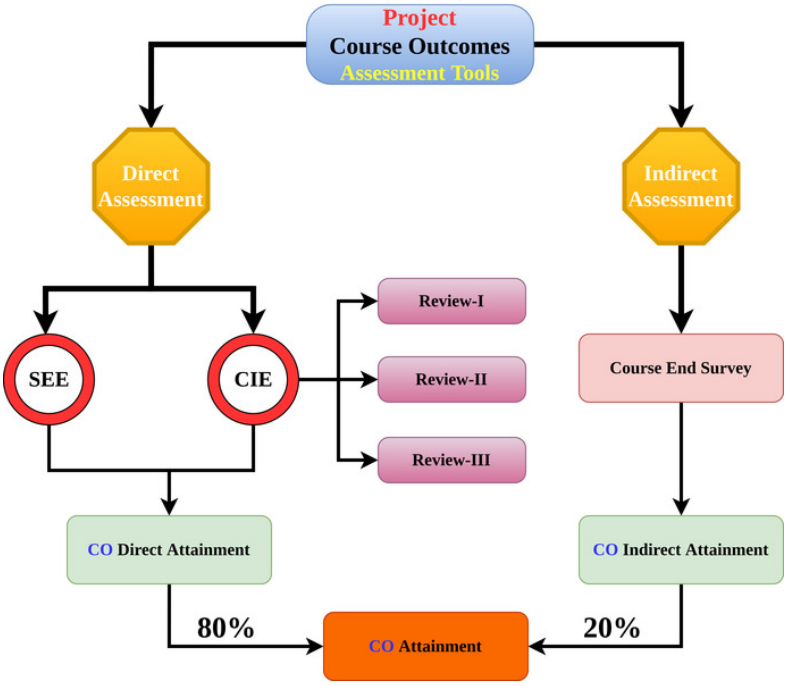
Mandatory Course Attainment Process:



Mandatory Courses:

As per curriculum Mandatory course rubrics are assessed on internal examination procedures for 100 marks which carries 80% weightage and course end survey carries 20% weightage.

Project Attainment Process:



Project Work:

Project work is carried out by students of IV - B. Tech, II – Semester. According to the curriculum, the internal marks allocated for project work is 80 marks, external evaluation marks are 120 which carries 80% weightage and course end survey carries 20% weightage.

Course End Survey is collected at the end of course from the students about their attainment level of COs. Feedback is collected with closed ended questions with options as

4- Excellent

3- Very Good

2- Good

1-Average

0-Poor

There response will be converted into percentage

$$\% \text{ of attainment} = \frac{\sum \text{Grade} \times \text{Number of responses to that grade}}{\text{Total respnses}} \times 100$$

Depending on the level of attainment grade was decided as mentioned below.

% of attainment	Grade
More than or equal to 80%	3
More than or equal to 70% and less than 80%	2
More than or equal to 60% and less than 70%	1
Less than 60%	0

3.2.2 Record the attainment of Course Outcomes of all courses with respect to set attainment levels (65) Institute Marks : 65.00

3.2.2. Record the attainment of Course Outcomes of all courses with respect to set attainment level (65)

As the 2018 admitted batch was the first autonomous batch, the threshold for internal and external exams was calculated based on the previous two batches (2016 & 2017) pass percentages in the course having the same/similar syllabus.

For 2018 admitted batch

2016 admitted & 2017 admitted batch average pass percentage	Internal Threshold	External Threshold
Less than 50%	55	40
More than or equal to 50% and less than 60%	57.5	42.5
More than or equal to 60% and less than 70%	60	45
More than or equal to 70% and less than 80%	62.5	47.5
More than or equal to 80%	65	50
If the course does not exist in R16	60	45

The percentage of students who secured more than the threshold was calculated. Grades were given on the % of students who secured more than the threshold value

Percentage of students secured more than the threshold	Grade
More than or equal to 80%	3
Less than 80% and more than or equal to 70%	2
Less than 70% and more than or equal to 60%	1
Less than 60%	0

Depending upon the percentage of students secured more than the threshold, the next batch threshold was decided by the same course as follows.

Next batch threshold for internal courses:

% of students secured more than the threshold value	Action
More than or equal to 95% and less than 100%	Change Threshold to Min (Present batch Thresold+10%, 70)
More than or equal to 90% and less than 95%	Change Threshold to Min (Present batch Thresold+7.5%,70)
More than or equal to 85% and less than 90%	Change Threshold to Min (Present batch Thresold+5%,70)
More than or equal to 80% and less than 85%	Change Threshold to Min (Present batch Thresold+2.5%,70)
Less than 80%	No Change in the threshold is required.

Theory attainment sample

Continuous Internal Evaluation:

PACE Institute of Technology and Sciences, Ongole

Course Outcome Attainment Sheet Internal (B.Tech-R18)

Programme Specilization:	MECH
Year :	II
Sem	I
Course Name:	FLUID MECHANICS & HYDRAULLIC MACHINERY
Course Code:	C205
A.Y:	2019-20
Batch:	2018-22
Course Type:	Non-Elective

Roll No	MID-1				MID-2				Assignment					Class Room Test					Online Test		Course Outcomes Attaiment (CIE)				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	A1	A2	A3	A4	A5	C1	C2	C3	C4	C5	MCQ-1	MCQ-2					
Max Marks	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	10	10	CO1	CO2	CO3	CO4	CO5
CO	1	2	1	3	3	4	5	5	1	2	3	4	5	1	2	3	4	5	1,2,3	3,4,5					
19KQ5A0342	0	1	2	1	5	3	5	5	5	5	5	5	5	4	0	5	5	5	8.5	4	60.00	49.47	77.08	76.84	90.00
19KQ5A0343	2	0	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	8.5	9	64.17	70.53	97.92	97.89	98.33
19KQ5A0344	0	2	1	0	4	4	5	5	5	5	5	5	5	2	5	3	5	5	7.5	7.5	45.83	78.95	62.50	89.47	95.83
19KQ5A0345	0	1	3	5	5	3	5	4	5	5	5	5	5	3	3	0	5	5	8.5	8	60.00	65.26	76.25	85.26	92.50

INTERNAL						
	Threshold	55	55	55	55	55
	%students secured more than Threshold	76.86	86.78	80.17	90.91	89.26
	Internal Grade	2	3	3	3	3
	Next A.Y Threshold	55	60	57.5	62.5	60

Semester-End Examination:

PACE Institute of Technology and Sciences, Ongole
Course Outcome Attainment Sheet External (B.Tech-R18)

Programme	MECH
Year :	II
Sem:	I
Course Name:	FLUID MECHANICS & HYDRAULLIC MACHINERY
Course Code:	C205
A.Y:	2019-20
Batch:	2018-22
Course Type:	Non-Elective

SL NO	CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
19KQ5A0344	5	3	4	4	8	41.67	25.00	33.33	33.33	66.67
19KQ5A0345	4	7	7	0	3	33.33	58.33	58.33	0.00	25.00

EXTERNAL	Threshold	40	40	40	40	40
	%students secured more than Threshold	43.59	45.3	52.14	30.77	45.3
	External Grade	0	0	0	0	0
	Next A.Y Target Threshold	40	40	40	40	40

CO Overall Attainment:

CO WISE ATTAINMENT

Particulars		C205.1	C205.2	C205.3	C205.4	C205.5
INTERNAL	Threshold Internal	55	55	55	55	55
	%students secured more than Threshold	76.8	86.4	80	90.4	88.8
	Internal Grade	2	3	3	3	3
	Next A.Y. Threshold	55	60	57.5	62.5	60
EXTERNAL	Threshold External	40	40	40	40	40
	%students secured more than Threshold	43.59	45.3	52.14	30.77	45.3
	External Grade	0	0	0	0	0
	Next A.Y. Target Threshold	40	40	40	40	40
Indirect Attainment		87.82	88.34	91.34	84.56	84.65
Indirect Grade		3	3	3	3	3
Overall Attainment		1.24	1.56	1.56	1.56	1.56

Lab attainment sample:

PACE Institute of Technology and Sciences, Ongole
Lab Course Outcome Attainment Sheet (B.Tech-R18)

Programme Specilization:	MECH
Year :	II
Sem	I
Course Name:	FLUID MECHANICS AND HYDRAULLIC MACHINERY LAB
Course Code:	C208
A.Y:	2019-20
Batch:	2018-22
Course Type:	LAB

Roll No	Day to Day Evolution												Record												Internal		External		Course Outcomes Attaiment (CIE)				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	CO	Marks	CO	Marks	CO1	CO2	CO3	CO4	CO5
Max Marks	20	20	20	20	20	20	20	20	20	20	20	20	5	5	5	5	5	5	5	5	5	5	5	5	15		60						
CO	5	4	4	4	4	4	4	1	2	3	3	5	5	4	4	4	4	4	1	2	3	3	5		Mixed		Mixed		1	2	3	4	5
19KQ1A0343	19	19	18	19	19	18	19	19	18	19	19	18	5	4	5	4	5	4	5	4	5	4	5	4	4	10	1	54	92.00	92.00	94.00	90.30	92.00
19KQ5A0344	18	17	18	18	18	17	18	18	18	17	18	18	5	4	5	4	5	4	5	4	5	4	5	4	4	8	4	52	88.00	92.00	88.00	85.45	90.00
19KQ5A0345	19	18	19	19	18	19	19	19	18	19	19	18	5	4	5	4	5	4	5	4	5	4	5	4	5	8	1	54	92.00	92.00	94.00	92.67	83.08

	Particulars	C208.1	C208.2	C208.3	C208.4	C208.5
INTERNA	Threshold Internal	65	65	65	65	65
	%students secured more	95.38	95.38	94.62	95.38	98.36
	Internal Grade	3	3	3	3	3
	Next A.Y Threshold	70	70	70	70	70
EXTERN	Threshold External	50	50	50	50	50
	%students secured more	100	100	100	100	100
	External Grade	3	3	3	3	3
	Next A.Y Target Threshold	60	60	60	60	60

Lab CO Overall Attainment:

CO WISE ATTAINMENT						
Particulars		C208.1	C208.2	C208.3	C208.4	C208.5
INTERNAL	Threshold Internal	65	65	65	65	65
	%students secured more than Threshold	95.38	95.38	94.62	95.38	98.36
	Internal Grade	3	3	3	3	3
	Next A.Y Threshold	70	70	70	70	70
EXTERNAL	Threshold External	50	50	50	50	50
	%students secured more than Threshold	100	100	100	100	100
	External Grade	3	3	3	3	3
	Next A.Y Target Threshold	60	60	60	60	60
Indirect Attainment		87.62	85.64	86.55	88.76	89.24
Indirect Grade		3	3	3	3	3
Overall Attainment		3.00	3.00	3.00	3.00	3.00

3.3 Attainment of Program Outcomes and Program Specific Outcomes (75) Total Marks 75.00

3.3.1 Describe assessment tools and processes used for measuring the attainment of each Program Outcome and Program Specific Outcomes (10) Institute Marks : 10.00

3.3. Attainment of Program Outcomes and Program Specific Outcomes (75)

3.3.1. Describe assessment tools and processes used for measuring the attainment of each Program Outcome and Program Specific Outcomes (10)

Course Outcomes (CO) are the statements that declare what students should be able to do at the end of a course. At the end of each course, the Program Outcomes (CO)/Program Specific Outcomes (PSO) assessment is done from the CO attainment. Each course has defined with set of Course Outcomes and corresponding evaluation criteria. The COs are mapped to the POs and PSOs under scale of 3, 2, 1 and '-', which are used to provide the quantitative measurement of how well the Pos and PSOs are mapped.

Level	Correlation level
3	Substantial (High) Correlation
2	Moderate (Medium) Correlation
1	Slight (Low) Correlation
-	Indicates there is no correlation.

The performance of the students in the all assessment methods during the semester in each course is used to compute the level of attainment of the COs. The CO attainment and CO-PO/PSO mappings are used to measure the attainment of POs and PSOs.

PO/PSO assessment is done by giving 80% weightage to direct assessment and 20% weightage to indirect assessment. Direct assessment is based on CO attainment from the process described in 3.2.1. Direct methods display the students' knowledge and skills from their performance in the various academic activities like Continuous Internal Evaluation (CIE), Semester End Examinations (SEE), Laboratory's, Internships, Mini-Project, seminar, and project. These methods provide a sampling of what students know and/or can do and provide strong evidence of student learning. Average of CO-PO/PSO attainment of all the courses is considered as direct assessment tool for PO/PSO attainment.

Surveys like Student Exit Survey, Employer Survey and Faculty Survey are considered as indirect attainment tools for PO/PSO attainment. Student Exit Survey is collected at the end of program from students about their attainment level of POs and PSOs. Employer survey is collected from the employer about students PO/PSOs level of attainment. Staff Survey is collected from the staff regarding students PO/PSOs level of attainment.

Feedback is collected with closed ended questions with options as

4- Excellent

3- Very Good

2- Good

1-Average

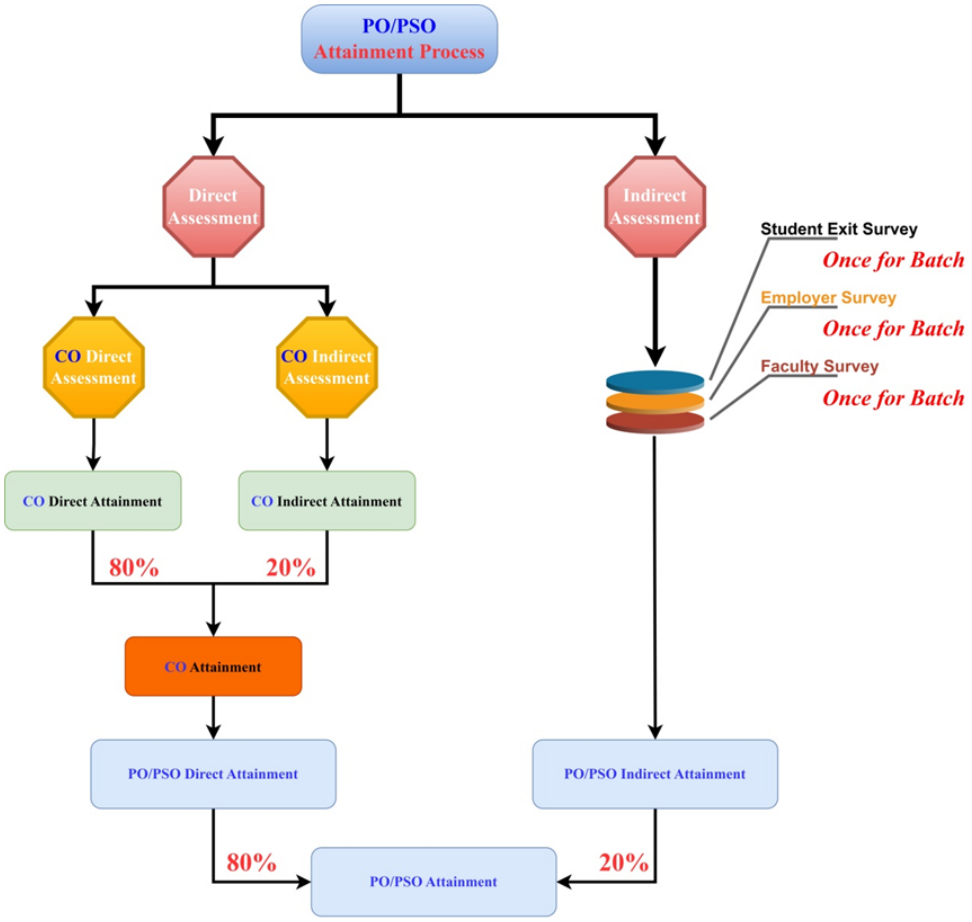
0-Poor

There response will be converted into percentage

Depending on the level of attainment grade was decided as mentioned below.

% of attainment	Grade
More than or equal to 80%	3
More than or equal to 70% and less than 80%	2
More than or equal to 60% and less than 70%	1
Less than 60%	0

PO/PSO attainment Process:



Sample PO/PSO Attainment for a Course:

PACE Institute of Technology and Sciences, Ongole
Coursewise PO, PSO Attainment Sheet (B.Tech-R18)

Programme Specilization:	MECH
Year :	III
Sem:	I
Course Name:	DESIGN OF MACHINE MEMBERS-I
Course Code:	C303
A.Y:	2020-21
Batch:	2018-22
Course Type:	Non-Elective

CO-PO, PSO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	CO-Avg
C303.1	2	3		-	-	-	-	-	-	-	-		2	2	2	2.20
C303.2	1	3	3	3	2	-	-	-	-	-	-	2	1	1	1	1.89
C303.3	1	3	3	3	2	-	-	-	-	-	-		-	-	-	2.40
C303.4	1	3	3	3	-	-	-	-	-	-	-	2	2	-	1	2.14
C303.5	2	3		2	2	-	-	-	-	-	-		2	-	1	2.00
Avg	1.40	3.00	3.00	2.75	2.00	-	-	-	-	-	-	2.00	1.75	1.50	1.25	2.13

CO WISE ATTAINMENT

Particulars		C303.1	C303.2	C303.3	C303.4	C303.5
INTERNAL	Threshold Internal	55	55	55	55	55
	%students secured more than Threshold	84.55	83.74	88.62	86.99	86.18
	Internal Grade	3	3	3	3	3
	Next A.Y. Threshold	57.5	57.5	60	60	60
EXTERNAL	Threshold External	40	40	40	40	40
	%students secured more than Threshold	73.11	70.59	26.89	63.87	46.22
	External Grade	2	2	0	1	0
	Next A.Y. Target Threshold	40	40	40	40	40
Indirect Attainment		89.33	87.23	81.33	86.33	84.33
Indirect Grade		3	3	3	3	3
Overall Attainment		2.52	2.52	1.56	2.04	1.56

PO, PSO ATTAINMENT

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	CO-Avg
C303.1	1.68	2.52	-	-	-	-	-	-	-	-	-	-	1.68	1.68	1.68	1.85
C303.2	0.84	2.52	2.52	2.52	1.68	-	-	-	-	-	-	1.68	0.84	0.84	0.84	1.59
C303.3	0.52	1.56	1.56	1.56	1.04	-	-	-	-	-	-	-	-	-	-	1.25
C303.4	0.68	2.04	2.04	2.04	-	-	-	-	-	-	-	1.36	1.36	-	0.68	1.46
C303.5	1.04	1.56	-	1.04	1.04	-	-	-	-	-	-	-	1.04	-	0.52	1.04
Avg	0.95	2.04	2.04	1.79	1.25	-	-	-	-	-	-	1.52	1.23	1.26	0.93	1.44

Course Coordinator Year Coordinator Academic Coordinator HoD

3.3.2 Provide results of evaluation of each PO & PSO (65)

Institute Marks : 65.00

PO Attainment

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	2	2.3	PO11	2
C102	1.50	1.52	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C103	1.25	1.40	2	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.60
C104	1.13	0.62	0.62	PO4	PO5	1.10	0.84	0.84	0.62	PO10	PO11	PO12
C105	1.46	1.36	1.29	1.26	1.22	PO6	PO7	PO8	PO9	0.08	0.56	0.49
C106	1	PO2	2	PO4	PO5	PO6	2	PO8	2	1	1	3
C107	3	PO2	PO3	3	2	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C108	1.54	0.87	0.87	PO4	PO5	1.50	1	1	0.87	PO10	PO11	PO12
C109	3	3	PO3	3	2	2	2	PO8	PO9	PO10	PO11	2
C110	0.87	1.74	PO3	1.15	1.42	1.68	0.89	PO8	0.97	1.68	PO11	1.42
C111	1.29	1.41	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C112	1.75	1.30	1.17	0.62	0.68	1.36	0.68	PO8	PO9	PO10	PO11	0.96
C113	1.22	1.22	1.22	0.85	0.99	0.81	PO7	PO8	PO9	PO10	PO11	0.66
C115	3	2	2	2	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.50
C116	3	2.8	2.8	1.33	1.5	1.5	PO7	PO8	PO9	PO10	PO11	1.40
C118	1.08	0.36	0.36	PO4	PO5	0.36	0.36	0.72	PO9	PO10	PO11	0.36
C214	1.25	0.65	PO3	PO4	PO5	0.59	PO7	PO8	1.04	0.98	0.98	1.36
C218	1.13	1.47	1.29	1.29	0.40	0.40	PO7	PO8	0.64	0.48	PO11	PO12
C209	0.72	0.40	PO3	PO4	PO5	0.42	PO7	PO8	0.4	0.30	0.50	0.40
C210	0.52	0.56	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C308	0.93	0.93	0.93	0.93	0.93	0.93	PO7	PO8	0.47	0.35	PO11	PO12
C317	0.52	0.4	1.56	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C407	1.46	1.82	2	2	PO5	PO6	PO7	PO8	1	0.66	PO11	PO12
C114	1.37	1.56	1.27	0.94	1.56	PO6	PO7	PO8	PO9	PO10	PO11	1.56
C117	3	3	3	3	3	PO6	PO7	PO8	PO9	PO10	PO11	2
C201	1.56	1.56	1.56	1.3	1.21	PO6	PO7	PO8	PO9	PO10	PO11	1.04
C202	1.37	1.24	1.2	1.04	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.83
C203	1.8	1	1	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1
C205	1.5	1.5	1.31	1.25	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.11
C211	1.34	1.34	1.14	0.68	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.93
C212	1.66	1.66	1.29	1.10	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.15
C213	0.98	0.98	0.94	0.85	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.95
C217	2.68	2.68	2.68	1.79	1.79	PO6	PO7	PO8	PO9	PO10	PO11	1.79
C301	0.89	1.08	1.32	0.64	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.40
C302	1.4	1.4	0.934	1.085	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.763
C305	2.694	2.694	2.494	1.895	1.894	PO6	PO7	PO8	PO9	PO10	PO11	2.368
C306	3	3	3	2	2.667	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C204	1.64	1.63	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C206	3	3	2	3	2.5	PO6	PO7	PO8	PO9	PO10	PO11	2
C207	2.04	2.04	2.04	1.36	1.36	PO6	PO7	PO8	PO9	PO10	PO11	2.04
C208	3.0	3.0	2.0	2.33	2.0	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C215	3.0	3.0	2.75	2.33	2	PO6	PO7	PO8	PO9	PO10	PO11	3
C216	3.0	3.0	3.0	2.0	2.0	PO6	PO7	PO8	PO9	PO10	PO11	3
C303	0.952	2.04	2.04	1.79	1.253	PO6	PO7	PO8	PO9	PO10	PO11	1.52
C304	2.296	2.296	1.363	1.174	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.762
C307	2.667	2.5	2.667	2.0	2.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0
C309	1.332	1.56	1.414	1.414	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.515
C310	1.464	1.464	1.275	1.287	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C311	1.88	1.462	1.358	1.046	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.254
C312	1.08	1.04	1.04	1.24	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.2
C313	3	3	2.4	2.5	2	PO6	PO7	PO8	PO9	PO10	PO11	2
C314	3	3	2.2	2.2	2	PO6	PO7	PO8	PO9	PO10	PO11	3
C315	3	2.5	2	2	2.25	PO6	PO7	PO8	PO9	PO10	PO11	2.333

C316	2.867	2.867	2.533	2.557	2.9	3	2.435	2.9	1.913	1.87	1.87	2.435
C401	1.24	1.24	1.24	0.992	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.032
C402	1.912	1.912	1.912	1.276	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.665
C403	1.272	1.272	1.158	0.994	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1.042
C404	2.232	2.118	2.086	1.812	PO5	2.44	1.63	PO8	1.18	PO10	PO11	1.383
C405	3	3	2.5	3	3	PO6	PO7	PO8	PO9	PO10	PO11	2
C406	3	2.5	2.5	2	2	PO6	PO7	PO8	PO9	PO10	PO11	2
C408	2.232	1.465	1.657	1.465	2.04	PO6	PO7	PO8	PO9	PO10	1.33	1.805
C409	2.7	1.968	2.7	2.718	3	3	3	0.977	1.968	1.935	1.935	2.435

PO Attainment Indirect

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
STUDENT I	3	3	3	3	3	3	3	3	3	3	3	3
EMPLOYEI	3	3	3	3	3	3	3	3	3	3	3	3
FACULTY S	3	3	3	3	3	3	3	3	3	3	3	3

PO Attainment Level

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
InDirect Attainment	3	3	3	3	3	3	3	3	3	3	3	3
Direct Attainment	1.88	1.79	1.75	1.66	1.85	1.51	1.53	1.57	1.22	1.14	1.27	1.53

PSO Attainment

Course	PSO1	PSO2	PSO3
C101	PSO1	PSO2	3
C102	0.56	PSO2	PSO3
C103	2.31	1.54	2.48
C104	1.85	0.62	PSO3
C105	1.22	1.12	1.46
C106	2	PSO2	PSO3
C107	PSO1	1	1
C108	2.62	0.87	PSO3
C109	2.50	2.83	PSO3
C110	1.56	PSO2	PSO3
C111	0.50	PSO2	PSO3
C112	1.17	0.58	1.75
C113	0.72	0.68	1.22
C115	0.75	0.25	0.50
C116	2	1.50	3
C118	PSO1	PSO2	0.36
C204	1.69	1.17	1.80
C210	0.52	0.36	0.56
C214	0.91	1.37	PSO3
C114	1.56	1.04	0.81
C117	3	2.67	2
C201	1.56	1.04	1.04
C202	1.24	0.97	1.04
C203	1	1	1
C205	1.50	1.04	0.87
C206	3	2	2
C207	2.04	1.7	1.36
C208	3	2	2
C209	0.80	0.80	PSO3
C211	1.40	1.26	0.97
C212	1.20	1.20	1.15
C213	1.08	0.89	1.08
C215	3	2	1.667
C216	3	2.667	1.333
C217	2.68	1.34	1.787
C218	1.93	1.93	PSO3

C301	PSO1	1.22	0.40
C302	1.286	1.165	0.998
C303	1.23	1.26	0.93
C304	2.258	2.138	1.22
C305	2.872	1.723	1.198
C306	3	2	2
C307	3	2.33	2.667
C308	0.93	1.4	PSO3
C309	1.27	0.686	0.518
C310	PSO1	1.15	1.077
C311	PSO1	PSO2	1.253
C312	1.2	1.12	1.22
C313	3	2	2
C314	3	2	2
C315	3	2	1.33
C316	2.87	1.87	1.913
C317	1.333	PSO2	0.52
C401	PSO1	PSO2	0.722
C402	1.912	1.397	1.077
C403	1.272	1.272	1.19
C404	1.045	1.05	1.283
C405	3	1.5	1
C406	3	1.667	2
C407	2.2	3	PSO3
C408	1.43	1.153	0.746
C409	2.95	1.935	1.968

PSO Attainment Indirect

Survey	PSO1	PSO2	PSO3
STUDENT EXIT SURV	3	3	3
EMPLOYER SURVEY	3	3	3
FACULTY SURVEY	3	3	3

PSO Attainment Level

Course	PSO1	PSO2	PSO3
Direct Attainment	1.87	1.44	1.37
InDirect Attainment	3	3	3

4 STUDENTS' PERFORMANCE (100) Total Marks 72.01

Institute Marks :

Table 4.1

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2022-23 (CAY)	2021-22 (CAYm1)	2020-21 (CAYm2)	2019-20 (CAYm3)	2018-19 (CAYm4)	2017-18 (CAYm5)	2016-17 (CAYm6)
Sanctioned intake of the program(N)	60	60	60	120	120	120	120
Total number of students admitted in first year minus number of students migrated to other programs/ institutions plus No. of students migrated to this program (N1)	39	57	53	113	77	101	106
Number of students admitted in 2nd year in the same batch via lateral entry (N2)	0	15	14	15	45	30	26
Separate division students, If applicable (N3)	0	0	0	0	0	0	0
Total number of students admitted in the programme(N1 + N2 + N3)	39	72	67	128	122	131	132

Table 4.2

Year of entry	Total No of students admitted in the program (N1 + N2 + N3)	Number of students who have successfully graduated without backlogs in any semester/ year of study (Without Backlog means no compartment or failures in any semester/ year of study)			
		I year	II year	III year	IV year
2022-23 (CAY)	39				
2021-22 (CAYm1)	72	15			
2020-21 (CAYm2)	67	16	20		
2019-20 (CAYm3)	128	21	23	19	
2018-19 (LYG)	122	32	22	19	19
2017-18 (LYGm1)	131	8	15	8	7
2016-17 (LYGm2)	132	14	13	9	6

Table 4.3

Year of entry	Total No of students admitted in the program (N1 + N2 + N3)	Number of students who have successfully graduated in stipulated period of study) [Total of with Backlog + without Backlog]			
		I year	II year	III year	IV year
2022-23 (CAY)	39				
2021-22 (CAYm1)	72	21			
2020-21 (CAYm2)	67	27	33		
2019-20 (CAYm3)	128	79	68	63	
2018-19 (LYG)	122	64	100	100	98
2017-18 (LYGm1)	131	60	61	52	47
2016-17 (LYGm2)	132	30	41	32	26

4.1 Enrolment Ratio (20)

Total Marks 18.00

Institute Marks : 18.00

	N (From Table 4.1)	N1 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2022-23 (CAY)	60	39	65.00
2021-22 (CAYm1)	60	57	95.00
2020-21 (CAYm2)	60	53	88.33

Average [(ER1 + ER2 + ER3) / 3] : 82.78

Assessment : 18.00

4.2 Success Rate in the stipulated period of the program (20)

Total Marks 3.62

4.2.1 Success rate without backlogs in any semester / year of study (15)

Institute Marks : 1.35

Item	Latest Year of Graduation, LYG (2018-19)	Latest Year of Graduation minus 1, LYGm1 (2017-18)	Latest Year of Graduation minus 2 LYGm2 (2016-17)
X Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and seperated division, if applicable	122.00	131.00	132.00
Y Number of students who have graduated without backlogs in the stipulated period	19.00	7.00	6.00
Success Index [SI = Y / X]	0.16	0.05	0.05

Average SI [(SI1 + SI2 + SI3) / 3] : 0.09

Assessment [15 * Average SI] : 1.35

4.2.2 Sucess rate in stipulated period (5)

Institute Marks : 2.27

Item	Latest Year of Graduation, LYG (2018-19)	Latest Year of Graduation minus 1, LYGm1 (2017-18)	Latest Year of Graduation minus 2 LYGm2 (2016-17)
X Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and seperated division, if applicable	122.00	131.00	132.00
Y Number of students who have graduated in the stipulated period	98.00	47.00	26.00
Success Index [SI = Y / X]	0.80	0.36	0.20

Average SI[(SI1 + SI2 + SI3) / 3]: 0.45

Assessment [5 * Average SI] : 2.27

Note : If 100% students clear without any backlog then also total marks scored will be 20 as both 4.2.1 & 4.2.2 will be applicable simultaneously.

4.3 Academic Performance in Second Year (10)

Total Marks 5.79

Institute Marks : 5.79

Academic Performance	CAYm2 (2020-21)	CAYm3 (2019-20)	LYG (2018-19)
Mean of CGPA or mean percentage of all successful students(X)	7.28	7.22	6.86
Total number of successful students (Y)	33.00	68.00	100.00
Total number of students appeared in the examination (Z)	41.00	94.00	109.00
API [X * (Y/Z)]	5.86	5.22	6.29

Average API [(AP1 + AP2 + AP3)/3] : 5.79

Assessment [AverageAPI] : 5.79

4.4 Placement, Higher Studies and Entrepreneurship (30) Total Marks 24.60

Institute Marks : 24.60

Item	LYG(2018-19)	LYGm1(2017-18)	LYGm2(2016-17)
Total No of Final Year Students(N)	100.00	52.00	32.00
No of students placed in the companies or goverment sector(X)	76.00	45.00	24.00
No of students admitted to higher studies with valid qualifying scores(GATE or equivalent State or National Level tests, GRE, GMAT etc.) (Y)	2.00	2.00	1.00
No of students turned enterpreneur in engineering/technology (Z)	0.00	0.00	0.00
Placement Index [(X+Y+Z)/N] :	0.78	0.90	0.78

Average Placement [(P1 + P2 + P3)/3] : 0.82

Assessment [30 * Average Placement] : 24.60

Program Name : Mechanical Engg.
Assessment Year : 2021-22 (CAYm1)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	PARISA PRADEEP	19KQ5A0332	Tcs	TCSL/DT22218979966, (04/12/2022)
2	PILLI AKHIL	19KQ5A0333	Lucky Nissan	26.03.2022
3	P LAKSHMI SRI SAI LOKESH	19KQ5A0334	Infosys	HRD/3T/100403214/21-22, (Dec.18, 2022)
4	S RAMAKRISHNA RAJU	19KQ5A0335	Tirumala Automotive	16.04.2022
5	A VIJAYA BHASKAR	19KQ5A0336	Lucky Nissan	26.03.2022
6	KHAGGA VAMSI KRISHNA	19KQ5A0337	Infosys	HRD/3T/100409630/21-22, (Nov,21, 2022)
7	NITHALAPATI RAHUL	19KQ5A0338	Lucky Nissan	26.03.2022
8	RAVULAPALLI RAVI KUMAR	19KQ5A0339	Tcs	TCSL/DT22218977745, (04/18/2022)
9	JANUMALA RATNA SUNDARAM	19KQ5A0340	Tirumala Automotive	16.04.2022
10	MEDABALIMI AJAY CHANDRA	19KQ5A0341	Wipro	June/25/2022
11	SHAIK ABID HUSSAIN	19KQ5A0342	AMT Power Transmission	12.03.2022
12	YEMPARALA VENKATA ANIL KUMAR	19KQ5A0343	Tcs	TCSL/DT22218973322, (04/26/2022)
13	MEDA SRINU	19KQ5A0344	Wipro	June/28/2022
14	GOTTIPATI SANDEEP	18KQ1A0316	AMT Power Transmission	12.03.2022
15	N.PRAVEEN KUMAR	18KQ1A0340	Lucky Nissan	26.03.2022
16	PANDIRI ASHOK	18KQ1A0345	AMT Power Transmission	12.03.2022
17	ARUMALLA KOTESWARA RAO	18KQ1A0302	Wipro	March/29/2022
18	BEJAWADA ABHISHEK RAJU	18KQ1A0305	Virtusa	March/18/2022
19	BUSHA GOPI KRISHNA	18KQ1A0306	Tcs	TCSL/DT22218970369, (05/15/2022)
20	CHALLA PHANEENDRA	18KQ1A0307	Capgemini	5228822/1133214, (03/16/2022)
21	CHUPPALA OBULESU	18KQ1A0308	Wipro	Aprail/05/2022
22	PANDIRI ELISHABABU	18KQ1A0310	Virtusa	March/23/2022
23	E.V.MOHAN KUMAR REDDY	18KQ1A0311	Infosys	HRD/3T/1004074563/21-22, (Nov 19, 2022)
24	EEDHARA MANOJ KUMAR	18KQ1A0312	Tcs	TCSL/DT22218976541,(04/08/2022)
25	GOLLA CHANDU	18KQ1A0314	Infosys	HRD/3T/1004071245/21-22, (Nov.11, 2022)
26	GOLLA REVANTH	18KQ1A0315	Capgemini	5228822/1138520, (03/23/2022)
27	JILAGA KISHORE KUMAR	18KQ1A0320	Wipro	Aprail/12/2022
28	K.V.SAI MANOJ KUMAR	18KQ1A0322	Virtusa	Aprail/18/2022
29	KETHINENI MAHENDRA	18KQ1A0323	Tcs	TCSL/DT22218974521, (04/07/2022)
30	KODAMALA SAHANKUMAR	18KQ1A0324	AMT Power Transmission	12.03.2022
31	KOMARA MYKRISHNA	18KQ1A0325	Wipro	Aprail/18/2022
32	KONDEPATI VIJAY BABU	18KQ1A0326	Lucky Nissan	26.03.2022
33	KONDRU ANIL KUMAR	18KQ1A0327	Infosys	HRD/3T/1004070258/21-22,(Oct.11, 2022)
34	KOTA GOVARDHAN	18KQ1A0328	Tcs	TCSL/DT22218977458, (05/03/2022)
35	KUNCHALA NAVEEN	18KQ1A0329	Capgemini	5228822/1136546, (03/30/2022)
36	K.V. NAGA SAI KRISHNA	18KQ1A0330	Virtusa	May/05/2022
37	M.N. YASASWI	18KQ1A0332	Wipro	Aprail/23/2022
38	K. VENKATA KRISHNA TEJA	18KQ1A0333	Tirumala Automotive	16.04.2022
39	M. NAVEEN KUMAR	18KQ1A0334	AMT Power Transmission	12.03.2022
40	MARATHOTI GOPI	18KQ1A0335	Tcs	TCSL/DT22218979654,(05/25/2022)
41	PUPPALA SANDEEP	18KQ1A0348	Capgemini	5228822/1137414, (04/13/2022)
42	PURNAGANTI PREMCHAND	18KQ1A0349	Virtusa	May/17/2022
43	TALLURI NAVEEN	18KQ1A0360	Wipro	Aprail,/28/2022
44	TALLURI YESU BABU	18KQ1A0361	Tirumala Automotive	16.04.2022
45	TELLA SUMANTH	18KQ1A0363	Infosys	HRD/3T/1004079632/21-22,(June.8, 2022)
46	TENALI SURAJ KUMAR	18KQ1A0364	Tcs	TCSL/DT22218973214, (06/03/2022)
47	THANGA SIVA PRASAD	18KQ1A0365	AMT Power Transmission	12.03.2022
48	THOTAPURI SALMANRAJU	18KQ1A0367	Wipro	May/02/2022
49	UPPATALA NAVEEN KUMAR	18KQ1A0369	Virtusa	May/23/2022
50	VALLEPU VINAY	18KQ1A0370	Tcs	TCSL/DT22218979630, (04/12/2022)
51	Y JAGADEESHWAR REDDY	18KQ1A0371	Infosys	HRD/3T/1004073698/21-22, (March.12, 2022)
52	CHALLA AJAY BABU	18KQ1A0373	Capgemini	5228822/1137894, (04/23/2022,)
53	NUGATHOTI MAHESH	18KQ1A0374	Wipro	May/12/2022
54	SANNISETTY SAITEJA	18KQ1A0376	Tirumala Automotive	16.04.2022
55	YEDDU TARUNTEJA	19KQ5A0301	AMT Power Transmission	12.03.2022
56	PENUMATSA PRUDHAVI	19KQ5A0302	Tcs	TCSL/DT22218973252, (03/18/2022)
57	P SUNIL KANAKA YASWANTH	19KQ5A0304	Infosys	HRD/3T/1004073214/21-22, (March.21, 2022)
58	KOTA RADHA KRISHNA	19KQ5A0306	Wipro	May/21/2022

59	DAMMU YESURAJU	19KQ5A0307	Tirumala Automotive	16.04.2022
60	MEDIDA THIRUPATHI SWAMY	19KQ5A0308	Virtusa	Aprail/05/2022
61	SUTHAR GURURAJ KUMAR	19KQ5A0309	Wipro	May/28/2022
62	VARADA ARAVIND	19KQ5A0310	Tcs	TCSL/DT22218976514, (03/25/2022)
63	NEELAM RAMACHANDRA	19KQ5A0311	Infosys	HRD/3T/1004076541/21-22, (Oct.18, 2022)
64	VALLEPU CHANDU	19KQ5A0316	AMT Power Transmission	12.03.2022
65	UPPUMA VULURI KIRAN KUMAR	19KQ5A0317	Wipro	June/03/2022
66	GIREESH CHANDRA KODURI	19KQ5A0318	Lucky Nissan	26.03.2022
67	CHERUKURI VAMSI	19KQ5A0319	Tirumala Automotive	16.04.2022
68	KARI GOPINADH	19KQ5A0320	Wipro	June/09/2022
69	ADUSUMALLI SAI RITHEESH	19KQ5A0321	Tcs	TCSL/DT22218973663, (04/05/2022)
70	RAVINUTHALA RAJESH	19KQ5A0324	Infosys	HRD/3T/1004079874/21-22, (Dec.14, 2022)
71	KASUKURTHI RAYUDU	19KQ5A0325	Wipro	June/15/2022
72	THANNEERU KISHOR	19KQ5A0326	AMT Power Transmission	12.03.2022
73	SHAIK ASHRAF	19KQ5A0327	Infosys	HRD/3T/100407410/21-22, (Dec.04, 2022)
74	KALLAGUNTA THRILOK	19KQ5A0328	Wipro	June/21/2022
75	SHAIK NAZEER	19KQ5A0329	Lucky Nissan	26.03.2022
76	VINJAMURI AKHIL BABU	19KQ5A0330	Tirumala Automotive	16.04.2022

Assessment Year : 2020-21 (CAYm2)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	BATHULA RAJESH	17KQ1A0303	TCS	TCSL/DT21222891342, (08/04/2022)
2	BILLA SIVA	17KQ1A0305	Capgemini	5228822/1132589, (03/22/2022)
3	CH. TARUN SAI VENKATESH	17KQ1A0307	Infosys	HRD/COV/1004300479/21-22, (March,21,2021)
4	CH. AJAY KUMAR	17KQ1A0308	VPG Sensors	10.02.2021
5	G. JAYANTH	17KQ1A0311	TCS	TCSL/DT21222891523, (04/03/2022)
6	G. VENKATA SAI KUMAR	17KQ1A0312	Stanadyne	15.05.2021
7	G. VENKATARAMANA	17KQ1A0313	VPG Sensors	10.02.2021
8	G. SRIRAM	17KQ1A0314	VPG Sensors	10.02.2021
9	K. MURALI KRISHNA	17KQ1A0320	TCS	TCSL/DT21222893698, (18/04/2021)
10	M.P.R. AVINASH TONY	17KQ1A0321	Stanadyne	15.05.2021
11	M.KRANTHI KUMAR	17KQ1A0323	TCS	TCSL/DT21222894568, (12/04/2021)
12	O. NARAYANAREDDY	17KQ1A0326	VPG Sensors	10.02.2021
13	O. BALA VENKATA DINESH	17KQ1A0327	Stanadyne	15.05.2021
14	P. NAGA SURESH	17KQ1A0328	Infosys	HRD/COV/1004301252/21-22, (Aprail,11,2021)
15	P. VIJAY	17KQ1A0329	Capgemini	5228822/1133296, (01/25/2022)
16	P. OBUL REDDY	17KQ1A0332	TCS	TCSL/DT21222893214, (19/03/2022)
17	P. BHARGAV REDDY	17KQ1A0333	Stanadyne	15.05.2021
18	R. VENKATESH	17KQ1A0336	Infosys	HRD/COV/1004308569/21-22, (Aprail,23,2021)
19	R. VENKATESWARLU	17KQ1A0338	Stanadyne	15.05.2021
20	SHAIK ALTHAF	17KQ1A0339	Capgemini	5228822/1132541, (02/12/2022)
21	SHAIK ASIF	17KQ1A0341	TCS	TCSL/DT21222898520,(07/04/2022)
22	SHAIK BAJI BASHA	17KQ1A0342	Capgemini	5228822/1134123, (02/24/2022)
23	V. SIVA SHANKAR	17KQ1A0345	Stanadyne	15.05.2021
24	VEMULA SAI TEJA	17KQ1A0348	Capgemini	5228822/1137120, (01/29/2022)
25	B. VENGALA RAO	17KQ1A0356	Stanadyne	15.05.2021
26	B. KARUNAKAR REDDY	17KQ1A0357	VPG Sensors	10.02.2021
27	G. VISHNUVARDHAN REDDY	17KQ1A0360	TCS	TCSL/DT21222896589, (07/04/2022)
28	G. AKHIL KUMAR	17KQ1A0361	TCS	TCSL/DT20229613257, (03.02.2022)
29	G. AJAY KUMAR	17KQ1A0363	Stanadyne	15.05.2021
30	M. K.MOHAN REDDY	17KQ1A0369	VPG Sensors	10.02.2021
31	N. SANDEEP	17KQ1A0374	Infosys	HRD/COV/1004303698/21-22, (March,13,2021)
32	P. YEHOSHUVA	17KQ1A0376	TCS	TCSL/DT21222898596, (17/03/2022)
33	P.V.N. VINEETH KUMAR	17KQ1A0378	Accenture	28.12.2021
34	P. VINOSKUMAR	17KQ1A0379	Stanadyne	15.05.2021
35	P. NAGENDRA BABU	17KQ1A0380	Infosys	HRD/COV/1004304521/21-22, (Feb,08,2021)
36	SADHU VAMSI	17KQ1A0381	Stanadyne	15.05.2021
37	SHAIK HUSSAIN BABU	17KQ1A0384	VPG Sensors	10.02.2021
38	SHAIK RASOOL	17KQ1A0388	TCS	TCSL/DT21222891234, (11/04/2022)
39	THONTLA SIVA REDDY	17KQ1A0393	Accenture	15.12.2021
40	VARLA NIVAS	17KQ1A0395	Stanadyne	15.05.2021
41	VIPPARLA BENHAR	17KQ1A0396	Accenture	08.12.2021
42	V.V.V. BHANU PRASAD	17KQ1A0397	Infosys	HRD/COV/1004301478/21-22, (March,03,2021)
43	MAMIDI PAPAIAH	18KQ5A0301	VPG Sensors	10.02.2021
44	S. RAM PRASAD	18KQ5A0303	VPG Sensors	10.02.2021
45	K. VENKATA RAMANA	18KQ5A0304	TCS	TCSL/DT21222894321, (18/03/2022)

Assessment Year : 2019-20 (CAYm3)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	Bollineni Thanuja	16KQ1A0301	Worksbot	July,20.2019
2	Paritala Nagalakshmi	16KQ1A0302	Worksbot	July,20.2019
3	Adapa durga poojith	16KQ1A0303	TCS	TCSL/DT20222894715,(13/04/2020)
4	Alluri kumar	16KQ1A0304	Worksbot	July,20.2019
5	Batcha Srikanth	16KQ1A0308	Hyoseong	29.02.2020
6	Bathula Rajesh	16KQ1A0309	TCS	TCSL/DT20222896520,(19/04/2020)
7	Gali nageswara rao	16KQ1A0314	Worksbot	July,20.2019
8	Jajula Madhan	16KQ1A0319	Hyoseong	29.02.2020
9	Kayasri Eknath	16KQ1A0323	Worksbot	July,20.2019
10	Kodamala Prudhvi	16KQ1A0324	TCS	TCSL/DT21222893698,(24/03/2021)
11	Kola Ramesh	16KQ1A0325	Infosys	HRD/3T/1004070916/20-21 (March 29, 2022)
12	Kommu Pavan Kalyan	16KQ1A0326	Infosys	HRD/3T/1004070923/20-21 (March 29, 2022)
13	Kotu Narendra	16KQ1A0329	Worksbot	July,20.2019
14	Mallavarapu Victor Babu	16KQ1A0333	Worksbot	July,20.2019
15	M.V.N.V.V Reddy	16KQ1A0335	Worksbot	July,20.2019
16	Nukathoti vamsikrishna	16KQ1A0337	Wipro	March/14/2020
17	Nunna Ganesh	16KQ1A0338	Hyoseong	29.02.2020
18	Palipaka Thimothi	16KQ1A0339	TCS	TCSL/DT20222891478,(22/08/2020)
19	Pulikam Eswara reddy	16KQ1A0341	Hyoseong	29.02.2020
20	Rayani Likith Naidu	16KQ1A0342	Hyoseong	29.02.2020
21	S.M.D Jaffer	16KQ1A0343	Worksbot	July,20.2019
22	Saneboyina Mahendra kumar	16KQ1A0344	Worksbot	July,20.2019
23	Seerla Raja Mahesh	16KQ1A0346	Worksbot	July,20.2019
24	Shaik Abdul Wajid	16KQ1A0347	Hyoseong	29.02.2020

4.5 Professional Activities (20) Total Marks 20.00

4.5.1 Professional societies/chapters and organizing engineering events (5)

Institute Marks : 5.00

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- Professional Refinement Programmes for faculty members of AICTE approved Technical Institutions sponsored by AICTE.
- Premier Agency operating MHRD, AICTE, MIT and International Projects.
- Reputed source for Information Dissemination through publications, seminars, workshops in Technical Education.
- Major Consultant for Educational Management, Institution Building, Career and Personality development of teachers and students respectively.
- Professional Society giving over more than 70 National and Regional Awards to Institutions, Teachers and Students for innovation and excellence in various areas of Engineering and Technology.

The Indian Society for Technical Education (ISTE) established student chapter with the department of Mechanical Engineering, PACE Institute of Technology & Sciences.

IEI

The Institution of Engineers (India) is the national organization of engineers in India (https://en.wikipedia.org/wiki/India). It has more than one million members in 15 engineering disciplines in 125 centers or chapters in India and overseas; it is the worlds largest multi-disciplinary engineering professional society in the engineering and technology world. This institute was established in 1920 in Kolkata, West Bengal, and is acclaimed to have pioneered non-formal education in engineering. The institute conducts an examination of its associate membership. This examination is considered to be on par with B.E. / B.Tech. The Institution of Engineers (India) (IEI) established student chapter with the department of Mechanical Engineering, PACE Institute of Technology & Sciences.

Consolidated list of events conducted

Sl. No	AY	Student Chapter	No. of Events
1	2021-22	IEI	6
		ISTE	7
2	2020-21	IEI	7
		ISTE	5
3	2019-20	IEI	6
		ISTE	5

4.4.2 Publication of technical magazines, newsletters, etc. (5)

Institute Marks : 5.00

Technical Magazines:

The department of Mechanical Engineering, PACE ITS publishes magazines yearly once. In these magazines details regarding Department Vision & Mission, Department Achievements, List of Events conducted by department, Student Participations & Achievements, Faculty achievements and Toppers list are published.

Sl. No	Academic Year		Issue No	Name of the Editor(s)	Publisher
1	2019-2020	Yearly Magazine	1	Dr. Raghuram Pradhan (Professor) Mr. G. E. Babu (Assistant Professor) Pandiri Elishababu (II Year student) Maddipati Narasimha Yasaswi (II Year student) Sivapuram Ram Prasad (III Year student) Gosala Veeraswami (III Year student)	Dept of Mechanical Engineering
2	2020-2021		1	Dr. Raghuram Pradhan (Professor) Dr. G. Sai Prasad (Professor) Kunchala Ramesh (II Year student) Kornepati Happy Babu (II Year student) Pandiri Elishababu (III Year student) Maddipati Narasimha Yasaswi (III Year student)	Dept of Mechanical Engineering
3	2021-22		1	Dr. Raghuram Pradhan (Professor) Mr. Y. Sreenivasa Reddy (Assistant Professor) Amara Eswar Kumar (II Year student) Golla Venkatesh (II Year student) Kunchala Ramesh (III Year student) Kornepati Happy Babu (III Year student)	Dept of Mechanical Engineering

Newsletters:

The department of Mechanical Engineering, PACE ITS Publishes newsletters for every 6 months. In this newsletter details regarding to Department Achievements, MoUs Sign, List of Events conducted by department, List of events participated by the students, Student interactions with Alumini members, Industrial persons etc., are published.

Sl. No	Academic Year		Issue No	Name of the Editor(s)	Publisher
1	2019-2020	**Newsletter**	1	Mr. G. E. Babu (Assistant Professor) Pandiri Elishababu (II Year student) Sivapuram Ram Prasad (III Year student)	Dept of Mechanical Engineering
			2	Dr. V. Venugopal (Professor) Maddipati Narasimha Yasaswi (II Year student) Gosala Veeraswami (III Year student)	Dept of Mechanical Engineering
2	2020-2021		1	Dr. J. Hussain (Professor) Kunchala Ramesh (II Year student) Pandiri Elishababu (III Year student)	Dept of Mechanical Engineering
			2	Mr. Y. Srinivasa Reddy (Assistant Professor) Kornepati Happy Babu (II Year student) Maddipati Narasimha Yasaswi (III Year student)	
3	2021-22		1	Dr. Raghuram Pradhan (Professor) Amara Eswar Kumar (II Year student) Kunchala Ramesh (III Year student)	Dept of Mechanical Engineering
			2	Mr. K. Venkateswarlu (Assistant Professor) Golla Venkatesh (II Year student) Kornepati Happy Babu (III Year student)	

4.4.3 Participation in inter-institute events by students of the program of study (10) Institute Marks : 10.00

The department of Mechanical Engineering in PACE Institute of Technology & Sciences encourages students to participate in various events taking place within the state and out of state. So many performed well in the events and achieved good achievements in the events. The details of student's participation in inter-institute events within the state and out of the state, Students inter-institute events within the state and out of the state in the academic years 2021-22, 2020-21, 2019-20 are mentioned below.

S.No	Academic year	Total No. of Participation certificates	No. of participation certificates from with in the state	No. of participation certificates from other states
1	2021-22	123	103	20
2	2020-21	86	74	12
3	2019-20	84	76	8

Students Achievements (within state/other state)

S.No	Academic year	Total No. of achievement certificates	No. of achievement certificates from with in the state	No. of achievement certificates from other states
1	2021-22	52	46	6
2	2020-21	45	41	4
3	2019-20	41	38	3

5 FACULTY INFORMATION AND CONTRIBUTIONS (200) Total Marks 177.99

Sr. No	Name	PAN No.	University Degree	Date of Receiving Degree	Area of Specialization	Research Paper Publications	Ph.D Guidance	Faculty receiving Ph.D during the assessment year	Current Designation	Date (Designated as Prof / Assoc. Prof.)	Initial Date of Joining	Association Type	At present working with the Institution (Yes / No)	Da Le
1	Dr.G.Kondaiah	AQXPG9684P	ME/M. Tech and PhD	27/08/2021	Metal Forming	22	0	0	Assistant Professor		28/09/2020	Regular	Yes	
2	Dr.Md. Jabihulla Shariff	AKRPJ4550H	ME/M. Tech and PhD	26/11/2022	Composite Materials	13	0	0	Assistant Professor		01/06/2015	Regular	Yes	
3	G. E. Babu	AAMPE0938P	M.E/M.Tech	14/01/2013	Machine Design	5	0	0	Assistant Professor		10/05/2013	Regular	Yes	
4	A. Sai Prasad	ARJPA5717G	M.E/M.Tech	06/08/2014	Machine Design	5	0	0	Assistant Professor		15/06/2016	Regular	Yes	
5	P. Kiran Babu	BGMPP3595G	M.E/M.Tech	20/06/2016	CAD/CAM	8	0	0	Assistant Professor		08/07/2016	Regular	Yes	
6	K. Venkateswarlu	AYPPK1559D	M.E/M.Tech	10/02/2014	Machine Design	6	0	0	Assistant Professor		13/02/2014	Regular	Yes	
7	Y. Srinivasa Reddy	ADCPY0530E	M.E/M.Tech	10/01/2014	Machine Design	10	0	0	Assistant Professor		13/03/2014	Regular	Yes	
8	K. Chiranjeevi	AMXPK1364L	M.E/M.Tech	13/05/2002	Foundry Forge Technology	2	0	0	Assistant Professor		28/09/2020	Regular	Yes	
9	N. Vijay Kumar	AUNPV7857M	M.E/M.Tech	20/12/2012	CAD/CAM	10	0	0	Assistant Professor		01/07/2022	Regular	Yes	
10	P. Sushma	AXZPP4175B	M.E/M.Tech	17/09/2018	Thermal Engineering	0	0	0	Assistant Professor		23/12/2020	Regular	Yes	
11	Ch.Meenakshi Devi	BNBPC3814R	M.E/M.Tech	21/03/2016	Machine Design	0	0	0	Assistant Professor		23/12/2020	Regular	Yes	
12	R. Ajay Kumar	ATCPR5399G	M.E/M.Tech	14/01/2013	Machine Design	2	0	0	Assistant Professor		10/05/2013	Regular	No	01
13	K. Koteswara Rao	BZAPK0899M	M.E/M.Tech	14/04/2014	Machine Design	0	0	0	Assistant Professor		10/08/2019	Regular	No	31
14	SK.Shareef	KLYPS4530J	M.E/M.Tech	18/05/2020	Thermal Engineering	0	0	0	Assistant Professor		23/12/2020	Regular	No	01
15	SK.Gouse Basha	LGKPS0034H	M.E/M.Tech	18/05/2020	Thermal Engineering	0	0	0	Assistant Professor		28/09/2020	Regular	No	30
16	D r. Raghuram Pradhan	AJFPR8074B	ME/M. Tech and PhD	17/05/2017	Composite Materials	40	0	0	Professor	17/05/2022	22/05/2015	Regular	Yes	
17	Dr.M. Selvam	AMJPS9899Q	ME/M. Tech and PhD	15/10/2018	Biodiesel	0	0	0	Associate Professor	16/10/2020	17/06/2019	Regular	Yes	
18	Dr.E.R.Siva Kumar	CAZPS2284P	ME/M. Tech and PhD	04/09/2020	Composite Materials	11	0	0	Assistant Professor		01/06/2019	Regular	No	23
19	M. Vijayan	ALFPV3300E	M.E/M.Tech	14/11/2011	Thermal Engineering	0	0	0	Assistant Professor		11/11/2019	Regular	No	28
20	K. Arunasanthi	BQFPK5713G	M.E/M.Tech	14/04/2008	CAD/CAM	0	0	0	Assistant Professor		20/06/2012	Regular	No	28
21	K.Purushothaman	CNVPP0274P	M.E/M.Tech	20/04/2015	CAD	1	0	0	Assistant Professor		01/06/2018	Regular	No	30
22	U.Bharath Kumar	AEVPU2121D	M.E/M.Tech	11/03/2019	Thermal Engineering	0	0	0	Assistant Professor		23/03/2021	Regular	No	31
23	Krishna	CFXPK2285P	M.E/M.Tech	16/06/2014	Manufacturing Technology	0	0	0	Assistant Professor		28/09/2020	Regular	No	31
24	K.Rameh Babu	CJQPK9308C	M.E/M.Tech	20/01/2014	Machine Design	0	0	0	Assistant Professor		06/07/2016	Regular	No	27
25	S.Polinaidu	EARPS7717H	M.E/M.Tech	11/01/2016	Machine Design	0	0	0	Assistant Professor		06/07/2019	Regular	No	24
26	M.Siva Nayak	AVPPM1979A	M.E/M.Tech	12/05/2008	CAD/CAM	0	0	0	Assistant Professor		07/02/2017	Regular	No	15
27	P.Sai Teja	DHLPP9959N	M.E/M.Tech	31/10/2016	Machine Design	0	0	0	Assistant Professor		01/06/2019	Regular	No	27
28	G.Bakkiiya Raju	CJHPB1473Q	M.E/M.Tech	10/05/2010	Manufacturing Engineering	0	0	0	Assistant Professor		28/08/2020	Regular	No	30
29	Dr. J HUSSAIN	AFGPH8969G	ME/M. Tech and PhD	12/03/2014	IC Engines	10	0	0	Professor		21/10/2019	Regular	Yes	
30	Dr. V. Venugopal	AYQPV3375D	ME/M. Tech and PhD	04/08/2014	MECHANICAL ENGINEERING	2	0	0	Professor	18/10/2021	02/11/2020	Regular	Yes	
31	DR. G SAI PRASAD	BIPPG1056N	ME/M. Tech and PhD	10/11/2012	Thermal Engineering	0	0	0	Professor		28/11/2019	Regular	Yes	
32	Dr.S.Vishwanath	BBKPV6222R	ME/M. Tech and PhD	20/11/2017	Composite Materials	0	0	0	Associate Professor	21/11/2022	19/08/2019	Regular	Yes	
33	Dr. Anburaj	AZCPA7756J	ME/M. Tech and PhD	30/04/2018	Composite Materials	0	0	0	Associate Professor		14/12/2020	Regular	Yes	

34	Dr.A.D.Dhass	BQYPD7686L	ME/M. Tech and PhD	10/07/2018	Solar Energy	0	0	0	Associate Professor	13/07/2020	03/06/2019	Regular	No	20
35	Dr. P. Rama Krishna	BQXPK3178F	ME/M. Tech and PhD	14/01/2013	Materials	27	0	0	Professor		03/06/2019	Regular	No	20
36	B.Balakrishna	BGDPB5007N	M.E/M.Tech	16/09/2019	Machine Design	1	0	0	Assistant Professor		28/09/2020	Regular	Yes	

5.1 Student-Faculty Ratio (SFR) (20) Total Marks 20.00

Institute Marks : 20

UG

No. of UG Programs in the Department 1

MECHANICAL ENGINEERING						
Year of Study	**CAY (2022-23)**		**CAYm1 (2021-22)**		**CAYm2 (2020-21)**	
	Sanction Intake	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual admitted through lateral entry students**
2nd Year	60	6	60	3	120	6
3rd Year	60	3	120	6	120	2
4th Year	120	6	120	2	120	11
Sub-Total	**240**	**15**	**300**	**11**	**360**	**19**
Total	**255**		**311**		**379**	
Grand Total	255		311		379	

PG

No. of PG Programs in the Department 0

Grand Total			

SFR

No. of UG Programs in the Department 1

No. of PG Programs in the Department 0

Description	**CAY(2022-23)**	**CAYm1 (2021-22)**	**CAYm2 (2020-21)**
Total No. of Students in the Department(S)	255 **Sum total of all (UG+PG) students**	311 **Sum total of all (UG+PG) students**	379 **Sum total of all (UG+PG) students**
No. of Faculty in the Department(F)	19 **F1**	25 **F2**	28 **F3**
Student Faculty Ratio(SFR)	13.42 **SFR1=S1/F1**	13.54 **SFR2=S2/F2**	12.44 **SFR3=S3/F3**
Average SFR	13.13 **SFR=(SFR1+SFR2+SFR3)/3**		
F=Total Number of Faculty Members in the Department (excluding first year faculty)			

Note: All the faculty whether regular or contractual (except Part-Time), will be considered. The contractual faculty (doing away with the terminology of visiting/adjunct faculty, whatsoever) who have taught for 2 consecutive semesters in the corresponding academic year on full time basis shall be considered for the purpose of calculation in the Faculty Student Ratio. However, following will be ensured in case of contractual faculty:

1. Shall have the AICTE prescribed qualifications and experience.
2. Shall be appointed on full time basis and worked for consecutive two semesters during the particular academic year under consideration.
3. Should have gone through an appropriate process of selection and the records of the same shall be made available to the visiting team during NBA visit

5.1.1. Provide the information about the regular and contractual faculty as per the format mentioned below:

	Total number of regular faculty in the department	**Total number of contractual faculty in the department**
CAY(2022-23)	19	0
CAYm1(2021-22)	25	0
CAYm2(2020-21)	28	0

Average SFR for three assessment years : 13.13

Assessment SFR : 20

5.2 Faculty Cadre Proportion (20) Total Marks 20.00

Institute Marks : 20.00

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY(2022-23)	1.00	4.00	2.00	3.00	8.00	12.00
CAYm1(2021-22)	1.00	3.00	3.00	3.00	10.00	19.00
CAYm2(2020-21)	2.00	2.00	4.00	4.00	12.00	22.00
Average Numbers	1.33	3.00	3.00	3.33	10.00	17.67

Cadre Ratio Marks [(AF1 / RF1) + [(AF2 / RF2) * 0.6] + [(AF3 / RF3) * 0.4]] * 10 : 20.00

5.3 Faculty Qualification (20)

Total Marks 19.99

Institute Marks : 19.99

	X	Y	F	FQ = 2 x [(10X + 4Y) / F)]
2022-23(CAY)	9	10	12.00	21.67
2021-22(CAYm1)	9	16	15.00	20.53
2020-21(CAYm2)	8	20	18.00	17.78

Average Assessment : 19.99

5.4 Faculty Retention (10)

Total Marks 8.00

Institute Marks : 8.00

Description	2021-22 (CAYm1)	2022-23 (CAY)
No of Faculty Retained	24	18
Total No of Faculty	28	28
% of Faculty Retained	86	64

Average : 75.00

Assessment Marks : 8.00

5.5 Faculty competencies in correlation to Program Specific Criteria (10)

Total Marks 10.00

Institute Marks : 10.00

The program specific criteria for B. Tech (Mechanical Engineering) program at PACE Institute of Technology & Sciences are formulated as per the guidelines specified by UGC & AICTE. The curriculum consists of a variety of courses covering Design, Thermal engineering, Production, Materials, Design and Research. Faculty specializes in different streams of domains as this makes the courses very effective.

Table:1 Faculty Specialization

S.No	Nameof theFaculty	Specialization	Area of Research Interest
1.	Dr.G.Kondaiah	Metal Forming	Materials science and engineering
2.	Dr. J Hussain	IC Engines	Thermal anlysis
3.	Dr. G Saiprasad	Thermal Engineering	Design analysis
4.	Dr. V. Venugopal	Mechanical Engineering	Thermal modeling analysis
5.	Dr.Raghuram Pradhan	Composite Materials	Design analysis& Thermal anlysis
6.	Dr.M. Selvam	Composite Materials	Alternative fuels
7.	Dr.S.Vishwanath	Composite Materials	Nano composite materials
8.	Dr.Anburaj	Composite Materials	Nano additives in metal cutting processes
9.	Dr.Md. Jabihulla Shariff	Composite Materials	Design analysis&composite materials
10.	G. E. Babu	Machine Design	Design analysis& Thermal anlysis
11.	K. Venkateswarlu	Machine Design	Design analysis&NDE
12.	Y. Srinivasa Reddy	Machine Design	Design analysis & Thermal science
13.	A. Sai Prasad	Machine Design	Design analysis
14.	P. KiranBabu	CAD/CAM	Design analysis
15.	K. Chiranjeevi	Foundry Forge Technology	Materials science and engineering
16.	P. Sushma	Thermal Engineering	Thermal anlysis
17.	Ch.Meenakshi Devi	Machine Design	Design analysis
18.	B.Balakrishna	Machine Design	Design analysis
19.	N. Vijay Kumar	CAD/CAM	Design analysis

Research Publications:

Faculties interested in specific domains of research for publishing their ideas.

Table 2:

S.NO	RESEARCH DOMAIN	NAME OF THE FACULTY	NO OF PUBLICATIONS
1	Materials science	1. Dr. G. Kondaiah. 2. Dr. G Saiprasad. 3. Dr. P. RamaKrishna	3
2	Thermal anlysis.& I.C Engines	1. Dr. J Hussain 2. Dr. V. Venugopal 3. SK.GouseBasha. 4. SK.Shareef. 5. P. Sushma. 6. U.Bharath Kumar. 7. M.Vijayan. 8. Dr.Raghuram Pradhan. 9. Dr.M. Selvam.	4
3	Composite Material	1. Dr.S.Vishwanath. 2. .Dr.E.R.SivaKumar 3. P. KiranBabu 4. R. Ajay Kumar. 5. A.Sai Prasad. 6. K.Purushothaman. 7. Dr.Md. JabihullaShariff.	15
4	Manufacturing (Metal Cutting)	1. Dr.AnburaJ. 2. M.SivaNayak. 3. K. Arunasanthi.	0
5	Artificial Intelligence	1. K. Venkateswarlu.	3
6	Design analysis	1. G. E. Babu. 2. Y. Srinivasa Reddy. 3. K. KoteswaraRao. 4. Krishna. 5. B.Bala Krishna. 6. N.Vijay Kumar 7. K.RamehBabu. 8. S.Polinaidu. 9. P.SaiTeja. 10. G.BakkiiyaRaju. 11. Ch.Meenakshi Devi.	13

Course Development:

Table 3: R18 Regulations Course Development.

S.No	Year /Sem	NameoftheCourse	NameoftheCoordinator	SupportingFaculty
1	I-II	Engineering Graphics	K.AarunaShanthi	M.Anusha
2		Engineering Workshop	K.Purushothaman	K.RamehBabu
3	II-I	Engineering Mechanics.	G. E. Babu	K. Venkateswarlu
4		Thermodynamics.	Dr. J. Hussan	M.Vijayan
5		Metallurgy & Material Science.	Dr. P. RamaKrishna	P. KiranBabu
6		Fluid Mechanics &HydraulicMachines.	M.Vijayan	Y.Srinivasa Reddy
7		Computer Aided Machine Drawing.	M.SivaNayak	K.RamehBabu
8		Metallurgy Lab	Dr. P. RamaKrishna	Y.Srinivasa Reddy
9		Fluid Mechanics & Hydraulic Machinery Lab	M.Vijayan	Y.Srinivasa Reddy
10	II-II	Production Technology.	D r. RaghuramPradhan	A. Sai Prasad
11		Thermal Engineering –I.	Dr. J. Hussan	M.Vijayan
12		Mechanics of Solids.	D r. RaghuramPradhan	Y.Srinivasa Reddy
13		Theory of machines.	R. Ajay Kumar	K. Venkateswarlu
14		Metal Cutting & Machine Tools.	M.Vijayan	A. Sai Prasad
15		Mechanics of Solids Lab	D r. RaghuramPradhan	Y.Srinivasa Reddy
16		Production Technology Lab	D r. RaghuramPradhan	A. Sai Prasad
17		Thermal Engineering Lab	Dr. J. Hussan	Y.Srinivasa Reddy
18	III-I	Theory of machines	DR. G Saiprasad	K. KoteswaraRao
19		Metal Cutting & Machine Tools	D r. RaghuramPradhan	K.RamehBabu
20		Design of Machine Members - I	DR. G Saiprasad	K. KoteswaraRao
21		Thermal Engineering –II	Dr. Anburaj	SK.GouseBasha
22		Maintenance Engineering	G. E. Babu	P. KiranBabu
23		Machine Tools Lab	D r. Raghuram Pradhan	K.Venkateswarlu
24		Dynamics of Machinery Lab	DR. G Saiprasad	K. Koteswara Rao
25	III-II	Instrumentation & Control Systems.	Dr.S.Vishwanath	K.Venkateswarlu
26		Heat and Mass Transfer.	Dr. J. Hussan	M.Vijayan
27		Design of Machine Members-II.	DR. G Saiprasad	K. Koteswara Rao
28		Metrology & Measurements.	Dr. P. Rama Krishna	P. KiranBabu
29		CAD /CAM.	K.AarunaShanthi	P. Kiran Babu
30		Finite Element Methods.	Dr.M. Selvam	K. Koteswara Rao
31		Production Planning and Control.	A. Sai Prasad	B.Bala Krishna
32		Metrology & ICS Lab	Dr.S.Vishwanath	K.Venkateswarlu
33		Heat Transfer Lab	Dr. J. Hussan	M.Vijayan
34		Mathematical Modelling Lab	K.Aaruna Shanthi	P. KiranBabu
35	IV-I	Renewable Sources of Energy	Dr.A.D.Dhass.	P.SaiTeja.
36		Power Plant Engineering	Dr.A.D.Dhass.	P.SaiTeja.
37	IV-II	Advanced Automobile Technology	D r. Raghuram Pradhan	Y.Srinivasa Reddy

Table 4: R21 Regulations Course Development-

SNo	Year /Sem	NameoftheCourse	NameoftheCoordinator	SupportingFaculty
1	I-I	Engineering Graphics	P. Kiran Babu	M.Anusha
2	I-II	Engineering Mechanics	G. E. Babu	K. Venkateswarlu
3		Engineering Workshop	A. Sai Prasad	K. Chiranjeevi

4	II-I	Metallurgy & Material Science	Dr. G. Kondaiah.	P. KiranBabu
5		Mechanics of Solids	G. E. Babu	K. Venkateswarlu
6		Fluid Mechanics & Hydraulic Machines	K.Venkateswarlu	P. Sushma.
7		Thermodynamics	Dr. J. Hussan	Y.Srinivasa Reddy
8		Mechanics of Solids Lab	G. E. Babu	K. Venkateswarlu
9		Fluid Mechanics & Hydraulic Machines Lab	K.Venkateswarlu	P. Sushma.
10		Computer Aided Engineering Drawing Practice	K.Aaruna Shanthi	P. KiranBabu
11		Metallurgy Lab	Dr. G. Kondaiah	Y.Srinivasa Reddy
12	II-II	Theory of Machines	DR. G Saiprasad	K. Koteswara Rao
13		Thermal Engineering –I.	Dr. V. Venugopal	SK.Shareef.
14		Manufacturing Technology.	K. Chiranjeevi	B.BalaKrishna.
15		Industrial Engineering and Management	Dr.E.R.SivaKumar	Dr.S.Vishwanath.
16		Computer Aided Machine Drawing Lab	P. KiranBabu	N. Vijay Kumar.
17		Thermal Engineering Lab	Dr. V. Venugopal	Y.Srinivasa Reddy
18		Manufacturing Technology Lab	Dr. G. Kondaiah	Dr.Md. JabihullaShariff.
19		Drafting and Modeling Lab	Dr.Md. Jabihulla Shariff	N. Vijay Kumar.

Ph. D Pursuing during the assessment period while working in the institute-

Table: 5

S.NO	NAME	YEAR OF REGISTRATION	UNIVERSITY
1	K. Venkateswarlu.	2017	Pondicherry University ,
2	R. Ajay Kumar.	2020	Pondicherry University
3	G. E. Babu.	2018	Vel Tech University, Chennai

5.6 Innovations by the Faculty in Teaching and Learning (10) Total Marks 10.00

Institute Marks : 10.00

Our college uses a combination of current technologies in addition to the more conventional chalk-and-talk teaching methods.

- **NPTEL Local Chapter:** A local NPTEL chapter was founded by the institution. Several NPTEL courses that students have registered for are mentored by faculty. This aids students in enhancing their academic performance and knowledge of contemporary mechanical industry technologies. The department where the students can access the learning materials at any time has NPTEL video lectures available.
- The topic faculty distributes the course materials to the students well in advance of the start of class.
- Faculties/Teachers distribute study materials to pupils via email, internet, and other means.
- It is encouraged for students to use numerous e-materials for self-improvement.
- In-class demonstration using working models, charts, components, etc. to facilitate learning.
- Working in small groups can help students develop a variety of interactive and collaborative abilities that are frequently challenging to master in individual study settings and impossible to master in large-group settings like lectures.
- Remedial/backlog lessons as well as particular classes for slow learners are offered to help students learning abilities.
- The Academic Calendar, Class Timetable, Course Syllabus, Course Objectives and Outcomes, Lesson Plan, Lecture Notes, Previous Question Papers, Assignment Questions, and Attainment Sheets are all included in the course materials that each Course Instructor prepares for the specific courses that they are handling.
- Usage of current teaching aids like LCD projectors, WiFi enabled laptops are usually utilised in classrooms and other student learning situations.
- The mentor inspires their particular group and makes sure every member excels in both academics and placement.
- Student seminars and workshops are held to help them become better communicators and learners.
- With the Google Classroom forum, students can ask questions at any moment.

The following summary should be used to summarise any teaching and learning innovations made by the faculty.Activities that add to teaching and learning help students learn more effectively. Innovations such as the use of ICT, instruction delivery, instructional techniques, testing, evaluation, and inclusive classroom environments may be included in these activities, which result in effective, efficient, and engaging instruction. Any donations to education should meet the requirements listed below:

• It must be open to peer review and criticism

• It must be reproducible and capable of being expanded upon by other academics.

The organisation/department may establish appropriate processes for publicising the efforts, getting feedback on them, and rewarding them. Examples of these include a specific goal statement, sufficient planning, the use of suitable techniques, the significance of the results, an engaging presentation, and critical reflection.

Continuous faculty capacity building programmes are essential to maintaining the institutions image as it keeps up with technological advancements and various innovative teaching and learning pedagogies.Having said that, the Institute has begun implementing a number of best practises to improve the standard of education provided and create an environment that is conducive to both teachers and students overall development.With all these difficulties in mind, a number of programmes were launched in the past years to inspire faculty members and advance the idea of ongoing professional development. The establishment of a policy document with a clearly defined SOP has made it possible for all staff members to align themselves with the system. The tasks listed below bring new ideas to teaching, learning, and assessment.

C C<u>oehesive Teaching Learning Practices-</u>

An innovative student-cantered teaching-learning (T- L) model called Cohesive Teaching Learning Practices (CTLP) is introduced to break up the routine of traditional lecture-based teaching in order to align classroom delivery with outcome-based education. (OBE). Academic calendars are created well in advance of the start of classes, and the members of IQAC occasionally review and ensure compliance with the aid of various committees (Academic Monitoring Committee) to make sure the systems and procedures are in place.

<u>Video Lectures-</u>

The teaching members are encouraged to create e-content in the video format as an addition to the classroom delivery.The effect of these video courses on students was seen during the COVID-19 season, when the educational system realizedthe importance of digital learning, and now the members of IQAC are volunteering as a result of it being rewarded and regularly monitored in one of the organization'sinitiatives.

<u>Integrated Course-</u>

With the idea of layered learning, integrated courses are specifically created to offer students a singular educational experience. This gives them the opportunity to put what they are learning into practise. The basic curriculum for these courses, which will be evaluated for 130 marks, is intended to combine both theory and laboratory components.

<u>Open Book Examination-</u>

Open Book Exams are a component of assessment in order to gauge a students thorough understanding of the topic. The students will be asked difficult questions for which there are no straightforward or obvious solutions in the text. The book or other authorised materials may be brought into the exam room by the pupils. The questions are written in a way that will allow students to respond in a more critical and thoughtful manner based on their knowledge of the course material. This technique of evaluation encourages higher order thinking in the students and motivates them to learn material thoroughly. The question setting is the difficult portion. The instructors received specialised instruction on how to create questions for open-book exams.

<u>ICT tools-</u>

The use of ICT tools, such as graphic tablets, projectors, active-pens, interactive projectors, etc., by faculty members are well-versed in order to facilitate simple learning and show the information in various interactive modes. Students are drawn to this visually appealing instructional strategy. The animated visuals make it simple for students to connect concepts to them, and the audio-visual senses of students are targeted to effectively absorb information.

<u>Activity based learning-</u>

Every weekend, co-curricular and extracurricular activities are held to energize the students and enhance their problem-solving skills, leadership potential, teamwork cooperation, awareness of professional ethics, and management of stressful circumstances. These include group discussions, webinars, aptitude training, social welfare camps, problem-solving exercises, entrepreneurship development programs, and many more.

<u>Tutorial sessions for Analytical and Programming subjects-</u>

Tutoring programs can assist students in acquiring the learning and study skills necessary to succeed in school and in life.Tutoring programs have a variety of benefits, including Individual and distinctive learning experiences, one-on-one attention, improved academic performance, improved attitude towards learning, encouraged self-paced and self-directed learning, improved self-esteem and confidence, encouraged independence and responsibility, assisted in overcoming learning challenges, and encouraged the freedom to ask questions.

<u>Assignments-</u>

Students are offered assignments based on current engineering problems so they can comprehend them and find solutions. To help students discover how to learn on their own and work in teams, group assignments are also given.

<u>Project-based learning-</u>

The Departments curriculum is structured so that through a variety of projects, including major and side projects as well as hobby projects, students can learn how to develop and build complex hardware solutions. The teamwork among the pupils is also frequently encouraged by project-based learning.

<u>Seminars and Technical Presentation-</u>

Students are encouraged to present at different national and international technical events on any technical subject related to their area of interest in order to share knowledge and get over stage fright. Term papers are included in the syllabus to help students with their communication skills, which are crucial to their professional development.

<u>Value Added Course-</u>

Apart from the core curriculum, these courses are conducted by department to give key knowledge to students in a specific advance in core field. It improves the employability skills and promote profession and life-oriented skills of the students.

<u>Full Semester Internship-</u>

To close the knowledge divide between academic theory and hands-on training in a real-world setting, full semester internships have been added to the curriculum. During the training, the pupils are able to comprehend organisational structure and industrial practises.

5.7 Faculty as participants in Faculty development/training activities/STTPs (15) Total Marks 15.00

Institute Marks : 15.00

Name of the faculty	Max 5 Per Faculty		
	2021-22(CAYm1)	2020-21(CAYm2)	2019-20(CAYm3)
Dr. G. Kondaiah	5.00	5.00	0.00
Dr. Md. Jabihulla Shariff	5.00	5.00	5.00
G. E. Babu	5.00	5.00	5.00
A. Sai Prasad	5.00	5.00	5.00
P. Kiran Babu	5.00	5.00	5.00
K. Venkateswarlu	5.00	5.00	5.00
Y. Srinivasa Reddy	5.00	5.00	5.00
K. Chiranjeevi	5.00	5.00	0.00
N. Vijay Kumar	0.00	0.00	0.00
P. Sushma	5.00	5.00	0.00
Ch. Meenakshi Devi	5.00	5.00	0.00
R. Ajay Kumar	5.00	5.00	5.00
K. Koteswara Rao	5.00	5.00	5.00
Sk. Shareef	5.00	5.00	0.00
Sk. Gouse Basha	5.00	5.00	0.00
Dr. Raghuram Pradhan	5.00	5.00	5.00
Dr. M. Selvam	5.00	5.00	5.00
Dr. E. R. Siva Kumar	5.00	5.00	5.00
M. Vijayan	5.00	5.00	5.00
K. Arunasanthi	5.00	5.00	5.00
U. Bharath Kumar	0.00	5.00	0.00
Krishna	0.00	5.00	0.00
K. Ramesh Babu	0.00	5.00	5.00
S. Polinaidu	0.00	5.00	5.00
M. Siva Nayak	0.00	5.00	5.00
P. Sai Teja	0.00	5.00	5.00
G. Bakkiiya Raju	5.00	5.00	0.00
Dr. J. Hussain	5.00	5.00	5.00
Dr. V. Venugopal	5.00	5.00	0.00
Dr. G. Sai Prasad	5.00	5.00	5.00
Dr. S. Vishwanath	5.00	5.00	5.00
Dr. Anburaj	5.00	5.00	0.00
Dr. A. D. Dhass	0.00	5.00	5.00
Dr. P. Rama Krishna	0.00	5.00	5.00
B. Balakrishna	5.00	5.00	0.00
Sum	130.00	170.00	110.00
RF = Number of Faculty required to comply with 20:1 Student Faculty Ratioas per 5.1	12.00	15.00	18.00
Assessment [3*(Sum / 0.5RF)]	65.00	68.00	36.67

Average assessment over 3 years: 15.00

5.8 Research and Development (75) Total Marks 55.00

5.8.1 Academic Research (20)

Institute Marks : 20.00

S. No	Name of The Faculty	2022-23			2021-22			2020-21		
		journals	Book Chapters	Patents	journals	Book Chapters	Patents	journals	Book Chapters	Patents
1	Dr.G.Kondiaha	1	0	0	3	0	0	1	0	0
2	Dr.Md. Jabihulla Shariff	0	0	0	0	0	0	3	0	1
3	G. E. Babu	1	0	0	1	0	0	0	0	0
4	A. Sai Prasad	1	0	0	1	0	0	0	0	1
5	P. Kiran Babu	1	0	0	1	0	0	1	0	1
6	K. Venkateswarlu	0	0	0	2	0	0	2	0	2
7	Y. SrinivasaReddy	0	0	0	2	0	0	0	0	1
8	K. Chiranjeevi	0	0	0	1	0	0	0	0	0
9	N. Vijay Kumar	0	0	0	0	0	0	0	0	0
10	P. Sushma	0	0	0	0	0	0	0	0	0
11	Ch.MeenakshiDevi	0	0	0	0	0	0	0	0	0
12	R. Ajay Kumar	0	0	0	0	0	0	0	0	1
13	K. Koteswara Rao	0	0	0	0	0	0	1	0	0
14	SK.Shareef	0	0	0	0	0	0	0	0	0
15	SK.GouseBasha	0	0	0	0	0	0	0	0	0
16	Dr.Raghuram Pradhan	6	2	2	0	0	0	5	0	1
17	Dr.M. Selvam	0	0	0	0	0	0	0	0	0
18	Dr.E.R.Siva Kumar	0	0	0	0	0	0	0	0	1
19	M. Vijayan	0	0	0	0	0	0	0	0	0
20	K. Arunasanthi	0	0	0	0	0	0	0	0	0
21	K.Purushothaman	0	0	0	0	0	0	0	0	1
22	U.Bharath Kumar	0	0	0	0	0	0	0	0	0
23	Krishna	0	0	0	0	0	0	0	0	0
24	K.Rameh Babu	0	0	0	0	0	0	0	0	1
25	S.Polinaidu	0	0	0	0	0	0	0	0	0
26	M.Siva Nayak	0	0	0	0	0	0	0	0	0
27	P.SaiTeja	1	0	0	0	0	0	1	0	1
28	G.Bakkiiya Raju	0	0	0	0	0	0	0	0	0
29	Dr. J HUSSAIN	0	0	0	0	0	0	0	0	0
30	Dr. V. Venugopal	0	0	0	0	0	0	0	0	0
31	DR. G SAIPRASAD	0	0	0	0	0	0	0	0	0
32	Dr.S.Vishwanath	0	0	0	0	0	0	0	0	0
33	Dr.Anburaj	0	0	0	0	0	0	0	0	0
34	Dr.A.D.Dhass	0	0	0	0	0	0	0	2	1
35	Dr. P. RamaKrishna	0	0	0	0	0	0	0	0	1
36	B.Balakrishna	1	0	0	0	0	0	0	0	0

Ph.D. Awarded during the Assessment Period while working in the Institute.					
S.NO	NAME	REG. NUMBER	YEAR OF COMPLETION	UNIVERSITY	TOPIC

1.	Dr.E.R.SivaKumar	1313239763/RG	Sep-2020	MIT, Anna University.	Experimental Investigations For Improving The Durability And Performance Characteristics Of Ci Engine Valves Using Nano Composite Coating
2.	Dr.G.Kondaiah	412112007	25/09/2021	NIT Thiruchuaapalli.	Consolidation of Mechanically Alloyed Al-5083 Powders by Equal Channel Angular Pressing
3.	Dr.Md. JabihullaShariff	161803207	26/11/20 22	Savitha School of Engineering . Chennai.	Experimental investigation and characterization of alriziajulibrissin fiber reinforced epoxy composites

5.8.2 Sponsored Research (20) Institute Marks : 0.00

2021-22 (CAYm1)

Project Title	Duration	Funding Agency	Amount(in Rupees)
NA	NA	NA	0.00
			Total Amount(X): 0.00

2020-21 (CAYm2)

Project Title	Duration	Funding Agency	Amount(in Rupees)
NA	NA	NA	0.00
			Total Amount(Y): 0.00

2019-20 (CAYm3)

Project Title	Duration	Funding Agency	Amount(in Rupees)
NA	NA	NA	0.00
			Total Amount(Z): 0.00

Cumulative Amount(X + Y + Z) = 0.00

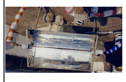
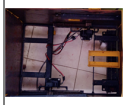
5.8.3 Development activities (15) Institute Marks : 15.00

Development activities

Product Development:Students of Mechanical have successfully developed many working models/products during their project tenure.

List of Projects done in the Mechanical Department

Table 5.8.3: Projects Done in the Department

S.No	Dept	Acadamic year	Title of the project /product	Guide name	Product
1	Mech	2022-23	Fabrication of a hand-powered trike for the handicapped using hand steering and solar system	Y.Srinivasa Reddy	
2	Mech	2021-22	Automatic vehicle detection with electromagnetic breaking system.	A. Sai Prasad	
3	Mech	2021-22	Design and manufacture of movable headlight system in automobile.	SK.SHAREEF	
4	Mech	2021-22	Fabrication of solar tricycle.	A Sai Prasad	
5	Mech	2021-22	Fabrication of voice enabled wheel chair.	Dr.G.Kondiah	
6	Mech	2021-22	Design and fabrication of seed sowing machine.	Dr.G.Kondiah,	
7	Mech	2020-21	Experimental investigation on thermal performance of parabolic trough collector with ellitical absorber using mwcnt/H2O nano fluid.	ShaikGouseBasha	
8	Mech	2020-21.	Automatic Emergency Exit With Safety Alarm.	Y.Srinivasa Reddy	

PATENT FILED & PUBLISHED:

SL NO	Title of the Invention (Provisionally filled and Published)	Application No
CAY 2022-23		
1	Inspection robot to detect leakage and blockage in pipelines	375750-001
2	Floor cleaning robot	375752-001
3	Robotic device to capture marine life sample	375753-001
4	Iot based agriculture robot for pesticides spraying	375754-001
5	A bamboo-based fiber composite material for structure and building construction method thereof.	20224167217A
6	A Control System For I.C Engine Fuel Injection Assembly and Working Method Thereof	202241066594A
7	A Flame-Retardant Natural Fiber Composite Board and Method Thereof.	202231069893A
8	A Method of Producing Silicon-Carbide Composite Matrix for Heating Ventilation and Air Conditioning (HVAC)	202341007312A
9	An Assembly for Improving the Fuel Injection Characteristics of Internal Combustion Engines	Under Processing
10	A Method of Regenerating Electricity using Reinforced Carbon Nano Composite in Bicycles	Under Processing
A.Y:2019-20		
11	Lemon grass composition- diesel blend as alternative fuel for diesel engine	201941048053 A
12	Design, development and fabrication of semi-automatic hydraulic emergency braking system	201941048055 A
13	Reinforced particulate aluminum metal matrix composite and process for making the same	201941052771

14	Natural fiber particle reinforced composites	201941052769
15	Waste heat in to electricity.	201941052773

BOOK CHAPTERS PUBLISHED

A.Y:2022-23

1. A.D.Dhass, Ganesh Babu.L, Raghuram Pradhan, G.V.K Murthy & M.Sreenivasan, Published a Book Chapter on “Energy Harvesting through Thermoelectric Generators”, Chapter-2, Materials and Technologies for a Green Environment, 2023,32-66, Bentham Science Publishers.

2.R.E.Ugandar, U.Rahamathunnisa, S Sajithra, S.Bhattacharya, H.Mickle Aancy & Raghuram Pradhan,"Biomedical Waste Management System using IOT" (Submitted -Under Review) in Sustainable Approaches and Strategies for E-Waste Management and Utilization (https://www.igi-global.com/submission/books/?projectid=e4206b5f-0f49-47b7-b0dc-220bdd63e498), IGI Global publisher,USA.

A.Y:2020-21

1. A.D.Dhass ,**Nanomaterial For Latent Thermal Energy Storage**, Springer Nature, Handbook of Nanomaterials and Nano composites for Energy and Environmental Applications, July 2021.

2.A.D.Dhass**, Low Power Renewable Power Supply Through Thermo Electric Generators**, Energy Harvesting Technologies for Powering WPAN and IoT Devices for Industry 4.0 Up-Gradation ,Nova Science Publishers, April 2020.

5.8.4 Consultancy (from Industry) (20)

Institute Marks : 20.00

2021-22 (CAYm1)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Periodic Mainte	1 year	Lakshmi Granit	135600.00
Periodic Mainte	1 Year	Sree Arundathi	145000.00
1.Furnace Des	1 Year	Indian Metal W	95000.00
			Total Amount(X): 375600.00

2020-21 (CAYm2)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Periodic Mainte	1 Year	Lakshmi granit	147500.00
Periodic Mainte	1 Year	Sree Arundathi	160000.00
1..FurnaceDes	1 Year	Indian Metal W	125000.00
			Total Amount(Y): 432500.00

2019-20 (CAYm3)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Periodic Maintenance, Gen	1 year	Lakshmi granit	116900.00
Periodic Maintenance, Gen	1 year	Sree Arundathi	95000.00
1..FurnaceDesign,Modificat	1 year	Indian Metal W	80000.00
			Total Amount(Z): 291900.00

Cumulative Amount(X + Y + Z) = 1100000.00

5.9 Faculty Performance Appraisal and Development System (FPADS) (10)

Total Marks 10.00

Institute Marks : 10.00

The institute has a thorough and well-defined mechanism for evaluating teacher performance and professional growth. The self-appraisal form is only collected once a year at the end of the academic year, after which the department head analyzes and passes it on to the principal. The management forms an expert panel to assess the effectiveness of the faculty and offer recommendations for future development.

All the criteria are given points, and each faculty is assessed according to the points they have earned. They should meet the basic standards for all relevant heads, including teaching, research and consultancy, rewards and recognitions, departmental activities, and campus administrative activities.

List of contents consider for evaluation are listed below

I. Academic and Career Profile
II. Contribution to Teaching and Learning

1. Academic Contributions
2. Use of participatory and innovative Teaching-Learning methodologies/ICT facilities used; updating of subject content, course improvement etc.
3. Content beyond syllabus covered for the Subject/Laboratory taught during the assessment period.
4. Percentage of student pass and feedback in the subjects/Laboratory taught during the assessment period.
5. UG/PG projects guided during assessment period
6. Research and academic contribution during the assessment period includes
7. Refresher courses, STTP, Orientation courses, Teaching & Learning evolution programs, soft skills development programs, FDPs attended.
8. Professional development activities organized such as FDP's, Seminars, Conferences and STTP's etc.
9. Contribution to the development of Department/Institution through participation in academic and administrative comities and responsibilities.
10. Contribution to the Academics and Examinations (Question papers setting, evolution of answer scripts, invigilation and observer duty) during the assessment period.
11. Membership on professional bodies.
12. Any other contribution during the assessment period.

5.10 Visiting/Adjunct/Emeritus Faculty etc. (10)

Total Marks 10.00

Institute Marks : 10.00

Department of Mechanical Engineering following experts from various institutes/industries have been utilized to impart a good blend of theoretical andpractical input to the students on latest technology used in Industries. This has helped students in securing placements in core companies. Details of Adjunct faculty members from various Institutions/Industries as given below table.

S.NO.	Name of the Faculty	A.Y.	Sem	Name of the Subject	Hours Per Week	Department / Specialization
1	N.Ravi Raja	2022-23	II	CATIA	36	M.Tech, I.Cad Technologies, Rajamundry
2	N.Ravi Raja	2022-23	II	ANSYS	36	M.Tech, I.Cad Technologies, Rajamundry
3	N.Ravi Raja	2021-22	I	Unigraphics	36	M.Tech, I.Cad Technologies, Rajamundry.
4	N.Ravi Raja	2021-22	I	Ansys	36	M.Tech, I.Cad Technologies, Rajamundry
5	N.Ravi Raja	2021-22	I	Creo	36	M.Tech, I.Cad Technologies, Rajamundry
6	N.Ravi Raja	2020-21	I	Hyper Works	36	M.Tech, I.Cad Technologies, Rajamundry
7	N.Ravi Raja	2020-21	I	Auto Cad	36	M.Tech, I.Cad Technologies, Rajamundry

6 FACILITIES AND TECHNICAL SUPPORT (80)

Total Marks 80.00

6.1 Adequate and well equipped laboratories, and technical manpower (40)

Total Marks 40.00

Institute Marks : 40.00

Sr. No	Name of the Laboratory	Number of students per set up(Batch Size)	Name of the Important Equipment	Weekly utilization status(all the courses for which the lab is utilized)	Technical Manpower Support		
					Name of the Technical staff	Designation	Qualification
1	ENGINEERINC	5	1.Surface plate	6	D.Subba Rao	Lab Technician	I.T.I
2	METALLURGY	5	1.Binocular mic	6	K.Lilly Dev	Lab Technician	B.TECH
3	FLUID MECHA	5	1.Impact of jet	6	K.Kishore Babu	Lab Technician	B.TECH
4	PRODUCTION	5	1.Wood workin	6	K.Kishore Babu	Lab Technician	B.TECH
5	THERMAL EN(	5	1.4 -Stroke die:	6	Sd.Akbar Salee	Lab Technician	DME
6	MACHINE TOC	5	1.Lathe machir	6	K.Lilly Dev	Lab Technician	B.TECH
7	DYNAMICS OF	5	1.Whirling of sh	6	K.Kishore Babu	Lab Technician	B.TECH
8	METROLOGY	5	.Mechanical ve	6	D.Subba Rao	Lab Technician	I.T.I
9	HEAT TRANSF	5	1.Thermal cond	6	SD. Akbar Sale	Lab Technician	DME
10	MATHEMATIC/	33	1 Numerical co	6	K.Lilly Dev	Lab Technician	B.TECH
11	SIMULATION L	60	1.Auto cad 2.(	12	K.Lilly Dev	Lab Technician	B.TECH

6.2 Laboratories maintenance and overall ambiance (10)

Total Marks 10.00

Institute Marks : 10.00

The maintenance and ambiance of all the laboratories in the Department of Mechanical Engineering are carried out in a proper way

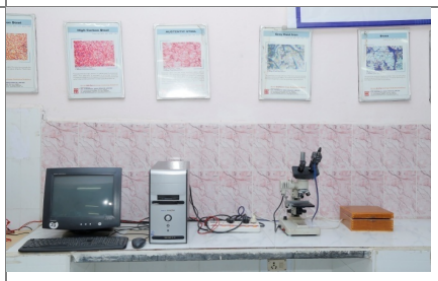
Maintenance:

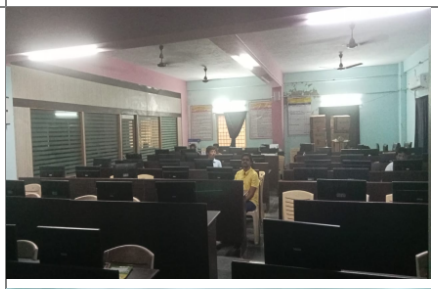
- Total laboratories are facilitated with good equipment to carry out the experiments as per curriculum and beyond curriculum.
- Before starting of every academic year the equipment will be calibrated, if servicing is required will be done by either inside lab technician or outside relevant expert.
- All the equipment is maintained in good condition to complete the all experiments as per curriculum and also for research work.
- Consultancy work also carried out in the laboratories beyond the working hours.
- Dusting and cleaning of floors, benches and equipment.
- Lab data like list of consumables, log book, experiment manuals, charts, equipment details etc., are properly maintained.
- List of equipment, cost of the equipment and experiments are displayed in all laboratories.
- A maintance register is available in all laboratories where in any complain / repair work is entered which will be attended immediately.
- Monitoring the CPUs for proper shut down every day.
- Air conditioners are used to avoid excess heat generated due to klystron power supply.
- Check-up of First aid kit and Fire extinguisher.

Ambiance:

- All the labs are installed with sufficient ventilation, lighting and safety to provide good environment to do experiments.
- The labs are equipped with sufficient space for every batch to perform all the experiments smoothly.
- Department has experienced faculty to provide practical exposure to students.
- In each lab precautions and equipment model charts are displayed to give more information to the students whenever they enter into the laboratory.
- Maintaining sufficient consumables in each laboratory.
- The laboratories are supported by well trained technical staff. And also each laboratory has a faculty member as a individual lab in-charge.
- Laboratories have well organized sitting arrangement.
- The faculty and technical staff are available beyond working hours to help the students in project work by utilizing the equipment.

- Department has enough labs which are used for all the academic year on timetable basis to meet the curriculum requirements.
- Chairs and benches are in good condition.
- Air conditioner facility is also provided in few labs.
- UPS is also available in computer labs for power backup.

S.NO	Name of the Lab	Image of the Lab
1	Engineering Workshop	
2	Metallurgy Lab	
3	FM&HM Lab	
4	Manufacturing Technology Lab	

5	Machine Tools Lab	
6	Thermal Engineering Lab	
7	Metrology & I&CS Lab	 
8	Heat Transfer Lab	
9	Simulation Lab	 

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6.3 Safety measures in laboratories (10) Total Marks 10.00

Institute Marks : 10.00

Sr. No	Laboratory Name	Safety Measures
1	ENGINEERING WORK SHOP LAB	• Sufficient space was provided in between each equipment. • Do's, Don'ts charts are displayed in the laboratory. • Sufficient space provided for maintaining consumable materials and completed parts. • Laboratories should have First Aid Box. • Laboratories should equip with Fire Extinguisher. • Aprons and shoes are mandatory to the students while entering into the lab. • Do not wear loose hanging garment. • Technical staff monitors lab at regular times. Laboratories should have First Aid Box. Laboratories should equip with Fire Extinguisher.
2	METALLURGY LAB	• Sufficient space was provided in between each equipment. • Do's, Don'ts charts are displayed in the laboratory. • Sufficient space provided for maintaining consumable materials and completed parts. • Aprons and shoes are mandatory to the students while entering into the lab. • Technical staff monitors lab at regular times. • Laboratories should have First Aid Box. • Laboratories should equip with Fire Extinguisher.
3	MANUFACTURING TECHNOLOGY LAB	• Sufficient space was provided in between each equipment. • Goggles, gloves, first aid kit and fire extinguishers are provided. • Do's, Don'ts charts are displayed in the laboratory. • Sufficient space provided for maintaining consumable materials and completed parts. • Aprons and shoes are mandatory to the student's while • Laboratories should have First Aid Box. • Laboratories should equip with Fire Extinguisher.
4	FM&HM LAB	• Sufficient space was provided in between each equipment. • Do's, Don'ts charts are displayed in the laboratory. • Sufficient space provided for maintaining consumable materials and completed parts. • Aprons and shoes are mandatory to the students while entering into the lab. • Laboratories should have First Aid Box. • Laboratories should equip with Fire Extinguisher.
5	THERMAL ENGINEERING LAB	• Sufficient space was provided in between each equipment. • Do's, Don'ts charts are displayed in the laboratory. • Sufficient space provided for maintaining consumable materials and completed parts. • Aprons and shoes are mandatory to the students while entering into the lab. • Technical staff monitors lab at regular times. • Laboratories should have First Aid Box. • Laboratories should equip with Fire Extinguisher.
6	MACHINE TOOLS LAB	• Sufficient space was provided in between each equipment. • Do's, Don'ts charts are displayed in the laboratory. • Sufficient space provided for maintaining consumable materials and completed parts. • Aprons and shoes are mandatory to the student's while entering into the lab. • Technical staff monitors lab at regular times. • Laboratories should have First Aid Box. • Laboratories should equip with Fire Extinguisher.
7	DYNAMICS OF MACHINERY LAB	• Sufficient space was provided in between each equipment. • Do's, Don'ts charts are displayed in the laboratory. • Sufficient space provided for maintaining consumable materials and completed parts. • Aprons and shoes are mandatory to the students while entering into the lab. • Technical staff monitors lab at regular times. • Laboratories should have First Aid Box. • Laboratories should equip with Fire Extinguisher.
8	METROLOGY LAB & INSTRUMENTATION LAB	• Sufficient space was provided in between each equipment. • Do's, Don'ts charts are displayed in the laboratory. • Sufficient space provided for maintaining consumable materials and completed parts. • Aprons and shoes are mandatory to the student's while entering into the lab. • Technical staff monitors lab at regular times. • Laboratories should have First Aid Box. • Laboratories should equip with Fire Extinguisher.
9	HEAT TRANSFER LAB	• Sufficient space was provided in between each equipment • Do's, Don'ts charts are displayed in the laboratory. • Sufficient space provided for maintaining consumable materials and completed parts. • Aprons and shoes are mandatory to the student's while entering into the lab. • Technical staff monitors lab at regular times. • Laboratories should have First Aid Box. • Laboratories should equip with Fire Extinguisher.
10	MATHEMETICAL MODELLING LAB	• Sufficient space was provided in between each equipment. • UPS is provided for continuous power supply. • Air-conditioners was provided. • Antivirus software is available in all computers. • Technical staff monitors lab at regular times. • Laboratories should have First Aid Box. • Laboratories should equip with Fire Extinguisher
11	SIMULATION LAB	• Separate cabins are maintained for computers and CNC - Machine. • UPS is provided for continuous power supply. • Air-conditioners was provided. • Antivirus software is available in all computers • Technical staff monitors lab at regular times. • Laboratories should have First Aid Box. • Laboratories should equip with Fire Extinguisher.

6.4 Project laboratory (20) Total Marks 20.00

Institute Marks : 20.00

The department of Mechanical Engineering has a project laboratory equipped with basic resources and software's for conduction of project works.

Table 6.4: Details of the available facilities in project laboratory

*All labs will be using for Project works, if it is necessary.

S No	Name of the Lab	Facilities utilized for Project works	Utilization
1	Engineering workshop	Open hearth furnace	B.TECH Students
		Metal cutting machine	B.TECH Students
2	Mechanics of solids	Universal testing machine	B.TECH Students
		Torsion testing machine	B.TECH Students
3	Metallurgy	Hardness testing machine	B.TECH Students
		Binocular microscope & Dual disc polishing machine	B.TECH Students
4	FM & HM	Bernoulli's apparatus	B.TECH Students
5	Production Technology	TIG & Arc welding	B.TECH Students
		Hydraulic press	B.TECH Students
6	Machine Tools	Lathe machine	B.TECH Students
		Surface grinding machine	B.TECH Students
		Radial drilling machine	B.TECH Students
7	Dynamics of machinery	Static and dynamic balancing machine	B.TECH Students
		Motorized gyroscopic	B.TECH Students
		Pin on disc machine	B.TECH Students
		Vibration test rig	B.TECH Students
8	Thermal engineering	Single cylinder diesel engine	B.TECH Students
		Exhaust gas analyzer	B.TECH Students
9	Simulation	Design &Analysis of mechanical parts	B.TECH Students

The main purpose of these Lab facilities for doing project works and the required research work in various emerging area of Mechanical Engineering. The details of the project works done in these labs and the resulting publications are listed below.

Table 6.4.1

Year	No. of projects	Title of projects
2018-19	**3**	Analysis of automotive car chair
		Design of a twill pattern jute fiber composite pressure vessel
		Resolving job shop scheduling problem through evolution of club to predator (ECP)
2019-20	**5**	Design and simulation of friction stir welding on AL6061 andAL7475
		Design and analysis of ZIGZAG classifier in food industry application
		Railway condition diagnoses with the assistance of ANFIS technique.
		Comprehensive study of wear characteristics of alumina and titanium nitride ceramics against AISI 5140 steel under dry sliding conditions for high temperature applications
		Design an artificial neural network based predictive model for automotive applications
2021-22	**4**	Design and Micro structure Analysis weld of Dissimilar materials
		Design and FMEA of complex geometrical shape in fuel mould casting
		Experimental performance of DI diesel engine fuelled by waste plastic oil blended with diesel
		Investigation of Mechanical properties of coconut fiber

Publications: (for students)

S. No	Author Name	Title of the paper	Journal name & publisher Name	VOL. no., Issue No., page No. 7 date	ISBN/ISSN No(On line & print)/DOI No
1	P.Sekhar Reddy	Analysis of automotive car chair	ELSEVIER	6 th febuary 2021	Proceedings 45 9(2021)6895-6899

2	P.Gopala Krishna	Design of a twill pattern jute fiber composite pressure vessel	ELSEVIER	Vol. 6, Issue: 3, PP: 3210-3222, 7 th june 2020	Proceedings 39 9(2020)6789-6794
3	B.Avinash	Design and simulation of friction stir welding on AL6061 andAL7475	Design Engineering	Issue 8, PP:10126-10126, July 2021	ISSN: 0011 - 9342
4	S.Venkata sai srikar	Design and analysis of ZIGZAG classifier in food industry application	Design Engineering	, Issue 7, PP:13335-13344, July 2021	ISSN: 0011 - 9342
5	K.Venkata Radha Krishna	Railway condition diagnoses with the assistance of ANFIS technique.	Design Engineeri	Issue 7, PP:10362-10376, July 2021	ISSN: 0011 - 9342
6	E. Mani,	Comprehensive study of wear characteristics of alumina and titanium nitride ceramics against AISI 5140 steel under dry sliding conditions for high temperature applications	Design Engineering	Vol 9, Issue 1, PP: 230 - 232 Nov 2019	ISSN: 2278 - 3075
7	A.Anil	Resolving job shop scheduling problem through evolution of club to predator	IJARET	Vol 11, Issue 11, PP: 392 - 400 Nov 2020	ISSN: 0976-6499

Research Paper Published by Faculty Members

Department: ME **Academic Year:2021-2022**

S.N	Name of the Author/s	Paper/Book Title	Journals/Publishers/Events
1	Kondaiah Gudimetla	Consolidation of Al-5083 alloy powders by ECAP	Int. J. Materials and Product Technology, Vol. 65, **No. 2, 2022**
2	G. Kondaiah,	Effect of temperature on structural steel (IS 2062) through equal channel angular pressing	AIP Conference Proceedings, https://doi.org/10.1063/5.0108366 Published Online: 29 November 2022
3	K. Gudimetla	Mechanical properties and microstructural characterization of Al-5083 mechanically alloyed powders consolidated through ECAP Process.	AIP Conference Proceedings 2446, 040021 (2022); https://doi.org/10.1063/5.0108257 Published Online: 29 November 2022
4	Raghuram Pradhan	Experimental investigation and optimization of flank wear during machining process using response surface methodology.	Materials Today: Proceedings · Apri**l 2022,**DOI:10.1016/j.matpr.2022.03.463
5	Raghuram Pradhan	Study on the influence of stacking pattern on mechanical behaviour of banana/snake grass fibers hybrid epoxy composite.	AIP Conference Proceedings 2446, 040021(2022);,https://doi.org/10.1063/5.0108257
6	V.Sivaprasad Raghuram Pradhan, and K. Srinivas Rao	Design & Analysis of Composite Propeller Blade for Aircraft.	IJIRCST, ISSN: 2347-5552, Volume-10, Issue-6, November 2022 https://doi.org/10.55524/ijircst.2022.10.6.13, Article ID IRPV1071, Pages 67-72
7	Sai Prasad, S. Kondal Rao, and M. Anusha	Design and Topology Optimization on Car Wheel Rim Using FEA.	IJIRCST,ISSN: 2347-5552, Volume-10, Issue-6, November 2022,https://doi.org/10.55524/ijircst.2022.10.6.12,Article ID IRPV1070, Pages 62-66
8	G. Kondaiah, G. E. Babu, and K. Venkateswarlu	Fluid Flow Analysis of Concentric Heat Exchanger with Different Nano Fluids and Mass Flow Rates.	IJIREM,ISSN: 2350-0557, Volume-9, Issue-5, October 2022 https://doi.org/10.55524/ijirem.2022.9.5.28Article ID IJIRD-1213, Pages 201-209
9	B. Balakrishna	Elevated Water Tank Design Comparison in Different Seismic Zones.	IJIRCST,ISSN: 2347-5552, Volume-10, Issue-1, January 2022,https://doi.org/10.55524/ijircst.2022.10.1.24

10	Yarram Srinivasa Reddy, G. Kondaiah, K. Venkateswarlu, andA. Prudhvi Krishna	Crash Analysis of Bumper Assembly with Solver to Improvise theDesign for Impact Tests.	International Journal of Innovative Research in Engineering & Management (IJIREM) ISSN: 2350-0557, Volume-9, Issue-3, June 2022 https://doi.org/10.55524/ijirem.2022.9.3.27
11	K. Sreenivasa Rao, G.E. Babu, P. Ravi kumar, M. Anusha, A. Saiprasad, and P. Kiran babu	Validation and Profile Modification of a Spur Gear to Improve theGear Tooth Strengths.	IJIRCST,ISSN: 2347-5552, Volume-10, Issue-4, July 2022 https://doi.org/10.55524/ijircst.2022.10.4.2
12	P. Kiranbabu, V.Sivaprasad, Raghuram Pradhan, L. Ramprasad Reddy, S. Kondala Rao, and Y.Srinivasa Reddy	Performance Analysis of The Hairpin Heat Exchanger Using Different Nano Fluids.	IJIRCST,ISSN: 2347-5552, Volume-10, Issue-3, May 2022, Article ID IRPP1210, Pages 386-392 https://doi.org/10.55524/ijircst.2022.10.3.61
13	K. Chiranjeevi	An Experimental Investigation for Comparison of Porous Concrete and Conventional Concrete in Strength.	IJIRCST,ISSN: 2347-5552, Volume-10, Issue-2, March 2022 https://doi.org/10.55524/ijircst.2022.10.2.114 ,Article ID IRPV1053, Pages 606-610

7 CONTINUOUS IMPROVEMENT (75)

Total Marks 75.00

7.1 Actions taken based on the results of evaluation of each of the COs, POs & PSOs (30)

Total Marks 30.00

Institute Marks : 30.00

POs Attainment Levels and Actions for Improvement- (2021-22)

POs	Target Level	Attainment Level	Observations
PO 1 : Engineering Knowledge			
PO 1	2.1	2.1	Target Achieved.
Actions: 1. Target achieved. Hence the attainment for the current academic year is fixed as Target for the next academic year.			
PO 2 : Problem Analysis			
PO 2	2.1	2.03	Target level has not been achieved. However following observations were made: 1. Exposure of the students to real world problems is less hence students are not able to visualize and relate to academic subjects. 2. Exposure of the students to real world problems is less hence students are not able to visualize and relate to academic subjects.
Actions: 1. Additional classes are being conducted to introduce fundamental concepts on Mechanical Engineering. 2. More problems of assignment and the monitoring the same on a regular basis. 3. Students are encouraged to raise questions which are solved in the classes.			
PO 3 : Design/development of Solutions			
PO 3	2.1	1.97	Target level has not been achieved. However following observations were made: 1. Students find it difficult to solve the engineering problems. 2. Basic knowledge of design is not well understood. 3. Subject involves both analysis and design.
Actions: 1. More design classes to be taught in tutorial classes. 2. More emphasis on mathematical basic to be given in the previous course. 3. Practical approach of teaching to be adapted. 4. More problems will be given for practice.			
PO 4 : Conduct Investigations of Complex Problems			
PO 4	2.1	1.9	Target level has not been achieved. However following observations were made: 1. Most of the project works are research based where students have to design experiments analyses and synthesis the data, produce results and derive specific conclusions. 2. Sometimes the studies do not end with valid conclusions. Courses required being included and syllabi updated to include and inculcate the analysis and research skills. 3. Lack of knowledge on materials and hands on practical experience/ process.
Actions: 1. Practical approach of teaching to be adapted. 2. More problems will be given for practice. 3. Conduction of Science Fest and motivating students to prepare/built prototype models.			
PO 5 : Modern Tool Usage			
PO 5	2.1	2.08	Target level has not been achieved. It is observed that 1. Use of CAD tools by some students for doing project works as a part of their degree program. 2. Students were needed to be counseled to use the Design/Analysis tools for better opportunity for placements and/or higher studies.
Actions 1. Students are taught with modern modes and methods of teaching like using LCD Projectors and with interactive and digital boards and learning in smart class rooms equipped with real time lecture webcast/broadcast facilities. 2. Modern labs are developed to learn/ demonstrate the use of Modern software tools like MATLAB, ANSYS, AutoCAD, SOLID WORKS etc. to specify fulfillment of requirement in engineering applications in new industrial era.			
PO 6 : The Engineer and Society			
PO 6	1.8	1.8	Target Achieved.
Actions: 1. Target achieved. Hence the attainment for the current academic year is fixed as Target for the next academic year.			
PO 7 : Environment and Sustainability			
PO 7	1.8	1.82	Target Achieved.
Actions: 1. Target achieved. Hence the attainment for the current academic year is fixed as Target for the next academic year.			
PO 8 : Ethics			
PO 8	1.8	1.86	Target Achieved.
Actions: 1. Target achieved. Hence the attainment for the current academic year is fixed as Target for the next academic year.			
PO 9 : Individual and Team Work			
PO 9	1.8	1.51	Target level has not been achieved. however following observations were made: 1. The students seem ready for working both as individuals and in a team work. This aspect is constantly encouraged in every aspect.
Actions: 1. The final year project work is conducted by first making student groups in which students with different abilities are included (decided on the basis of CGPA). These groups are allotted to faculty members as per the area-preference given by the students. This helps students to learn to work with team members of different capabilities and background. 2. The laboratory work of the students is conducted by framing student groups so that students learn to work in a team environment.			
PO 10 : Communication			
PO 10	1.8	1.51	Presentation and communication skills need to be improved among the students.
Actions 1. Soft skill training is imparted to students to enhance various aspects of communication or technical talks by group discussion, presentation and new learning outcomes. 2. Students that are seen to be weak in communication skills are encouraged to undergo relevant courses and are also referred to language lab for improving their communication skills.			
PO 11 : Project Management and Finance			
PO 11	1.8	1.62	Target level has not been achieved. however following observations were made: 1. Some courses of curriculum give the knowledge of management principles to the students work including financial implications and to manage the project in multidisciplinary environment.
Actions 1. The students study the principles of management. 2. The process planning and cost estimation is also studied for implementing these projects.			
PO 12 : Life-long Learning			
PO 12	1.8	1.82	Target Achieved.
Actions: 1. Target achieved. Hence the attainment for the current academic year is fixed as Target for the next academic year.			

PSOs Attainment Levels and Actions for Improvement- (2021-22)

PSOs	Target Level	Attainment Level	Observations
PSO 1 : Promotes the technical knowledge, skills and attitude for the requirement of industry and Society towards Mechanical Engineering.			
PSO 1	2.1	2.1	Target Achieved.
Actions: 1. Target achieved. Hence the attainment for the current academic year is fixed as Target for the next academic year.			
PSO 2 : Facilitates to plan, design, develops and tests an energy efficient manufacturing system for required engineering application.			
PSO 2	2.1	1.73	Target level has not been achieved. 1. Students will have specialization in the selected area of mechanical Engineering.
Actions 1. Students are motivated to take up the real-life problems during their project work so that they can design, analyze and find solution which gives exposure to latest technologies.			
PSO 3 : Nurtures the students towards advanced design and analysis tools for mechanical system.			
PSO 3	2.1	1.67	Target level has not been achieved. 1. Students should know the emerging field of Mechanical Engineering.
Actions 1. Concepts of Rapid prototyping and new developments are imparted to students.			

7.2 Academic Audit and actions taken thereof during the period of Assessment (15) Total Marks 15.00

Institute Marks : 15.00

The purpose of the academic audit is to evaluate the performance of the various departments, and appreciated their achievements and give suggestions for further improvement in the quality of teaching, research, administration, curricular, and extra-curricular activities. It is to assess the academic performance of the both individual faculty and the whole department.

Academic audit has two types namely internal and external.

Internal Academic Audit:

Internal audit is an in-house operation for self-introspection. It evaluates at the end of the each semester. Academic audit team is assigned by the principal on the recommendations of convener of the academic audit committee.

Following documents are verified at the time of audit.

- Syllabus Coverage
- Question Bank of all courses
- Counselling files
- Attendance Registers
- Course files of both Theory & Lab
- Class teacher file
- Department files

The audit team verifies all the documents and submits the report to audit committee. The academic audit committee convener prepares the consolidated report along with recommendations and submits to the principal. The principal implement all the recommendations through Internal Quality Assurance Cell (IQAC).

External Academic Audit:

External audit has more reliability. It evaluates after the completion of the each academic year. Institute invites two professors from the prominent institutes.

Following documents are verified at the time of audit.

- Curricular Aspects
- Teaching-Learning and Evaluation
- Research and Innovation
- Student Progression
- Curricular, and extra-curricular activities

The audit team verifies all the documents and prepares and submits the non-compliance report along with the suggestions to principal. The principal implement all the feasible suggestions through IQAC.

7.3 Improvement in Placement, Higher Studies and Entrepreneurship (10) Total Marks 10.00

Institute Marks : 10.00

Assessment in based on improvement in:

Placement: number, quality placement, core industry, pay packages, etc.

ITEM	2021-22	2020-21	2019-20
Total No. of final year students (N)	122	131	131
No. of students placed in companies (X)	76	45	24
Placement Percentage index: ((X/N)*100)	0.62	0.34	0.18
Average placement = (P1+P2+P3)/3	0.38		

Higher studies: performance in GATE, GRE, GMAT, CAT, etc. and admissions in premier institutions.

ITEM	2021-22	2020-21	2019-20
Total No. of final year students (N)	122	131	131
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent state or national level tests, GRE, GMAT, etc.) (Y)	2	2	1
Higher studies Percentage index: ((Y/N)*100)	0.01	0.01	0.007
Average Higher studies = (P1+P2+P3)/3	0.009		

Entrepreneurs:

ITEM	2021-22	2020-21	2019-20
Total No. of final year students (N)	122	131	131
No. of students turned entrepreneur in Engineering/ Technology (Z)	-	-	-
Entrepreneurs index: ((Z/N)*100)	0	0	0
Average Entrepreneurs = (P1+P2+P3)/3	0		

7.4 Improvement in the quality of students admitted to the program (20) Total Marks 20.00

Institute Marks : 20.00

Item		2022-23	2021-22	2020-21
National Level Entrance Examination	No of students admitted	0	0	0
	Opening Score/Rank	0	0	0
	Closing Score/Rank	0	0	0
State/ University/ Level Entrance Examination/ Others	No of students admitted	39	57	52
APEAPCET	Opening Score/Rank	69049	53013	89059
	Closing Score/Rank	69049	88099	103168
Name of the Entrance Examination for Lateral Entry or lateral entry details	No of students admitted	15	14	15
	Opening Score/Rank	2457	1327	1294
APECET	Closing Score/Rank	2457	1327	8299
Average CBSE/Any other board result of admitted students(Physics, Chemistry&Maths)		55.64	60.88	56.54

8 FIRST YEAR ACADEMICS (50) Total Marks 44.13

8.1 First Year Student-Faculty Ratio (FYSFR) (5) Total Marks 5.00

Institute Marks : 5.00

Please provide First year faculty information considering load

Name of the faculty member	PAN No.	Qualification	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining	Teaching load (%)			Currently Associated (Yes / No)	Nature Of Association (Regular / Contract)	Date Of leaving(In case Currently Associated is 'No')
							CAY	CAYm1	CAYm2			
V.PRABHAKAF	AJHPV0671N	MA	30/11/2010	English	Assistant Professor	28/09/2020	100	100	100	Yes	Regular	
T.JHANSI LAK	CMIPD6983M	MA	30/12/2008	English	Assistant Professor	01/06/2019	100	100	100	Yes	Regular	
M.PUSHPAVAT	CWXPM3431L	MA	30/05/2011	English	Assistant Professor	01/06/2019	100	100	100	Yes	Regular	
A.SUHASINI	BHAPA4544D	MA	31/05/2013	English	Assistant Professor	27/01/2020	100	100	100	Yes	Regular	
M.SANDHYA R	BCXPM6029F	MA	30/04/2005	English	Assistant Professor	28/09/2020	100	100	100	Yes	Regular	
V.MADHAVA R	BIGPM8430B	MA	30/01/2016	English	Assistant Professor	17/09/2022	100	0	0	Yes	Regular	
M.RAVEENDR	AYYPR2687L	M.Sc	30/10/2007	Mathematics	Assistant Professor	08/08/2011	100	100	100	Yes	Regular	
G.PAVANI	AYVPG7080R	M.Sc	30/04/2008	Mathematics	Assistant Professor	25/11/2021	100	100	0	Yes	Regular	
M.KALYANI	CTTPK5698G	M.Sc	28/02/2021	Mathematics	Assistant Professor	12/07/2021	100	100	0	Yes	Regular	
J.SEETHA	JODPS8648N	M.Sc	30/04/2018	Mathematics	Assistant Professor	01/09/2022	100	0	0	Yes	Regular	
Dr.V.HIMAMAH	AXQPV3208G	M.Sc. and PhD	30/05/2018	Physics	Associate Professor	17/10/2019	100	100	100	Yes	Regular	
N.NARASIMHA	ATGPN3113Q	M.Phil	05/02/2012	Physics	Assistant Professor	01/06/2018	100	100	100	Yes	Regular	
K.SRIRANJAN	DSHPK9325L	M.Sc	30/04/2007	Physics	Assistant Professor	17/10/2019	100	100	100	Yes	Regular	
Dr.M MALLI KA	CGWPM7867E	M.Sc. and PhD	29/07/2017	Environmental Sciences	Associate Professor	20/11/2017	100	100	100	Yes	Regular	
Dr.P.GIDYONU	CVTPP7014B	M.Sc. and PhD	16/03/2021	Chemistry	Assistant Professor	01/09/2021	100	100	0	Yes	Regular	
Dr.CH.VINUTH	AVZPV4660K	M.Sc. and PhD	29/01/2018	Chemistry	Associate Professor	05/04/2019	100	100	100	Yes	Regular	
CH.DV .SAI KU	BFJPC8845N	M.Sc	30/11/2015	Chemistry	Assistant Professor	19/09/2019	100	100	100	Yes	Regular	
B.KOTESH BA	BFOPB5835E	M.Sc	30/04/2003	Chemistry	Assistant Professor	18/12/2017	100	100	100	Yes	Regular	
B.ESWARI	BLSPB9968C	M.Sc	30/04/2011	Chemistry	Assistant Professor	28/09/2019	100	100	100	Yes	Regular	
S.LAKSHMI	CBCPG9870R	M.Sc	30/04/2004	Chemistry	Assistant Professor	01/11/2012	100	100	100	Yes	Regular	
M.HIMABINDU	CVOPM1277Q	M.Sc	30/04/2011	Chemistry	Assistant Professor	20/10/2021	100	100	0	Yes	Regular	
Mr.P. Sreehari	BBWPP1598J	M.E/M.Tech	06/01/2012	CSE	Assistant Professor	03/05/2014	100	100	100	Yes	Regular	
M M. Dedeepy	CYCPK7632N	M.E/M.Tech	05/01/2018	CSE	Assistant Professor	15/06/2018	100	100	100	Yes	Regular	
K.Anusha	BAPPK2246C	M.E/M.Tech	02/01/2016	CSE	Assistant Professor	01/09/2021	100	100	0	Yes	Regular	
I.Meghana	AEAPI9420C	M.E/M.Tech	12/01/2020	CSE	Assistant Professor	18/10/2021	100	100	0	Yes	Regular	
S.Visweswara	EQIPS6158B	M.E/M.Tech	12/01/2017	CSE	Assistant Professor	06/01/2020	100	100	100	Yes	Regular	
J.Krishna Kish	JXZPK7024M	M.E/M.Tech	12/01/2012	CSE	Assistant Professor	17/06/2020	100	100	100	Yes	Regular	
Y. Sivaiah	AUTPY4534C	M.E/M.Tech	11/01/2021	CSE	Assistant Professor	12/06/2021	100	100	0	Yes	Regular	
D. Venkata Sri	CIUPD0964L	M.E/M.Tech	11/01/2021	CSE	Assistant Professor	12/06/2021	100	100	0	Yes	Regular	
P V Madhusud	BHSPP5372G	M.E/M.Tech	11/01/2012	CSE	Assistant Professor	07/10/2017	100	100	100	Yes	Regular	
M.Saramma	NRIPS7663R	M.E/M.Tech	15/03/2020	EEE	Assistant Professor	01/08/2020	100	100	100	Yes	Regular	
M.Rajasekhar	DBOPM0341G	M.E/M.Tech	20/03/2019	EEE	Assistant Professor	03/03/2020	100	100	100	Yes	Regular	

D.Balaram Rec	BJJPD4900M	M.E/M.Tech	20/03/2015	EEE	Assistant Professor	03/03/2020	100	100	100	Yes	Regular	
S.Sreenu	GBKPS6548L	M.E/M.Tech	10/11/2013	EEE	Assistant Professor	20/08/2020	100	100	100	Yes	Regular	
P.Pedababu	BGBPG9945A	M.E/M.Tech	07/07/2018	EEE	Assistant Professor	20/08/2020	100	100	100	Yes	Regular	
D. Syam Kuma	BSQPD4184H	M.E/M.Tech	30/01/2017	MECH	Assistant Professor	28/09/2020	100	100	100	Yes	Regular	
T.ANUSHA	AJMPT8181A	M.E/M.Tech	23/11/2013	ECE	Assistant Professor	21/10/2021	100	100	0	Yes	Regular	
CH.MANASA	BCOPC1422P	M.E/M.Tech	10/08/2017	ECE	Assistant Professor	01/10/2021	100	100	0	Yes	Regular	
P.KIRAN BABU	AVHPP8016F	M.E/M.Tech	28/12/2013	ECE	Assistant Professor	28/09/2020	100	100	100	Yes	Regular	
Dr.L KRISHNA	ADJPL5146L	M.Sc. and PhD	30/05/2015	Mathematics	Professor	08/01/2018	0	100	100	No	Regular	30/09/2022
K.GURAVA RE	BCSPK6664D	M.Sc	30/04/2008	Chemistry	Assistant Professor	05/01/2016	0	100	100	No	Regular	30/09/2022
M.RAMA KOTA	CNBPM8008E	M.Sc	30/04/2010	Chemistry	Assistant Professor	28/09/2020	0	100	100	No	Regular	30/09/2022
D KAVITHA	FJRPD1413F	M.E/M.Tech	10/08/2018	CIVIL	Assistant Professor	22/11/2019	100	100	0	Yes	Regular	
A.MURALI KRI	AICPA9358B	MA	30/05/1997	English	Assistant Professor	28/09/2020	50	50	50	No	Regular	31/12/2022
Ms.AJP. SUVA	BGOPA3773P	MA	31/03/2006	English	Assistant Professor	03/08/2020	100	50	50	Yes	Regular	
Dr.S.RAMA MO	EQBPS2574G	M.Sc. and PhD	21/12/2019	Mathematics	Associate Professor	03/09/2022	100	0	0	Yes	Regular	
T RAVINDRAN	AKCPT3054H	M.Sc	28/02/2015	Physics	Assistant Professor	01/06/2019	100	100	100	Yes	Regular	
Dr.M RAVI KUI	BWYPM5407N	M.Sc. and PhD	03/08/2015	Chemistry	Professor	28/09/2020	0	0	100	No	Regular	31/08/2021
S.V.S.PHANEE	CMYPS2805K	M.Sc	30/04/1998	Mathematics	Assistant Professor	28/09/2020	100	100	100	Yes	Regular	
B.MALLIKARJI	ANQPB4659M	M.Sc	30/04/1998	Mathematics	Assistant Professor	01/06/2019	100	100	100	Yes	Regular	
M.Kranthi	ATUPM7900N	M.Sc	12/02/2013	Mathematics	Assistant Professor	05/01/2018	0	0	50	No	Regular	30/04/2021
Dr.B.PURNA C	BJYPP1806P	M.Sc. and PhD	31/07/2012	Physics	Assistant Professor	04/12/2017	0	0	50	No	Regular	31/05/2021
Dr.C.PAVAN KI	CSVPP4823M	M.Sc. and PhD	10/08/2016	Mathematics	Associate Professor	28/09/2019	0	0	100	No	Regular	05/07/2021
E.SIVA SAI	ADJPE1928R	M.Sc	02/09/2020	Mathematics	Assistant Professor	28/09/2020	0	0	100	No	Regular	31/07/2021
Dr.M.GANAPA	ASQPG8287K	M.Sc. and PhD	30/06/2018	Mathematics	Associate Professor	07/01/2019	0	0	100	No	Regular	22/07/2021
Dr.ENDLURI V	AAPPE4392N	ME/M. Tech and PhD	30/12/2020	CSE	Associate Professor	05/06/2017	100	100	100	Yes	Regular	
U.MANJULA	DGEPM5547K	M.E/M.Tech	13/05/2017	ECE	Assistant Professor	22/03/2021	100	100	0	Yes	Regular	
T.V SIVA NAG	BCVPT7431A	M.Sc	30/04/2011	Mathematics	Assistant Professor	16/10/2020	100	100	100	Yes	Regular	
CH.RATNA RA	AMKPC0569J	MA	31/03/1994	English	Assistant Professor	26/10/2020	100	50	50	Yes	Regular	
CH.KOTI REDI	AITPC0590Q	M.Sc	28/04/2006	Mathematics	Assistant Professor	17/10/2013	50	50	50	Yes	Regular	
K.SUBBA RAO	CKMPK5853K	M.Sc	30/11/2010	Mathematics	Assistant Professor	06/03/2014	50	50	50	Yes	Regular	
A.NAGAMALLI	ASLPA8302Q	M.Sc	28/08/2007	Mathematics	Assistant Professor	01/06/2019	100	50	100	Yes	Regular	
E.NARASAMM	AAZPE0839J	M.Sc	30/04/2007	Mathematics	Assistant Professor	01/06/2018	50	50	50	Yes	Regular	
CH.V.SUBRAM	BDXPC8524L	M.Sc	31/03/2008	Mathematics	Assistant Professor	25/11/2021	50	50	0	No	Regular	31/01/2023
A.SIVA RAM P	AWOPA7459D	M.Sc	13/04/2013	Mathematics	Assistant Professor	02/09/2013	100	50	100	Yes	Regular	
V BALA GURA	GAGPR6914E	M.Sc	30/04/2018	Mathematics	Assistant Professor	28/09/2020	50	50	50	Yes	Regular	
B.MAHALAKA	BGCPB0519G	M.Sc	30/04/2016	Mathematics	Assistant Professor	28/09/2020	100	50	100	Yes	Regular	
R.KAVYA	HSNPK2265R	M.Sc	30/06/2022	Mathematics	Assistant Professor	03/09/2022	100	0	0	Yes	Regular	

G.RAMESH BA	AUJPG7243E	M.Sc	30/04/2005	Physics	Assistant Professor	03/03/2012	100	100	100	Yes	Regular	
Dr.P.BRAHMAI	AYBPB6195Q	M.Sc. and PhD	01/08/2019	Zoology	Associate Professor	28/09/2020	100	100	100	Yes	Regular	
G.HARIPRIYA	BPMPG9604Q	M.Sc	30/04/2004	Chemistry	Assistant Professor	18/11/2022	100	0	0	Yes	Regular	
SD.NOUSHEE	HVLPS8403J	M.Sc	30/06/2020	Chemistry	Assistant Professor	10/11/2020	100	100	100	Yes	Regular	
O SRI ROOPA	ACIPO2890G	M.Sc	30/04/2008	Chemistry	Assistant Professor	08/10/2022	100	0	0	Yes	Regular	
Mr.M.Venkata I	GKOPP8634K	M.E/M.Tech	01/04/2019	CSE	Assistant Professor	04/09/2019	100	100	100	Yes	Regular	
M. Anusha	CWAPM3041D	M.E/M.Tech	19/12/2016	MECHANICAL ENGINERRING	Assistant Professor	28/12/2016	100	100	100	Yes	Regular	
T VENKATA PF	AUNPT0627K	M.E/M.Tech	04/10/2022	CIVIL ENGINEERING	Assistant Professor	14/10/2022	100	0	0	Yes	Regular	
N VEERANJAI	ALSPN1594P	MA	30/04/2010	English	Assistant Professor	01/05/2018	0	50	100	No	Regular	22/04/2022
Dr.P.RAMESH	ANSPP0160B	M.A and Ph.D	31/07/1996	English	Professor	28/09/2020	0	100	100	No	Regular	02/07/2022
K.MADHU BAE	DTKPK6602J	MA	30/04/2013	English	Assistant Professor	28/09/2020	0	0	100	No	Regular	30/08/2021
SK.NAZER HU	KQKPS8352D	MA	31/12/2009	English	Assistant Professor	02/09/2019	0	0	100	No	Regular	30/08/2021
K.BALA CHAN	APAPB4859D	M.Sc	28/04/2006	Mathematics	Assistant Professor	19/09/2013	0	100	100	No	Regular	16/08/2022
B.VEERASHAI	BBWPB1382E	M.Sc	30/04/2007	Mathematics	Assistant Professor	03/08/2019	0	0	100	No	Regular	30/08/2021
L.SRINIVAS	ALFPL1306E	M.Sc	30/04/2007	Mathematics	Assistant Professor	03/08/2019	0	0	100	No	Regular	30/08/2021
B.Thirumalarac	CLZPB5877N	M.E/M.Tech	01/08/2018	CSE	Assistant Professor	01/09/2018	0	50	100	No	Regular	06/06/2022
Y VEDASREE	AJUPY2895E	MA	30/04/2008	English	Assistant Professor	28/09/2020	100	100	100	Yes	Regular	
M.JANARDHA	AHSPJ8480G	M.Sc	05/04/2005	Physics	Assistant Professor	15/05/2017	100	100	100	Yes	Regular	
T.NAGENDRA	EVKPR4332D	M.Sc	06/12/2006	Chemistry	Assistant Professor	20/04/2020	100	100	100	Yes	Regular	
Dr.K. Rajasekh	DGNPK0635M	ME/M. Tech and PhD	22/03/2022	MECHANICAL ENGINERRING	Assistant Professor	20/09/2020	100	100	100	Yes	Regular	
K. Suresh Babı	DCAPK6527B	M.E/M.Tech	08/07/2021	MECHANICAL ENGINERRING	Assistant Professor	08/09/2020	100	100	100	Yes	Regular	
T.RAMAIAH	AJAPT9596P	M.E/M.Tech	15/03/2015	ECE	Assistant Professor	23/11/2015	100	100	100	Yes	Regular	
Dr.K.LAKSHMI	BTVPK0162L	M.Sc. and PhD	31/01/2017	Mathematics	Associate Professor	31/01/2017	100	100	100	Yes	Regular	
G.Subbarao	AJWPG3711B	M.E/M.Tech	17/05/2014	CSE	Assistant Professor	13/08/2018	100	100	100	Yes	Regular	
Dr.B.HARI BAE	ATZCB0248F	M.Sc. and PhD	13/06/2022	Mathematics	Assistant Professor	20/07/2009	100	100	100	Yes	Regular	
Dr.SD.RAFI	DWXPS1602A	M.Sc. and PhD	09/06/2022	Chemistry	Assistant Professor	22/12/2021	100	100	0	Yes	Regular	
Dr.UDAYABHA	BZHPP6688J	ME/M. Tech and PhD	14/10/2020	ECE	Assistant Professor	02/09/2019	100	100	0	Yes	Regular	
V.VENKATA RA	AYVPV7786P	M.Sc	30/04/2007	Chemistry	Assistant Professor	28/10/2020	0	0	100	No	Regular	31/05/2022
K.SRINIVASUL	BKIPK5360A	M.Sc	30/04/1997	Mathematics	Assistant Professor	10/01/2013	0	50	50	Yes	Regular	
A.RAJU	BFXPA9896P	M.Sc	30/04/2016	Physics	Assistant Professor	02/09/2019	100	100	100	Yes	Regular	
K.CHINA DEVI	DMIPK7448M	MA	30/04/2011	English	Assistant Professor	02/09/2019	100	100	100	Yes	Regular	
T.Silpa	BKEPT2774F	MA	31/12/2018	English	Assistant Professor	02/09/2019	100	60	100	Yes	Regular	
B.Ayyappa jyot	BLUPB4226M	MA	31/12/2018	English	Assistant Professor	02/09/2019	100	100	100	Yes	Regular	

Year	Number Of Students(approved intake strength) N	Number of Faculty members(considering fractional load) F	FYSFR (N/F)	*Assessment=(5*20)/FYSFR(Limited to Max.5)
2020-21(CAYm2)	1020	74	14	5
2021-22(CAYm1)	1020	76	13	5
2022-23(CAY)	1140	79	14	5
Average	1060	76	13	5

AverageFYSFR: 0.00

Assessment [(5 * 15) / AverageFYSFR]: 5.00

8.2 Qualification of Faculty Teaching First Year Common Courses (5) Total Marks 3.33

Institute Marks : 3.33

Year	x (Number Of Regular Faculty with Ph.D)	y (Number Of Regular Faculty with Post graduate Qualification)	RF (Number Of Faculty Members required as per SFR of 20:1)	Assessment Of Faculty Qualification [(5x + 3y) / RF]
2020-21	6	47	54	3.00
2021-22	8	56	54	3.00
2022-23	9	61	57	4.00

Average Assessment: 3.33

8.3 First Year Academic Performance (10) Total Marks 5.80

Institute Marks : 5.80

Academic Performance	CAYm1(2021-22)	CAYm2(2020-21)	CAYm3 (2019-20)
Mean of CGPA or mean percentage of all successful students(X)	5.27	5.80	5.98
Total Number of successful students(Y)	57.00	52.00	109.00
Total Number of students appeared in the examination(Z)	55.00	52.00	106.00
API [X*(Y/Z)]	5.46	5.80	6.15

Average API[(AP1+AP2+AP3)/3] : 5.80

Assessment = Average API : 5.80

8.4 Attainment of Course Outcomes of first year courses (10) Total Marks 10.00

8.4.1 Describe the assessment processes used to gather the data upon which the evaluation of Course Outcomes of first year is done (5) Institute Marks : 5.00

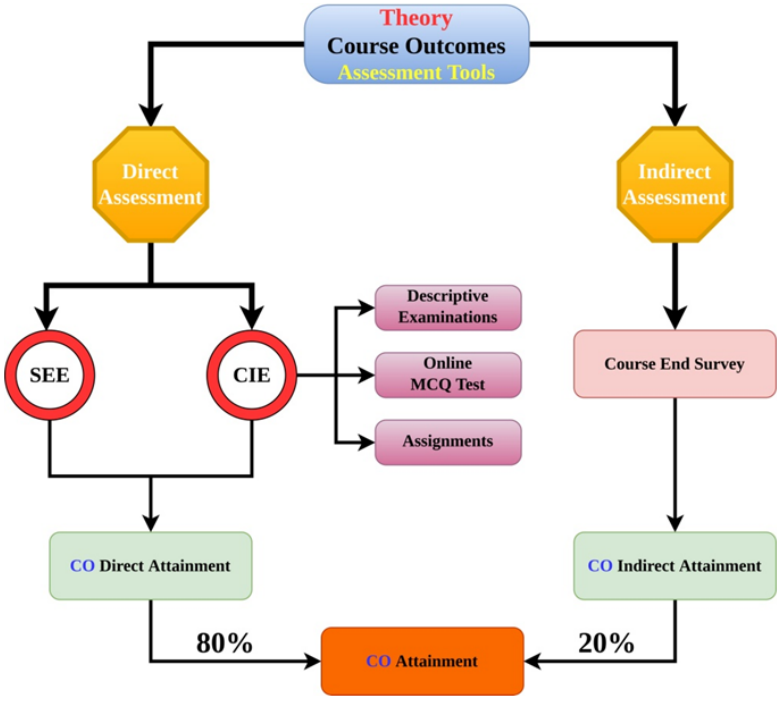
For the Evaluation of attainments CO's both direct and indirect assessment methods are used. The 80% weightage is considered for direct assessment which includes internal assessments (like Mid-examinations, Assignments, Day to Day Evaluations, etc) and Semester end examinations. The remaining 20% weightage is based on course-end survey.

Internally developed excel spreadsheets are used for direct assessment. Feedback forms based on CO's were framed for each class and the feedback was taken from students for indirect assessment.

CO attainment process

The first year curriculum comprises of various types of courses like Theory Courses, Laboratory Courses, and Mandatory courses.

Theory Attainment Process



Theory:

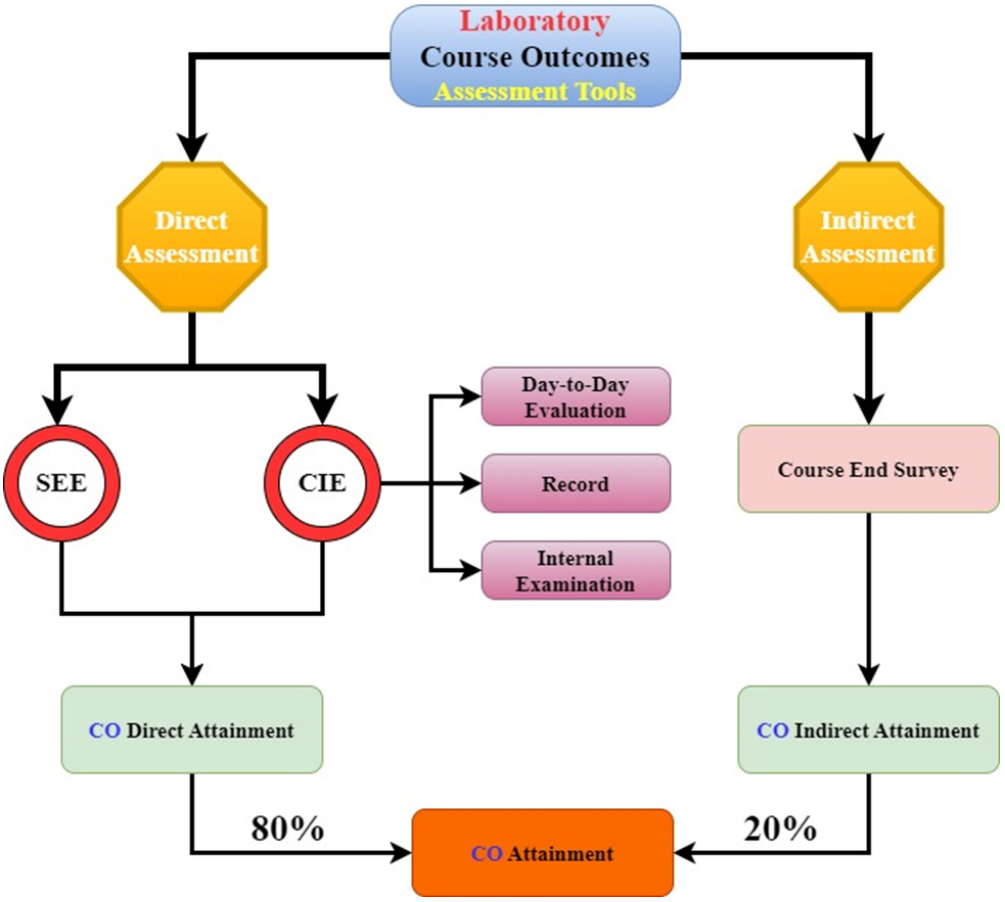
Mid-Examinations: Two mid-examinations are conducted for each semester. Mid-examinations serve to encourage students to keep up with course content covered. The Mid examination is of 90 minutes for 15 marks. The questions are framed in such a way that they should map Bloom's taxonomy, whereas each question is mapped to the respective course outcomes, which was evaluated based on the set attainment levels. The Multiple choice questions of 10 marks is also evaluated in both mid's of each course.

Assignments: Students are assigned course-related work and their submissions are evaluated on the basis of work quality. A total of 2 assignments are given per course where each assignment carries 5 Marks.

Semester-End Examination: The semester-end examination is 180 minutes of 70 marks duration and covers the entire syllabus of the course. The questions are framed in such a way that they should satisfy Bloom's taxonomy, where as each question is mapped to the concurred course outcomes of the course. The CO's are evaluated based on the set attainment levels.

All direct assessment such as Mid-examinations, Assignments & Semester end examinations covers 80% of weightage and Indirect assessment consists of a course-end survey which comprises 20% of weightage.

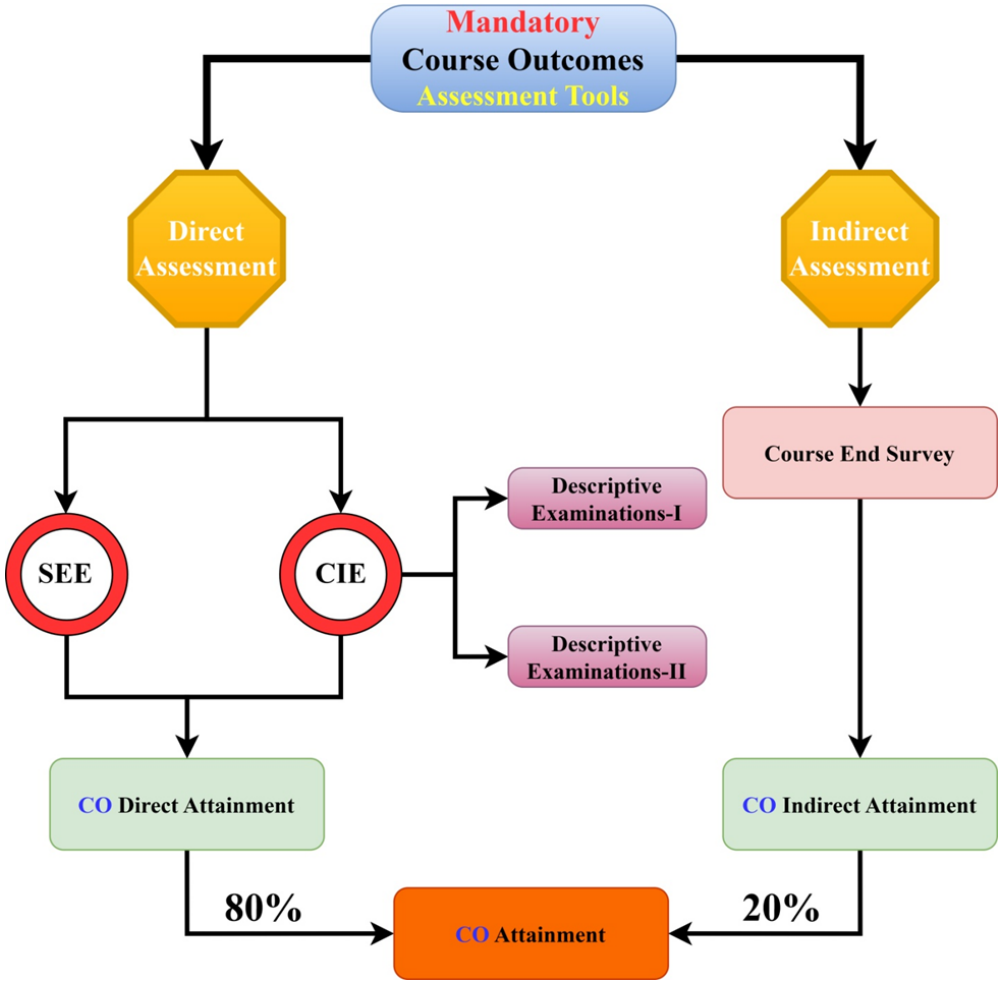
Laboratory Attainment Process:



Laboratory Courses:

For a total of 50 marks, continuous internal evaluation is 15 marks which comprises mainly day-to-day evaluation (5 marks), Record (5 marks), Internal Examinations (5 marks) and Semester end examinations of 35 marks which cover 80% weightage of laboratory assessment and remaining 20% weightage for course end survey.

Mandatory Course Attainment Process:



Mandatory Courses:

For a total of 100 marks, continuous internal evaluation is 30 marks which comprise two descriptive examinations, and Semester end examinations of 70 marks are conducted. All direct assessment covers 80% of weightage and Indirect assessment consists of a course-end survey which comprises 20% of weightage.

Course End Survey is collected at the end of course from the students about their attainment level of COs.

Feedback is collected with closed ended questions with options as

4- Excellent

3- Very Good

2- Good

1-Average

0-Poor

There response will be converted into percentage

$$\% \text{ of attainment} = \frac{\sum \text{Grade} \times \text{Number of responses to that grade}}{\text{Total respnses}} \times 100$$

Depending on the level of attainment grade was decided as mentioned below.

% of attainment	Grade
More than or equal to 80%	3
More than or equal to 70% and less than 80%	2
More than or equal to 60% and less than 70%	1
Less than 60%	0

8.4.2 Record the attainment of Course Outcomes of all first year courses (5) Institute Marks : 5.00

As the 2021 admitted batch was introduced with new R21 regulations, the threshold for internal and external exams was calculated based on the previous two batches (2019& 2020) pass percentages in the course having the same/similar syllabus.

For 2018 admitted batch

2019 admitted & 2020 admitted batch average pass percentage	Internal Threshold	External Threshold
Less than 50%	55	40
More than or equal to 50% and less than 60%	57.5	42.5
More than or equal to 60% and less than 70%	60	45
More than or equal to 70% and less than 80%	62.5	47.5
More than or equal to 80%	65	50
If the course does not exist in R18	60	45

The percentage of students who secured more than the threshold was calculated. Grades were given on the % of students who secured more than the threshold value

Percentage of students secured more than the threshold	Grade
More than or equal to 80%	3
Less than 80% and more than or equal to 70%	2
Less than 70% and more than or equal to 60%	1
Less than 60%	0

Depending upon the percentage of students secured more than the threshold, the next batch threshold was decided by the same course as follows.

Next batch threshold for internal courses:

% of students secured more than the threshold value	Action
More than or equal to 95% and less than 100%	Change Threshold to Min (Present batch Thresold+10%, 70)
More than or equal to 90% and less than 95%	Change Threshold to Min (Present batch Thresold+7.5%,70)
More than or equal to 85% and less than 90%	Change Threshold to Min (Present batch Thresold+5%,70)
More than or equal to 80% and less than 85%	Change Threshold to Min (Present batch Thresold+2.5%,70)
Less than 80%	No Change in the threshold is required.

8.5 Attainment of Program Outcomes from first year courses (20) Total Marks 20.00

8.5.1 Indicate results of evaluation of each relevant PO and/or PSO if applicable (10)

Institute Marks : 10.00

POs Attainment:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	0.40	0.66	PO11	1.04
C102	1.68	1.81	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C103	0.64	0.83	0.97	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.83
C104	0.86	1.03	0.54	PO4	1.08	PO6	PO7	PO8	PO9	PO10	PO11	0.98
C105	1.46	1.36	1.32	1.26	1.28	PO6	PO7	PO8	PO9	0.61	0.62	0.49
C106	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	2.00	2.67	PO11	PO12
C107	2.00	PO2	3.00	2.00	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C108	3.00	3.00	PO3	1.00	2.00	0.33	2.00	PO8	PO9	PO10	PO11	1.67
C109	3.00	2.75	2.75	1.50	2.00	1.33	PO7	PO8	PO9	PO10	PO11	1.50
C110	0.97	0.97	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C111	0.62	0.35	0.35	PO4	PO5	0.62	0.41	0.41	0.35	PO10	PO11	PO12
C112	0.70	0.70	0.39	0.33	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.36
C113	0.82	0.82	0.82	0.48	0.76	0.43	PO7	PO8	PO9	PO10	PO11	0.51
C114	2.40	2.20	2.20	1.00	1.00	1.00	PO7	PO8	PO9	PO10	PO11	1.20
C115	3.00	3.00	2.60	2.40	2.00	PO6	PO7	PO8	PO9	PO10	PO11	1.80
C116	3.00	2.80	2.80	1.33	1.50	1.50	PO7	PO8	PO9	PO10	PO11	1.40
C117	0.52	1.56	1.04	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	0.88

PO Attainment Level

PSOs Attainment:

Course	PSO1	PSO2	PSO3
C101	0.60	PSO2	PSO3
C102	0.62	PSO2	PSO3
C103	0.83	1.24	PSO3
C104	0.45	0.56	0.56
C105	1.16	1.14	PSO3
C106	2.00	PSO2	PSO3
C107	1.50	2.00	PSO3
C108	2.50	2.83	PSO3
C109	2.00	1.67	PSO3
C110	0.37	PSO2	PSO3
C111	1.05	0.35	PSO3
C112	0.35	0.35	0.35
C113	PSO1	PSO2	0.31
C114	1.50	1.25	PSO3
C115	2.20	2.20	3.00
C116	2.00	1.50	PSO3
C117	PSO1	0.52	0.52

PSO Attainment Level

Course	PO1	PO2	PO3
Direct Attainment	1.28	1.30	0.95
PSO Attainment	1.28	1.30	0.95

8.5.2 Actions taken based on the results of evaluation of relevant POs and PSOs (10)

Institute Marks : 10.00

POs Attainment Levels and Actions for Improvement- (2021-22)

POs	Target Level	Attainment Level	Observations
PO 1 : Engineering Knowledge			
PO 1	1.5	1.64	Target Achieved. Enhancement in ability to solve analyze the numerical
Actions1: Hence the attainment for the current academic year is fixed as Target for the next academic year. Action 2: Encouraged the students to get more engineering knowledge of mathematics, science and engineering fundamentals.			
PO 2 : Problem Analysis			
PO 2	1.5	1.66	Target Achieved. Experimental analysis of the assigned problem
Actions 1: Hence the attainment for the current academic year is fixed as Target for the next academic year. Action 2: Motivated to review research literature to analyze complex engineering problems.			
PO 3 : Design/development of Solutions			
PO 3	1.5	1.56	Target Achieved. Able to innovative prototype
Actions 1: Hence the attainment for the current academic year is fixed as Target for the next academic year. Action 2: Instructed the students to attend the seminars and workshops for designing of solutions for complex engineering problems.			
PO 4 : Conduct Investigations of Complex Problems			
PO 4	1.5	1.26	Target not achieved. Extend the ability to experimentally analyze the problems through relevant software's
Actions1 : Provide number of related articles foe the developing research knowledge . Actions 2: Guided the students to gain the research knowledge.			
PO 5 : Modern Tool Usage			
PO 5	1.5	1.45	Target not achieved. Usage of additional software's, latest testing too
Actions 1: Encouraged and allowed students to explore the same using relevant software tools. And participated workshops. Actions 2: Will be conducted workshops on modern tools usage.			
PO 6 : The Engineer and Society			
PO 6	1.5	0.87	Target not Achieved. However following observation was made: Need improvement in application of Engineering practice techniques.
Actions 1: To understand the safety concerns and social aspects, students visited industry to expand their practical knowledge with the effect of improved practices in engineering. Action 2: To improve the students participate in social responsible activities and awareness on health problems and legal acts.			
PO 7 : Environment and Sustainability			
PO 7	1.5	1.20	Target not Achieved. However following observation was made: The issues of global and environmental awareness should reach the students.
Action 1: Students are encouraged to do projects on alternate fuels. Action 2: Energy conservation is practiced by the installation of LED Lamps and LED tube light and energy efficient fans. Action 3: More emphasis on understanding environmental issues. Action 4: Make better awareness on environment and their importance , by using live demo in surroundings			
PO 8 : Ethics			
PO 8	1.5	0.41	Target not Achieved. However following observation was made: Create responsibilities on engineering ethics to Engineers.
Action 1: Students are motivated and made aware about the demands of engineering profession, duties towards society & fellow human beings and importance of honesty and ethics. Action 2: Students were trained in ethical principles & responsibilities in order to attain level. Action 3: To improve the students ethical principles and professional ethics will be conducted programs.			
PO 9 : Individual and Team Work			
PO 9	1.5	0.92	Target not achieved. Ability to co-ordinate and team management through conduction of projects
Action 1: Students to be motivated to organize and participate in quiz contest and group participation in events. Motivate to do teamwork in projects. Action 2: The laboratory work of the students is conducted by framing student groups so that students learn to work in a team environment. Action 3: To encourage the students improve their leadership qualities by the team work.			
PO 10 : Communication			
PO 10	1.5	1.31	Target not achieved. Ability to present and convey the latest engineering trends
Action 1: Encourage to communication/technical talks by group discussions, presentations and also referred to language lab for improving their communication skills Action2 : To enhance Students personal development and communication skills by providing special courses			
PO 11 : Project Management and Finance			
PO 11	1.5	0.62	Target not achieved. Planned expert lectures on topics related to project management & finance
Action 1: The students study the principles of management. Action 2: Faculty to conduct exercises / group activity regarding the management principles and managing projects. Action 3: To encourage the students for the developing management skills and financial discipline by the project works			
PO 12 : Life-long Learning			
PO 12	1.5	1.06	Target not achieved. Significant improvement in number of students clearing competitive examinations
Action 1: Expert talks were conducted in our institutions. Action2: Give importance of the lifelong learning and updated modern technologies in teaching and also life.			

PSOs Attainment Levels and Actions for Improvement- (2021-22)

PSOs	Target Level	Attainment Level	Observations
PSO 1 : Promotes the technical knowledge, skills and attitude for the requirement of industry and Society towards Mechanical Engineering.			
PSO 1	1.5	1.28	Target is not Achieved. Enhancement in ability to solve analyze the numerical
Actions1: Hence the attainment for the current academic year is fixed as Target for the next academic year. Action 2: Encouraged the students to get more engineering knowledge of mathematics, science and engineering fundamentals.			
PSO 2 : Facilitates to plan, design, develops and tests an energy efficient manufacturing system for required engineering application.			
PSO 2	1.5	1.30	Target level has not been achieved. 1. Students will learn basic & fundamentals of engineering and mechanical engineering in specific. 2. Students will build confidence in solving real life career in the specific field.
Action 1: Students are motivated to take up the real life problems during their project work so that they can design, analyze and find solution which gives exposure to latest technologies. Action:2 Encourage to the students project works and industrial tours for developing knowledge , design and planning.			
PSO 3 : Nurtures the students towards advanced design and analysis tools for mechanical system.			
PSO 3	1.5	0.95	Target level has not been achieved. Students should know the emerging field of Mechanical Engineering.
Action 1: Concepts of Rapid prototyping and new developments are imparted to students. Action 2: Motivated to participate in workshops, industrial tours and seminars.			

9 STUDENT SUPPORT SYSTEMS (50)

Total Marks 50.00

9.1 Mentoring system to help at individual level (5)

Total Marks 5.00

Institute Marks : 5.00

A mentoring system can be an effective way to provide support and guidance at the individual level. Here are some key steps to implementing a successful mentoring system at PACE Institute of Technology & Sciences:

i. All faculty and students are divided into mentor-mentee for every semester.
ii. Mentoring of the students is our top priority.
iii. Each mentor has been assigned 15-20 mentees in the same department. They would look into assigned students' academic progress, and participation in co-curricular & extracurricular activities.
iv. At a minimum, mentors and mentees should meet regularly at least one hour per month.

v. **Academic Guidance**

i. Academic guidance is an essential component of academic success that can help students achieve their academic goals by providing support, advice, and resources. Whether it involves course selection, study skills, academic planning, career planning, or academic support, academic guidance can provide students with the tools they need to succeed academically.
ii. Sharing information on academic planners, academic schedules, and e- learning resources. Students with poor attendance are identified and it is ensures that they improve their attendance by getting counselled in presence of a HoD and mentor representatives.
iii. For a slow learner, mentor representative focuses mainly on their studies with the support of additional reading materials, model questions along with solutions.

v. **Professional Guidance**

i. The department are well equipped with knowledgeable human resources in the form of members of faculty who by keeping themselves updated of developments offer guidance to the prospective professionals in addition to the classroom teaching.
ii. Professional guidance is an essential component of career development that can help individuals achieve their career goals by providing support, advice, and resources. Whether it involves career exploration, career planning, skill development, networking, or job search strategies, professional guidance can provide individuals with the tools they need to succeed in their chosen careers.

v. **Career Advancement**

i. Career advancement is an important component of professional success that can provide individuals with opportunities for growth, satisfaction, financial rewards, recognition, and networking. By developing new skills, gaining experience, taking on new responsibilities, and pursuing opportunities for growth and development, individuals can advance their careers and achieve their professional goals.
ii. Encourage the students to take up online certification courses in order to build their careers.

v. **Laboratory specific**

i. It's important to provide specific details about the students laboratory work, including the day to day evaluation, lab record updating, and research works the tasks they have been involved in, and any additional responsibilities they have taken on. This can help future mentors or employers understand the students laboratory experience and potential for future success in the field.
ii. Irregular students in laboratory classes are counselled to attend regularly and complete backlog experiments during specified extra hours.

v. **All-round Development**

i. An all-round development mentoring system should prioritize the needs and goals of individuals, and provide a supportive and nurturing environment for personal, academic, and professional growth.
ii. This institution puts forward effort to realize all-round development and guides the student accordingly. In addition to academics, the students are encouraged to participate in literature, cultural, and sports activities which help to develop leadership qualities, decision-making abilities, team spirit, and socio-psychological awareness.

9.2 Feedback analysis and reward /corrective measures taken, if any (10)

Total Marks 10.00

Institute Marks : 10.00

Student feedback analysis involves gathering and analyzing feedback from students in order to improve teaching, learning, and the overall student experience. Here are some steps for conducting a student feedback analysis:

v. **Collect Feedback**

Feedbackcollected from the students using surveys, focus groups, or other methods. Make sure to ask specific questions that will provide useful information for improving teaching and learning.

i. Twice a semester the feedback on all courses in collected. Along with that, department and institutional-level feedback also will be collected on facilities, the conduction of co-curricular and extracurricular activities, and maintenance of discipline in the department.
ii. The course end survey will be collected to understand the student level of course attainment.
iii. Feedback has been taken from the outgoing students as a part of the student exist survey to understand the student PO and PSO attainment status.
iv. Feedback on the curriculum and syllabus has been collected once a year from all the stakeholders
v. Student satisfaction survey will be collected once a year from all the students on Teaching Learning Evaluation.
vi. Staff exit survey is collected from the staff while he/she relieves the institution.

v. **Analysis and Report Preparation**

i. Analysing and preparing a report on a student feedback system is a valuable process that can help identify areas of strength and areas for improvement, and provide recommendations for enhancing the overall student experience.
ii. The faculty who get less than the threshold percentage of 70% are asked to give an explanation and corrective measures are taken by the HoD for improvement.
iii. The student feedback is also given weightage in the staff appraisal form.
iv. Student course end survey is used as an indirect tool for the course outcomes attainment.
v. The student exit survey uses as an indirect tool for POs, and PSOs attainment.
vi. The stakeholder feedback is utilized for framing the curriculum and syllabus.
vii. The student satisfaction survey is used for the suggestion in the TLE process.
viii. Staff exist survey is used for the improvement institution and is useful for the increase in the retention of staff.

v. **Reward / Corrective Measures Taken**

Head of the department analyzes the feedback of each faculty and will take necessary actions. Following things are considered for reward/correction measures

i. Induction programs are conducted for newly joined faculty members and continuing education programme for the experienced faculties. Those faculty who have not obtained good appraisals have a detailed discussion with the Head of the department on how to improve the teaching.
ii. Level of feedback is taken into account while evaluating the staff of promotion.
iii. Student feedback is one of the mandatory roles in the faculty award scheme.
iv. All the faculty members are evaluated yearly in even and oddsemesters considering their contributions towards academic, research and administration.
v. Class committee meeting shall be conducted twice in every semester for each class. Committee members includes Head of the department, Academic Coordinator, class teacher, two faculty members teaching in the respective class, two student members from the class.

9.3 Feedback on facilities (5) Total Marks 5.00

Institute Marks : 5.00

The feedback on the facilities has been initiated by the institute. The lab and library facility, training & placement facilities and general facilities will be rated by students via a survey conducted. This feedback helps to identify areas that need improvement and make improvements together with students.

Teaching & Learning, Facilities / Activities, Curriculum, Career guidance / Employability (Student Exit Survey)

SRINIVASA EDUCATIONAL SOCIETY'S

PACE INSTITUTE OF TECHNOLOGY & SCIENCES

(AUTONOMOUS)

Approved by AICTE, Accredited by NBA & NAAC(A Grade), Recognized under 2(f) & 12(B) of UGC
Permanently Affiliated to JNTUK, Kakinada. A.P., An ISO 9001:2008 Certified Institution
NH-16, Near Valluramma Temple, ONGOLE - 523 272, A.P., INDIA, Ph.: 08592 278315, 9581456310 | www.pace.ac.in

INTERNAL QUALITY ASSURANCE CELL (IQAC)

Student Exit Survey

Dear students,

We would grateful if you could fill out and submit the following exit survey. We assure you that your feedback will be treated confidentially for our continuous improvement.

Name of the student : **Branch :**

Mobile No : **Email :**

Questionnaire	Excellent (5)	Very good (4)	Good (3)	Satisfactory (2)	Poor (1)
Teaching & Learning					
Teaching & learning methods adopted were					
Overall quality of teaching & learning activities in the college is					
The learning materials and resources provided were					
Facilities / Activities					
Infrastructure, Lab facilities & Library					
Students mentoring and guidance					
Internet / wifi facility					
Extracurricular activities					
Safety & Security					
Curriculum					
The curriculum of the program is well designed and promotes learning experience of the students					
Employability is given focus in the curriculum design					
The curriculum incorporates the recent technological					

ii Parents feedback

SRINIVASA EDUCATIONAL SOCIETY'S

PACE INSTITUTE OF TECHNOLOGY & SCIENCES

(AUTONOMOUS)

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INTERNAL QUALITY ASSURANCE CELL (IQAC)

FEEDBACK FROM PARENTS

a) Name of the Parent :

b) Present Address :

Phone Number :

Email-ID :

c) Name of the Student :

d) Branch and Year :

e) Please provide your comments on the following:

1. College Infrastructure : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
2. Teaching imparted to your ward : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
3. Department Resources : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
4. Faculties helpfulness : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
5. Library Facilities : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
6. Computing and Internet Facilities : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
7. Sports, Extra Curricular Facilities : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
8. Personality/Communications Skills Development Facilities : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
9. Placement Opportunities : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
10. Transport Facilities : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
11. Mess/Canteen Facilities : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
12. Feedback on ward's Progress : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
13. Discipline standards in the College : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)
14. Overall rating of the College : □ Excellent(4) □ Good(3) □ Average(2) □ Fair(1)

e) Your Positive/Negative Comments:

f) Your suggestions for the Improvement of the Institution/Department:

Date: Signature.

9.4 Self-Learning (5) Total Marks 5.00

Institute Marks : 5.00

A. Scope for self-learning

Self-learning refers to the process of acquiring knowledge or skills through independent study, research, and practice, without the guidance or supervision of a teacher or instructor.

PACE Institute of Technology & Sciences provides some of the areas where self-learning can be particularly useful include:

- Academic subjects
- Technical skills
- Life skills
- Extracurricular activities

B. The institution needs to specify the facilities, materials for learning beyond syllabus, Webinars, Podcast, MOOCs etc. and demonstrate its effective utilization

Providing facilities, materials, and opportunities for learning beyond the syllabus is essential for promoting self-learning and ensuring that students are well-prepared for their future careers.

PACE Institute of Technology & Sciences provides some steps that institutions can take to specify and demonstrate the effective utilization of these resources:

- Self-learning courses under the category of elective courses wherein the students are provided with the flexibility of choosing courses available in online portals like MOOCs and popular e-learning portals like NPTEL SWAYAM, Spoken tutorials, EduSkills, Codetantra, NASSCOM, Coursera, Infosys Spring Board, CISCO, Microsoft Certification courses etc…
- To enable the students to effectively utilization the library and to motivate for self-learning weekly one library hour is allocated in the timetable.

9.5 Career Guidance, Training, Placement (10) Total Marks 10.00

Institute Marks : 10.00

A. Availability of career guidance facilities

Career guidance facilities are essential for students to make informed decisions about their future careers and to develop the skills and knowledge necessary to achieve their goals.

PACE Institute of Technology & sciences can make some ways of career guidance facilities available to their students:

- Soft skill training programmes from first year onwards
- Training on employability skills.
- Online tests to assess the students.
- Conduct of motivation lectures and mock interviews
- Technical training & guest lectures
- Enabling the students to resume preparation
- Arranging customized industry– oriented training
- Entrepreneurship and higher studies awareness programs
- Conduct of mock interviews.

B. Counseling for higher studies (GATE/GRE, GMAT, etc.)

Counseling for higher studies is an essential service that institutions can offer to their students who are considering pursuing advanced degrees or further education.

PACE Institute of Technology & sciences provides some ways in which institutions can provide counseling for higher studies:

- Workshops and Seminars
- Mock tests
- Practice materials
- Online Courses
- Personalized Coaching

C. Pre-placement training

Pre-placement training is a crucial service that institutions can offer to their students to help them prepare for job interviews and employment opportunities.

PACE Institute of Technology & sciences provides some ways in which institutions can provide pre-placement training:

- Resume building
- Interview skills training
- Soft skills training
- Online resources

D. Placement process and support

The placement process can be a challenging experience for students. Institutions can provide critical support to students by maintaining a company and job database, setting up a dedicated placement cell, offering career counseling, providing interview preparation services, and leveraging their alumni network.

PACE Institute of Technology & sciences provides some ways in which institutions can offer support to their students in the placement process:

- Company and job database
- Placement cell
- Career counseling
- Interview preparation
- Alumni network

9.6 Entrepreneurship Cell

Total Marks 5.00

Institute Marks : 5.00

A. Entrepreneurship initiatives

Entrepreneurship initiatives are a critical aspect of an institutions support system for students who want to start their own businesses.

PACE Institute of Technology & Sciences provides some ways in which institutions can offer entrepreneurship initiatives:

- Invited motivational talks
- Awareness programs on new business avenues
- Celebration of world's Entrepreneurship day
- Entrepreneurship courses
- Funding opportunities
- Guest lecture/Workshops with MOU companies

B. Data on students benefitted

S.No	Academic Year	Number of Entrepreneurs
1	2021-2022	2
2	2020-2021	3
3	2019-2020	4

9.7 Co-curricular and Extra-curricular Activities

Total Marks 10.00

Institute Marks : 10.00

A. Availability of sports and cultural facilities

Availability of sports and cultural facilities is an important aspect of an institutions support system for students.

PACE Institute of Technology & sciences provides some ways in which institutions can provide sports and cultural facilities:

i. Sports facilities: A variety of sports facilities such as outdoor and indoor sports fields, and fitness centers. These facilities can be used for a range of sports activities such as cricket, football, basketball, badminton, Volleyball, and more.

ii. Sports events: organize sports events such as intercollegiate tournaments, intra-college matches, and sports meets. These events can provide students with opportunities to showcase their skills and compete with other institutions.

iii. Cultural facilities: Institutions can offer facilities for cultural activities such as music, dance, drama, and other performing arts. These facilities can include theaters, and auditoriums etc

iv. Cultural events: Institutions can organize cultural events such as music festivals, dance competitions, and drama competitions.

B. NCC, NSS and other clubs

NCC and NSS are both student organizations that operate in PACE Institute of Technology & sciences.

· The National Cadet Corps (NCC) is a youth development movement that aims to train young people in discipline, leadership, and patriotism through military-style training.

· The National Service Scheme (NSS) is a community service program that encourages students to participate in various activities that contribute to the development of society. The NSS aims to develop the personality of students through community service, promote national integration and social harmony, and encourage students to work towards the betterment of society. NSS activities may include tree planting, blood donation camps, health and hygiene campaigns, and awareness programs on social issues.

· Clubs and societies: Institutions can establish and support clubs and societies for sports and cultural activities. These clubs and societies can provide students with opportunities to meet other students who share similar interests and engage in sports and cultural activities together.

C. Annual student's activities

Annual student activities are an important part of the academic calendar in PACE Institute of Technology & sciences. These activities provide students with opportunities to showcase their talents, develop new skills, and build their confidence.

PACE Institute of Technology & sciences conducts some common annual student activities:

- Annual sports day
- Cultural festival
- Science fair
- Debate competition
- Quiz competition
- Annual day celebration
- Charity events
- Talent show
- Career fair

10 GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES (120) Total Marks 120.00

10.1 Organization, Governance and Transparency (55) Total Marks 55.00

10.1.1 State the Vision and Mission of the Institute (5) Institute Marks : 5.00

Vision:

Our vision is to impart futuristic technical education transforming the students technically superior, ethically strong and self disciplined to serve the nation as a valuable resource.

Mission:

M1	To inculcate quality education by implementing innovative teaching-learning methods and state-of-the-art facilities.
M2	To enrich the intellectual know-how, credibility and integrity of the students to necessitate industry.
M3	To recognize as scholarly and influential leaders in engineering education, to develop human power with creativity, advanced technology and passion for the betterment of future nation.

To realize the vision, the above mission statements have been established by taking into account, the contemporary Industry requirements, Technical skills needed, Technological & Product development, Ongoing research & development, Industry-Institute interaction, Twenty-first century skills and Societal needs.

To sensitize all the stakeholders about availability of the Vision and Mission statements, display boards and Sign boards are arranged in the prominent locations across the campus. In addition to this, Vision and Mission statements are made available to the stakeholders through:

- Institute website
- Principal Chamber
- Each of the departments
- Library
- Institute-level documents
- All major central facilities

10.1.2 Availability of the Institutional Strategic Plan and its Effective Implementation and Monitoring (25) Institute Marks : 25.00

Pace Institute of Technology and Sciences has formulated a dynamic strategic plan to achieve the Institutional Goals in this competitive world. Strategic Plan includes the targets and the strategies to achieve the targets. The plan is formulated based on the SWOC analysis of the institute. All the staff are fully committed to deliver high quality standards to the students by continuous learning and enhancing their skills.

The following are the targets that the strategic plan has identified for the upcoming years:

STRATEGIC PLAN IDENTIFIES THE FOLLOWING ROAD TARGETS FOR AY 2018-2028

- Implementation of Outcome Based Education.
- Establish at least 2 Research Centers by 2023.
- To attain NAAC A++ grade during 2nd Cycle Accreditation.
- To be ranked among TOP 200 engineering institutions in NIRF Ranking.
- To secure TOP 50 position in ARIIA Ranking 2025.
- Promote industry-institution collaboration with top MNCs.
- Establish Centers of Excellence in various departments.
- Incubate successful start-ups creating innovative products and business models using the knowledge and technologies developed by the Institution.
- Provide an invigorating work environment for faculty and staff.
- Improve the involvement of alumni in all the aspects of Institutions development by collaborating with them in placements, guest lecture, mentoring students in various projects, mentoring incubate, research and development, consultancy.
- Collaboration with various industries in the field of Research & Development and consultancy.
- Collaboration with Institutions around the world to promote quality higher education and for supporting students/faculty exchange programmes.

In view of achieving the above strategic plan the following key strategic issues are focused:

- **Create an institutional culture which equips the students with the skills required for the industry**

- Training programs are conducted for improving the communication skills and interpersonal skills from the first year onwards.
- Induction program is conducted for the students in the first year.
- Motivational programs are being conducted by the industry experts and successful alumni.
- Offers minors degree with inter-disciplinary open electives
- Internships for hands-on experience and community service are encouraged for the students.
- Student chapters are established for professional bodies and continuous activities are organized under the student chapters to enhance the leadership qualities.
- Entrepreneur Development Cell (EDC) works continuously to promote entrepreneurship.
- Add-on courses on latest technologies are conducted to enhance the placement opportunities.
- Students are encouraged to complete self-learning courses through MOOCs/Swayam NPTEL.

- **Continuous capacity building of the faculty and Promoting research culture among the students and faculty:**

- Faculty development programs are organized by inviting subject experts from premier institutions and industry to enhance their technical skills and research skills.
- Training on course design, question paper setting and teaching pedagogy in-line with OBE philosophy are being conducted.
- All the faculty are encouraged to attend ATAL FDPs to improve their skills and expertise in latest technologies.
- Encouraging faculty members and students to participate in workshops, conferences and seminars by providing financial support
- Incentives for quality journal publications and sponsored research projects are given.
- Encouragement to pursue the Ph.D. (Part time, Full time) by providing support in terms of research facilities and academic leaves.
- Students are encouraged to participate in innovative project contests
- Students were encouraged to develop prototypes and apply for Patents

10.1.3 Governing body, administrative setup, functions of various bodies, service rules, procedures, recruitment and promotional policies (10) Institute Marks : 10.00

Governing body: Governing body is formulated to coordinate with all Academic and Administrative activities of the college.

Term: The Governing Body shall be reconstituted every three years except in the case of UGC nominee who shall have a term of five years.

Meetings: Meetings of the Governing Body shall be held at least twice a year.

Functions of the Governing Body: Subject to the existing provision in the bye-laws of respective college and rules laid down by the state government/parent university, the Governing Body shall:

- Guide the college while fulfilling the objectives for which the college has been granted autonomous status.
- Institute scholarships, fellowships, studentships, medals, prizes and certificates on the recommendations of the Academic Council
- Approve new programmes of study leading to degrees and/or diplomas.
- All recruitments of Teaching Faculty/Principal shall be made by the Governing Body/state government as applicable in accordance with the policies laid down by the UGC and State Government from time to time.
- To approve annual budget of the college before submitting the same at the UGC.
- Perform such other functions and institute committees, as may be necessary and deemed fit for the proper development of the college

Members of Governing Body:

S. No	Details of the Member	Representative in GB
1	Sri. M. Venu Gopala Rao Chairman, Srinivasa Educational Society	Chairman, Management
2	Sri. M. Sridhar Secretary & Correspondent, Srinivasa Educational Society	Member, Management
3	Sri. M. Vasu Babu Vice-Chairman, Srinivasa Educational Society	Member, Management
4	Smt. M. Padma Treasurer, Srinivasa Educational Society	Member, Management
5	Sri. M. Ravindra Joint Secretary, Srinivasa Educational Society	Member, Management
6	Dr. R.N. Yadav Professor, Dept of ECE, NIT, Bhopal	Member-UGC Nominee
7	Dr. S. Narayana Reddy Principal, SVU College of Engineering, Tirupati, AP	Member- State Govt. Nominee
8	Dr. Ch. Srinivas Rao Professor in ECE, UCEN, JNTUK, Kakinada	Member- University Nominee
9	Sri P. Siva Prasad CEO, Mydentistchoice.Com, Hyderabad	Member- Industrialist
10	Sri K.V.C Krishna Chartered Accountant, Flat No. 103, B-Block, Pavani Homes, Hyderabad	Special Invitee
11	Dr. G. V. K. Murthy Principal, PACEITS	Member- Ex-Officio
12	Dr. R. Veeranjaneyulu, Prof in CSE, PACE ITS	Member - Teacher
13	Dr. T. Mary Jones Professor & Head, Dept. of MBA, PACEITS	Member - Teacher

Academic Council:

Academic Council is formulated to approve the course structure and syllabus formulated by Board of Studies and monitors the overall performance of the institution. It comprises members nominated by JNTUK and Governing body, Principal, Deans and Head of the Departments. The body meets twice a year.

Functions:

- To scrutinize and approve the proposals with or without modification of the boards of studies with regard to courses of study, academic regulations, curricula, syllabi and modifications thereof, instructional and evaluation arrangements, methods, procedures relevant thereto etc., provided that where the Academic Council differs on any proposal, it will have the right to return the matter for reconsideration to the Board of Studies concerned or reject it, after giving reasons to do so.
- To make regulations regarding the admission of students to different programs of study in the college keeping in view the policy of the Government.
- To make regulations for sports, extra-curricular activities, and proper maintenance and functioning of the playgrounds and hostels.
- To recommend to the Governing Body proposals for the institution of new programs of study.
- To recommend to the Governing Body institution of scholarships, studentships, fellowships, prizes, and medals, and to frame regulations for the award of the same.
- To advise the Governing Body on suggestions(s) pertaining to academic affairs made by it.
- To perform such other functions as may be assigned by the Governing Body.

Members:

The Academic Council consists of the following members,

1. The Principal (Chairman)

2. All the Heads of Departments in the college

3. Four teachers of the college representing different categories of teaching staff by rotation on the basis of seniority of service in the college.

4. Not less than four experts/academicians from outside the college representing such areas as

Industry, Commerce, Law, Education, Medicine, Engineering, Sciences etc., to be nominated by the Governing Body.

5. Three nominees of the university not less than Professors.

6. A faculty member nominated by the Principal (Member Secretary).

Term: The tenure of nominated members shall be three years.

BOARD OF STUDIES:

A Board of Studies is formulated for each department to prepare the course structure and syllabus. They monitor regularly the performance of the department. They meet at least twice for a year and guide the department respectively.

Functions and Responsibilities

- To prepare syllabi for various courses keeping in view the objectives of the college, interest of the stakeholders, and national requirements for consideration and approval of the Academic Council
- To suggest methodologies for innovative teaching and evaluation techniques
- To suggest panel of names to the Academic Council for appointment of examiners
- To coordinate research, teaching, extension and other academic activities in the department/college.

In addition to internal members BoS consist of external members as mentioned below:

- One Expert from Parent University
- Two Expert from Outside Parent University
- One Expert from Industry
- One Meritorious Alumni

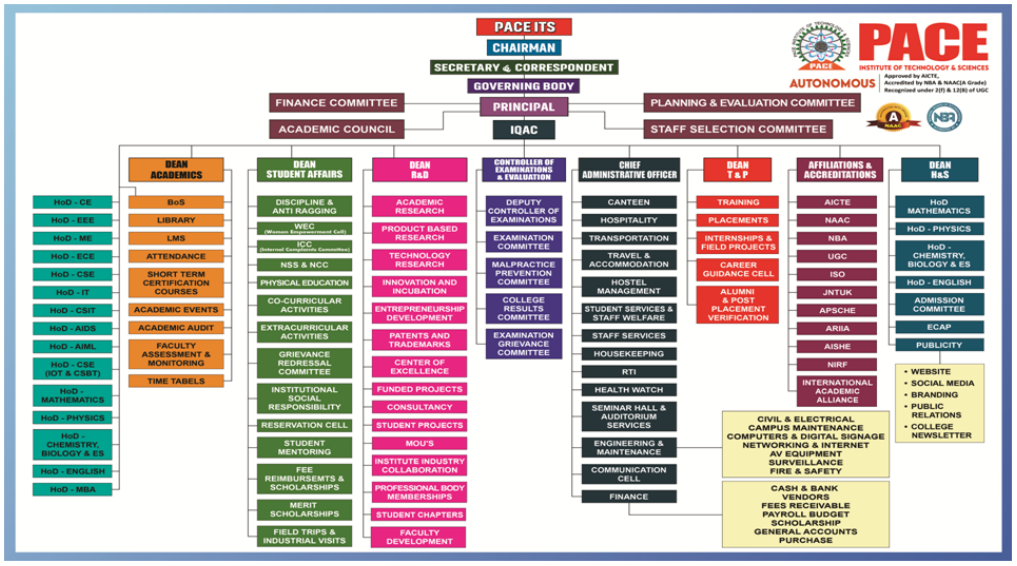
FINANCE COMMITTEE

Finance Committee is formulated to estimate budgets and monitor the financial transactions and the financial status of the institution.

Functions:

- To estimate budget relating to the grant received/receivable from UGC, and income from fees, etc. collected for the activities to undertake the scheme of autonomy
- To verify Cash inflows and outflows in all bank accounts
- To verify advances given and outstanding payments totals, receipts and payments
- To maintain all ledger books, preparation of salary statements
- To audit accounts for the above

Administrative set up: Following diagram depicts the brief administrative set up and the glance of committees in order to create and enhance the infrastructure that facilitate teaching and learning process.



PACEITS has a decentralized mechanism for delegating authority and providing operational autonomy to all the functionaries to work towards decentralized governance. It includes the Board of Governors, Academic council, Secretary and Correspondent, Principal, Board of Studies, Director, Dean Academics, Dean Student Affairs, Dean Research & Development, Administrative Officer, Dean Training & Placements, Controller of examinations and HOD's for effective Governance and participative management. Top management in consultation with the Board of Governors and Secretary & Correspondent gives strategic directions to the Principal regarding various future initiatives focusing broadly on the Vision and Mission of the institution. The principal prepares the action plan keeping in view the short-term and long-term goals of the institution and gets it executed through IQAC, various Deans, heads of the Departments, and other committees. Principal with various HODs nominated institute-level committees to the faculty members. The department-level committees are nominated by the respective Heads of Departments. All Administrative matters including Finance, campus maintenance, Canteen, Hostel Management, and scholarship is handled by Chief Administrative Officer. Student examinations were conducted by the Controller of Examination and Senior/Junior supervisors.

The service rules, policies and procedures are available in the website and are circulated to all the staff members. The meetings are conducted regularly and the minutes of the meeting with attendee's signature is filed properly. Every meeting starts with the review of the previous meeting minutes and the action taken on the discussed points.

10.1.4 Decentralization in working and grievance redressal mechanism (5) Institute Marks : 5.00

List the names of the faculty members who have been delegated powers for taking administrative decisions. Mention details in respect of decentralization in working. Specify the mechanism and composition of grievance redressal cell including Anti Ragging Committee & Sexual Harassment Committee.

GRIEVANCE REDRESSAL COMMITTEE

Grievance Redressal committee is formulated to investigate the complaints received from the students and faculties.

Functions:

- To formulate the policy to investigate and review complaints or grievances of students and faculties.
- To create awareness of availability of members for students and faculties to report grievances.
- To investigate the cause of grievances to ensure effectual solution.

S. No	Name	Designation
1	Dr. G V K Murthy	Chairmen
2	Mr. G Ramesh Babu	Convener
3	Dr. R Veeranjaneyulu	Member
4	Dr. A Seshagiri Rao	Member
5	Dr. D Suresh	Member
6	Dr. D Anil Kumar	Member
7	Dr. M Rajasekhar	Member
8	Mr. V Sivaprasad	Member
9	Mr. B Nagaraju	Member
10	Dr. G Kondaiah	Member
11	Mr. G Ganesh Naidu	Member
12	Dr. T Mary Jones	Member
13	Mr. M Raveendra	Member

ANTI-RAGGING COMMITTEE: Anti ragging committee is formulated to ensure a safe environment for first years that enter into the campus with high aspirations. This committee encourages healthy relationships between the students of different years and branches.

Functions of Anti ragging Committee:

- To initiate timely action against erring students of discipline
- To maintain records of the cases investigated
- To sensitize students about the evils of ragging and its prevention in the college campus by organizing talks/programmes
- To address complaints about ragging as per the Govt. and University procedures

Composition of the committee:

S. No	Name	Designation
1	Dr. G. V. K. Murthy	Chairman
2	Mr. G. Ramesh Babu	Convener
3	Dr. R. Veeranjaneyulu	Member
4	Dr. D. Anil Kumar	Member
5	Ch. Ravindra Babu	Member
6	Dr. A. Seshagiri Rao	Member
7	Mrs. N. Vaishnavi	Member
8	Mr. K. Venkateswarlu	Member
9	Mr. B. Suresh Babu	Member
10	MR. S. Ch. Kantha Rao	Member
11	Mr. M. Sivudu	Member
12	Mr. S. Anka Rao	Member
13	Mr. Y. Srinivasa Reddy	Member
14	Mr. M. Naga Bhaskar	Member
15	Mr. I. Madhusudhan	Member
16	Ms. Sk. Heena Kauser	Member

INTERNAL COMPLAINTS COMMITTEE (SEXUAL HARASSMENT COMMITTEE): Internal compliance committee is formulated to ensure safe campus for girl students and lady staff members. The committee creates awareness programs for the girls about the presence of the cell and gives assurance to them that they will support them in all circumstances.

Functions:

- Registering the complaint and taking necessary action to support the victim
- To receive the complaints regarding sexual harassment
- To investigate and submit the report against the complaints filed
- To educate all about sexual harassment and impacts

Composition of the committee:

S. No	Name	Designation
1	Mrs. N. Vaishnavi, Assoc. Prof, ECE	Convener
2	Mrs. K. Jeevana, Asst. Prof, EEE	Member
3	Mrs. P. Rama Lingamma, Asst. Prof, IT	Member
4	Mrs. Ch. Anusha, Asst. Librarian, Library	Member
5	Mrs. D. Annapurna, Lab Programmer, CSE	Member
6	Mrs. BathiniArunakumari, External Member	Member
7	Ms. Sk. Amrin, UG Student, ECE	Member
8	Ms. Tanneru Sai Mahalakshmi, PG Student, MBA	Member

The Grievance Redressal Committee is formulated to investigate the complaints received from the students and faculties. The committee addresses the problems and ensures that the students are comfortable with all the teaching and learning processes and administrative procedures of the institution. The committee encourages the students and faculty members to share their grievances freely and on receiving the complaint, the committee investigates the problem and redresses it as soon as possible.

10.1.5 Delegation of financial powers (5) Institute Marks : 5.00

PACE Institute of Technology and Sciences has a well-established financial system. For the smooth functioning of the institutional activities the financial powers are delegated to different levels i.e. Secretary & Correspondent, the Principal, and the Heads of different departments. The principal can sanction any recurring or non-recurring amount which has prior approval in the budget.

Other than the prior approved budget items

To address any emergency situation Heads of the department hold hand cash of ten thousand. For any emergency requirements, the principal can sanction an amount of one lakh. The amount of more than one lakh can be sanctioned by the Secretary and Correspondent.

10.1.6 Transparency and availability of correct/unambiguous information in public domain (5) Institute Marks : 5.00

- All the information is available on the college website for the stakeholders. The right to Information Committee is also available in the institution to provide any information sought by any of the stakeholders.
- All the information related to staff and students is also made available on the website.
- All the mandatory disclosures to be displayed on the website are updated as per the instructions of AICTE/AISHE.

10.2 Budget Allocation, Utilization, and Public Accounting at Institute level (15) Total Marks 15.00

:

Total Income at Institute level: For CFY,CFYm1,CFYm2 & CFYm3
CFY : (Current Financial Year),
CFYm1 : (Current Financial Year minus 1),
CFYm2 : (Current Financial Year minus 2) and
CFYm3 : (Current Financial Year minus 3)

Table 1 - CFY 2022-2023

Total Income 202657090.04				Actual expenditure(till…): 198790890			Total No. Of Students 5691
Fee	Govt.	Grants	Other sources(specify)	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify	Expenditure per student
198520200	0	0	4136890.04	189400590	9390300	0	34930.75

Table 2 - CFYm1 2021-2022

Total Income 194745749.46				Actual expenditure(till…): 192045749			Total No. Of Students 5245
Fee	Govt.	Grants	Other sources(specify)	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify	Expenditure per student
190022936.66	2614510	0	2108302.80	185854976	6190773	0	36615.01

Table 3 - CFYm2 2020-2021

Total Income 183174271.23				Actual expenditure(till…): 178620223			Total No. Of Students 4855
Fee	Govt.	Grants	Other sources(specify)	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify	Expenditure per student
178420366.85	0	1845785	2908119.38	176491113	2129110	0	36790.98

Table 4 - CFYm3 2019-2020

Total Income 167104584				Actual expenditure(till…): 152520345			Total No. Of Students 4556
Fee	Govt.	Grants	Other sources(specify)	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify	Expenditure per student
164826053	0	0	2278531	151037107	1483238	0	33476.81

Items	**Budgeted in 2022-2023**	**Actual Expenses in 2022-2023 till**	**Budgeted in 2021-2022**	**Actual Expenses in 2021-2022 till**	**Budgeted in 2020-2021**	**Actual Expenses in 2020-2021 till**	**Budgeted in 2019-2020**	**Actual Expenses in 2019-2020 till**
Infrastructure Built-Up	2000000	169477(	150000(	1264982	2000000	1959402	1500000	6971444
Library	800000	645377	400000	171367	500000	0	1000000	704129
Laboratory equipment	9500000	939030(	650000(	6190773	2700000	2129110	1800000	148323(
Laboratory consumables	500000	461362	100000(	890019	250000	211817	800000	760762
Teaching and non-teaching stal	1450000	1440202	140000(	1364053	1250000	1194641	1000000	9893894
Maintenance and spares	4000000	3007013	520000(	5025890	2500000	2259283	5000000	480331(
R&D	1200000	104738(	120000(	1061590	550000	483325	900000	850295
Training and Travel	2000000	1672924	100000(	842673	2000000	1893021	2200000	213014(
Miscellaneous Expenses*	150000	91242	150000	140162	100000	92178	100000	97850
Others, specify	1770000	2150737	240000(	2866812	285170(	3249330	3376500	3578021
Total	**200850000**	**198790890**	**194450000**	**192045749**	**182117000**	**178620223**	**160565000**	**152520345**

10.2.1 Adequacy of budget allocation (5)

Institute Marks : 5.00

The institute collects the budget proposals from all the departments and cells before starting the financial year. The departments submit the budget proposals considering all the recurring (i.e. lab maintenance/repairs) and non-recurring (new purchases) requirements. All cells submit the proposals considering all their requirements. The Institute finance committee chaired by the principal prepares a draft budget statement considering the proposals from the departments, cells, salary requirements, and funds available. After the preparation of a draft budget, a review meeting will be conducted with all departments and cell heads with the principal and management. In this meeting, all will justify their proposals. After finalizing the budget values, it will be presented to the governing body for final approval.

10.2.2 Utilization of allocated funds (5) Institute Marks : 5.00

The allocated funds are utilized properly and are adequate as per the Academic requirements. The budget funds are utilized on a priority basis as per the requirements of each department based on the availability of funds. The finance committee monitors the utilization of allocated funds. Major heads are spent directly from the account section. However, all recurring and non-recurring expenditure of institute/departments is met in full (including salaries, lab consumables, miscellaneous expenditure, etc.) After the completion of every financial year, the budget will be audited by an external auditor to understand the reliability of budget utilization. The institution carefully monitors the expenses such that the necessities are met without affecting the smooth working of the institution. The management has been very efficiently and effectively doing this over the past several years and the institution never had any serious budget crunch that affected the normal functioning of the institution.

10.2.3 Availability of the audited statements on the institute's website (5) Institute Marks : 5.00

PACEITS follows good governance. All the college accounts are taken care of by the accounting department, which will be audited periodically (every year) by auditors. The budget allocation and utilizationare monitored by the finance committee. Supplementary allocations are made in special cases if needed.

The audited statements are available on the institute website on the finance committee webpage.

10.3 Program Specific Budget Allocation, Utilization (30) Total Marks 30.00

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Total Income at Institute level: For CFY,CFYm1,CFYm2 & CFYm3
CFY: (Current Financial Year),
CFYm1 : (Current Financial Year minus 1),
CFYm2 : (Current Financial Year minus 2) and
CFYm3 : (Current Financial Year minus 3)

Table 1 :: CFY 2022-2023

Total Budget 720000		Actual expenditure (till…): 551560		Total No. Of Students 267
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
1,50,000	5,70,000	1,06,950	4,44,610	2065.77

Table 2 :: CFYm1 2021-2022

Total Budget 2238000		Actual expenditure (till…): 2080470		Total No. Of Students 317
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
16,50,000	5,88,000	16,38,000	4,42,470	6563.00

Table 3 :: CFYm2 2020-2021

Total Budget 570000		Actual expenditure (till…): 454190		Total No. Of Students 381
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
25,000	5,45,000	21,360	4,32,830	1192.10

Table 4 :: CFYm3 2019-2020

Total Budget 602000		Actual expenditure (till…): 512415		Total No. Of Students 385
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
15000	5,87,000	12800	4,99,615	1330.95

Items	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till	Budgeted in 2020-2021	Actual Expenses in 2020-2021 till	Budgeted in 2019-2020	Actual Expenses in 2019-2020 till
Laboratory equipment	150000	106950	165000(	163800(	25000	21360	15000	12800
Software	0	0	0	0	0	0	0	0
Laboratory consumable	40000	37260	30000	20300	20000	18400	50000	36365
Maintenance and spares	150000	111350	140000	89670	130000	88930	125000	97150
R & D	160000	121000	150000	118000	130000	72000	150000	145000
Training and Travel	200000	160000	250000	200000	250000	240000	250000	211100
Miscellaneous Expenses*	20000	15000	18000	14500	15000	13500	12000	10000
Total	**720000**	**551560**	**2238000**	**2080470**	**570000**	**454190**	**602000**	**512415**

10.3.1 Adequacy of budget allocation (10) Institute Marks : 10.00

Before the beginning of every financial year, the institution's finance committee chaired by the principal invites budget proposals from various departments.

The department budget coordinator collects information regarding budget proposals from the staff and lab in-charges. The staff and lab in-charges submit their proposals considering various factors lab equipment, software, lab consumables, maintenance and repairs, travel and training, etc.

The department budget coordinator prepares a draft budget considering all the proposals.

Before submitting the budget proposal to the institute finance committee, the department conducts a meeting chaired by the Head of the department to look into the budget proposals.

After the Head of the Department is satisfied with all the proposals, it is presented to Program Assessment and Quality Improvement Committee (PAQIC) for suggestions.

After incorporating all feasible suggestions, the budget is submitted to the institute's finance committee. After receiving all the budget proposals, the institute finance committee conducts a review meeting to consider the justificationfor department proposals.

After considering all the department requirements and funds available the finance committee sanctions head-wise amounts to the department.

10.3.2 Utilization of allocated funds (20) Institute Marks : 20.00

The department utilizes the funds allotted for various items effectively. The head of the department monitors the utilization of recurring and nonrecurring funds. The head of the department frequently reviews the funds utilized to estimate the remaining work to be carried on. In contingency, the head of the department holds cash of ten thousand, for which after the utilization, bills will be submitted to the Central Administrative office for transparency in transactions. The department also presents the budget sanctioned and utilized in the Program Assessment and Quality Improvement committee (PAQIC) for review. At the end of every financial year, the institutional budget which is a consolidation of all departments is audited by external auditors, andaninternal financial audit is conducted to estimate the appropriateness of the funds utilized.

10.4 Library and Internet (20) Total Marks 20.00

10.4.1 Quality of learning resources (hard/soft) (10) Institute Marks : 10.00

- Availability of relevant learning resources including e-resources and Digital Library

  Pace Institute of Technology and Sciences has a spacious and comfortable library to facilitate the student's and staff for their learning. Pace Library provides all the required learning resources including e-resources and Digital Library. It is filled with many volumes of books, print and online journals, e-books, magazines, CDs & DVDs, M. Tech Dissertations, etc., The library has access to e-journals in IEEE-ASPP, DELNET, IEI, and N-LIST(INFLIBNET).

- Accessibility to students: The library has provided all the facilities for the students and faculty to enhance their learning. The library is available from morning 8.00 AM to evening 8.00 PM for the students and staff. It is available on sundays and holidays from morning 9.00 AM to evening 1.00 PM.
  - Circulation Service
  - Reference Service
  - Clipping Service
  - Internet Service
  - Reprographic Service
  - OPAC

10.4.2 Internet (10) Institute Marks : 10.00

Internet Is provided by INRI Communications and BSNL. The available bandwidth is 150 MBPS from INRI Communications and 40 MBPS and 40 MBPS from two lines of BSNL. Wi-fi facility is available throughout the campus by INRI Communications. The internet is made available through LAN connections for all the labs, offices, and digital libraries and a wi-fi facility is available for all common areas in the campus like class rooms, corridors and ground. The internet is highly secured with efficient Firewall Sophos XG 330.

Annexure I

(A) PROGRAM OUTCOME (POs)

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.

(B) PROGRAM SPECIFIC OUTCOME (PSOs)

Program should specify 2-4 program specific outcomes.

PSO1	Promotes the technical knowledge, skills and attitude for the requirement of industry and Society towards Mechanical Engineering.
PSO2	Facilitates to plan, design, develops and tests an energy efficient manufacturing system for required engineering application.
PSO3	Nurtures the students towards advanced design and analysis tools for mechanical system.

Declaration

The head of the institution needs to make a declaration as per the format given -

- I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines inforce as on date and the institutes hall fully abide by them.
- It is submitted that information provided in this Self Assessment Report is factually correct.
- I understand and agree that an appropriate disciplinary action against the Institute willbe initiated by the NBA. In case, any false statement/information is observed during pre-visit, visit, postvisit and subsequent to grant of accreditation.

Head of the Institute
Name : Dr. G. V. K. Murthy
Designation : Principal
Signature :

Seal of The Institution :

Place : Ongole
Date : 01-04-2023 18:55:56