

Department of Production Technology

**Whole Heartedly Welcomes the
NBA EXPERT TEAM MEMBERS**

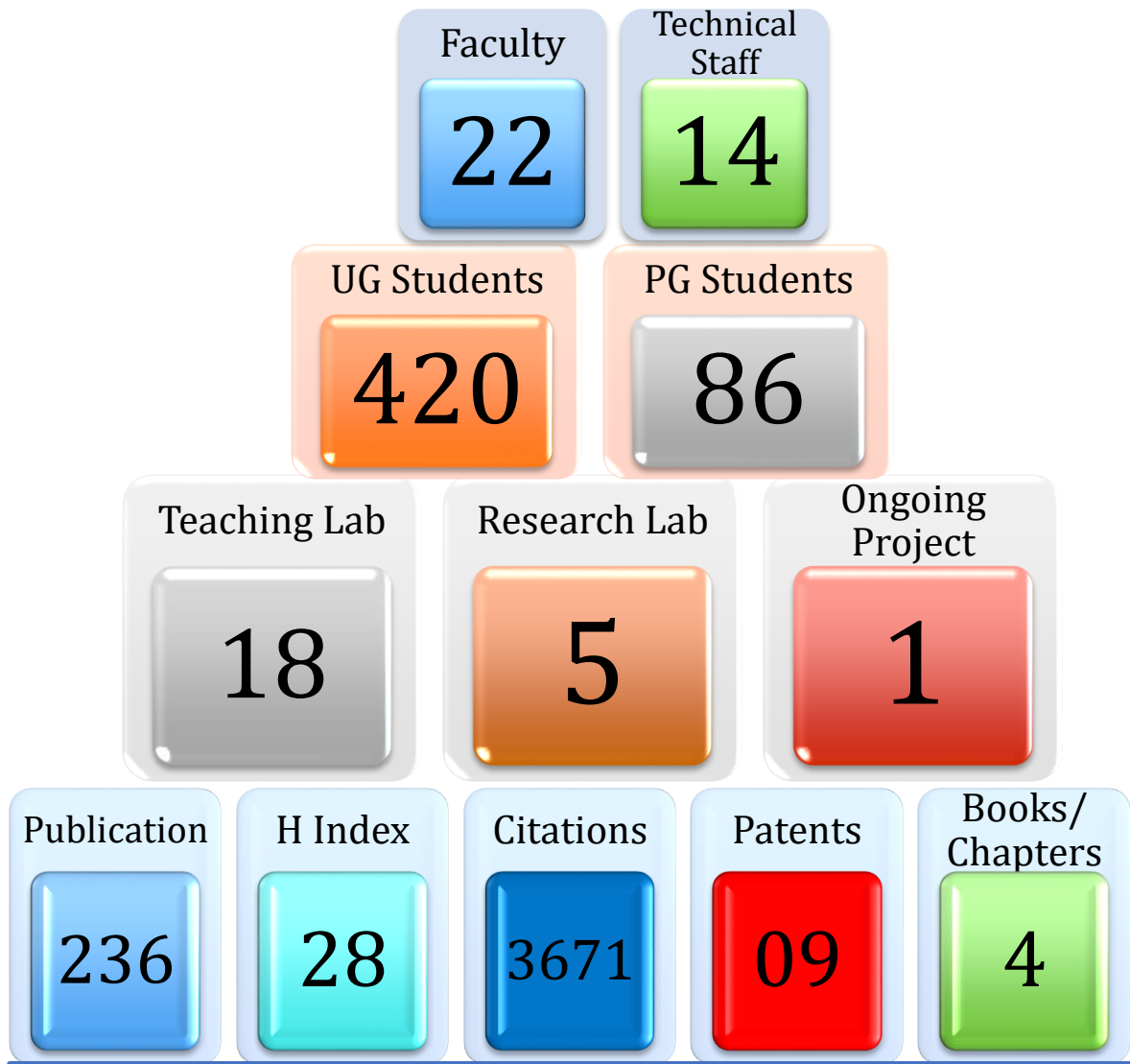


Estd. 1949



Department of Production Technology

- 1 Started in 1977, fifth department in MIT Campus
- 2 UGC – SAP recognized Department – Rs.71.5 Lakh - 2012
- 3 DST – FIST recognized Department – Rs.1.08 Crore - 2012
- 4 Tamil Nadu Innovation Initiatives (TANII) – Rs.17.82 Crore - 2020
- 5 Established State of Art facilities for Research UGC-UPE – Rs. 443 Lakh - 2016
- 6 Modernization of Teaching Labs to the tune off Rs. 2.2 Crore - 2022
- 7 Centre for Robotics and Automation (*jointly with Department of Instrumentation Engineering*) - 2022
- 8 Sponsored research – Rs.1.01 Crore - 2017
- 9 MOU with the Govt. of Tamilnadu Dr.MGR Medical University Chennai – UPE (Limited Manufacturing Facility) since 2022
- 10 Prof. SRK Endowment - 2022 – 10 Lakh



<https://annauniv.irins.org/faculty/index/Department+of+Production+Engineering>

Former Faculty members

Dr. S Ganapathy
Former Registrar
Anna University



Prof Dr.P.R.Nakkeeran,
Former Director
Tamil virtual university



Dr. P. Mannar Jawahar,
Former VC, Anna University



Prof Dr S. Sathikh,
Former Vice Chancellor
Madras University



Dr. A. Rajadurai
Former Dean,
Madras Institute of Technology,
Anna University



Distinguished Alumni

1980

Dr. L. KARUNAMOORTHY
Former Registrar, Anna University



1996

Mr. RR. Clement
IRS, Commissioner of Income Tax



2001

Mr. Sivasankaran P S
Additional Commissioner, Income Tax Department



2011

Mr. Karthikeyan
Assistant Commandant, CRPF



Ms. Divya Priyadharshini
Sub collector



2012

Mr. Arun kumar
Indian Air Force



2017

Mr. K PRADEEP

Assistant Collector, South Tripura



2017

Mr. Ezhilarasan V
UPSC CSE-2022 AIR - 523



2020

Institute Vision

Anna University is to be a world class institution by producing professionals with high **technical knowledge, professional skills and ethical values** and remain as a preferred partner to the industry and community for their economic and social development through **excellence in teaching, research and consultancy**. Anna University shall be recognized as a point of reference, a catalyst, a facilitator, a trend setter and **a leader** in technical education.

Department Vision

To develop educational avenues for the students to emerge as disciplined **researchers, technocrats and entrepreneurs** making transformative impact on establishing a world class **society** in the domain of **Production Engineering** and Automation



1.1 MISSION

Institute Mission

Department Mission

IM1	Producing students who are intellectually and technically equipped with well-defined knowledge, skills and ethics who are creative thinkers, inspiring leaders and contributing citizens .
IM2	Introducing high quality academic and research programs and providing extension services in cutting edge technologies.
IM3	Ensuring a supportive campus climate with dynamic leadership and development opportunities to meet the needs of the students, faculty and staff.
IM4	Enhancing academic productivity through induction of quality faculty, accelerated graduation, credit banking, augmented continuing education opportunities and adoption of current technology.
IM5	Sharing the intellectual resources and infrastructural facilities among the academia from other institutions and among the industrial society, funding agencies and government.
IM6	Enhancing the collaborative partnership between Industry and Institute for commercializing and transferring the latest technological know-how towards societal development.
IM7	Setting up a Global University Network Campus that embodies the ideals of an open, democratic and global society catering to the needs of the global community and satisfying cultural, ethnic and racial diversity.
IM8	Expanding global participation spread across continents with the aid of interactive satellite-based education and the usage of digital library .
IM9	Enriching the national and international character of the university.
IM10	Ensuring efficient administrative co-ordination and effective decision-making through necessary reforms and by strategically allocating resources.
IM11	Benchmarking against technologically sound global leaders with a view towards continuous improvement

DM1	To impart students with knowledge on modern manufacturing and automated systems by incorporating critical thinking, leadership qualities, communication with interpersonal skills .
DM2	To create a conducive environment for exchange of multidisciplinary ideas towards research, creativity, innovation and entrepreneurship to meet the societal needs with optimal solutions
DM3	To follow the values of integrity and honesty through curricular, co-curricular and extracurricular activities.

Correlation

	IM1	IM2	IM3	IM4	IM5	IM6	IM7	IM8	IM9	IM10	IM11
DM1	H	M	M	M	L	L	L	-	-	L	L
DM2	M	M	M	M	M	M	L	L	L	M	-
DM3	M	L	M	L	L	L	M	-	L	M	-

**L- Low (Slight),
M- Medium (Moderate),
H- High (Substantial)**

1.1 VISION

Department Vision (DV)

To develop educational avenues for the students to emerge as disciplined **researchers, technocrats** and **entrepreneurs** making transformative impact on establishing a world class **society** in the domain of **Production Engineering** and Automation

Department Mission (DM)

DM1	To impart students with knowledge on modern manufacturing and automated systems by incorporating critical thinking, leadership qualities, communication with interpersonal skills.
DM2	To create a conducive environment for exchange of multidisciplinary ideas towards research, creativity, innovation and entrepreneurship to meet the societal needs with optimal solutions
DM3	To follow the values of integrity and honesty through curricular, co-curricular and extracurricular activities.



Mapping of Department Vision with Mission

	DM1	DM2	DM3
DV	High	High	Medium

1.2,1.5 Program Educational Objectives Vs. Dept. Mission

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO1	Graduates will be competent to effectively design, model, and analyze products and processes, incorporating essential skills required for automated production systems
PEO2	Graduates will emerge with the necessary confidence and expertise in production engineering, positioning them for successful careers in industry, research organizations, or as entrepreneurs
PEO3	Graduates will incorporate ethical considerations and a keen awareness of societal and environmental responsibilities into their life long learning practices.

DM1	To impart students with knowledge on modern manufacturing and automated systems by incorporating critical thinking, leadership qualities, communication with interpersonal skills.
DM2	To create a conducive environment for exchange of multidisciplinary ideas towards research, creativity, innovation and entrepreneurship to meet the societal needs with optimal solutions
DM3	To follow the values of integrity and honesty through curricular, co-curricular and extracurricular activities.

CONSISTENCY OF MISSION WITH PEOs OF THE PROGRAMME

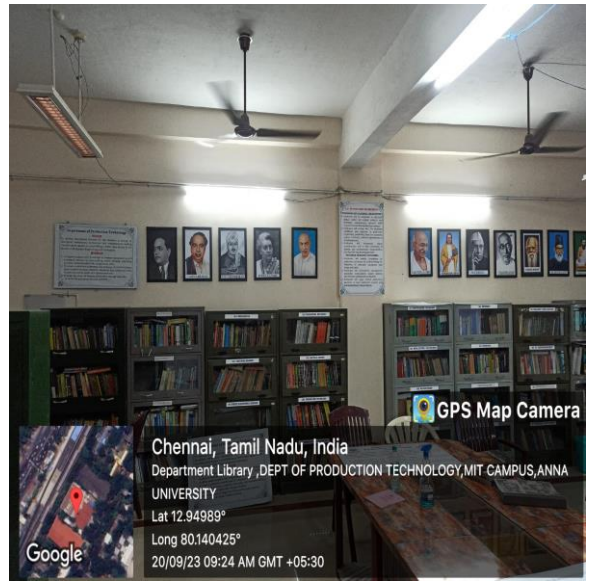
	DM1	DM2	DM3
PEO1	3	2	1
PEO2	3	3	2
PEO3	1	2	3

1- Low (Slight),
2- Medium (Moderate),
3- High (Substantial)

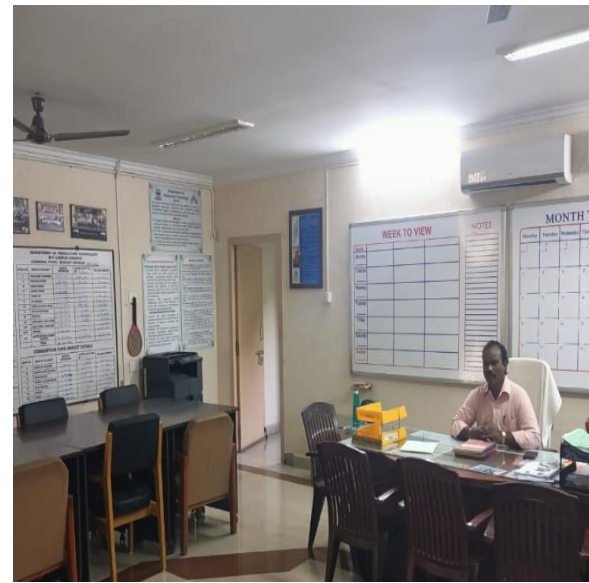
1.3 Publication and Dissemination of Dept. Vision, Mission and PEOs



Ground Floor



Department library



HOD Room



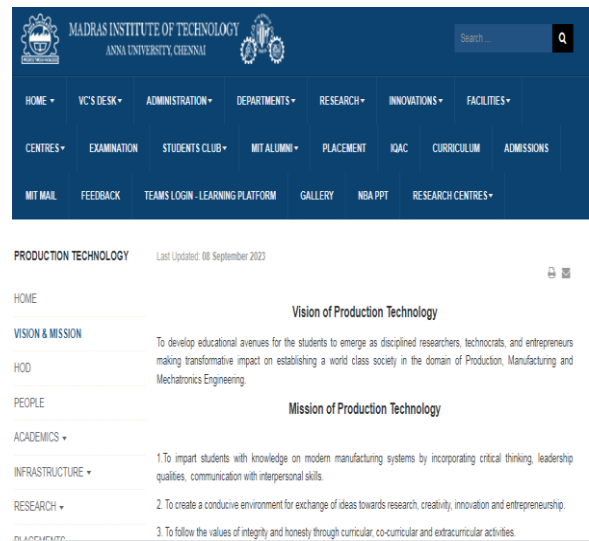
Prof. SRK Conference Hall



Inside the Laboratory



International Conference Brochure

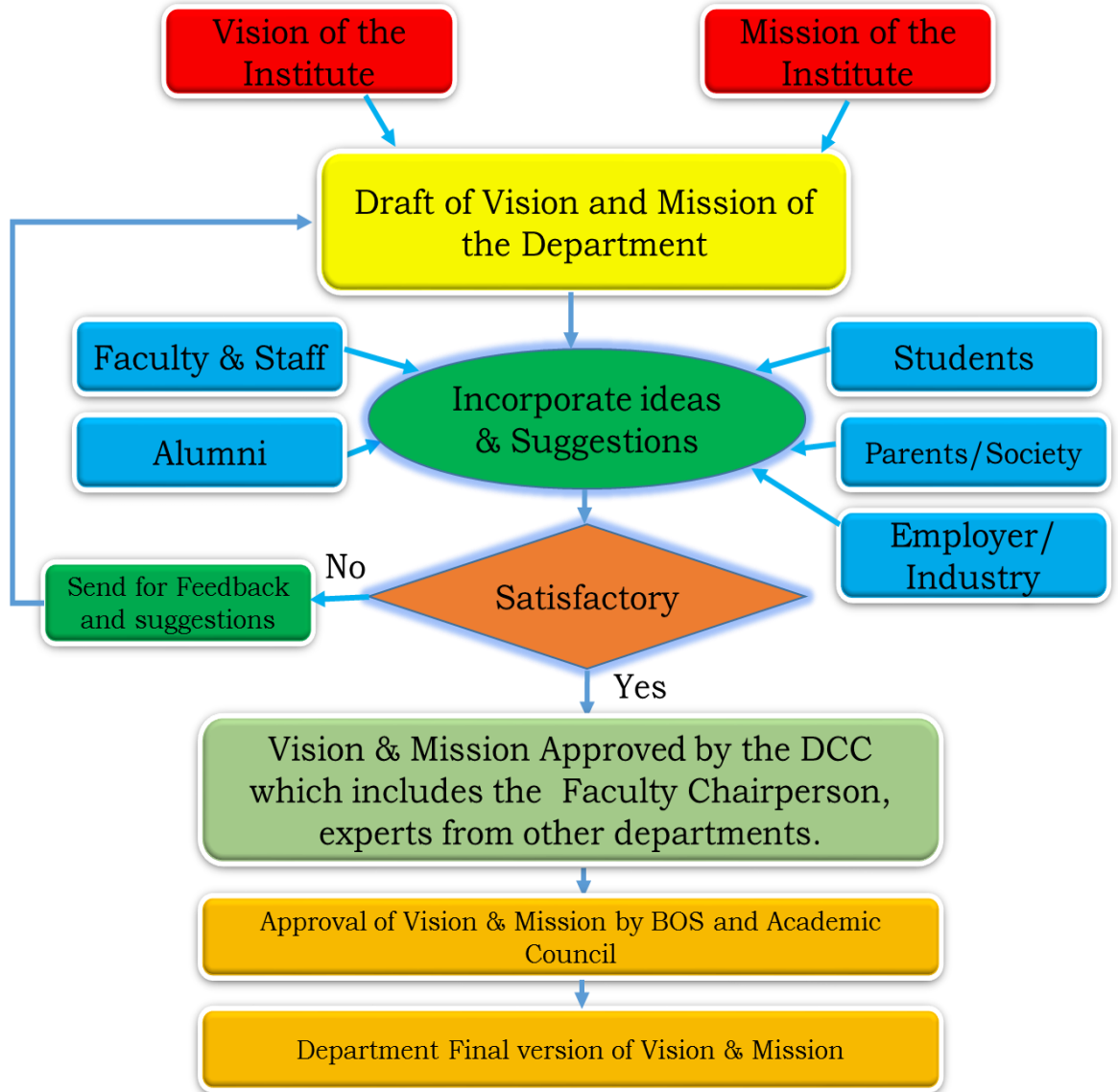


Department Website

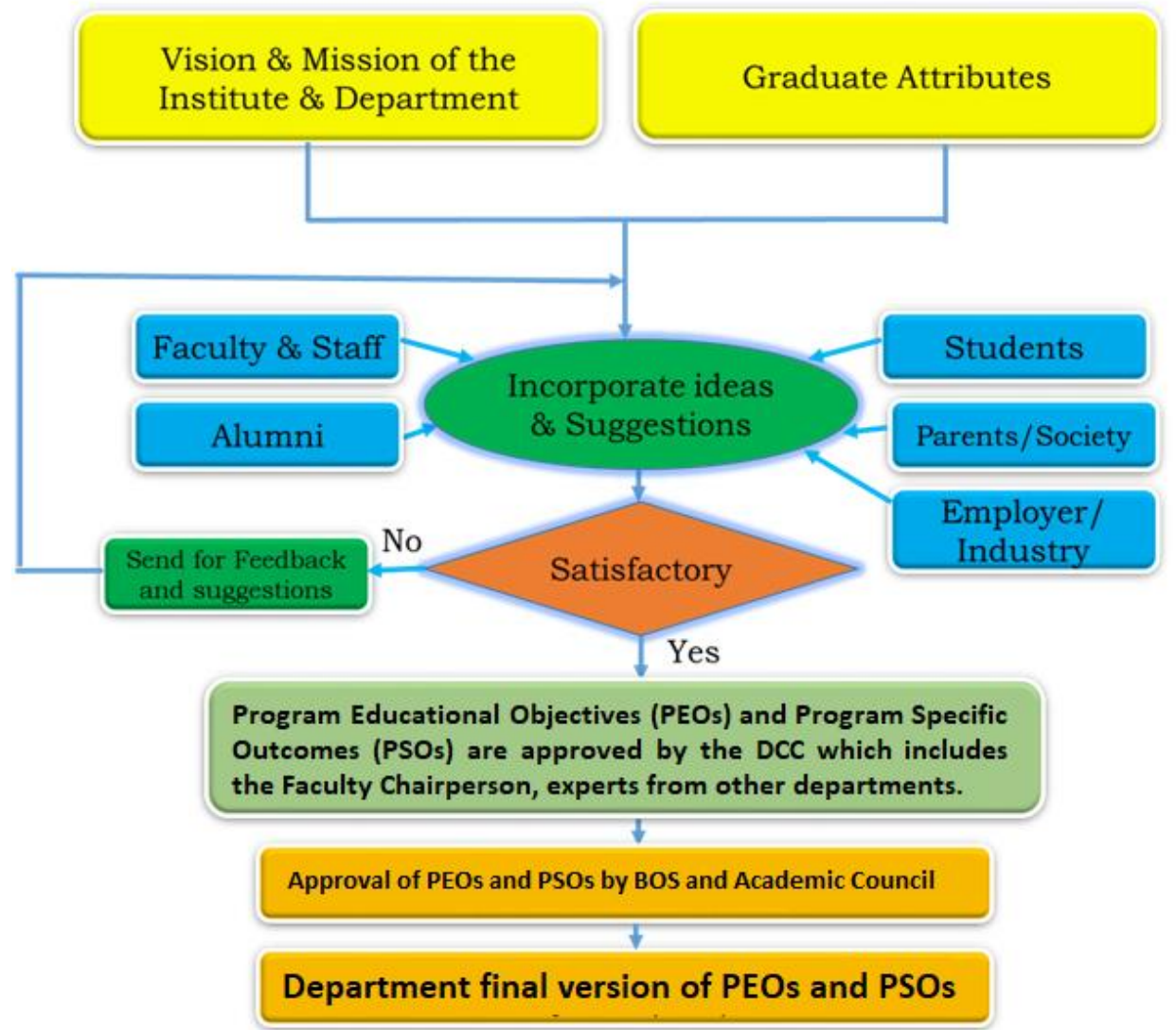


Corridor

1.4 Process for defining the Vision and Mission of the Department, and PEOs of the program



Process of defining Vision and Mission of the Department



Process of Establishing Programme Educational Objectives (PEOs) and PSOs of the Department

Program Outcomes (POs) & Program Specific Outcomes (PSOs)

PO	Graduate Attributes
PO 1	Engineering knowledge
PO 2	Problem analysis
PO 3	Design/development of solutions
PO 4	Conduct investigations of complex problems
PO 5	Modern tool usage
PO 6	The Engineer and society
PO 7	Environment and sustainability
PO 8	Ethics
PO 9	Individual and team work
PO 10	Communication
PO 11	Project management and finance
PO 12	Life-long learning

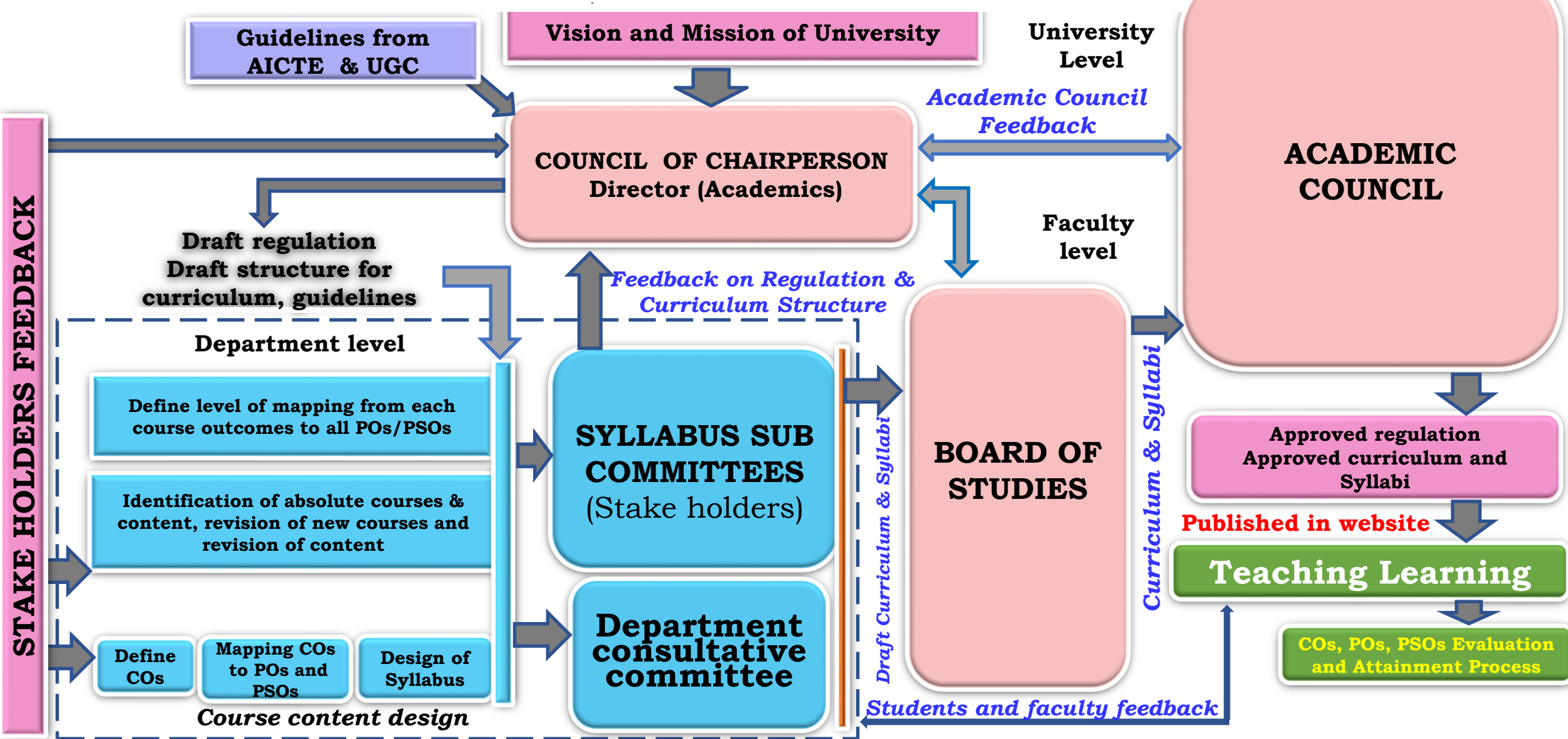
PSOs	
PSO 1	Graduates will exhibit foundation in production techniques by understanding the behaviour of materials, mechanics and design principles
PSO 2	Graduates will demonstrate management principles, sustainability, quality systems and resource optimization in industry
PSO 3	Graduates will apply various production practices to meet industrial, societal and multidisciplinary requirements.

1- Low (Slight),
2- Medium (Moderate),
3- High (Substantial)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
PEO1	3	3	3	2	2	2	2	1	2	1	2	2	3	1	2
PEO2	3	3	3	2	3	2	2	2	3	2	3	3	3	2	2
PEO3	1	1	1	1	1	3	3	3	2	1	1	3	1	1	2

2.1.1 Process for designing the program curriculum

PROCESS ON FRAMING REGULATIONS, PROGRAM CURRICULAM AND SYLLABI AT ANNA UNIVERSITY



2.1.2 Structure of the Curriculum

Criterion : 02

R2015

Course area summary

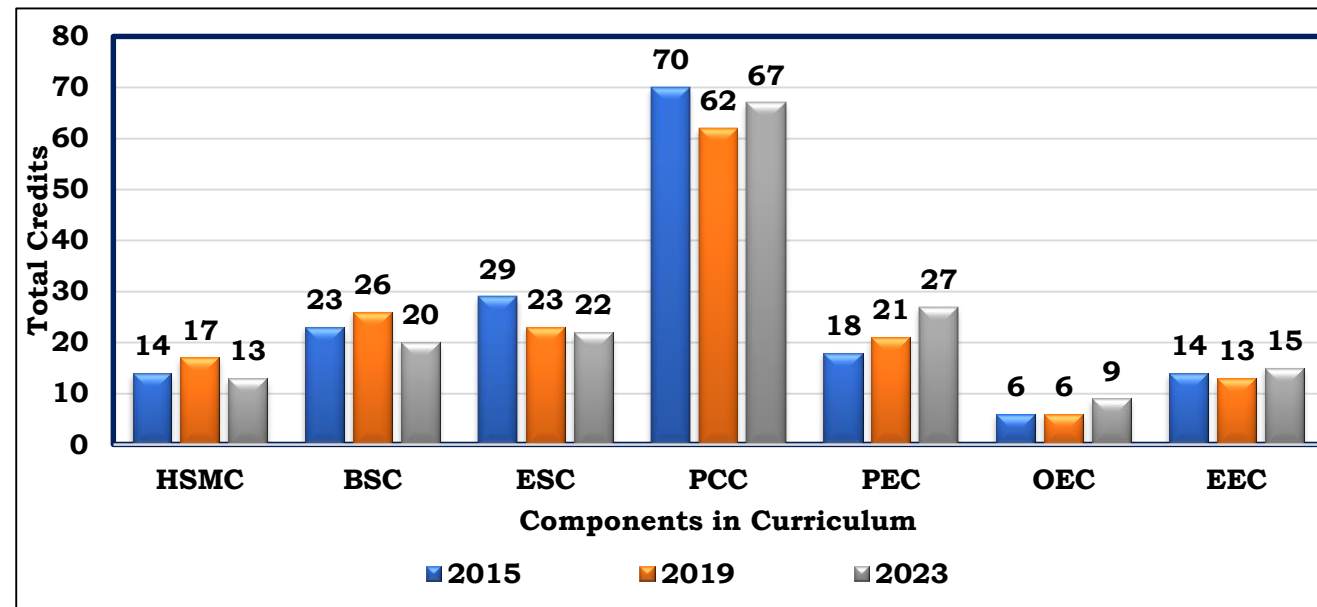
R2019

Sl. No.	Subject Area	Credits as per semester								Credits Total
		I	II	III	IV	V	VI	VII	VIII	
1.	HS	04	04	-	03	-	-	03	-	14
2.	BS	12	07	04	-	-	-	-	-	23
3.	ES	06	09	14	-	-	-	-	-	29
4.	PC	-	05	05	21	17	14	08	-	70
5.	PE	-	-	-	-	06	06	03	03	18
6.	OE	-	-	-	-	-	-	03	03	06
7.	EEC	-	-	-	-	-	02	02	10	14
8.	AC	-	-	-	-	-	-	-	-	00
	TOTAL	22	25	23	24	23	22	19	16	174

Sl. No	Subject Area	Credits as per semester								Credits Total
		I	II	III	IV	V	VI	VII	VIII	
1.	HS	04	04	03	03	03	-	-	-	17
2.	BS	12	07	04	03	-	-	-	-	26
3.	ES	05	14	04	-	-	-	-	-	23
4.	PC	-	-	11	17	14	13	07	-	62
5.	PE	-	-	-	-	03	06	09	03	21
6.	OE	-	-	-	-	-	03	03	-	06
7.	EEC	-	-	-	-	-	-	05	08	13
8.	AC	-	-	-	-	-	-	-	-	00
	TOTAL	21	25	22	23	20	22	24	11	168

R2023

Sl. No.	Subject Area	Credits as per semester								Credits Total
		I	II	III	IV	V	VI	VII	VIII	
1.	HSMC	04	06	-	-	-	-	03	-	13
2.	BSC	11	05	04	-	-	-	-	-	20
3.	ESC	10	08	04	-	-	-	-	-	22
4.	PCC	-	04	16	22	18	07	-	-	67
5.	PEC	-	-	-	02	02	14	09	-	27
6.	OEC	-	-	-	-	03	03	03	-	09
7.	EEC	01	01	01	-	-	-	04	08	15
8.	AC	-	-	-	-	-	-	-	-	00
	TOTAL	26	24	25	24	23	24	19	8	173



2.1.3 Components of the curriculum

New Core Subjects in R2015

Sl. No.	R2012 Course Code	R2012 Course Name	R2015 Course Code	R2015 Course Name
1	ME 8251	Design Concepts in Engineering	AE7351	Engineering Fluid Mechanics and Machinery
2	PR 8503	Jigs, Fixtures and Press Tools	PR7601	Computer Aided Product Design
3	-	-	PR7703	Robotic Technology

New Elective Courses in R2015

Sl. No.	R2015 Course Code	R2015 Core Name
1	CY7001	Chemistry for Smart Materials Manufacturing
2	CY7002	Surface Modifications and Analytical Techniques
3	PR7012	Modern Production Techniques

New Laboratory Subjects in 2015

Sl.No.	R2015 Course Code	R2015 Core Name
1	GE7161	Computer Practices Laboratory
2	PR7512	Metrology and Quality Control Laboratory

New Core Subjects in 2019

Sl. No.	R2015 Course Code	R2015 Core Name	R2019 Course Code	R2019 Core Name
1	EI7307	Electrical, Electronics and Control Systems	EE5251	Basics of Electrical and Electronics Engineering
2	PR7201	Machining Processes	PR5403	Machining Processes and Machine Tools
3	PR7601	Computer Aided Product Design	PR5603	Computer Aided Design and Analysis
4	-	-	PR5601	Metal Forming
5	-	-	PR5602	CNC Machines

New Elective Courses in 2019

Sl.No.	R2019 Course Code	R2019 Core Name
1	MF5652	Additive Manufacturing
2	PR5006	Theory of Metal Cutting
3	PR5008	Design of Casting and Weldments
4	PR5017	Smart Materials for Manufacturing
5	PR5018	Corrosion Engineering
6	ME5081	Process Planning and Cost Estimation

New Laboratory Subjects in R2019

Sl.No.	R2019 Course Code	R2019 Core Name
1	PR5611	CNC and Metal Forming Laboratory
2	PR5411	Machining Processes Laboratory
3	GE5161	Problem Solving and Python Programming Laboratory

2.1.3 Components of the curriculum DOMAIN-WISE GROUPING OF CORE COURSE IN THE CURRICULUM IN LINE WITH THE INTERNATIONAL ACADEMY FOR PRODUCTION ENGINEERING TAKES ITS ABBREVIATED NAME FROM THE FRENCH ACRONYM OF COLLEGE INTERNATIONAL POUR LA RECHERCHE EN PRODUCTIQUE (CIRP)

Criterion :02

	Materials and Manufacturing processes*				Manufacturing systems*		Product design process*		Statistics, industrial organization and Management*	
	MATERIALS		MANUFACTURING		ADVANCED MANUFACTURING		DESIGN AND ANALYSIS		INDUSTRIAL AND AUTOMATION	
	R2015	CIRP	R2015	CIRP	R2015	CIRP	R2015	CIRP	R2015	CIRP
R2015	Materials Science	INTR216	Machining Processes	MANU324	Metal Cutting and CNC Technology	MECH416	Engineering Mechanics	PHYS126	Engineering Fluid Mechanics and Machinery	MECH222
	Metallurgy and Materials	MANU314	Metal Forming Processes	MANU412	Computer Aided Product	COME322	Engineering Thermodynamics and Thermal Engineering	INTR216	Fluid Power Systems	
	Mechanics of Solids	MECH 224	Foundry and Welding Technology	MANU313	Computer Integrated Manufacturing Systems	DEM 427	Kinematics and Dynamics of Machines	MANU312	Statistical Quality Control and Reliability Engineering	
			Finite Element Analysis in Manufacturing	MANU414			Machine Components Design	DESI 423	Production of Automotive Components	
			Engineering Metrology	MECH321					Robotic Technology	MANU323
									Industrial Engineering and Management	PROM5421
									Mechatronics for Automation	MECH416
R2019	R2019	CIRP	R2019	CIRP	R2019	CIRP	R2019	CIRP	R2019	CIRP
	Materials Science	MANU 314	Foundry and Welding Technology	MANU313	CNC Machines	MECH 416	Engineering Mechanics	PHYS126	Fluid Mechanics and Fluid Machines	MECH 222
	Mechanics of Solids	MECH224	Machining Processes and Machine Tools	MANU324	Computer Integrated Manufacturing Systems	DEM 427	Kinematics and Dynamics of Machines	MANU312	Fluid Power Systems	
	Engineering Materials	INTR 216	Metal Forming	MANU 412			Machine Components Design	DESI 423	Statistics for production management	PROM421
			Engineering Metrology	MECH 321			Thermodynamics and thermal Engineering	MANU221	Mechatronics for Automation	MANU323
							Computer Aided Design and Analysis	COME322		

2.1.4 Process used to identify extent of compliance of the curriculum for attaining the Program Outcomes (POs) & Program Specific Outcomes (PSOs)

PO/CO	PI	CO1	CO2	CO3	CO4	CO5	PO/CO	PI	CO1	CO2	CO3	CO4	CO5
PO1	1.1.1	3.0	3.0	3.0	3.0	3.0	PO6	6.1.1	-	-	-	-	-
	1.1.2	3.0	3.0	3.0	3.0	3.0		6.2.1	-	-	-	-	-
	1.2.1	3.0	3.0	3.0	3.0	3.0	...	...	...	...	...	...
	1.3.1	3.0	3.0	3.0	3.0	3.0	...	...	...	...	...	...
	1.4.1	3.0	3.0	3.0	3.0	3.0		...	...	...	...	...
		3.0	3.0	3.0	3.0	3.0							
PO2	2.1.1						...	...	...	...	...	...	...
	2.1.2							...	...	...	...	...	...
	2.1.3	3.0	3.0	3.0	3.0	3.0	...	...	...	...	...	...
	2.2.1	3.0	3.0	3.0	3.0	3.0		...	...	...	...	...
	2.2.2						...	...	...	...	...	...
	2.2.3							...	...	...	...	...
	2.2.4						PO12	12.1.1					
	2.3.1	3.0	3.0	3.0	3.0	3.0		12.1.2					
	2.3.2	3.0	3.0	3.0	3.0	3.0		12.2.1					
	2.4.1							12.2.2	1.0	1.0	1.0	1.0	1.0
	2.4.2							12.3.1					
	2.4.3							12.3.2					
	2.4.4							1.0	1.0	1.0	1.0	1.0	
			3.0	3.0	3.0	3.0	3.0						

PO/CO	PI	CO1	CO2	CO3	CO4	CO5
PSO1	Foundation in Materials, Mechanics & Design	1.0	1.0	1.0	1.0	1.0
PSO2	Management Sustainability Quality Optimization	-	-	-	-	-
PSO3	Industry Society Multidiscipline	1.0	1.0	1.0	1.0	1.0

Program Outcomes – Competencies – Performance Indicators
 B.E. Production Engineering – Regulation 2023
 Department of Production Technology, MIT Campus, Anna University, Chennai

Subject Code and Name: PR5011-Finite Elements Analysis in Application Semester:6 (Elective) Year:3

PO	CO	PSO1					PSO2	PSO3	PSO4	PSO5
		1	2	3	4	5				
PO1	4.1.3						Foundation in Materials, Mechanics & Design	PSO1	PSO2	PSO3
	4.1.4									
	4.2.1									
	4.2.2	2.0	2.0	2.0	2.0	2.0				
PO2	4.3.1						Management	PSO2	PSO3	PSO4
	4.3.2									
PO5	4.3.3	2.0	2.0	2.0	2.0	2.0	Sustainability Quality Optimization	PSO3	PSO4	PSO5
	4.3.4									
	5.1.1	2.0	2.0	2.0	2.0	2.0				
	5.1.2	2.0	2.0	2.0	2.0	2.0				
	5.2.1									
	5.2.2									
5.3.1						Industry Society Multidiscipline	PSO4	PSO5	PSO6	
5.3.2										
		2.0	2.0	2.0	2.0	2.0				

COs/POs & PSOs	Mapping of COs with POs and PSOs														
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Attain understanding of the foundational principles involved in solving Finite Element problems.	3	3	1	2	2	-	-	1	-	1	-	1	1	-	2
Apply the process of discretization and solution to one-dimensional solid mechanics and heat transfer problems using Finite Element Analysis.	3	3	1	2	2	-	-	1	-	1	-	1	1	-	2
Examine the influence of shape functions and the utilization of higher order formulations in achieving convergence while solving FEA problems.	3	3	1	2	2	-	-	1	-	1	-	1	1	-	2
Implement computer-based techniques to solve problems utilizing Finite Element Analysis.	3	3	1	2	2	-	-	1	-	1	-	1	1	-	2
Analyze a production process using Finite Element Analysis, considering its parameters and effects on the process	3	3	1	2	2	-	-	1	-	1	-	1	1	-	2
CO/PO & PSO Average	3.0	3.0	1.0	2.0	2.0	-	-	1.0	-	1.0	-	1.0	1.0	-	2.0

HOD
 23/3/2023

Faculty Signature

2.2.1 Process followed to improve quality of Teaching Learning (Pedagogy: Innovation Practices In Teaching Learning Process)



Project Based Learning

- Mini Projects
- Case Studies
- Socially Relevant Project
- Creative Innovative Project
- Final Year Project



Chalk and Talk Learning

- ICT Board
- Lectures
- Seminars
- Assignments
- Case Studies



Activity Based Learning

- Tutorial
- Group Discussion
- Flipped Classroom
- Group Game in Class
- Quizzes



Supportive Learning

- Assignment
- Quiz
- Projects
- Course Material
- Web Content



Digital Resources

- Books
- Mind maps
- Visual Aids



Self and External Learning

- Home Assignments
- Video Lectures
- Seminars
- Guest Lectures
- Field Visits
- Industrial Visits



2.2.1 Process followed to improve quality of Teaching Learning PROCESS SLOW LEARNER IDENTIFICATION AND ENCOURAGEMENT OF ADVANCED LEARNER

Class Committee Meeting Minutes

MINUTES OF THE FIRST CLASS COMMITTEE MEETING FOR 3/8 B.E PRODUCTION ENGINEERING FULL TIME HELD ON 6/8/2018 AT 10.00 AM IN HOD CABIN, DEPARTMENT OF PRODUCTION TECHNOLOGY, MIT CAMPUS

The following members in the enclosed attendance sheet were presented in the class committee meeting; The HOD welcomed the Members and followed by the agenda were moved by the faculty advisor. The HOD brought up and explained the vision, mission of the department and the importance of the PO's,PEO's,PSO's and course outcomes to the students.

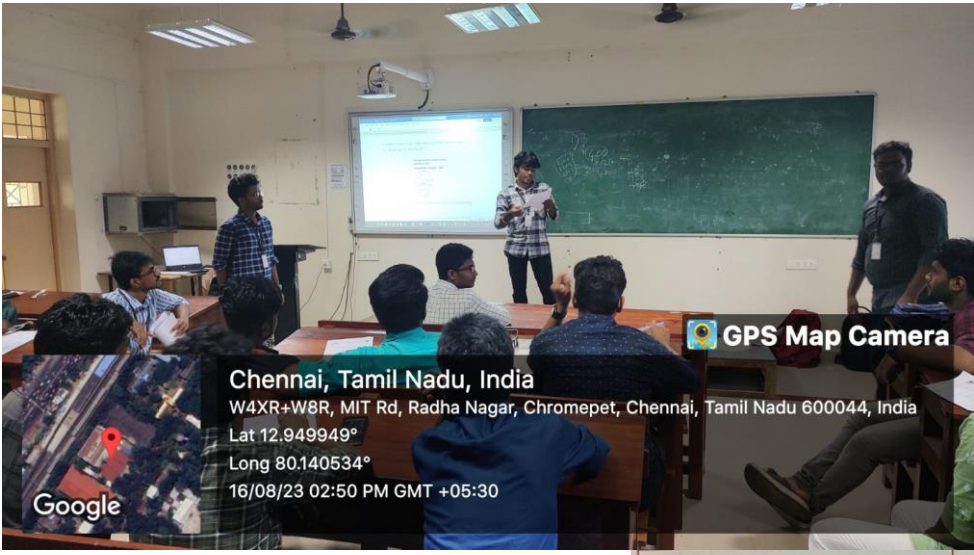
AGENDA 1: Assessment Schedule
After due deliberation, the first assessment schedule is approved and enclosed the schedule in ANNEXURE-1.

AGENDA 2-4: Shortage of Attendance, Pedagogical Plan, Slow and Fast Learners Categories and Target for Cos.
The faculty members reported that, the following students were lagging the attendance, individual course plan and pedagogical plan also discussed on each course and list of slow and fast learner were identified and action plan is also proposed and after deliberation attainment target were fixed as follows,

S.NO	SUBJECT NAME	FACULTY NAME	SA REG. NUMBER	PEDAGOGY PLAN	REG. NUMBER SLOW LEARNER	ATTAINMENT TARGET ON COS
1	AE7351 – ENGINEERING FLUID MECHANICS AND MACHINERY	C.Mahenderan	Nil	Chalk and Talk	Reg. No: 2017507061 2017507042 2017507022 Action plan: Problems with Answers are discussed	60

Advanced Learners

- Value Added Courses from L&T and CUIC (8 Courses, 36 Students)
- Student Exchange Program (2 Nos.)



Senior Student Initiatives

Retest

Reg No	Asses I	Retest Asses I	Asses II	Retest Asses II
2017507002	17.5		13	29
2017507008	9	13	0	20.5
2017507009	16.5	18.5	10	19.5
2017507010	21.5	30	7.5	28
2017507021	32		21	33
2017507022	18	14.5	24.5	
2017507024	2	19	16.5	11.5

ICT Facility

INFORMATION
COMMUNICATION
TECHNOLOGY
TOOLS(ICT)

LEARNING
MANAGEMENT
SYSTEM

DEPARTMENT
LIBRARY

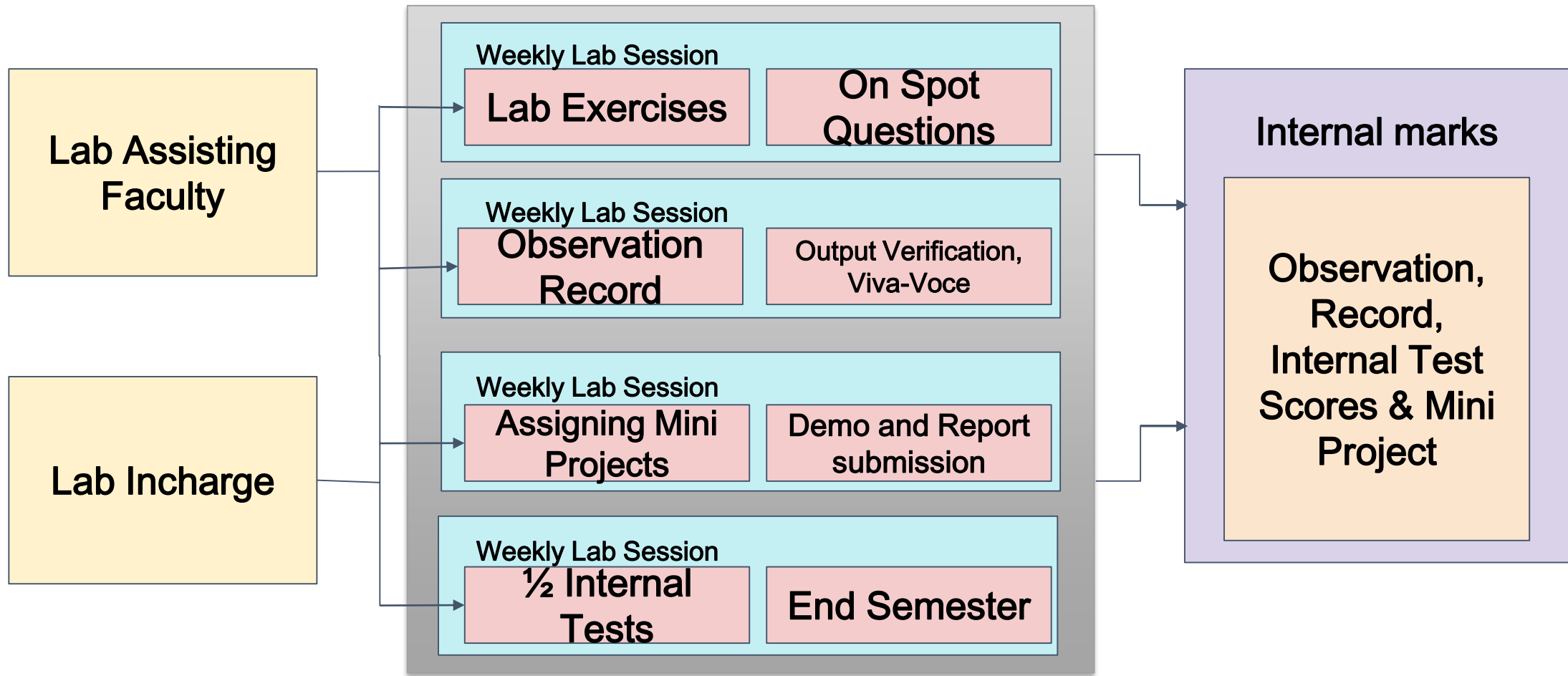


Dept. Library
Management
System &
Digitalization

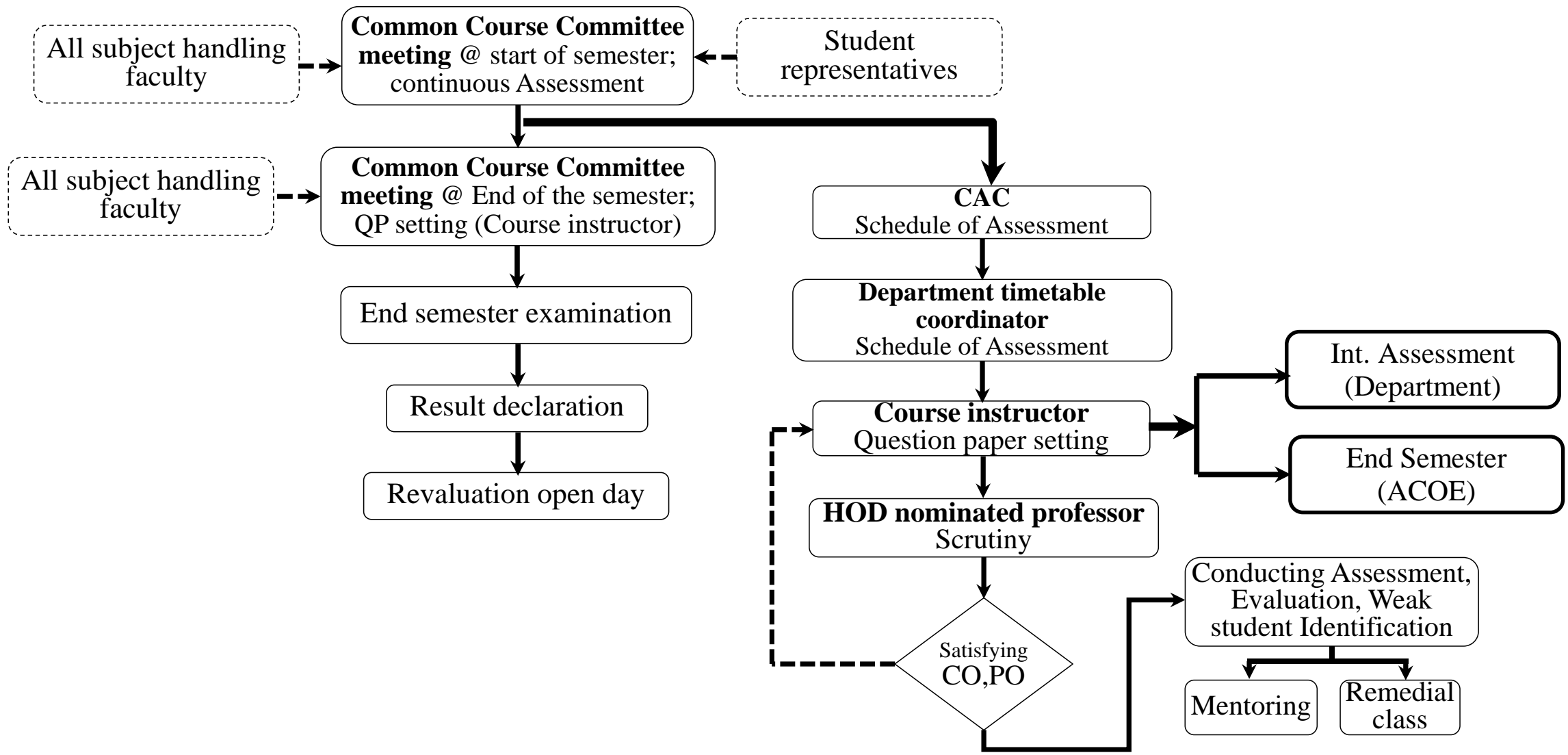
- **Library Automation Software - Rs. 58, 999/-**
- **Books-1500**
- **Plagiarism Checking**
 - **URKUND**
 - **TURNITIN**

Smart
Class rooms - 2

Class
rooms - 10



2.2.2 PROCESS FOR QUESTION PAPER SETTING AND EVALUATION



2.2.2 Process to ensure questions from outcomes/learning levels perspective

Criterion : 02

Question. No	Marks / CO					Total Marks	Marks / BL					
	CO 1	CO 2	CO 3	CO 4	CO 5		L1	L2	L3	L4	L5	L6
1	2	-	-	-	-	2	2	-	-	-	-	-
2	2	-	-	-	-	2	2	-	-	-	-	-
3	-	2	-	-	-	2	-	2	-	-	-	-
4	-	2	-	-	-	2	-	2	-	-	-	-
5	-	-	2	-	-	2	-	2	-	-	-	-
6	-	-	2	-	-	2	-	2	-	-	-	-
7	-	-	-	2	-	2	2	-	-	-	-	-
8	-	-	-	2	-	2	2	-	-	-	-	-
9	-	-	-	-	2	2	2	-	-	-	-	-
10	-	-	-	-	2	2	2	-	-	-	-	-
11	13	-	-	-	-	13	-	-	13	-	-	-
12	-	13	-	-	-	13	-	-	-	13	-	-
13	-	-	13	-	-	13	-	-	13	-	-	-
14	-	-	-	13	-	13	-	-	-	13	-	-
15	-	-	-	-	13	13	-	-	13	-	-	-
16	-	-	-	7	8	15	-	-	-	-	7	8
Total	17	17	17	24	25	100	L1+L2= 20		L3+L4= 65		L5+L6= 15	
Mark Distribution in (%)	17%	17%	17%	24%	25%	100	20%		65%		15%	

Outcome based Education

2.2.2 Evidence of COs coverage in class test / mid-term tests

DEPARTMENT OF PRODUCTION TECHNOLOGY

B.E., PRODUCTION ENGINEERING

IV SEMESTER – ASSESSMENT I

PR 7451 – KINEMATICS AND DYNAMICS OF MACHINES

(Regulation 2015)

Time: 90 mins

Answer ALL Questions

Max. Marks: 50

Date: 29.01.2019

Part – A (5 x 2 = 10 Marks)

Q.No.	Question	Marks	CO	BL	PO
1.	Define kinematic pair. How kinematic pairs are classified.	2	1	1	1

Part – B (2 x 13 = 26 Marks)

Q.No.	Question	Marks	CO	BL	PO
6.	With the help of neat sketches explain the various inversions of a four bar mechanism	13	1	2	1,2,4,9

Part – C (1 x 14 = 14 Marks)

Q.No.	Question	Marks	CO	BL	PO
8.	A cam operates an offset roller follower. The least radius of the cam is 50 mm, roller diameter is 30 mm, and offset is 20 mm. The cam rotates at 360 rpm. The angle of ascent is 48°, angle of	14	5	6	1,2,3,4,9

DEPARTMENT OF PRODUCTION TECHNOLOGY

B.E., PRODUCTION ENGINEERING

IV SEMESTER – ASSESSMENT II

PR 7451 – KINEMATICS AND DYNAMICS OF MACHINES

(Regulation 2015)

Time: 90 mins

Answer ALL Questions

Max. Marks: 50

Date: 26.03.2019

Part – A (5 x 2 = 10 Marks)

Q.No.	Question	Marks	CO	BL	PO
1.	Write the conditions for the maximum power transmitted	2	2	2	1

Part – B (2 x 13 = 26 Marks)

Q.No.	Question	Marks	CO	BL	PO
6.	Determine the maximum power that can be transmitted using a belt of 10 mm x 100 mm with an angle of lap of 160°. The density of the belt is 1000 kg/m ³ and the coefficient of friction may taken as 0.25. the tension in	13	2	5	1,2,4,9

Part – C (1 x 14 = 14 Marks)

Q.No.	Question	Marks	CO	BL	PO
8.	Two 20° involute spur gears having a velocity ratio of 2.5 mesh externally. Module is 4 mm and the addendum is equal to 1.23 module. Pinion rotates at 150 rpm. Find (i) the minimum	14	3	4	1,2,3,4,9

2.2.2 Quality of Assignment and its relevance to COs

Assignment – I

PR5451- Kinematics and Dynamics of Machines

1. The four bar mechanism ABCD AD is fixed on end its 300mm long the crank AB is 120mm long and rotates at 100rpm clockwise when the crank CD=600mm oscillate about D BC and AD are equal length find the angular velocity and angular acceleration of link BC when the angle $\angle BAD = 60^\circ$ **(CO1, BL 4)**

(OR)

2. In a four bar mechanism AB rotate at 30 rad/sec. the length of the link are AB=200mm, BC=400mm, CD=450mm, AD=600mm and AB is at right angle to D determine the velocity and acceleration at midpoint of the link BC. **(CO1, BL 4)**

3. In slider crank mechanism the length of crank CB and connecting rod AB are 125mm and 500mm respectively. The center of gravity of connecting rod 250mm from the slides A the crank speed is 600 rpm clockwise when like crank as turned 45° from the inner dead center position determine.

- (1) Linear velocity and acceleration of midpoint of the connecting rod
- (2) Angular velocity and angular acceleration of connecting rod. **(CO1, BL 4)**

(OR)

4. The crank of a slider crank mechanism is 15 cm and the connecting rod is 60 cm long. The crank makes 300 rpm in the clockwise direction. When it has turned 45° from the inner dead centre position, determine:

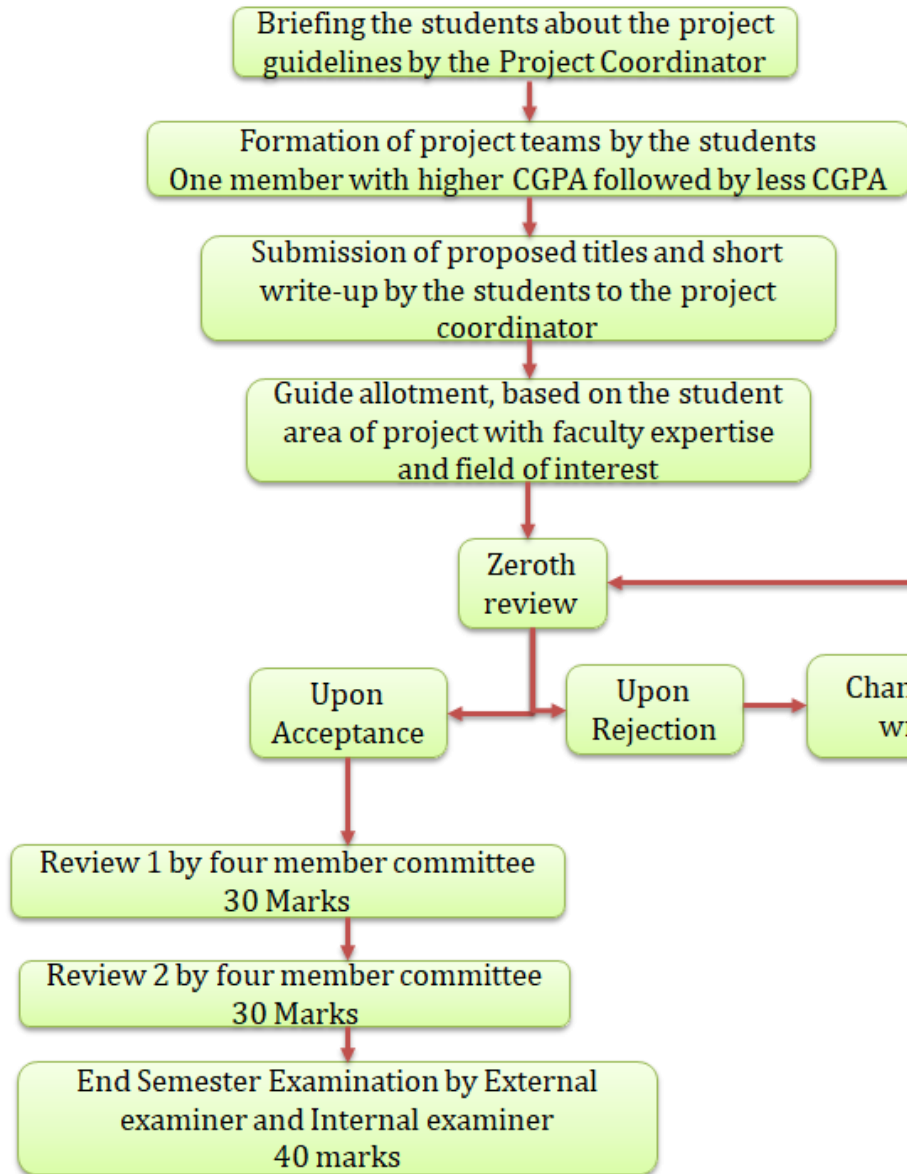
- (i) Acceleration of the midpoint of the connecting rod and

(ii) Angular acceleration of the connecting rod. **(CO1, BL 4)**

Rubrics

Criteria	Weightage %	Levels		
		Low	Medium	High
Content	50	Relevant to the questions Covers one third the questions some part with non-detailed description	Relevant to the questions Covers half the questions Detailed description	Relevant to the questions Covers all the questions Covers all aspect of questions Detailed description
Structured representation	25	Disorganized manner Inconsistent paragraph	Partially organized manner Partial consistent paragraph	Organized manner Consistent paragraph
Submission	25	Beyond two day delay	Two day delay	On time

2.2.3.A



S.No	Reg. Number	Name	Topic List
1	2019507024	KARTHIKEYAN B	1. Mapping and localization of mobile robot using IMU sensor 2. Development of multi-purpose machine with Scotch Yoke Mechanism 3. Contour attachment for lathe machine
	2019507003	ARULSELVAM A R	
	2019507022	KAMALESH A	

S.No	Staff Name	Allocation of project
7	Dr. P. Karthikeyan (Mechatronics, Robotics, Brain Computer Interface, Machine Learning and Fusion)	Mapping and Localization of Mobile Robot using IMU Sensor

Circular

With reference to the academic schedule received from Centre for Academic Courses, The review schedule for PR5811- Project II as follows.

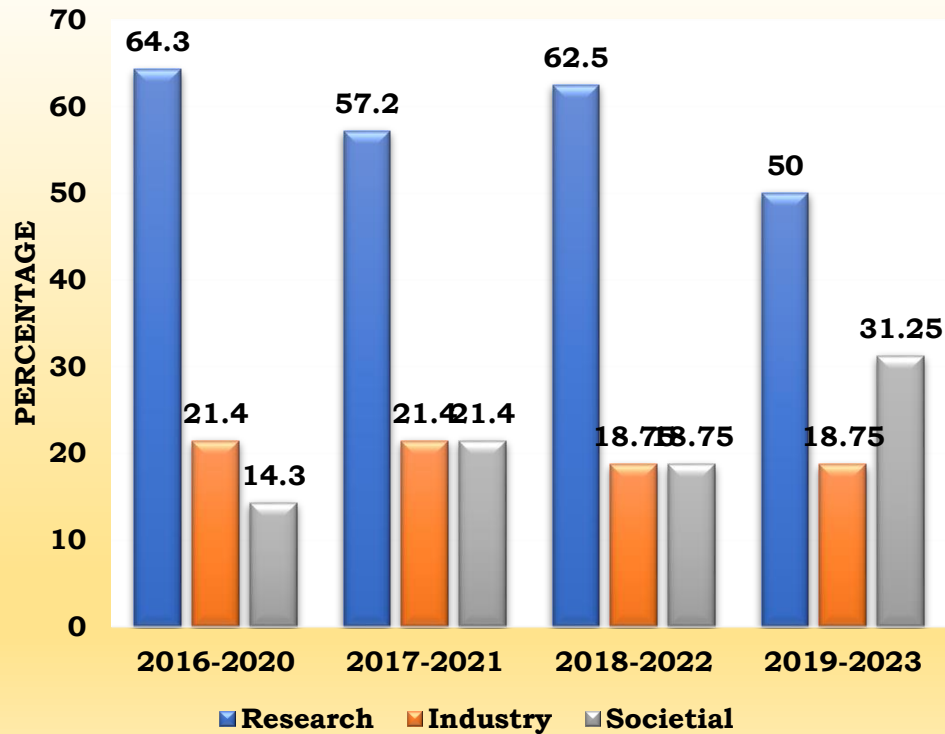
Zeroth Review	-	27-02-2023
Review I	-	13-03-2023
Review II	-	03-04-2023
The Final Report submission	-	05-05-2023

2.2.3 Types and relevance of the projects and their contribution towards attainment of POs and PSOs

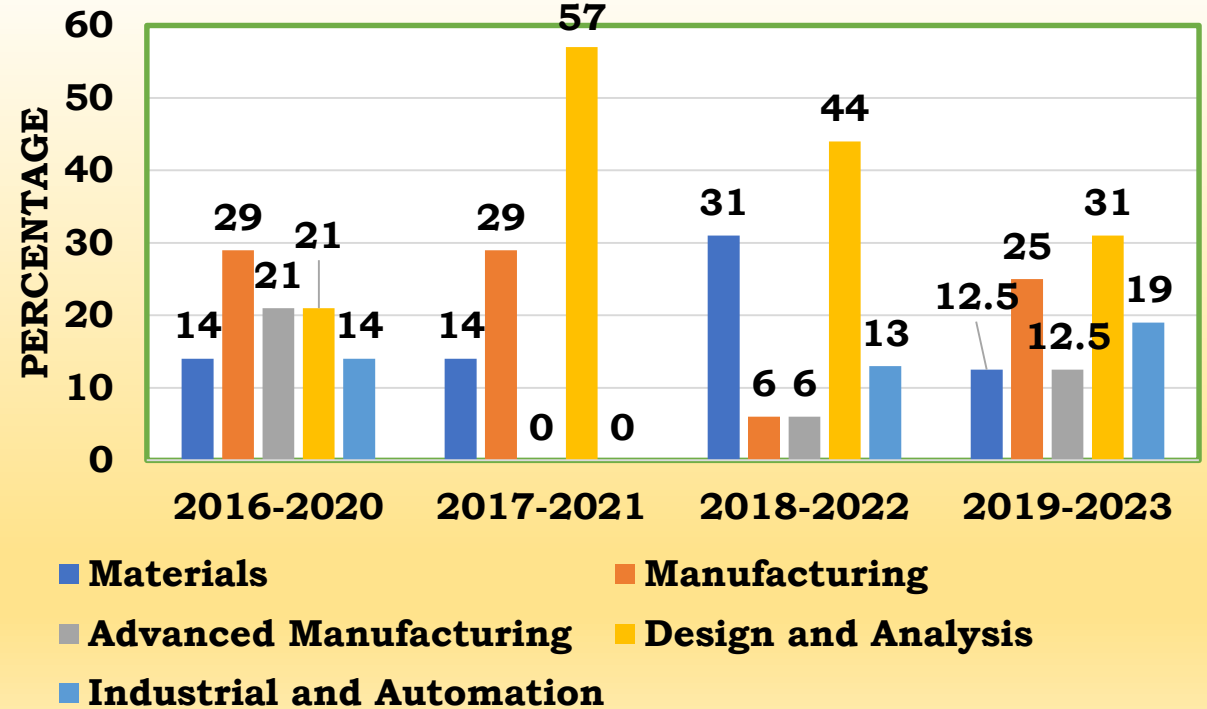
Criterion : 02

S.No	Title of the Project	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Social Relevant Projects																
1	Flow adapter vertical axis wind turbines for efficient energy harvest.	3	1	2	2	1	1	1	1	1	1	3	3	1	2	1
2	FarmBot – An Autonomous system for diseases control in crops using image processing.	3	3	3	1	1	1	1	1	1	1	3	2	2	3	2
...
Creative and Innovative Projects																
1	Electromagnetic braking	2	2	1	2	1	1	1	1	1	1	3	3	3	3	3
...

Project distribution



Domain wise distribution



2.2.3 QUALITY OF THE STUDENT PROJECTS

Review I and Review II Rubrics

Rubric	Excellent	Good	Average	Partially acceptable	Unacceptable
% Weightage	(81 - 100%)	(61 - 80%)	(41 - 60%)	(21 - 40%)	(0 - 20%)
Data collection/Design /Fabrication work etc. (15 marks)	Chooses appropriate computational and information tools for Data collection /design/ fabrication work obtains correct solution to model developed for the project or uses tools effectively.	Chooses appropriate computational and information tools for Data collection/design/ fabrication work obtains correct solution to model developed for the project.	Chooses appropriate computational and information tools for Data collection/design/ fabrication work. Partially collection of data.	No proper selection of computational tools for Data collection/design/ fabrication work. Data was not collected properly.	No computational tools for Data collection/design / fabrication work was used and Incomplete work.
Data analysis & Experimentation (10 marks)	Clear application of research tools. Results are analyzed properly and discussed with guide.	Clear application of research tools. Results are analyzed to some extent and discussed with guide.	Clear application of research tools. Results were not analyzed and hardly discussed with guide.	Research tools are not specified. Results were not analyzed and not discussed with guide.	No work has been done related to analyze / fabrication/ experimentation of the project.
Team work (05 Marks)	The team worked well together to achieve objectives. Each member contributed in a valuable way to the project.	The team worked well together most of the time, with only a few occurrences of communication breakdown or failure to collaborate when necessary.	The team worked together but with many instances of occurrences of communication breakdown or failure to collaborate when necessary.	The team worked together very rarely but some members work independently, without regard to objectives or priorities.	The team did not collaborate or communicate well. Some members work independently, without regard to objectives or priorities.

End Semester Exam Rubrics

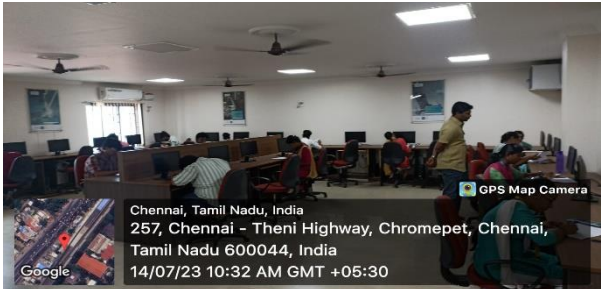
Rubric	Excellent	Good	Average	Partially acceptable	Unacceptable
% Weightage	(81 - 100%)	(61 - 80%)	(41 - 60%)	(21 - 40%)	(0 - 20%)
Project Report (20 Marks)	Information in project report is in logical sequence with diagrams, tables, results and discussion. The report is complete and in proper format.	Information in project report is in logical sequence with diagrams, tables, results and discussion. The report is partially complete and in proper format.	Information in project report is not in logical sequence with diagrams, tables, results and discussion. The report is incomplete but in proper format.	Less Information is provided in the report about the project, results and discussion. The report is incomplete and not in proper format.	There is no Information about the project with no results and discussion. The report is incomplete and not in proper format.
Viva-voce (20 Marks) 10 for Each Internal & External Examiner	Give complete and logical reply to the questions asked by examiner.	Give complete and logical reply to the questions asked by examiner with few errors.	Give incomplete and illogical reply to the questions asked by examiner.	Give very few and illogical reply to the questions asked by examiner.	Given no reply to the questions asked by examiner.

Sample mark allocation

REG.NO	NAME	GUIDE NAME	TOPIC	RUBRICS				RUBRICS				
				Review I	Excellent (81 - 100%)	Good (61 - 80%)	Average (41 - 60%)	Partially acceptable (21 - 40%)	Review II	Excellent (81 - 100%)	Good (61 - 80%)	Average (41 - 60%)	Partially acceptable (21 - 40%)
2019507024	KARTHIKEYAN B	Mr.N.ARUNAGIRI	Additive manufacturing of Bone Fixation Screws by FDM and its Characterization	8		✓			8.5	✓		
2019507003	ARULSELVAM A R			7.5		✓			8		✓	
2019507022	KAMALESH A			7		✓			8		✓	
2019507006	BALACHANDAR G	Mr.P.MANI	Mechanical Characterisation of Natural Fiber Reinforced Hybrid Composites and Estimation of Optimal Machining Parameters for AWJW Process	8.5	✓				8.5	✓		
2019507044	SHRI RAM PRASAD S			7.5		✓			7.5		✓	
2019507032	MADHUSUDAN S			7.5		✓			7.5		✓	



Advanced Manufacturing Laboratory – 82 Nos



Rapid Prototype Laboratory – 94 Nos



Test and Optimization Laboratory – 75 Nos



Mechatronics Laboratory – 76 Nos

Dr.P.Ganesh & Dr.E.Pavithra
Additive manufacturing
Computer aided product design

Dr.C.Arun Prakash
Mechatronics for automation



NC Programming Laboratory - 327 Nos

Dr.C.Nandakumar & Dr.G.Kumaresan

CNC Machines



CNC Machine Laboratory – 74 Nos

Dr.N.Srirangarajulu & Mr.P.Mani

CNC Machines
Metal cutting and CNC Technology
Machining Processes



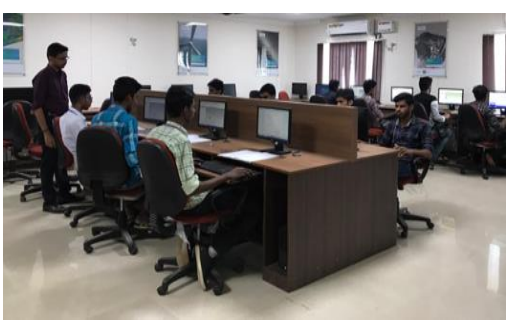
Automation Laboratory – 115 Nos



Robotics Laboratory – 64 Nos

Dr.V.Mugendiran

Robotic Technology
Computer integrated manufacturing systems
Welding technology



Product Design and Validation – 128 Nos

2.2.4 INDUSTRY INVOLVEMENT IN PROGRAM CURRICULUM - SYLLABUS REVISION & UPDATION FOR B.E PRODUCTION ENGINEERING R 2015, R 2019 & R 2023

Criterion : 02

SYLLABUS SUB COMMITTEE FOR FRAMING CURRICULA AND SYLLABI

S. No	Regulation	Branch	Expert member	Name of the company
1.	R 2015	B.E Production Engineering	Dr U Solomon, Project Director	CVRDE, Avadi, Chennai
2.	R 2019	B.E Production Engineering	Dr U Solomon, Project Director	CVRDE, Avadi, Chennai
			Mr. B.Murali	No. 5, Corporation, High School Road, Nungambakkam.
3.	R 2023	B.E Production Engineering	Dr U Solomon, Project Director	CVRDE, Avadi, Chennai
			Mr Saravanakumar	Manager-QMO Royal Enfield
			Dr.T.R Kannan	Chief Tech Officer, Alarvy Tech Pvt. Ltd.
			Dr.N.Aranganathan	TVS Sundaram Brake Linings, Padi, Ch 50.
			Dr.N.R. Ramesh	Scientist – F, Deep Sea Tech., NIOT
			Mr.R.Selvam	Designated partner, GTS Tool, Plast LLP

SYLLABUS SUB MEETING AT PROF. SRK HALL



2.2.4 INDUSTRY INVOLVEMENT IN PARTIAL DELIVERY OF ANY REGULAR COURSES FOR STUDENTS

Criterion : 02

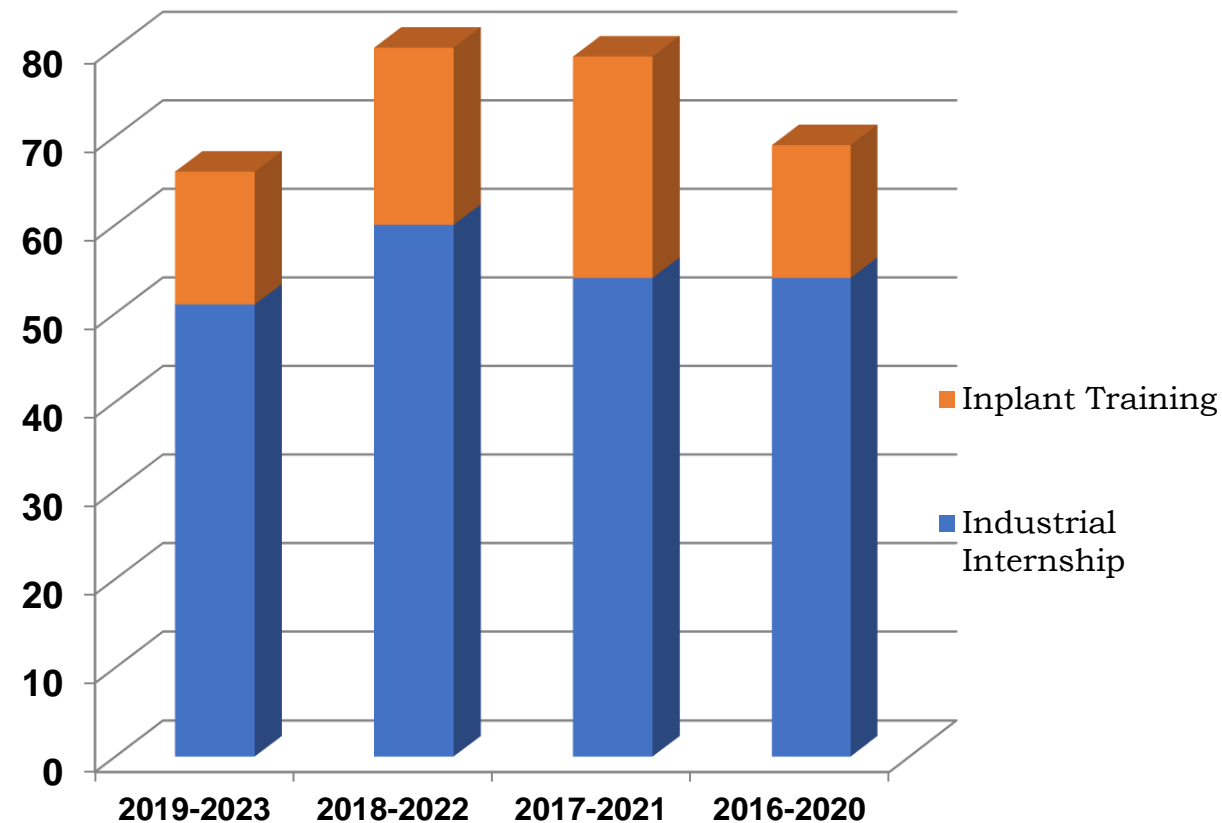
S.No.	Topic	Month/Year	Aligned with curriculum	Details of the speaker
1.	Seminar on 3D experience platform – Unleashing the power of solid works	7th September 2023	Computer Aided Drafting, Modeling and Analysis Laboratory	Dassault systems Mr.Nikhil Naikade, Industry Process Consultant. Mr.Prasanna Surendran, Territorial Technical manager.
2.	Recent Trends in Robotics and Automation-2023- Industrial robotics	24th May 2023	Robotic Technology, Computer Integrated Manufacturing Systems	M/s. Kuka India Private Limited
3.	GAIT analysis using BIOPAC system	24th – 28th July 2023	Robotic Technology, Computer Integrated Manufacturing Systems	Ms.Varnika Talwar, M/s. Gentech Marketing and Distribution Pvt. Ltd, New Delhi-110 055.
4.	Guest Lecture - Scope of software integration in automotive environment	25th Aug 2023	Production of Automotive Components, Selection and heat treatment of material	Mr. TM Mohammed Sagheer, Specialist, Product Innovation, ZF commercial vehicle control systems India limited.
5.	One day lecture on Meteorology & Disaster Management	30th March 2022	Environmental Science and Engineering Disaster Management	Mr.K.S Hosaliker, Head Climate Research and Services (CRS) , Indian Meteorological Department (IMD) Pune, Ministry of Earth Sciences, Pune. Dr.S. Balachandran, Head Regional Meteorological Centre (RMC), Chennai. Prof. Sridhar Balasubramanian, Department of Mechanical Engineering, Member of IDP Climate Studies, IIT Bombay
6.	Recent trends in sheet metal forming	26th Dec 2022	Metal forming	Professor K. Narasimhan, Professor of Metallurgical Engineering and Materials science, IIT, Bombay.

2.2.5 Initiatives related to industry internship/ summer training

INDUSTRIAL VISITS

Sl. No.	Industries Visited	Date
1	Integral coach factory, Perambur, Chennai	20-01-2020
2	Nippon Thermostat (India) Limited, Gummidipoondi, Chennai	27-09-2019
3	SM Kannappa Automobiles Pvt Ltd., Bangalore	04-09-2019
4	Meritor HVS (India) Limited, Mysore	17-12-2021
5	TIDC India (TI Cycles), Ambattur, Chennai	24-03-2022
6	Flextronics, Sriperumbatur Chennai	14-03-2022
7	TVS Sundaram Clayton Ltd Padi, Chennai	18-05-2022
8	Wheels India Sriperumbatur, Chennai	22-09-2022
9	Brakes India Pvt Ltd, Padi Chennai	09-07-2022

INDUSTRIAL INTERNSHIP / SUMMER TRAINING



2.2.5 Initiatives related to industry internship/ summer training

Industrial Training/Tour for Students

S.No	Industries Visited	Date
1	Protech Machinery, Sipcot Oragadam, Chennai	03-09-2017
2	Shakthi Industry Coimbatore	10-03-2018
3	Integral coach factory, Perambur, Chennai	20-03-2018
4	SM Kannappa Automobiles Pvt Ltd., Bangalore	04-09-2019
5	Nippon Thermostat (India) Limited, Chennai	27-09-2019
6	Integral coach factory, Perambur, Chennai	20-01-2020
7	Meritor HVS (India) Limited, Mysore	17-12-2021
8	Flextronics, Sriperumbatur Chennai	14-03-2022
9	TIDC India (TI Cycles), Ambattur, Chennai	24-03-2022
10	TVS Sundaram Clayton Ltd Padi, Chennai	18-05-2022
11	Brakes India Pvt Ltd, Padi Chennai	09-07-2022
12	Wheels India Sriperumbatur, Chennai	22-09-2022
13	Kerala Electricals & Allied Engineering Co.Ltd, CSIR-NIIST, Trivandrum (Tour)	11-11-2022
14	Industrial visit at Caterpillar, Perungudi & Thiruvallur plant	23-02-2023



Protech Machinery



Shakthi Industry



Nippon Thermostat



TIDC India

2.2.5 Initiatives related to industry internship/ summer training

Industrial/Internship/Summer Training and post Training Assessment

PR7712 - INDUSTRIAL TRAINING / INTERNSHIP

REPORT

Submitted by

DINESH KUMAR S (2016507009)

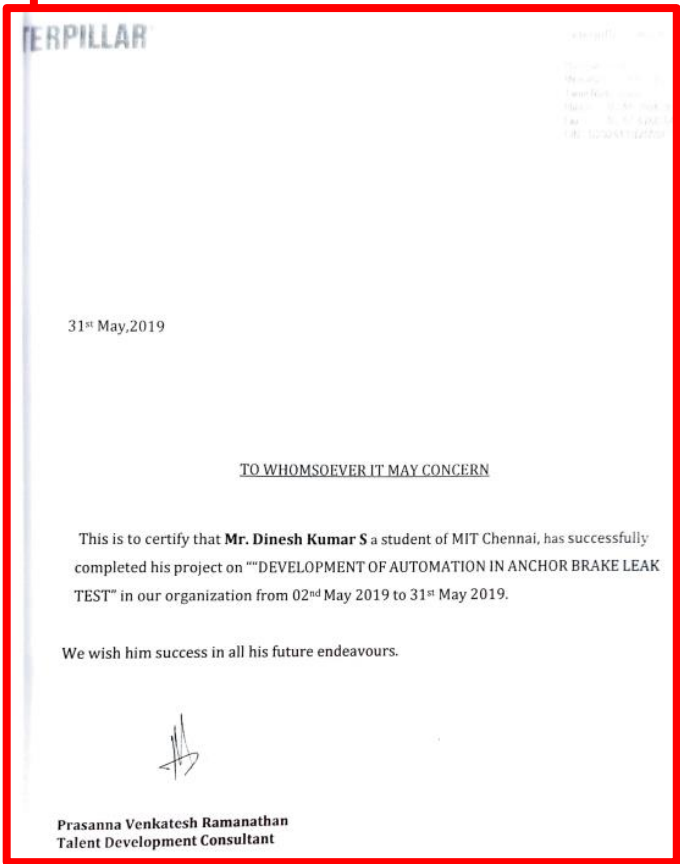
in partial fulfillment for the award of the degree

of

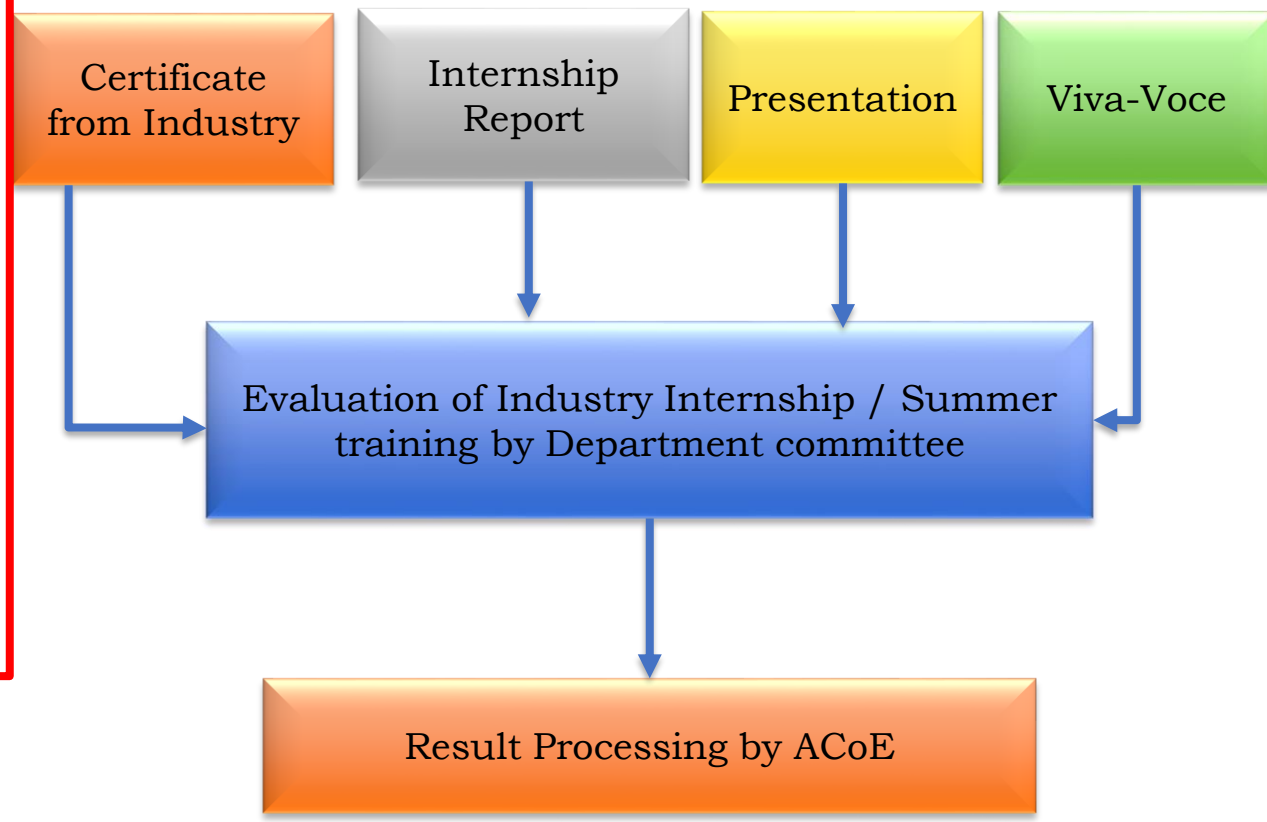
BACHELOR OF ENGINEERING
IN
PRODUCTION ENGINEERING



DEPARTMENT OF PRODUCTION TECHNOLOGY
MADRAS INSTITUTE OF TECHNOLOGY CAMPUS
ANNA UNIVERSITY CHENNAI.
NOVEMBER 2019.



EVALUATION OF INDUSTRIAL INTERNSHIP / SUMMER TRAINING



2.2.5 Initiatives related to industry internship/ summer training

Impact Analysis of Industrial Training

- Students Project
- Engineering Materials
- Machining Processes and Machine Tools
- Kinematics and Dynamics of Machines
- Fluid Power Systems
- Foundry and Welding Technology
- Engineering Metrology
- Metal Forming
- CNC Machines
- Mechatronics for Automation
- Total Quality Management
- Corrosion Engineering
- Lean Manufacturing
- Non - Destructive Testing Methods
- Additive Manufacturing
- Unconventional Machining Processes
- Supply Chain Management

- ❖ Field Visit
- ❖ Internship
- ❖ Industrial Visit
- ❖ Implant training etc

**Improvement in
Students Subject
Learning &
Placements**

Job Opportunities in Core Companies

- Tolaram Dufil Prima Foods (28 LPA)
- JSW Steels (9 LPA)
- Caterpillar India (8.78 LPA)
- Hyundai Motor (7.87 LPA)
- Kinaxis (6.12 LPA)
- Latent View Analytics (6.5 LPA)
- Blume Global (7 LAP)
- Ford Motor (5.5 LPA)
- Larsen & Toubro (4.87 LPA)
- Renault Nissan (3.5 LPA)
- TVS Motor Company Ltd (5.5 LPA)
- ATC Tires (4 LPA)
- Murugappa Group (CUMI) (3.5 LPA)
- Daimler India (6 LPA)
- L1 Supply Networks (5 LPA)
- Disprz (6 LPA)
- Stellantis (5.5 LPA)

3.1 Course Outcomes and Program Outcomes

3.1 A Evidence of COs being defined for Every Course

Sample Course Outcome and Content Mapping

PR5602 - CNC Machines

Course Outcome	Course Content
1. To describe the fundamentals of CNC machines.	UNIT I INTRODUCTION -Evolution Of CNC Technology, Principles, Features, Advantages, Applications, CNC And DNC Concept, Classification Of CNC Machines – Turning Centre, Machining Centre, Grinding Machine, EDM, Types Of Control Systems, CNC Controllers, Characteristics , Interpolators– Computer Aided Inspection- Economics Of CNC.
2. To discuss the different components and functions of CNC machines.	UNIT II STRUCTURE OF CNC MACHINE - CNC Machine Building, Structural Details, Configuration And Design, Guide Ways – Friction, Anti Friction And Other Types Of Guide Ways, Elements Used To Convert The Rotary Motion To A Linear Motion – Screw And Nut, Recirculating Ball Screw, Planetary Roller Screw, Recirculating Roller Screw, Rack And Pinion, Spindle Assembly, Torque Transmission Elements – Gears, Timing Belts, Flexible Couplings, Bearings- Maintenance Of CNC Machines.
3. To illustrate the control systems, advantages and disadvantages of CNC machining centers.	UNIT III CNC MACHINING -Coordinates, Axes, and Motion - CNC Systems - CNC Controls - Operating a CNC Machine – CNC Milling – Types, Machines axes, Machining centers, CNC Turning – Types, Number of axes, Axes designation -Advantages and Disadvantages of CNC Technology - Applications.
4. To recall and develop the CNC program.	UNIT IV CNC PROGRAMMING -Coordinate Systems and Reference Points - The Ten Steps of CNC Programming - Structure Of A Part Program, G Codes and M Codes, Tool Length Compensation, Cutter Radius And Tool Nose Radius Compensation, Do Loops, Subroutines, Canned Cycles, Mirror Image, Parametric Programming , Machining Cycles, Programming For Machining Centre And Turning Centre For Well Known Controllers, Generation of CNC Codes From CAM Packages.
5. To identify the appropriate cutting tool and work holding devices.	UNIT V TOOLING AND WORK HOLDING DEVICES Introduction To Cutting Tool Materials – Carbides, Ceramics, CBN, PCD–Inserts Classification- PMK, NSH, Qualified, Semi Qualified And Preset Tooling, Tooling System For Machining Centre And Turning Centre, Work Holding Devices For Rotating And Fixed Work Parts.

3.1 B Availability of COs embedded in the Syllabus

PR5602

CNC MACHINES

L T P C

3 0 0 3

COURSE OBJECTIVES:

- To provide knowledge on the fundamentals of CNC machines.
- To educate the different components and functions of CNC machines.
- To teach the control systems, advantages and disadvantages of CNC machining centers.
- To discuss and develop the CNC program.
- To explain the different cutting tool materials and work holding devices.

UNIT I INTRODUCTION

9

Evolution Of CNC Technology, Principles, Features, Advantages, Applications, CNC And DNC Concept, Classification Of CNC Machines – Turning Centre, Machining Centre, Grinding Machine,

UNIT IV CNC PROGRAMMING

9

Coordinate Systems and Reference Points -The Ten Steps of CNC Programming - Structure Of A Part Program, G Codes and M Codes, Tool Length Compensation, Cutter Radius And Tool Nose Radius Compensation, Do Loops, Subroutines, Canned Cycles, Mirror Image, Parametric Programming, Machining Cycles, Programming For Machining Centre And Turning Centre For Well Known Controllers, Generation of CNC Codes From CAM Packages.

UNIT V TOOLING AND WORK HOLDING DEVICES

9

Introduction To Cutting Tool Materials – Carbides, Ceramics, CBN, PCD–Inserts Classification- PMK, NSH, Qualified, Semi Qualified And Preset Tooling, Tooling System For Machining Centre And Turning Centre, Work Holding Devices For Rotating And Fixed Work Parts.

TOTAL : 45 PERIODS

COURSE OUTCOMES:

At the end of the course, students will be able to

1. To describe the fundamentals of CNC machines.
2. To discuss the different components and functions of CNC machines.
3. To illustrate the control systems, advantages and disadvantages of CNC machining centers.
4. To recall and develop the CNC program.
5. To identify the appropriate cutting tool and work holding devices.

3.1 Course Outcomes and Program Outcomes

PR7301 - METALLURGY AND MATERIALS TESTING

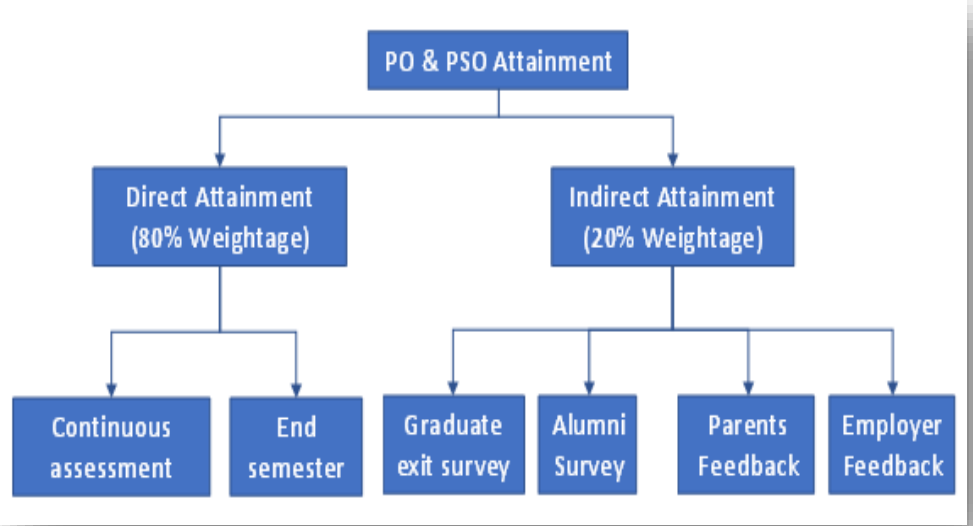
Course Outcome	Statement	Programme Outcomes												Programme Specific Outcomes		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
C206.1	Identify the microstructural features of ferrous materials.	2	2	2	1	2	1	2	-	1	1	1	2	1	2	1
C206.2	Relate the heat treatment, microstructure and properties.	3	2	2	2	2	2	2	1	1	1	2	2	1	2	1
C206.3	Understand the properties and uses of nonferrous alloys.	2	3	2	2	3	2	1	2	2	1	1	2	2	2	1
C206.4	Correlate the mechanical behavior with the mechanisms of strengthening.	3	3	1	2	2	2	1	1	1	1	1	2	1	2	1
C206.5	Suggest suitable polymer and ceramic for a given application.	2	3	3	1	1	2	2	1	1	1	1	1	2	1	1
PO & PSO Average		2.4	2.6	2	1.6	2	1.8	1.6	1.25	1.2	1	1.2	1.8	1.4	1.8	1
1 - Low Correlation 2 - Medium Correlation 3 - High Correlation Note: With reference to Examination Reform Policy by AICTE, adapting the statements of performance indicator																

	NBA Course Code	Course Code	Title of the Course	Programme Outcomes												PSO		
				1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
	C201	AE7351	Engineering Fluid Mechanics and Machinery	3.0	3.0	2.0	3.0	2.0	1.0	1.0	-	-	1.0	2.0	2.0	2.6	2.4	2.4
	C202	AE7352	Mechanics of Solids	3.0	3.0	2.0	2.0	3.0	1.0	1.0	-	-	1.0	2.0	2.0	2.6	2.4	2.4
	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	C205	MA7354	Numerical methods	3.0	2.6	1.6	1.6	1.0	1.0	0.0	1.0	1.0	1.0	-	1.8	--	--	--
	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	C302	PR7502	Fluid Power Systems	3.0	2.2	2.4	1.8	2.4	1.0	1.0	1.0	1.2	2.8	2.4	2.4	2.6	3.0	2.6
	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	C403	PR7703	Robotic Technology	3.0	-	3.0	2.0	2.0	3.0	3.0	2.0	-	-	3.0	3.0	2.0	3.0	3.0
	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	C408	PR7811	Project Work	3.0	3.0	2.0	1.0	2.0	1.0	1.0	2.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
PO Average for Entire Program				2.64	2.49	2.26	2.10	2.25	1.78	2.02	2.06	2.39	2.00	2.33	2.64	2.28	2.25	2.07

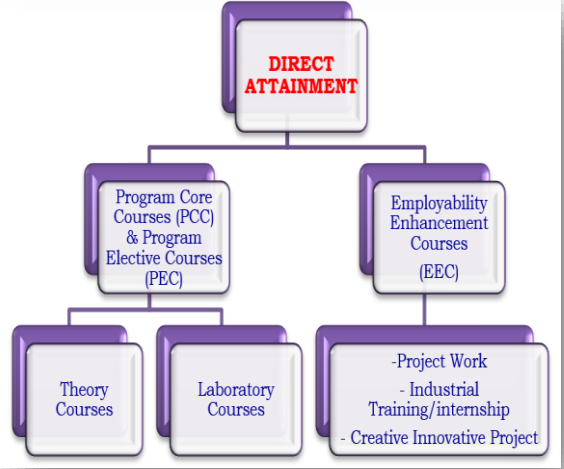
3.2.1 Assessment processes used to gather the data upon which the evaluation of Course Outcome is based

Criterion : 03

Attainment of Course Outcomes Modes of Assessments: 1. Direct Attainment and 2. Indirect Attainment



Weightage for CIA and ESE for



Direct Attainment

Category of Course	Continuous Internal Assessment (CIA) (Marks)	End Semester Exam (ESE) (Marks)
Theory	50	50
Laboratory	75	25
Project Work	60	40
Internship	100	--

Quality Conformance for Assessment QP

ACADEMIC SESSION
ACADEMIC PROGRAMME
SUBJECT CODE SUBJECT NAM
SEMESTER
POINTS TO BE CHECKED
1. Syllabus has been uniformly covered over the two assessment tests
2. The student can answer the questions within the stipulated time
3. The question paper contains a judicious mix of lower order (remembrance type) questions and higher order (analytical type) questions
4. Mark distribution to the different units covered in the question paper is uniform
5. Question paper is free of grammatical and typographic errors
6. Mark split-up for the various subdivisions is mentioned clearly
7. CO, PO mapping of the Question Paper is correctly done as per syllabus requirements
8. Bloom's taxonomy levels of the questions have been correctly specified in the question paper
9. Overall standard or difficulty level of the question paper on a scale of 1 – 10. 1 – Very poor: 5 – Average: 10 – Very good
10. Any other remarks (If the question paper is below the required standard, suggestions to improve the same)

Quality Conformance for End Semester QP

OFFICE OF THE ADDITIONAL CONTROLLER OF EXAMINATIONS (UNIVERSITY DEPARTMENTS) ANNA UNIVERSITY : CHENNAI 600 025 ACADEMIC AUDIT REPORT 2020 Ph. No. : 044-22357850, 54	Dr. S. SANJEEVI ACOE (UDs) DEPARTMENT OF PRODUCTION TECHNOLOGY
	Campus Academic Program Department offering the course Semester No Course Code Course Name Question Paper Setter Name and Department Answer Script Evaluator Name and Department Academic session 1. The extent (percentage) to which the Question Paper covers the syllabus (Unit wise)? 2. Questions can be answered in the stipulated time 3. Clarity and Unambiguity of the question paper 4. Standard of the Question Paper (Whether conform to the degree / program for which it is set) 5. Percentage of Descriptive Vs Problem based questions? 6. Question paper is set according to the format specified (including the distribution of marks for subdivisions, if any) 7. Enough attention has been given to ensure that there are no grammatical / typo graphical mistakes 8. Any other remarks: 9. Specific suggestion for improvement of the Question paper 1. Valuation of the answer scripts is uniform and fair 2. Marks are distributed for the various steps/stages of answers 3. The overall valuation is 4. Any Other Remarks:

3.2.1 The quality /relevance of assessment processes & tools used

Rubric for Theory Courses

	Assessment	Marks Allotted	RUBRIC		
			Good Marks (80-100)%	Average Marks (60-80)%	Low Marks (<50)%
Theory Courses	CIA & ESE	2	2	1.5-1	<1
	CIA & ESE	13	9-13	5-8	<5
	CIA	14	10-14	6-9	<6
	ESE	15	11-15	6-10	<6

Rubric for Laboratory Courses

Rubrics for CNC Laboratory				
	Low (L)	Medium (M)	High (H)	Max. Marks
Aim & Procedure	≤ 0.6	> 0.6 & ≤ 1.2	> 1.2 & ≤ 2	2
Formula / Programming & Model diagram	≤ 0.6	> 0.6 & ≤ 1.2	> 1.2 & ≤ 2	2
Experiment & Output	≤ 1	> 1 & ≤ 2	> 2 & ≤ 3	3
Result	≤ 0.6	> 0.6 & ≤ 1.2	> 1.2 & ≤ 2	2
Viva Voce	≤ 0.3	> 0.3 & ≤ 0.6	> 0.6 & ≤ 1	1

Score	Aim & Procedure
L	Aim alone
M	Aim with incomplete procedure
H	Aim with complete procedure

Score	Formula / Programming & Model Diagram
L	Irrelevant formula / Programming and inappropriate diagram
M	Partially correct formula / Programming and diagram
H	Accurate formula / Programming and neat diagram

Score	Experiment & Output
L	Inappropriate attempt was made
M	Correct setting and Partially completed process
H	Experiment well executed

Score	Result
L	Unable to complete the component / Test
M	Component / Test was partially completed
H	Component / Test was prepared exemplary

Score	Viva Voce
L	Unable to understand the question and wrong answer
M	Able to understand the question and partially right answer
H	Able to understand the question and answer the questions perfectly

Late Submission

Important Note: Negative marks will be awarded for late submission

Rubrics for Modeling And Analysis Laboratory				
	Low (L)	Medium (M)	High (H)	Max. Marks
Aim & Procedure	≤ 0.6	> 0.6 & ≤ 1.2	> 1.2 & ≤ 2	2
Design, Model Diagram	≤ 0.6	> 0.6 & ≤ 1.2	> 1.2 & ≤ 2	2
Simulation & Analysis	≤ 1	> 1 & ≤ 2	> 2 & ≤ 3	3
Result	≤ 0.6	> 0.6 & ≤ 1.2	> 1.2 & ≤ 2	2
Viva Voce	≤ 0.3	> 0.3 & ≤ 0.6	> 0.6 & ≤ 1	1

Score	Aim & Procedure
L	Aim alone
M	Aim with incomplete procedure
H	Aim with complete procedure

Score	Drawing Accuracy / Simulation Analysis
L	<ul style="list-style-type: none"> Basic geometric shapes / pre-processor Major drawing errors / modelling errors are still present
M	<ul style="list-style-type: none"> Demonstrate ability to effectively create a drawing / method of solving All necessary drawing elements are evident / approach to solve problem Minor errors are present
H	<ul style="list-style-type: none"> Exemplary understanding of the drawing / problem All drawing elements are accurate and precise – no mistakes / simulation results converged without error Utilized all necessary methods for drawing accurately / utilized all tools perfectly

Score	Post Processing /Assembly
L	Inappropriate attempt was made to setup the drawing and layers correctly / post processing not done
M	<ul style="list-style-type: none"> Attempt was made to setup the drawing accurately / post processing Some evidence of utilizing layers is present / x-y plots created Correct template used / methodology developed
H	<ul style="list-style-type: none"> Exemplary effort to utilize all setting accurately / visualization module Exceptional use of layers and line-types / post processing visualization results obtained

Score	Result
L	Unable to arrive the assembly or simulation
M	Able to arrive the assembly or simulation but partially correct
H	Able to arrive the assembly or simulation with perfect geometrical accuracy

Score	Viva Voce
L	Unable to understand the question
M	Able to understand the question and partially right answer
H	Able to understand the question and answer the questions perfectly

Late Submission

Important Note: Negative marks will be awarded for late submission

Rubric for Creative and Innovative Project

	Assessment	Marks Allotted (100)	RUBRICS		
			Good Marks (80-100)%	Average Marks (60-80)%	Low Marks (<50)%
Creative and Innovation Project	Report	20	15 - 20	14 - 10	<10
	Presentation	40	28 - 40	15 - 27	<15
	Output/Simulation Results	20	15 - 20	14 - 10	<10
	Viva Voce	20	15 - 20	14 - 10	<10
			Completion of Project with targeted result	Completion of Project with partially correct report	Incomplete Project

Rubric for Industrial Training / Internship

	Assessment	Marks Allotted (100)	RUBRICS		
			Good Marks (80-100)%	Average Marks (60-80)%	Low Marks (<50)%
Industrial Training / Internship	Report	20	28 - 40	15 - 27	<15
	Presentation	30	20 - 30	10 - 20	<10
	Viva Voce	30	20 - 30	20 - 30	<10

3.2.1 The quality /relevance of assessment processes & tools used

Model End Semester Exam Question Paper

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. / B. Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS – NOV/ DEC 2021

PRODUCTION ENGINEERING

7th Semester

PR7701 & INDUSTRIAL ENGINEERING AND MANAGEMENT

(Regulation 2015)

⊕ Time: 3hrs

Max Marks: 100

CO 1	To familiarize student about the concepts of inventory management.
CO 2	To introduce the students about Production Management Techniques such as work study, Plant location, Layout, Materials handling.
CO 3	To illustrate to the students about importance of financial management.
CO 4	To introduce Profit Planning and management as a concept to plan for profit.
CO 5	To familiarize the students, HR ad Marketing concepts and techniques

BL – Bloom’s Taxonomy Levels


(L1 - Remembering, L2 - Understanding, L3 - Applying, L4 - Analysing, L5 - Evaluating, L6 - Creating)

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

Q. No	Questions	Marks	CO	BL
1	When communicating with others, what are things we should consider?	2	1	2
2	Difference between			

Data Collection for CO / PO/ PSO Attainment

	Name	: Mr.K Tamilarasan					Department of Production Technology																			
	Subject Code	: PR7701 Industrial Engineering and Management					Batch: 2017 - 2021																			
	Semester	: VII, Nov 2020																								
	ASSESSMENT 1					ASSESSMENT 2					OVERALL ASSESMENT %					END SEMSTER					END SEMSTER %					
	C01	C02	C03	C04	C05	C01	C02	C03	C04	C05	C01	C02	C03	C04	C05	C01	C02	C03	C04	C05	C01	C02	C03	C04	C05	
S.No.	Roll No.	31	19	0	0	0	0	0	19	17	14	100.00	100.00	100.00	100.00	100.00	32	17	17	17	17	100.00	100.00	100.00	100.00	100.00
1	2017507001	26	19	0	0	0	0	0	16	17	13	83.87	100.00	84.21	100.00	92.86	17	9	9	8	12	53.13	52.94	52.94	47.06	70.59
2	2017507002	27	18	0	0	0	0	0	17	16	13	87.10	94.74	89.47	94.12	92.86	19	10	10	13	11	59.38	58.82	58.82	76.47	64.71
3	2017507005	29	18	0	0	0	0	0	18	16	13	93.55	94.74	94.74	94.12	92.86	26	14	14	16	8	81.25	82.35	82.35	94.12	47.06

Question. No	Marks / CO					Total Marks	Marks / BL							
	CO 1	CO 2	CO 3	CO 4	CO 5		L1	L2	L3	L4	L5	L6		
1	2					2		2						
2	2					2	2							
3		2				2			2					
4		2				2				2				
5			2			2			2					
6			2			2				2				
7				2		2	2							
8				2		2			2					
9					2	2						2		
10					2	2						2		
11	13					13	13							
12		13				13		13						
13			13			13		13						
14				13		13			13					
15					13	13			13					
16				15		15						15		
Total	<u>17</u>	<u>17</u>	<u>17</u>	<u>32</u>	<u>17</u>	100	L1+L2=45	L3+L4=51	L5+L6=4					

CO/BL Distribution

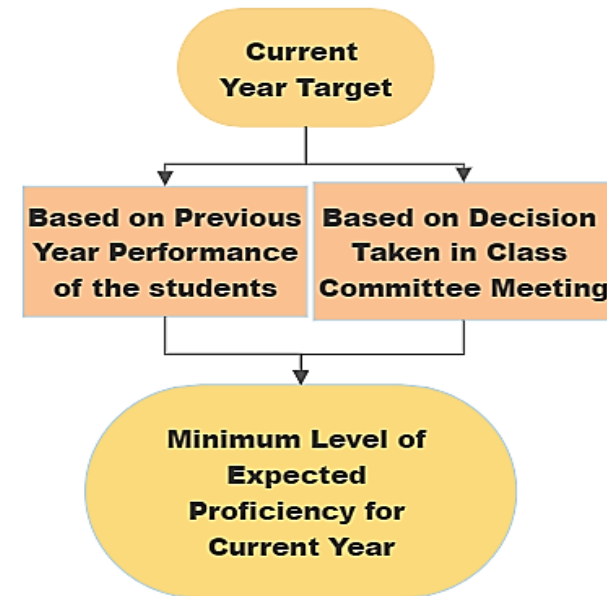
3.2.1 The quality /relevance of assessment processes & tools used

Model Calculation for Attainment – PR 7503 – Machine Component Design Batch 2017 - 2021

LEVEL OF PROFICIENCY EXPECTED FROM STUDENTS / THRESHOLD	Lower	Upper	Level
50 - 60% STUDENTS SCORING MORE THAN 65% OF MARKS	50	60	1
60 - 70% STUDENTS SCORING MORE THAN 65% OF MARKS	60	70	2
70 - 100% STUDENTS SCORING MORE THAN 65% OF MARKS	70	100	3

Batch wise Target for CO Attainment (Based on Previous Year Performance of the Students)

	2016 - 2020
Analytical Courses	50 Marks
Theory Courses	60 Marks
Lab Courses	75 Marks
Project	75 Marks

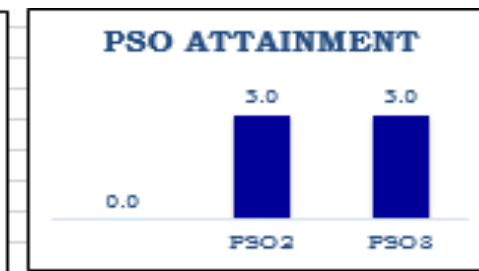
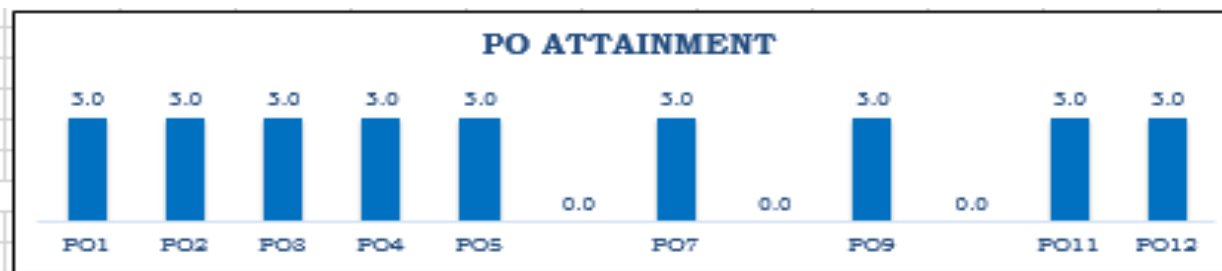
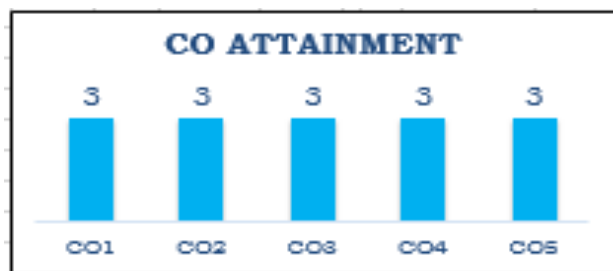


	CIA					ESE					OVERALL				
	CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
ATTAINMENT STUDENTS COUNT (A)	61	61	61	61	61	42	42	42	44	42	--	--	--	--	--
TOTAL STUDENT CLASS COUNT (B)	61	61	61	61	61	61	61	61	61	61	--	--	--	--	--
ATTAINMENT PERCENTAGE (A/B)	100.0	100.0	100.0	100.0	100.0	68.9	68.9	68.9	72.1	68.9	84.4	84.4	84.4	86.1	84.4
MINIMUM LEVEL OF PROFICIENCY	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
LEVEL OF ATTAINMENT (D)	3	3	3	3	3	2	2	2	3	2	3	3	3	3	3

List of Assessment Tools and Processes

PR 7503 Machine Component Design - CO- PO ARTICULATION MATRIX																
CO - PO Mapping		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
	CO1	3	3	2	3	3	-	1	-	3	-	2	3	-	-	1
	CO2	3	3	1	2	3	-	1	-	3	-	2	3	-	1	1
	CO3	3	3	2	3	2	-	2	-	2	-	3	3	-	2	1
	CO4	3	3	2	1	1	-	1	-	3	-	2	3	-	2	1
	CO5	3	3	2	1	1	-	1	-	2	-	2	3	-	2	1

PO AND PSO ATTAINMENT OVERALL : BATCH 2018 - 2019															
	PO1	PO2	PO3	PO4	PO5	PO7	PO9	PO11	PO12	PSO2	PSO3				
Attainment	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0				



3.3.2.A Verification of Documents, Results and Level of Attainment of Each PO/PSO

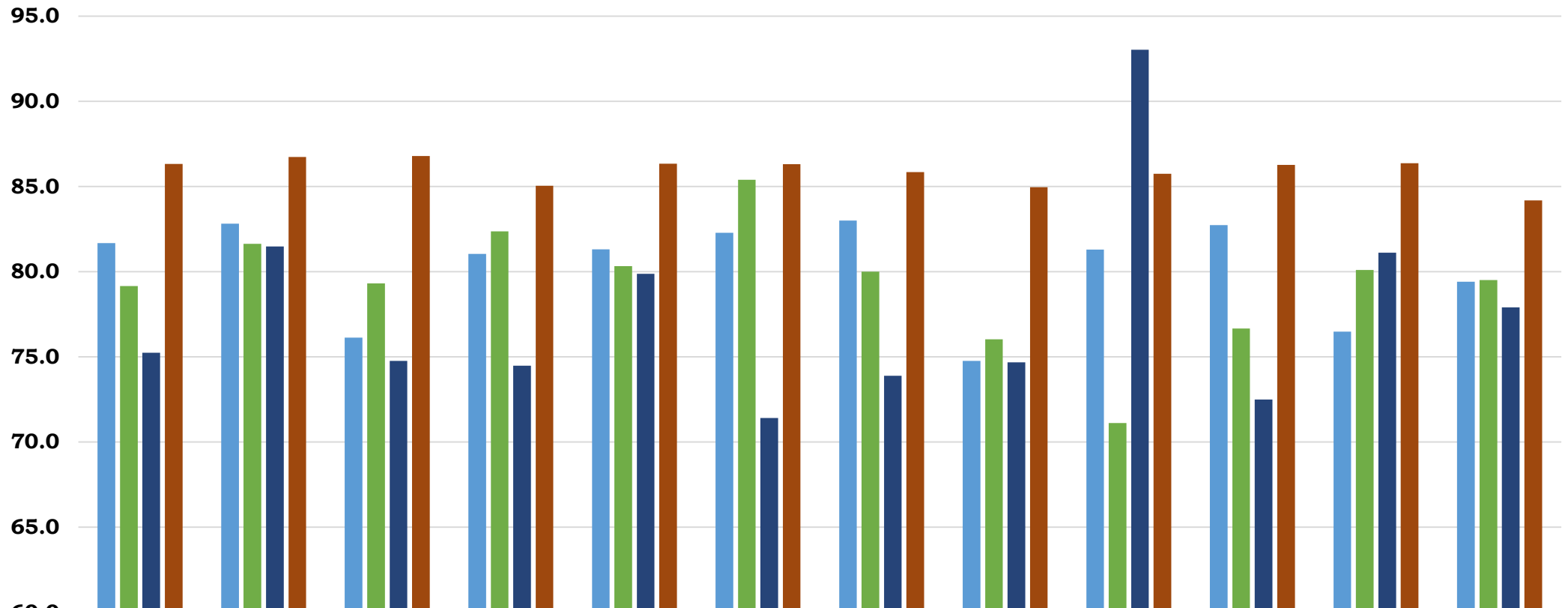
Criterion : 03

Overall Direct Attainment Sheet for CO – PO – PSO for Batch 2016 - 2020

				CO1	CO2	CO3	CO4	CO5	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3			
1	AE73 51	Fluid Mechanics and Machinery	Target	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0					2.0	2.0	2.0	2.0	2.0	2.0		
			Actual	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0					3.0	3.0	3.0	3.0	3.0	3.0	3.0
			Attainment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					Yes	Yes	Yes	Yes	Yes	Yes	Yes
				CO1	CO2	CO3	CO4	CO5	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3			
2	AE73 52	Mechanics of Solids	Target	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0		
			Actual	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
			Attainment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
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26	PR77 01	Industrial Engineering and Management	Target	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0		2.0		2.0	2.0	2.0	2.0	2.0	2.0		
			Actual	3.0	3.0	3.0	2.0	1.0	2.4	2.4	2.3	2.7	2.7		2.4		2.4		2.4	2.4	2.4	2.4	2.4	2.5	2.6	
			Attainment	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
				Overall					Overall												Overall					
Batch 2016 - 2020				CO1	CO2	CO3	CO4	CO5	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3			
				Target	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		
				Attainment	2.93	2.52	2.89	2.73	2.15	2.59	2.60	2.60	2.55	2.59	2.59	2.58	2.55	2.57	2.59	2.59	2.53	2.65	2.61	2.61		

Comparison of PO Attainment

% PO Attainment Comparison



	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Batch 2019 - 2023	81.7	82.8	76.1	81.0	81.3	82.3	83.0	74.8	81.3	82.7	76.5	79.4
Batch 2018 - 2022	79.2	81.6	79.3	82.4	80.3	85.4	80.0	76.0	71.1	76.7	80.1	79.5
Batch 2017 - 2021	75.2	81.5	74.8	74.5	79.9	71.4	73.9	74.7	93.0	72.5	81.1	77.9
Batch 2016 - 2020	86.3	86.7	86.8	85.0	86.3	86.3	85.8	85.0	85.7	86.3	86.4	84.2

3.3.2 Provide results of evaluation of each PO & PSO

Forms for Indirect PO - PSO Attainment



UNIVERSITY DEPARTMENT OF ANNA UNIVERSITY, CHENNAI – MIT CAMPUS,
DEPARTMENT OF PRODUCTION TECHNOLOGY,
CHROMEPET; CHENNAI - 600044.

ALUMNI SURVEY FORM

We shall be thankful to and appreciate you, if you can spare some of your valuable time to fill up this survey form and give us your valuable suggestions for further improvement of the Institution programme. Your valuable input will be of great use to improve the quality of our academic program and enhance the credibility of the Institute.

Sd/-
Head of the Department

Name of the Alumni:	SUDHARSHAN - A	Reg.No:	2019507046
Degree	B.E. → M.E.	Ph.D.	
Programme	Production/Mechanical/ Manufacturing/Mechatronics		
Year of Graduation	2019		
Name of the organization where you are working	-		
Designation	-		

S.No	Graduate Attributes	POs/ PSOs	Excellent (5)	Very Good (4)	Good (3)	Satisfactory (2)	Poor (1)
1	Extend of usefulness of Basic Science and Engineering Science courses in understanding Problems you solved so far in your career		✓				
2	Publication of research papers, white papers, promotions in organizations			✓			
3	Ability to design and develop system components and processes		✓				
4	New tools learnt during job and its applications			✓			
5	Ability to factor in sustainability, ethical, health, public safety and environmental issues in the solutions developed by you			✓			
6	Level of comfort in working in groups-initially and at present			✓			
7	Communication skills (level of acquisition during the program, usefulness in the job, additional acquisitions during work etc.)				✓		
8	Extent of application of projects, management principles in the projects handled/being handled by you		✓				
9	Enhancement of qualifications (higher degrees, certificate courses etc.), knowledge skills etc. (workshops, training programs etc.)				✓		

ANNA UNIVERSITY UNIVERSITY DEPARTMENTS CHENNAI - 600025

EXIT SURVEY (2019-20) ON PROGRAMME OUTCOME AND STUDENT PROGRESSION

Date:

Academic Year of Joining: Academic Year of Completion:

Name of the UD Campus : CEG / ACT / SAP / MIT Name of the Department:

Name of the Programme:

Name of the Student : Roll No:

Mobile No : E mail Id:

PART 1 : Feedback on Attainment of Programme Outcome (POs) on completion of the Programme :

Please give your valuable feedback on attainment of Programme Outcome to improve quality of the programme by rating (please tick) the following statements about the Programme using the five-point scale *

5= Strongly Agree; 4= Agree; 3= Undecided; 2= Disagree; 1= Strongly Disagree

Sl.No.	Statement	5	4	3	2	1
1	PO1 - Knowledge of Engineering Sciences I am able to apply the knowledge of <u>mathematics</u> , science and engineering fundamentals to the conceptualization of Engineering/ Technology/ Architecture/ Science/ Management solutions					

1 of 6

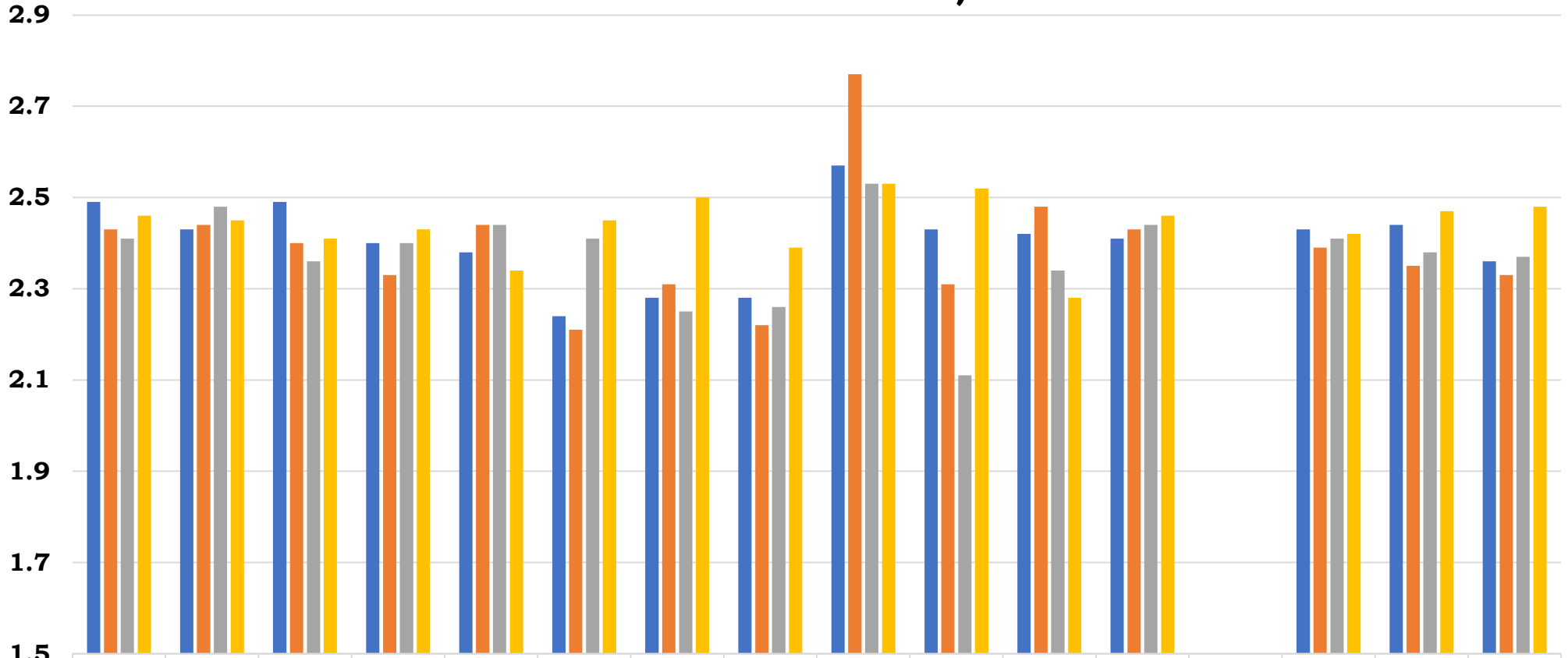
2	PO2 : Problem analysis : I am able to identify, formulate and solve Engineering/ Technology/ Architecture/ Science/ Management problems					
3	PO3: Design /Development of Solutions I am able to Design solutions for complex Engineering/ Technology/ Architecture/ Science/ Management problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.					
4	PO4: Investigation I am able to Conduct investigations of Engineering/ Technology/ Architecture/ Science/ Management problems including extract information pertinent to the problems through literature survey, apply appropriate research methodologies, analysis and interpretation of data, and synthesis of information to provide valid conclusions					
5	PO5 : Modern Tool Usage I am able to Create, select and apply appropriate techniques and modern Engineering/ Technology/ Architecture/ Science/ Management tools including application, prediction and modeling software, with due understanding of the limitations.					
6	PO6: Individual and Team work I am able to function effectively as an individual and as a member or leader in diverse teams and in multi-disciplinary settings and demonstrating a capacity for self-management and teamwork, decision-making based on open-mindedness, objectivity and rational analysis.					

2 of 6

5= Strongly Agree; 4= Agree; 3= Undecided; 2= Disagree; 1= Strongly Disagree

3.3.2 Provide results of evaluation of each PO & PSO

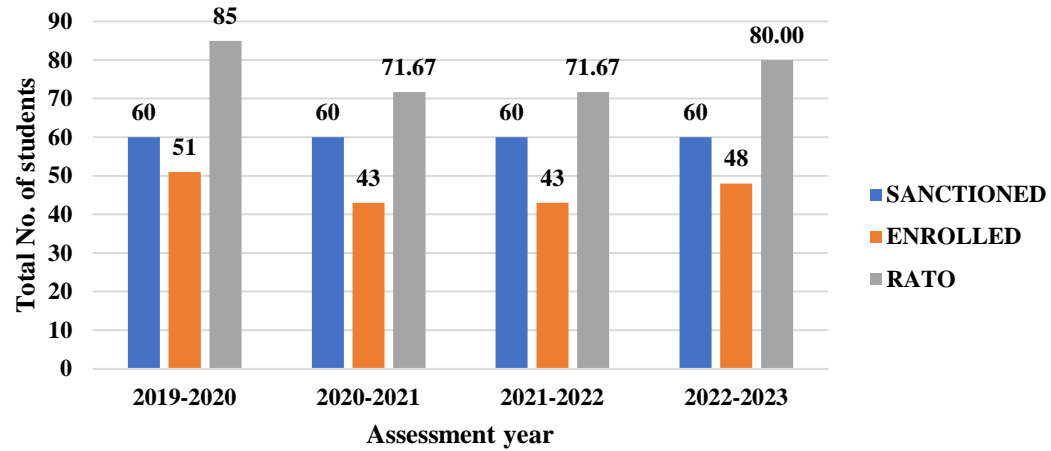
PO - PSO Overall Comparison (80% Direct Attainment and 20% Indirect Attainment)



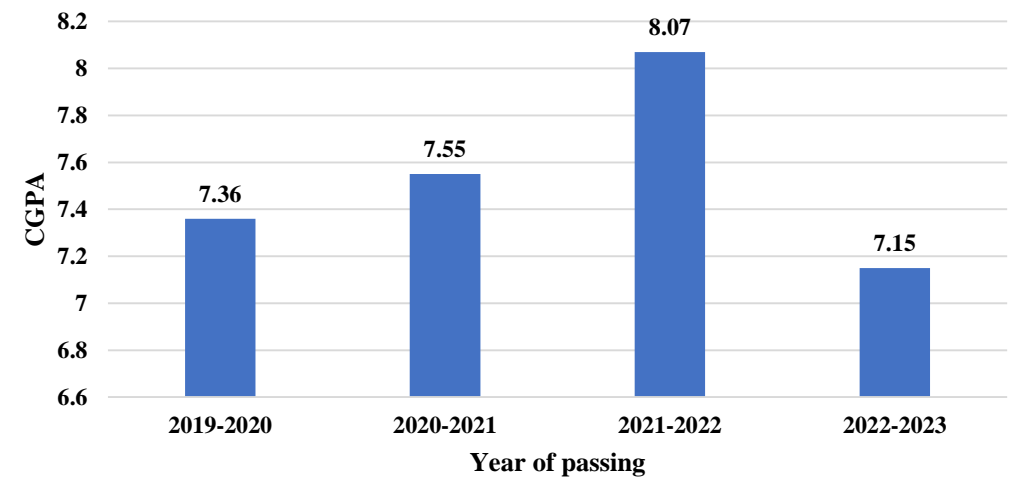
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
■ Batch 2016 - 2020	2.49	2.43	2.49	2.4	2.38	2.24	2.28	2.28	2.57	2.43	2.42	2.41		2.43	2.44	2.36
■ Batch 2017 - 2021	2.43	2.44	2.4	2.33	2.44	2.21	2.31	2.22	2.77	2.31	2.48	2.43		2.39	2.35	2.33
■ Batch 2018 - 2022	2.41	2.48	2.36	2.4	2.44	2.41	2.25	2.26	2.53	2.11	2.34	2.44		2.41	2.38	2.37
■ Batch 2019 - 2023	2.46	2.45	2.41	2.43	2.34	2.45	2.5	2.39	2.53	2.52	2.28	2.46		2.42	2.47	2.48

4. Student's Performance

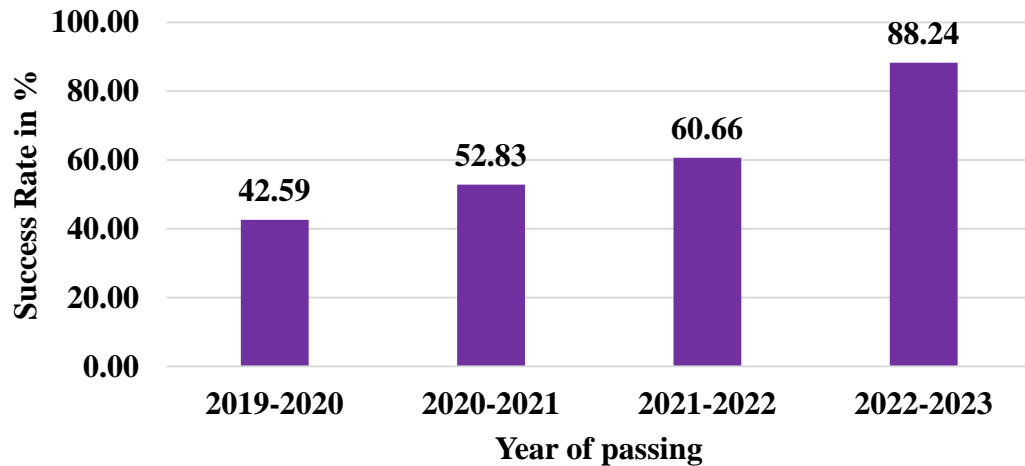
STUDENT ENROLLMENT



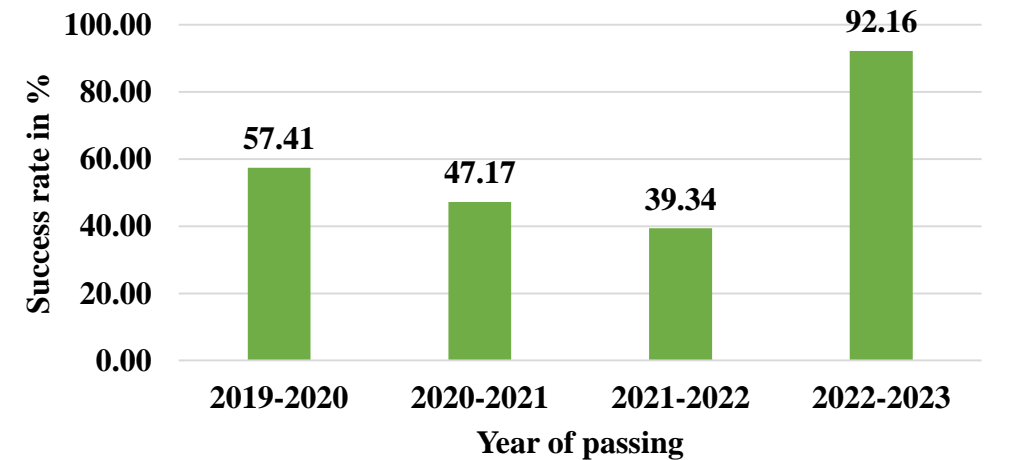
AVERAGE CGPA



SUCCESS RATE WITH BACKLOG



SUCCESS RATE WITHOUT BACKLOG



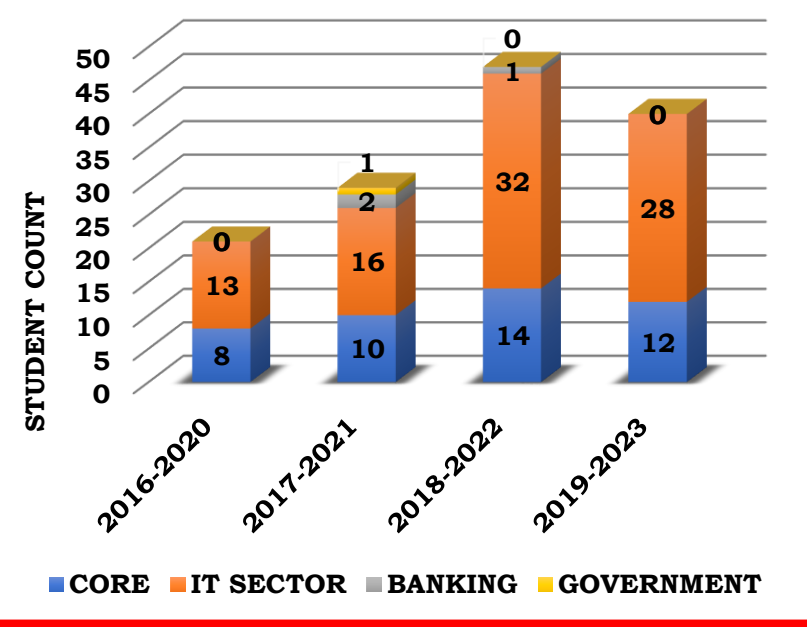
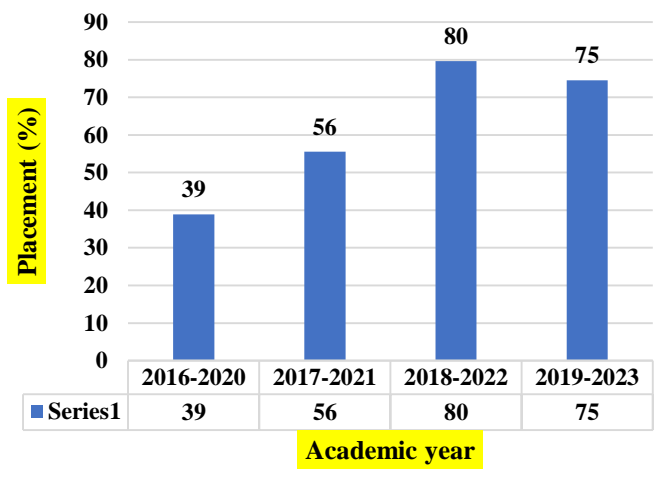
4.4 TOP RECRUITERS (2016-2023)

Criterion : 04

CORE COMPANIES



PLACEMENT PERCENTAGE



IT - PRODUCT BASED



IT - SERVICE BASED



HIGHEST PACKAGE(LPA)
 2016-2020: Rs.9.48 (M/s Caterpillar India)
 2017-2021: Rs.10.35 (M/s Caterpillar India)
 2018-2022:Rs.10.35 (M/s Caterpillar India)
 2019-2023:Rs.28 (M/s Tolaram)



4.4 HIGHER STUDIES (Notable Universities)

Criterion : 04



QS:97



QS:348



QS:289



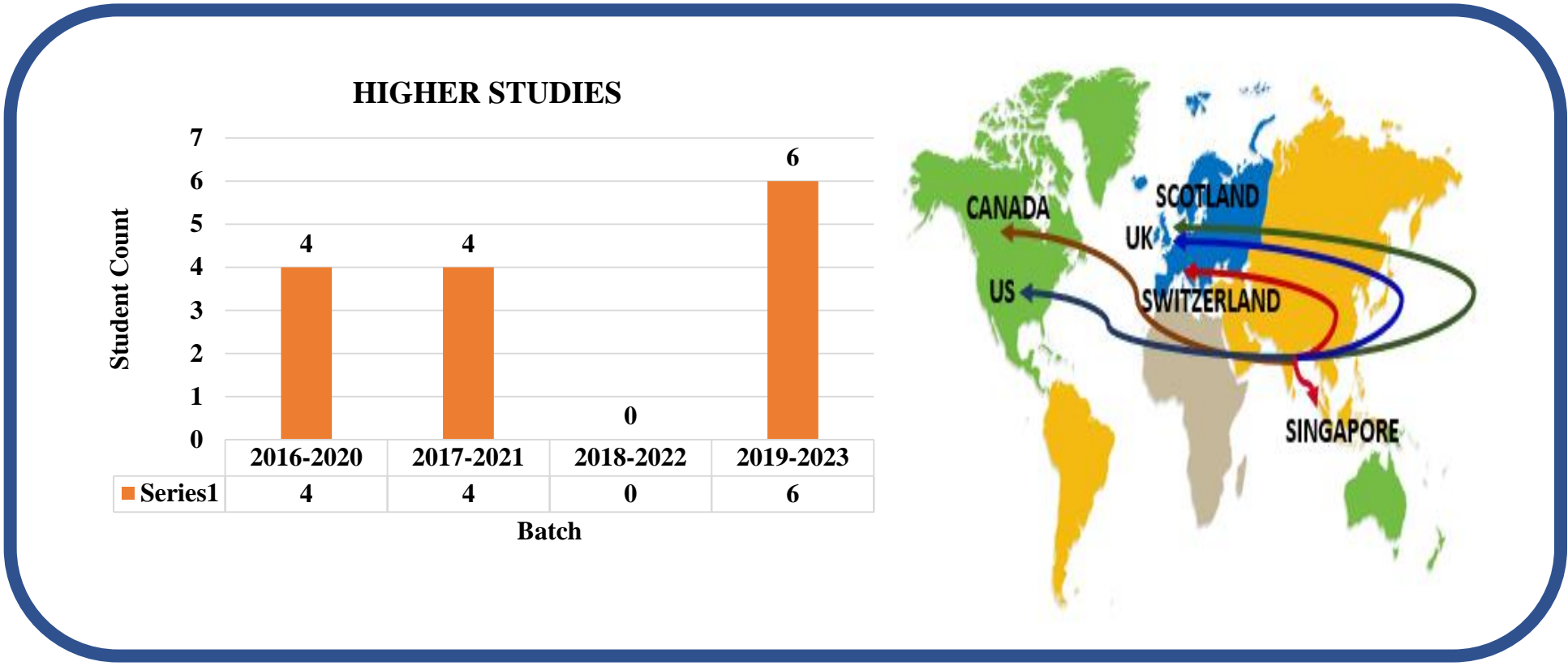
QS:26



QS:137



QS:601-650

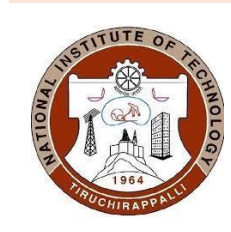


QS:661

QS:661



QS:1980



QS:220

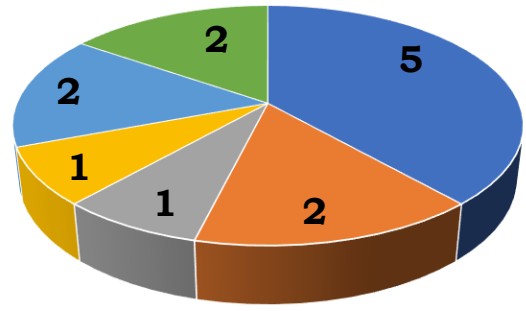


QS:11



QS:651-650

State, National, International Level Examinations



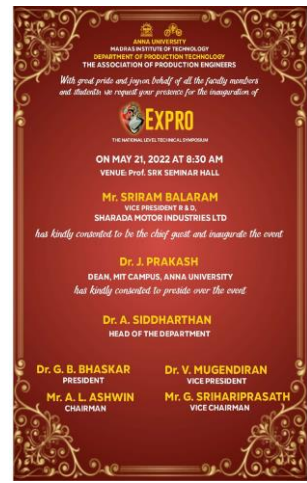
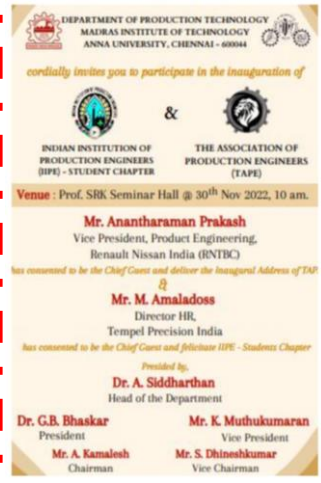
- GATE
- CAT
- GRE
- TOFEL
- Civil Service
- TANCET

4.5 Professional Activities

Description	Details	PO mapping
Student Chapter	TAPE Student Chapter	1, 2, 6 to 12
Society	Indian Institute of Production Engineers (IPE)	1, 2, 6 to 12
Engineering Events	EXPRO	6 to 12
	Student Workshops (National Level)	6 to 12
	Guest Lectures (Department level)	1, 6, 10
	Mock Interview (Department level)	1, 2, 6
Magazine/Newsletter	PROMAG	6, 9, 10
Prizes / Awards	Awards in Inter-Institution events	6, 10
	Awards in Institution level	6, 10
Participation	National level competitions	1, 2, 3, 6, 9, 10

DEPT. MAGAZINES

PRODUCTION MAGAZINE



POs Mapped with the criterion

PO1:Engineeringknowledge, PO2:Problem analysis, PO3:Design/development of solutions, PO6: The engineer and society, PO7: Environment and sustainability, PO8: Ethics, PO9: Individual and team work, PO10: Communication, PO11: Project management and finance, PO12: Life-long learning

4.5.2 STUDENT ACTIVITIES

NATIONAL LEVEL SYMPOSIUM EXPRO 2023



INDUSTRIAL VISITS

BRAKES INDIA PVT. LTD.,



ELECTRONICS PVT. LTD



TVS SUNDARAM CLAYTON Ltd



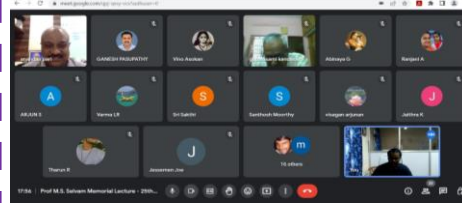
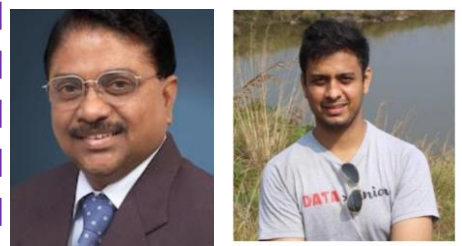
WHEELS INDIA LIMITED



Prof SRK Endowment lecture 2022



Prof Selvam Memorial lecture 25/03/2023



WORKSHOPS

Friction Stir Welding Workshop, CWS



Incremental Forming Workshop conducted by TAPE,18/03/2023



Design of Fretting Fixtures, 31/05/2023



Recent trends in Sheet metal forming, 26/12/2022



MIT open day-20/07/2023 to 22/07/2023



Abdul Kalam Birthday Celebration -Youth awakening Day 15/10/2023



4.5.2 AWARDS AND ACHIEVEMENTS

Criterion : 04

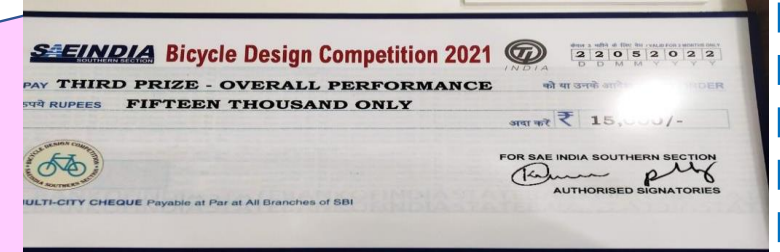
Won 2nd Place Contentstack on Vashisht 2023 @ IITDM Kancheepuram



Won Phase-I first Rank in Aerothon 2023



Won Third Prize from SAE India bicycle design competition 2022.



Won second place in QUADSKI at VASHISHT'23 held at IITDM Kancheepuram



Best Paper Award (AMMA 2023)



NSS Volunteer 2023



4.5.2 AWARDS AND ACHIEVEMENTS

Criterion : 04

MIT Open Day Celebration (2022)

Welcome to MIT CAMPUS, ANNA UNIVERSITY OPEN DAY 2022
(Showcasing MIT's Academic, Research and Innovation initiatives and contributions to the General Public)
Chromepet, Chennai – 600 044

Date : 05.09.2022
 Time : 10.00 a.m – 4.00 p.m

Faculty Members, Staff Members & Students of MIT

"சென்னை பல்கலைக் கழகத்தில் அனைத்து மக்களும்; அறிவுடை பரந்தல், சந்திந்தல் படைப்போம்"



Mr.S.Sivanathan (2019507045)
Mitacs - Globalink Research Internship (\$9000)
University of Northern British Columbia –
QS Rank 785

Mitacs
 Certificate of Program Completion
 This certifies that **SIVANATHAN SIVASANKAR** has successfully completed a **Mitacs Globalink Research Internship** effective December 2022.

Project Title: Research on Self-Tapping Wood Screws
 Host University: University of Northern British Columbia - Prince George
 Host Professor: Thomas Tansert

Globalink Research Internships are 12 weeks in duration and interns are required to work 40 hours per week.

Ms.S. Nimishaa (2019507034)
Universite Francois-Rabelais,
DE Tours, France –
QS Rank 663

ECTS Grade scales - Academic Year 2021/2022
 Outside School of Engineering - Polych Tour

Grade	ECTS	Quality	Grade	ECTS	Quality
100	12	Very good	20	2.0	Very good
90	10	Good	15	1.5	Good
80	8	Satisfactory	10	1.0	Satisfactory
70	6	Satisfactory	5	0.5	Satisfactory
60	4	Satisfactory	3	0.3	Satisfactory
50	2	Satisfactory	2	0.2	Satisfactory
40	1	Satisfactory	1	0.1	Satisfactory

Centre for Academic Services
 ANNA UNIVERSITY, CHENNAI - 600 044
 APPLICATION FOR FOREIGN KNOWLEDGE PROGRAMS

Name: S. NIMISHAA
 Roll Number: 2019507034
 Department: B.E. Production Engineering
 Semester: V
 Production / MIT Campus: R.123
 Name of the Foreign University: University of Tours, France
 Address: 36170001, Tournailleraie, Rabelais Square, 37000 Tours, France
 Contact Number: 021 47 31 22 22
 Mobile Number / E-mail ID: 9445558094795 / nimishaa@annauniv.edu

The following should be submitted:
 1. Call Letter from the Foreign University
 2. Memorandum of Understanding (MOU)
 3. Approval of the Department / Faculty of the Home University
 4. Learning Agreement (Study Plan)
 5. Declaration by Parent (if present)

Signature with stamp: *[Signature]*
 Director, Centre for Academic Services

Recommended by: *[Signature]*
 Director, Centre for Academic Services

First prize in Cricket Mr . Paerarason T

ANNA UNIVERSITY, CHENNAI-25
ANNUAL SPORTS DAY 2021-2022

CERTIFICATE OF MERIT

Awarded to Mr./Ms. **PAERARASON T**.....
 Register number **2018507029**..... Department of **PRODUCTION TECHNOLOGY**..... of MIT campus for securing **1 / 44 / 44** Place in the **Event / Game CRICKET**..... conducted by the Anna University Sports Board on **30.05.2022**.....

Assistant Director of Physical Education, University Sports Board
 Chairman, University Sports Board

Third prize in Contraption conducted by Caterpillar Mr Ravivarma R

CATERPILLAR

Certificate of Appreciation

This certificate is proudly presented to
Mr./Ms. RAVIVARMA R
 of **HIT**..... for securing **3rd/3rd** Place
 in Contraption- Let's Do the Work! 2022 conducted by Caterpillar India Pvt. Ltd. on 14th October 2022

WIN
CONTRAPTION
 LET'S DO THE WORK!

5. FACULTY INFORMATION



Name: Dr. A.SIDDHARTHAN
 Designation: Professor and Head
 Qualifications: *M.E., Ph.D. (IIT)*
Expertise: Microwave Processing of Materials, Biomaterials, Surface Engineering, Nanomaterials, Injection Moulding, Glass Fibre Manufacturing



Name: Dr. J. JANCIRANI
 Designation: Professor
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Vehicle Dynamics, Composites Material



Name: Dr. G.B.BHASKAR
 Designation: Professor
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Composite Materials, Manufacturing



Name: Dr. C. NANDAKUMAR
 Designation: Associate Professor
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Manufacturing, Advanced Machining, Composites, Automobile



Name: Dr. P. GANESH
 Designation: Associate Professor
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Metal Forming, Incremental Forming, Superplastic Forming, Finite Element Analysis, CIM and Computer Aided Product Design Prosthetics, Robotics



Name: Dr. N. SRIRANGARAJALU
 Designation: Assistant Professor (Si.Gr)
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Friction Stir Welding, Advanced Manufacturing Process, Material Characterization



Name: Dr. P. KARTHIKEYAN
 Designation: Assistant Professor (Si.Gr)
 Qualifications: *M.E., Ph.D. (Universiti Malaysia Perlis)*
Expertise: Mechatronics, Robotics, Brain Computer Interface, Machine Learning and Fusion



Name: Dr. V. MUGENDIRAN
 Designation: Assistant Professor (Si.Gr)
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Metal Forming, Optimization, Finite Element Analysis, Image Processing



Name: Dr. G. Kumaresan
 Designation: Assistant Professor
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Metal Forming, Materials Technology



Name: Dr. M. MANOJ
 Designation: Teaching Fellow
 Qualifications: *M.E., Phd (AU)*
Expertise: Composite Materials, Machining of Composites, Design



Name: Mr. R. MATHIYAZHAGAN
 Designation: Teaching Fellow
 Qualifications: *M.E., Phd (AU)*
Expertise: Mechatronics, Sensors, Machine Vision, Surface Roughness Measurement



Name: Mr. A. VISAGAN
 Designation: Teaching Fellow
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Metal Forming, Incremental Forming, Optimization Techniques, Reverse Engineering



Name: Mr. K. TAMILARASAN
 Designation: Teaching Fellow
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Incremental forming Operations management



Name: Mr. P. MANI
 Designation: Teaching Fellow
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Unconventional machining process



Name: Mr. P. RETHINAM
 Designation: Teaching Fellow
 Qualifications: *M.E.,*
Expertise: Thermodynamics and Refrigeration and Airconditioning



Name: Mr. N. ARUNAGIRI
 Designation: Teaching Fellow
 Qualifications: *M.E., Phd (AU)*
Expertise: Additive Manufacturing (Extrusion), CNC Systems, High Temperature Systems



Name: Mr. K. MUTHUKUMARAN
 Designation: Teaching Fellow
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Machining, Optimization



Name: Mrs. U. VISHNUJA
 Designation: Teaching Fellow
 Qualifications: *M.E., Ph.D. (AU)*
Expertise: Advanced Machining Process, Optimization

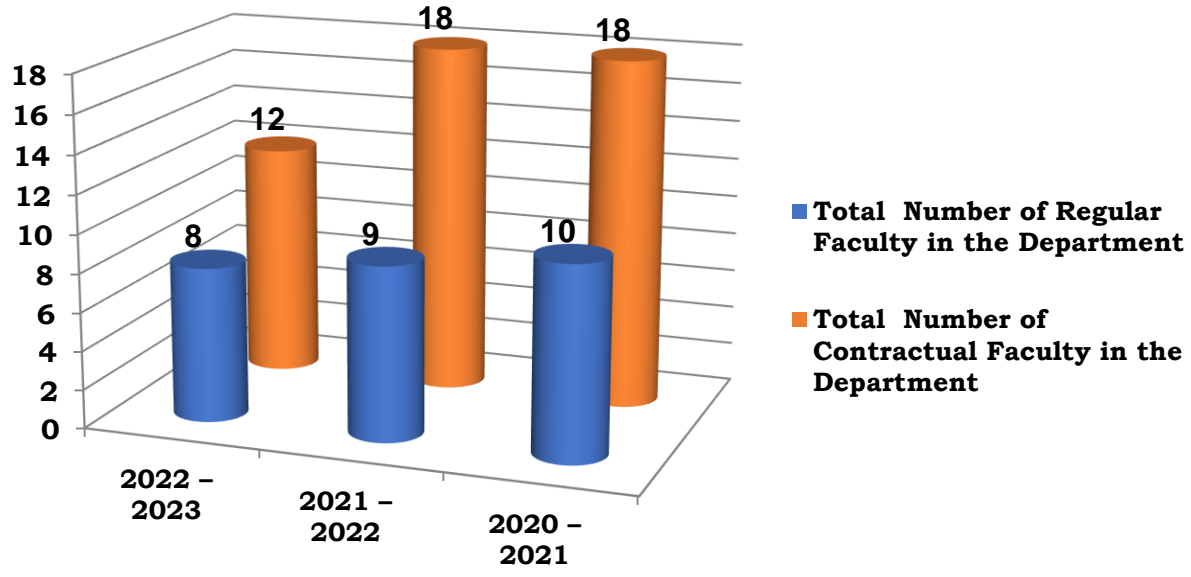
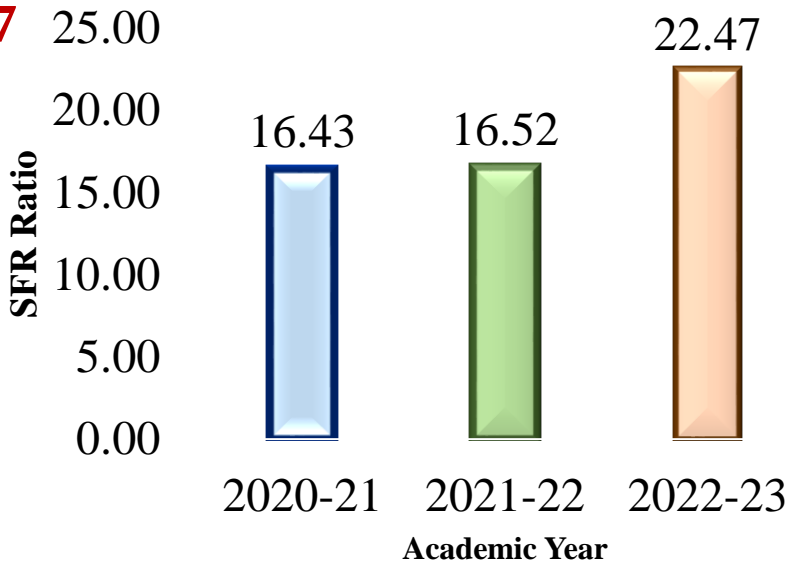


Name: Mr. S. MOHAMED SHAZULI
 Designation: Teaching Fellow
 Qualifications: *M.E.,*
Expertise: Mechatronics, Robotics, Sensors

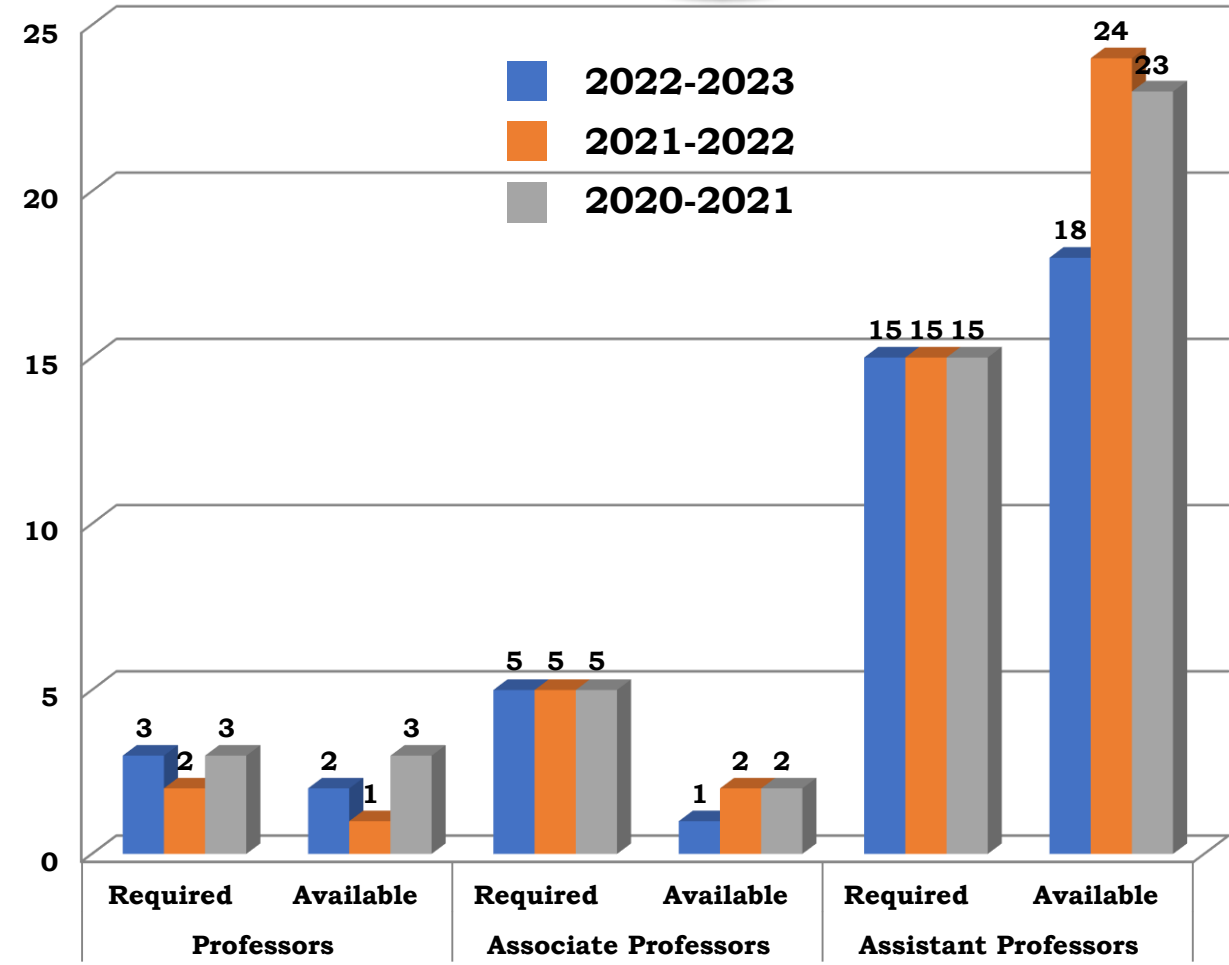
5.1 STUDENT-FACULTY RATIO 5.2 FACULTY CADRE PROPORTION

Criterion : 05

SFR Average : 18.47



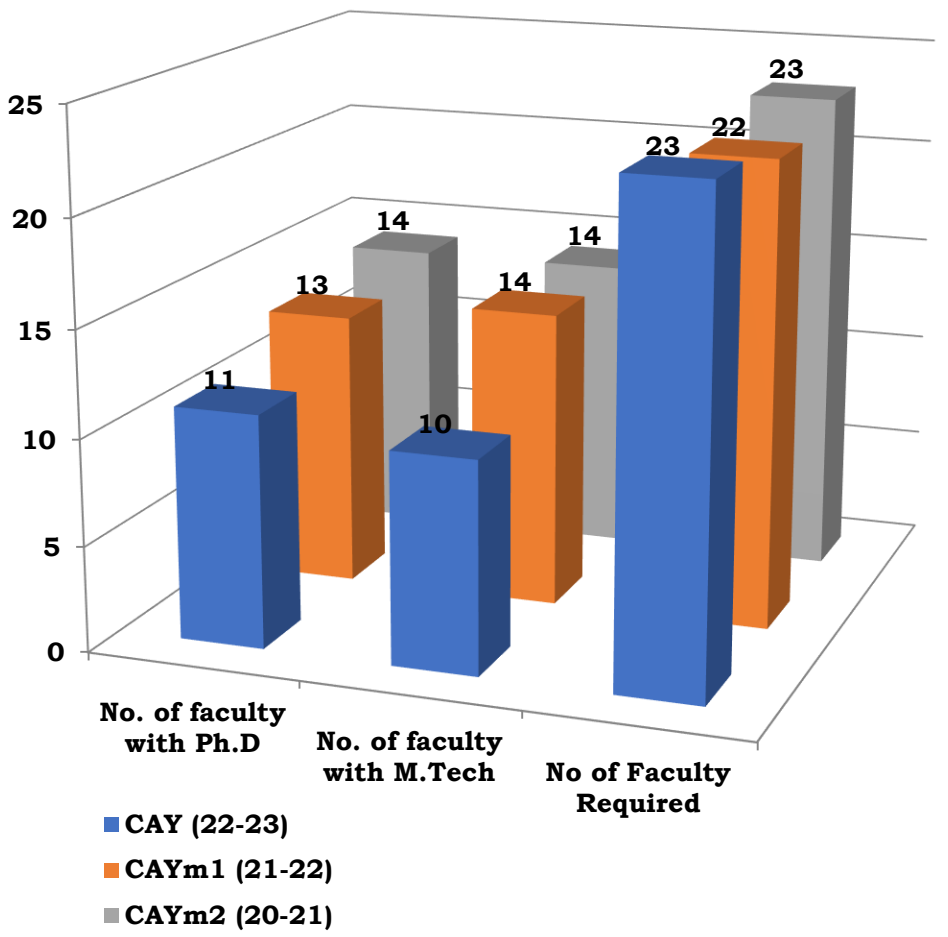
Faculty Cadre Proportion 15.17



5.3;5.4;5.5 FACULTY QUALIFICATION; RETENTION; COMPETENCY

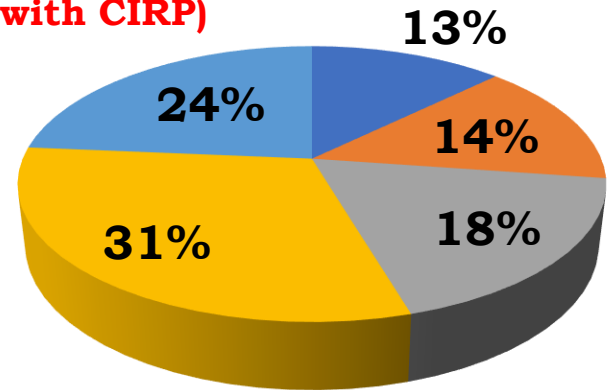
FQ=15.66

FACULTY RETENTION 85.72%



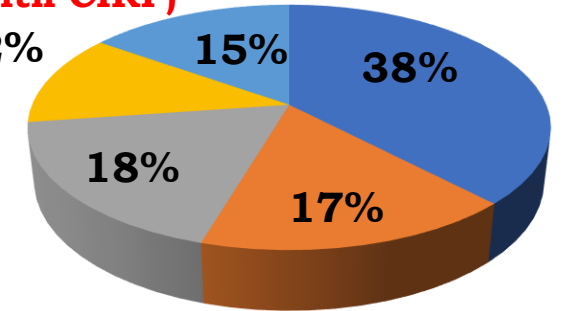
Faculty Expertise

- Materials
 - Manufacturing
 - Advanced Manufacturing
 - Design And Analysis
 - Industrial And Automation
- (Inline with CIRP)**



Domain wise Publication

- Materials
 - Manufacturing
 - Advanced Manufacturing
 - Design And Analysis
 - Industrial And Automation
- (Inline with CIRP)**



5.5 FACULTY COMPETENCY

Guest Lecture

Faculty	Topics
Dr. G. B. Bhaskar	Delivered a Guest Lecture on dated 17/08/2021 in the topic of “ Processing of Composite Materials ” at the 7 days FDP on Manufacturing Processes, organized by Sri Sairam Engineering College, Chennai
Dr. C. Nandakumar	Delivered a Guest Lecture on dated 23/12/2020 in the topic of “ Machining of Ti Alloy in CNC Wire EDM using online LN2 Cooling ” Virtual FDP At Karpaga Vinayaga College of Engineering & Technology
Dr. V. Mugendiran	Delivered a Guest Lecture on dated 01/10/2020 in the topic of “ Additive Manufacturing ” at Arunai Engineering College
Dr. V. Mugendiran	Delivered a Guest Lecture on dated 03/07/2021 in the topic of “ Development of Prototype of Gas burner Based Boiler ” at Arunai Engineering college

Session Chair

Faculty	Topics
Dr. G. B. Bhaskar	Attended International Conference Session Chair on dated 21/02/2020 at St. Joseph's Engineering College, Chennai – 119
Dr. C. Nandakumar	Attended International Conference Session Chair on dated 28/4/2020 at Eswari Engineering College, Chennai – 89

5.5 FACULTY COMPETENCY

Board of Studies

Academic Year	Name of the Faculty	Institution Name
2019-2020	Dr. G. B. Bhaskar	Kalaingnarkarunanadhi Institute of Technology, Coimbatore
		Bannari Amman Institute of Technology, Sathyamangalam
2020-2021	Dr. G. B. Bhaskar	Kalaingnarkarunanadhi Institute of Technology, Coimbatore
	Dr. P. Karthikeyan	VIT, Chennai (06/02/2021)
2021-2022	Dr. A. Siddharthan	Sri Sairam Engineering College, Chennai (24.03.2022)
	Dr. G. B. Bhaskar	Kalaingnarkarunanadhi Institute of Technology, Coimbatore
2022-2023	Dr. A. Siddharthan	Vel Tech Multi Tech Dr Rangarajan Dr Sakunthala Engineering College
	Dr. G. B. Bhaskar	Saveetha Engineering College, Chennai

Professional Society – MIT Chapter

IPE- Indian Institute of Production Engineers

Staff 10 Nos
UG Student 153 Nos
PG Student 18 Nos

TRS- The Robotic Society

Staff 6 Nos
UG Student 20 Nos
PG Student 9 Nos

Course Development

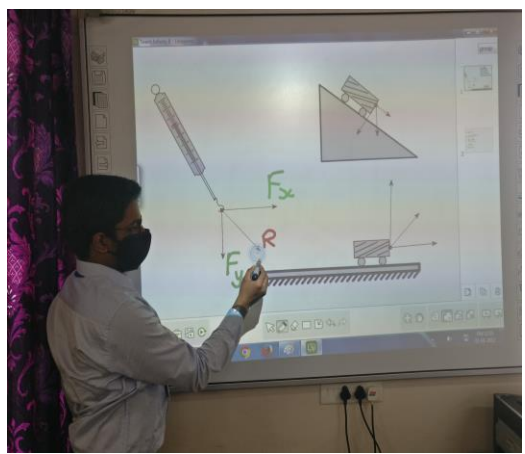
S.NO	SUBJECT	PROPOSED BY	CATEGORY
1	Product Design and Development for Engineers	Dr. J. Jancirani	Open Elective
2	Biomimetic Engineering	Dr. A. Siddharthan	Open Elective
3	Micro and Nano Manufacturing	Dr. C. Nandakumar	Open Elective
4	Design Concept Optimization and Rapid Prototyping	Dr. P. Ganesh	Open Elective
5	Reliability Analysis and Maintainability	Dr. V. Mugendiran	Open Elective
6	Sustainable Production	Dr. G. B. Bhaskar	Open Elective

Memberships in Committees

Name of the Faculty	Member in Committees
Dr. A. Siddharthan	Preliminary Design Review - Indigenous Track system for MBT Arjun Mk-IA CVRDE
	Techno-financial Evaluation Committee- 6000m depth-rated manned scientific submarine Matsya6000-NIOT

5.6 INNOVATION BY THE FACULTY IN TEACHING AND LEARNING

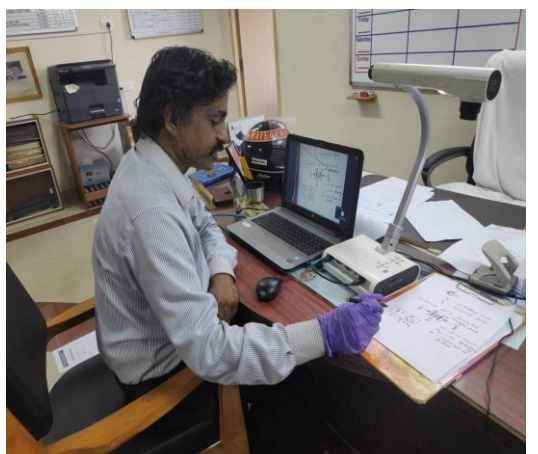
Criterion : 05



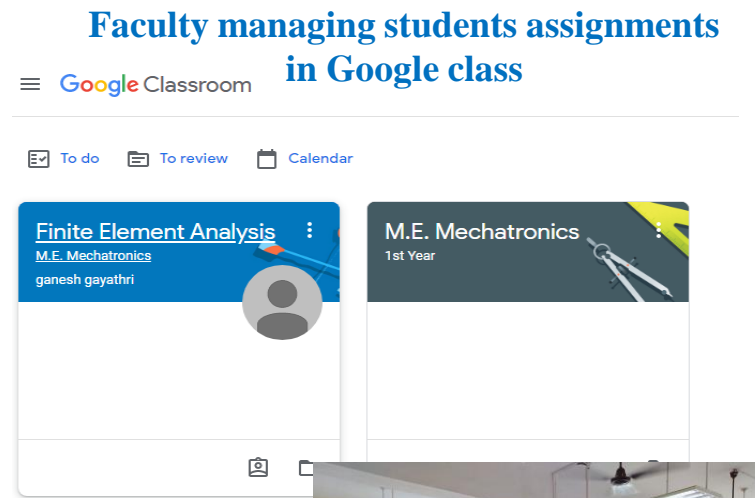
Faculty handling Engineering Mechanics in Smart Board



Faculty handling classes in MS Teams



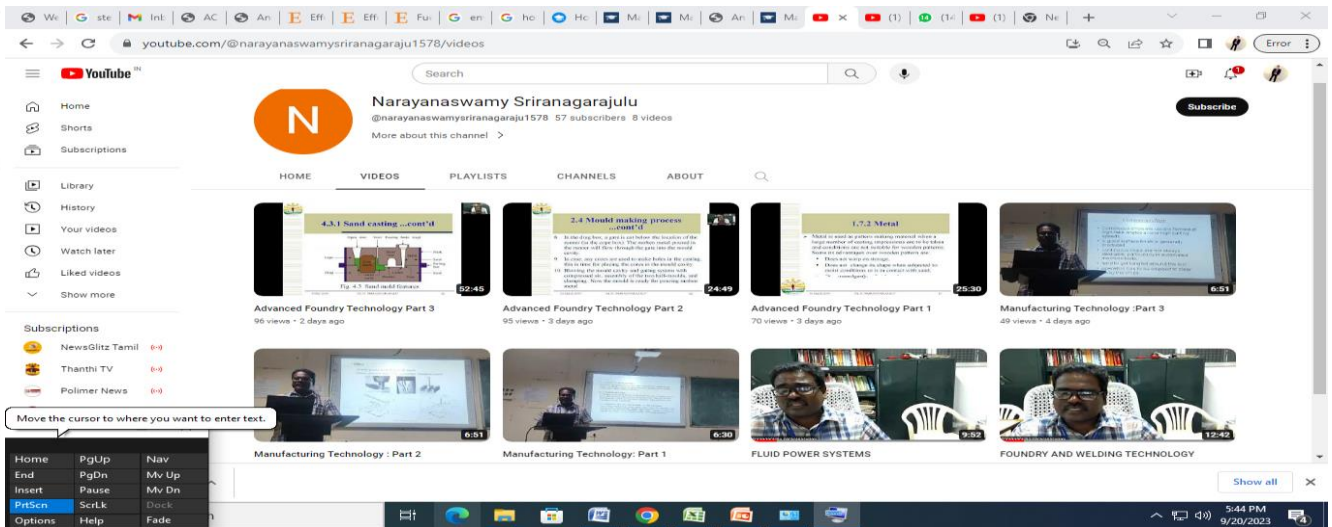
Faculty using Image capture camera in MS Teams



Faculty managing students assignments in Google class



Faculty using LMS Moodle



You tube Lecture in Faculty



Faculty using PPT presentation for teaching students

5.6 INNOVATION BY THE FACULTY IN TEACHING AND LEARNING

Availability of Work on Institute Website



PRODUCTION TECHNOLOGY

Last Updated: 21 September 2023

- HOME
- VISION & MISSION
- HOD
- PEOPLE
- ACADEMICS ▾
- INFRASTRUCTURE ▾
- RESEARCH ▾
- PLACEMENTS
- STUDENTS ▾
- ACHIEVEMENTS ▾
- EVENTS/ACTIVITIES
- DEPT LIBRARY
- CENTRAL WORKSHOP
- ALUMNI
- COURSE MATERIALS**
- 360 VIRTUAL TOUR

COURSE MATERIALS

Sl.No	Staff Name	Subject Code	Subject Name	YouTube Link
1.	Dr.A.Siddharthan	ME5451	Hydraulics and Pneumatics.	https://www.youtube.com/@siddharthanarjunan7196
2.	Dr.G.B.Bhaskar			https://www.youtube.com/@dr.g.b.bhaskar6954
3.	Dr.P.Ganesh			https://www.youtube.com/@Ganeshpasupathy
4.	Dr.C.NandaKumar	PR5003	Tool Design.	
5.	Dr.N.Srirangarajalu		Overview of Fluid Power.	https://www.youtube.com/@narayanaswamysriranagaraju1578
			Friction Stir Welding.	
6.	Dr.C.Arun Prakash	PR5403	Machining Process and Machine Tools.	
		PR5501	Engineering Metrology.	
7.	Mr.R.Mathiyazhagan	MR7105	Sensors and Signal Conditioning.	
8.	Mr. N.Arunagiri	PR7892	Corrosion Engineering.	
9.	Mr. S.Mohamed Shazuli	PR5073	Robotic Technology.	

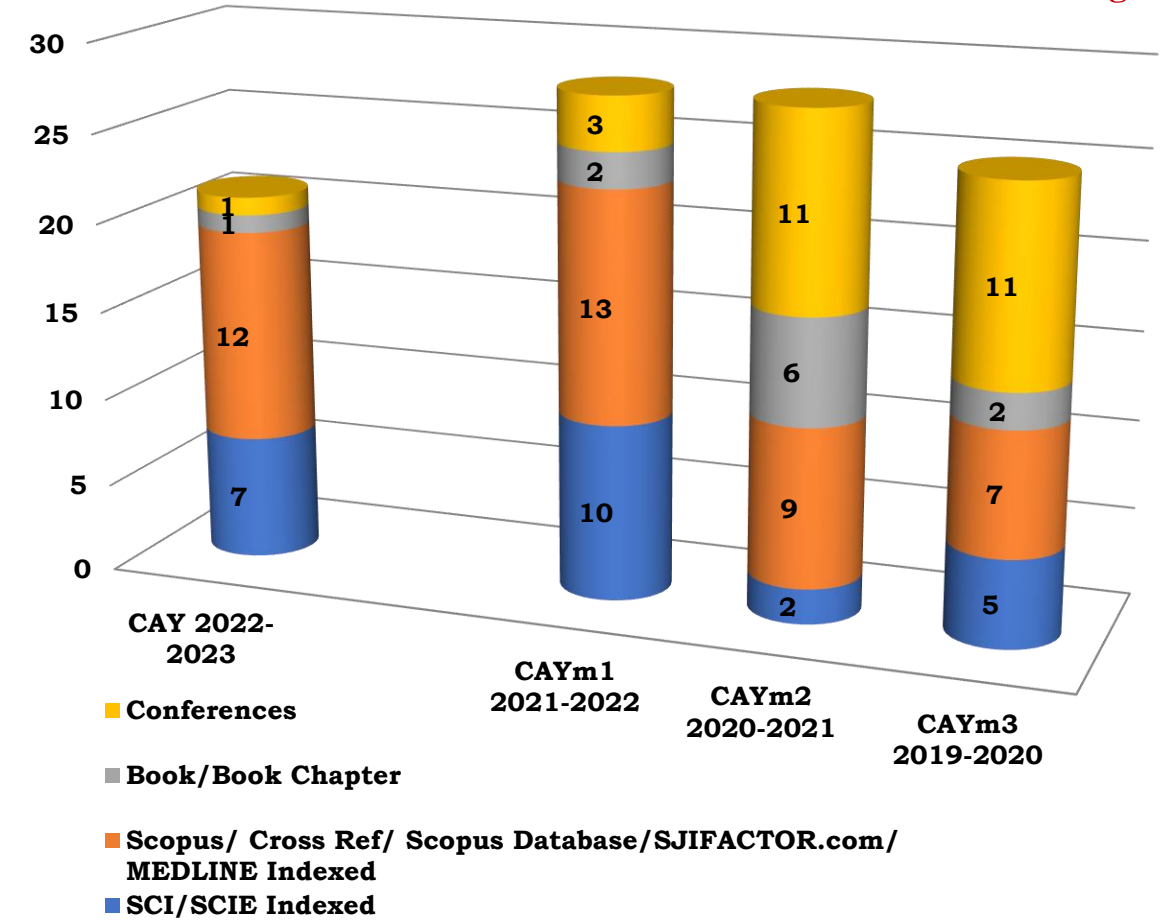
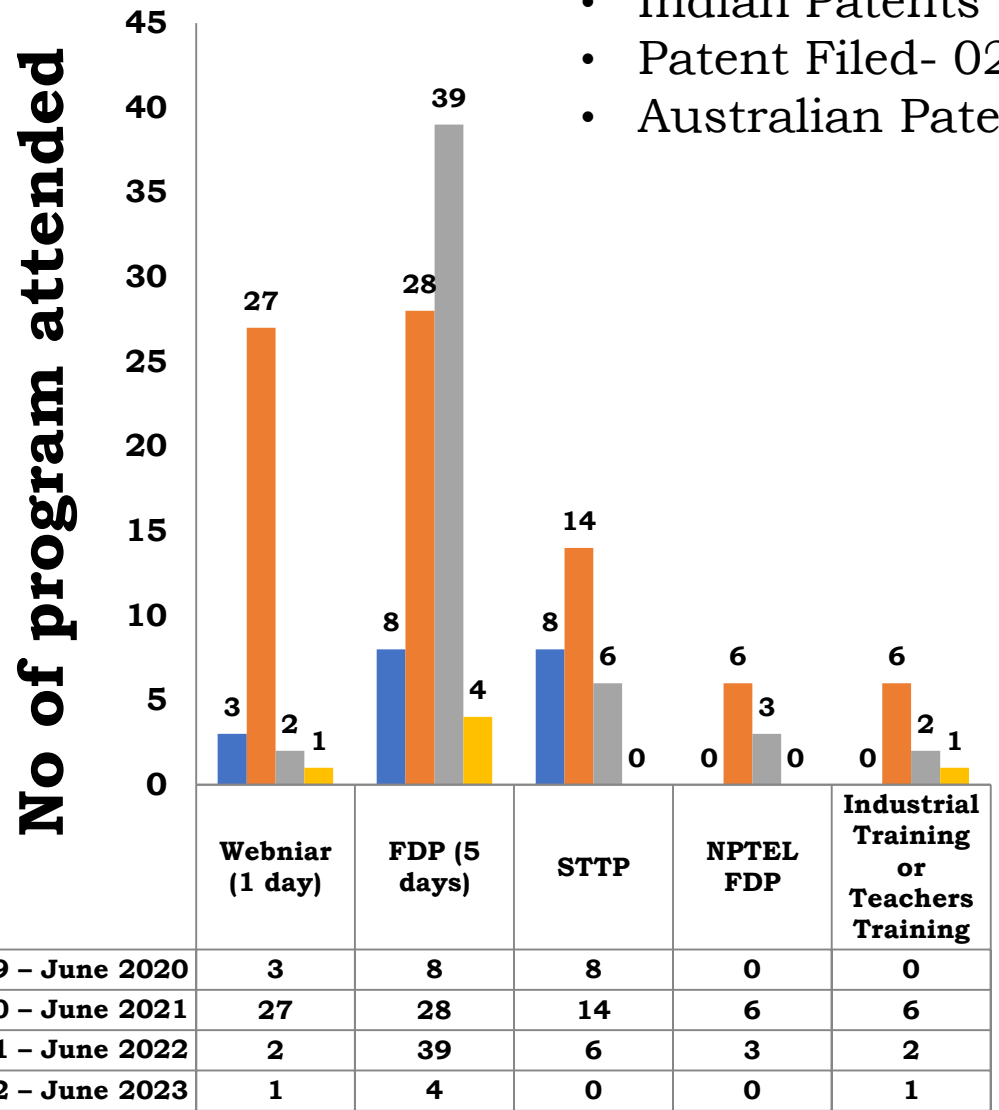
Availability of work for Peer Review

Name of the Faculty	Name of the Journal
Dr. A. Siddharthan	Transaction of the Indian Institute of Metals
	Silicon
	International Journal of Advanced Manufacturing Technology
Dr. P. Karthikeyan	IEEE Sensors Journal
	IEEE Transaction on Cybernetics
	Nonlinear Dynamics
	Proceedings of the Institution of Mechanical Engineers
	Psychophysiology
	Silicon
	Symmetry
Dr. V. Mugendiran	Journal of Mechanical Science and Technology

Tangible Outcomes:

- Indian Patents : 4 Granted, 4 Published
- Patent Filed- 02
- Australian Patent – 1 Granted

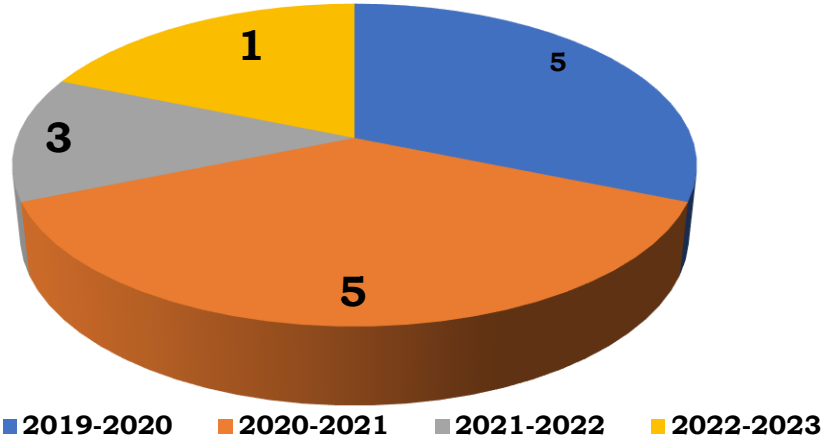
“ CITATIONS - 3669
 ... H-index - 28
 Impact factor (Highest)- 8.4
 Mechanical Systems and Signal Processing



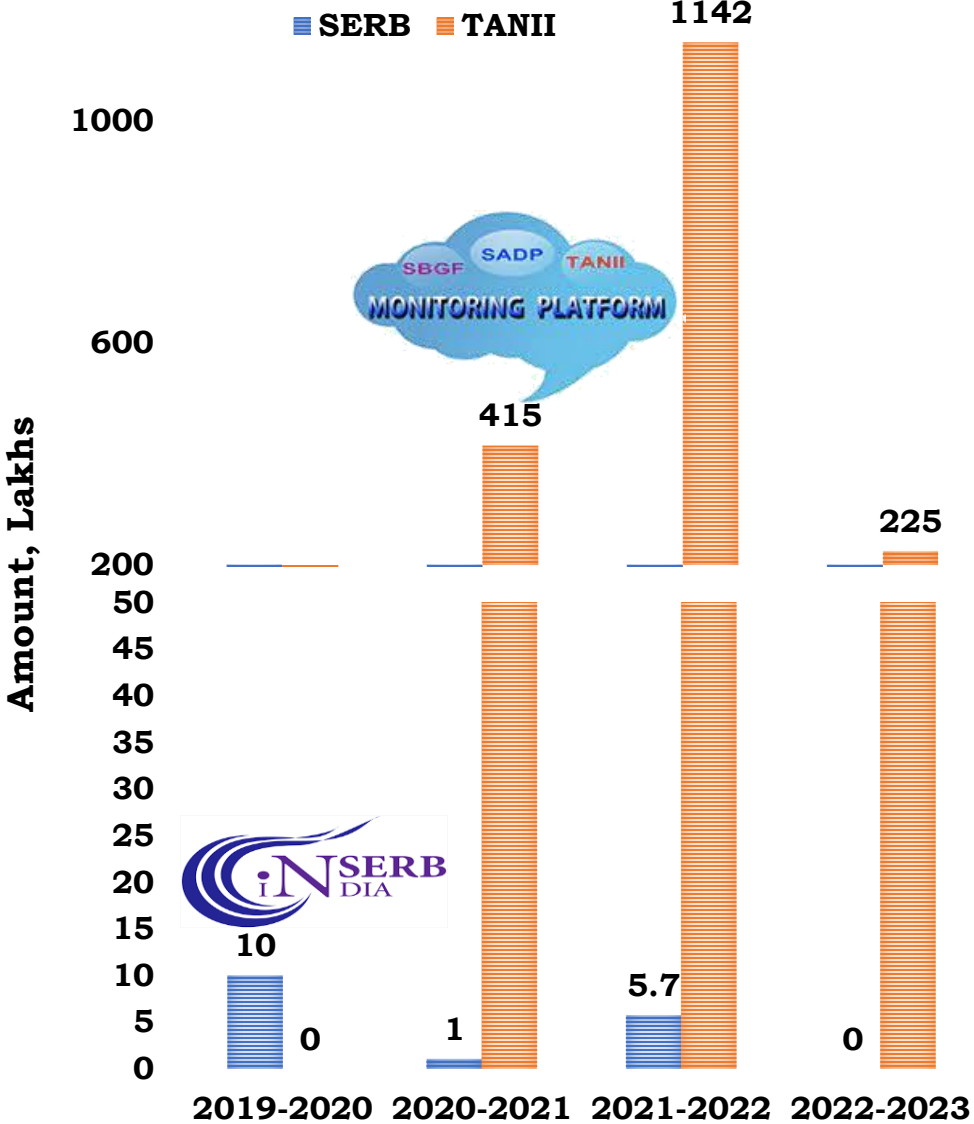
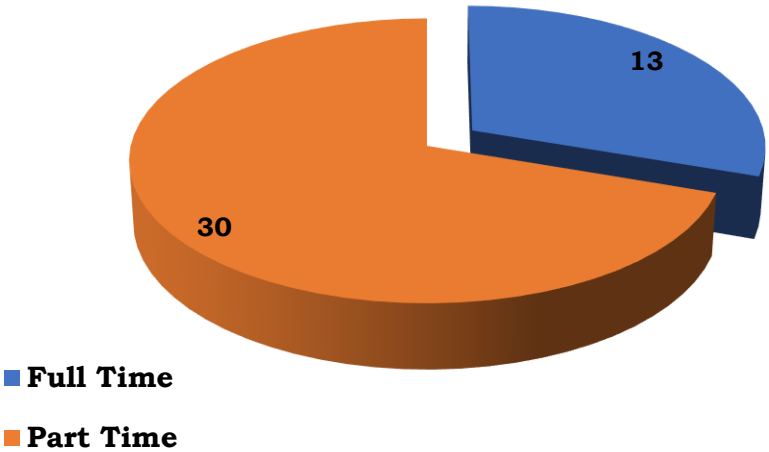
5.8.1 ACADEMIC RESEARCH

5.8.2 SPONSORED RESEARCH

Ph.D Completed

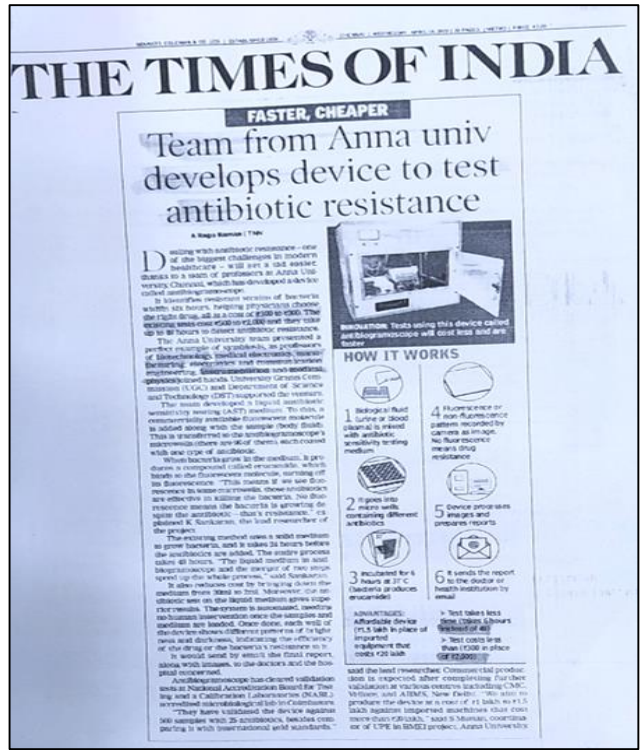
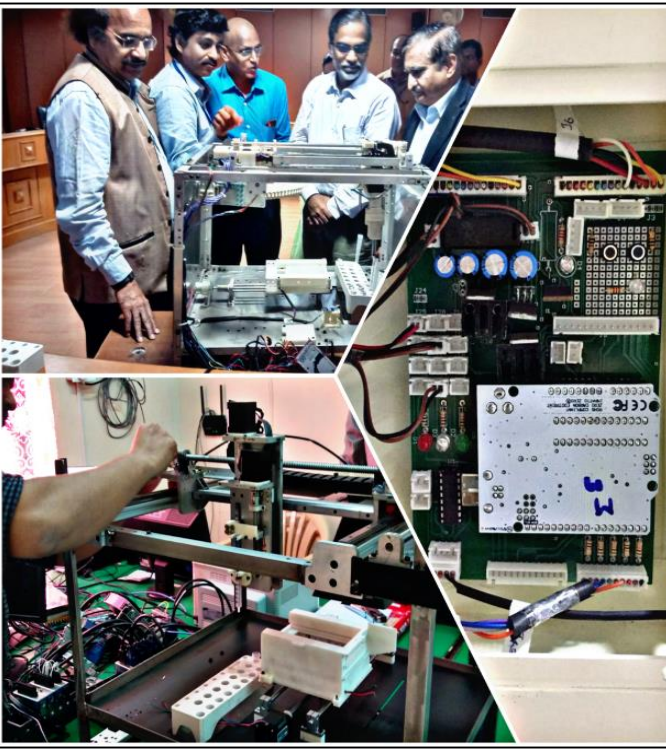


Ph.D Ongoing



Sl. No	TITLE OF THE PROJECT	NAME OF THE FACULTY	NAME OF THE FUNDING AGENCY	DURATION	GRANT RECEIVED	STATUS
1	Design and fabrication of portable wood chopper cum briquetting Machine.	Dr. A.Rajadurai	CSRC	2019-2020	25,000	Completed
2	Hydrogen cell assisted with petrol to run a vehicle.	Dr. A.Rajadurai	CSRC	2019-2020	10,000	Completed
3	Design and fabrication of non-electric perpetually operated cutter	Dr. J.Jancirani	CSRC	2019-2020	11,720	Completed
4	Development of air cooling unit for motor bike helmet using peltier module.	Dr. A. Siddharthan	CSRC	2019-2020	22,846	Completed
5	Efficiently performing engines using Turbocharger Linked with an Intercooler.	Dr. P.Ganesh	CSRC	2019-2020	24,487	Completed
6	Construction of Flapper type robot with surveillance system	Dr. P.Ganesh	CSRC	2019-2020	19,551	Completed
7	3D Configured Automated CNC Spot welding machine.	Dr. C. Nandakumar	CSRC	2019-2020	25,000	Completed
8	Experimental study on ultrasonic welding on thin copper and brass [Dissimilar] sheets using Taguchi Method.	Dr. N. Srirangarajalu	CSRC	2019-2020	22,365	Completed
9	Three DOF serial manipulator for pick and place operation.	Dr. P. Karthikeyan	CSRC	2019-2020	23,614	Completed
10	Automated sequence analyzer for A€Z smart library.	Dr. P. Karthikeyan	CSRC	2019-2020	24,225	Completed
11	Design and fabrication of Test rig for measurement of strain on irregular surface by image processing.	Dr. V. Mugendiran	CSRC	2019-2020	25,000	Completed
12	Music Therapy App using EEG Sensor	Dr. C. Nandakumar	CSRC	2022-2023	25,000	Completed
13	Fabrication of Patient Specific Airway Stent by Solvent Cast Direct Writing on Medical Grade Silicone	Dr. V. Mugendiran	CSRC	2022-2023	25,000	Completed
14	Obstacle Detection and Path Mapping Assistive Device for Visually Impaired People	Dr. V. Mugendiran	CSRC	2022-2023	25,000	Completed
Total Amount for past 3 Years (Rs. In Lakhs)		2.33 Lakhs				

5.8.3 DEVELOPMENT ACTIVITIES

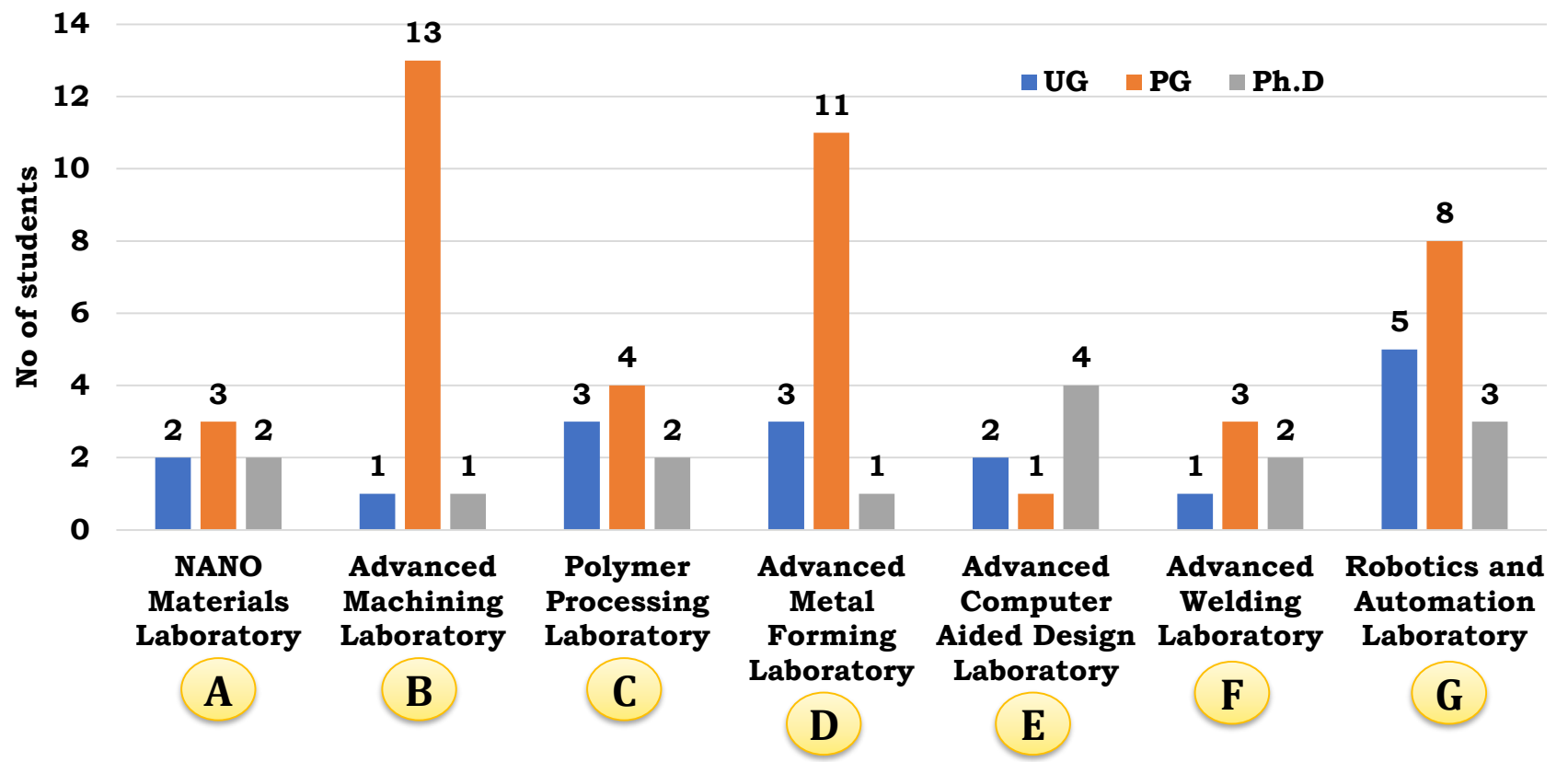


ANTIBIOGRAM DEVICE (UGC – UPE Pathogen Identification-6 Hour Accuracy (NABL) - 99.07% Supplied to Premier Hospitals(CMC Vellore, Microbiology Lab-Coimbatore) – 15th April 2019

AU – MIT BOT (Society driven) Donated to Omanthurar Multispecialty Govt. Hospital, Chennai on 31st May 2020

Spirograph based Collector Assembly for producing Electrospun mat with near uniform Characteristics delivered to Physics Instruments Co, Chennai on 21st September 2022

5.8.3 RESEARCH LABORATORIES



6.1 Laboratory Technical Manpower



Name: Mr.R.Duraipondi
 Designation: General Foreman (SG)
 Qualifications: *M.E. (Manufacturing)*



Name: Mr.A.PrabuInbaraj
 Designation: Skilled Asst Gr-II
 Qualifications: *Diploma (Electrical)*



Name: Mr.K.Rangarajan
 Designation: Professional Assistant-I
 Qualifications: *M.E. (Applied Electronics)*



Name: Mr.V.Vasudevan
 Designation: Professional Assistant-III
 Qualifications: *Diploma (Mechanical)*



Name: Mr.T.Kasi
 Designation: Technical Assistant (SG)
 Qualifications: *M.E. (Manufacturing)*



Name: Mr.N.JayaKumar
 Designation: Lab Assistant (SG)
 Qualifications: *Diploma (Plumbing)*



Name: Mr.H.Sampath
 Designation: Professional Assistant-I
 Qualifications: *M.E. (Manufacturing)*



Name: Mr.S.Suresh
 Designation: Professional Assistant-III
 Qualifications: *B.E. (Mechanical)*



Name: Mr.H.Ananthkrishnan
 Designation: Technical Assistant (SG)
 Qualifications: *B.E. (Mechanical)*



Name: Mr.V.Dinesh Kumar
 Designation: Professional Assistant-I
 Qualifications: *B.E. (Production)*



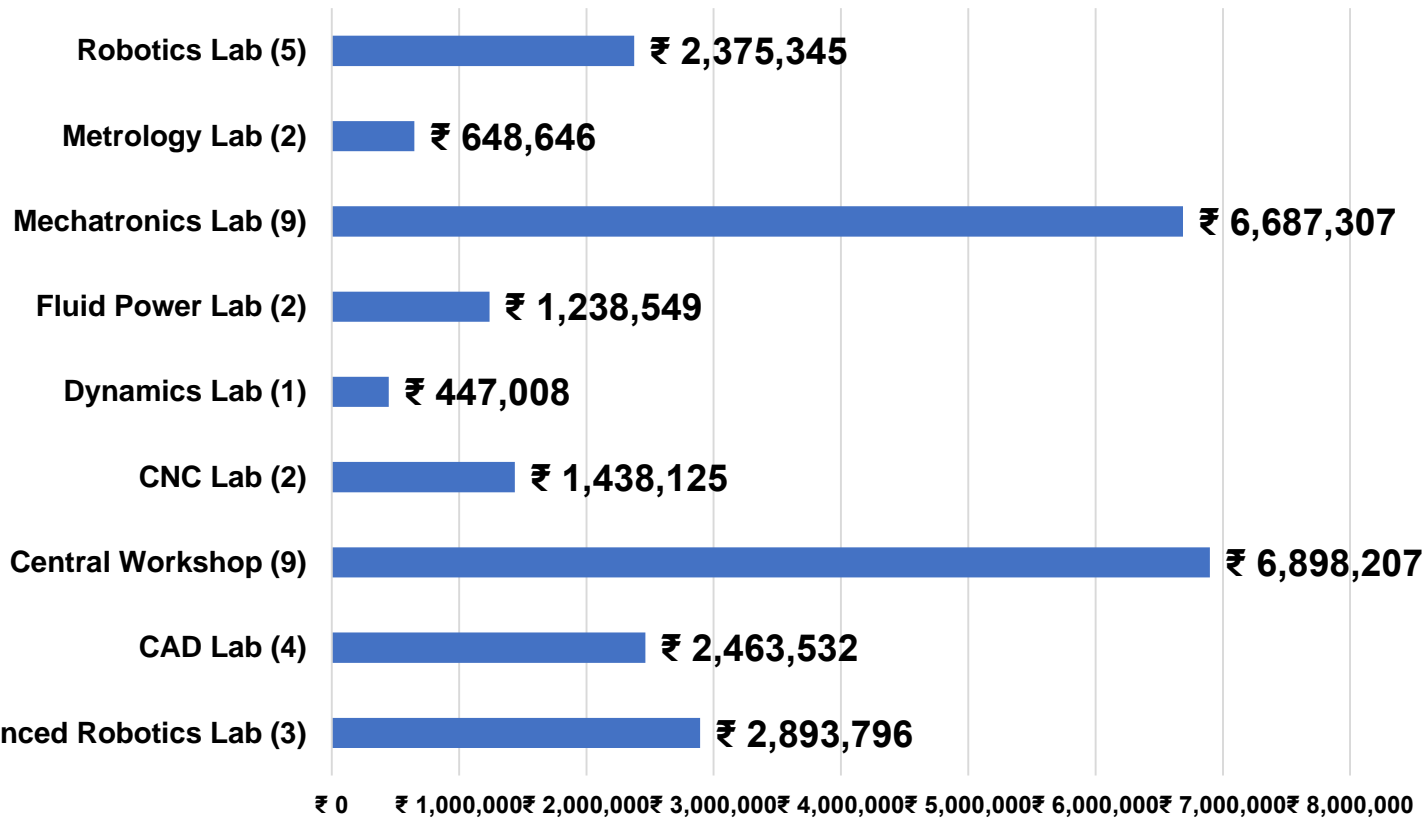
Name: Mr.S.Selva Kumar
 Designation: Professional Assistant-I
 Qualifications: *B.E. (Computer Science)*



Name: Mr.S.Muralitharan
 Designation: Professional Assistant-III
 Qualifications: *Diploma (ECE)*

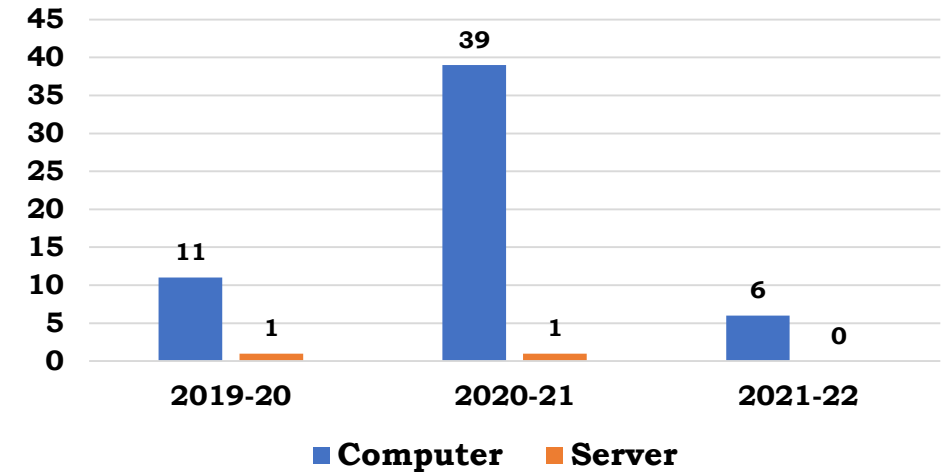
6.1 Equipment & Computer Purchase

LABWISE EQUIPMENT PURCHASE UNDER LAB MODERNIZATION



Totally 49 equipment were purchased under Lab Modernization for total value of **Rs.2,77,65,159**

Computer Purchase



Multiuser User License

- HEXAGON EDGECAM: 15
- SIMULIA ABAQUS: 3
- SOLIDWORKS: 30

Single User License

- CIROS FESTO
- MATLAB
- Geomagic Freeform

6.1 Lab Modernization Equipment



SERVO MOTOR DRIVE AND CONTROLLER
Year: 2020 ;Rs. 9 lakh



HYBRID STEPPER MOTOR DRIVE AND CONTROLLER
Year: 2020 ;Rs. 9 lakh



i7 COMPUTERS
Year: 2020
Rs. 7.7 lakh



GRINDING MACHINE
Year: 2020
Rs. 7.9 lakh



VERTICAL MILLING MACHINE
Year: 2020 ; Rs. 9.65 lakh



HORIZONTAL MILLING MACHINE
Year: 2020; Rs. 9.44 lakh



PLC BASED CONVEYOR DISTRIBUTION AND SORTING STATION
Year: 2020 ; Rs. 12 lakh



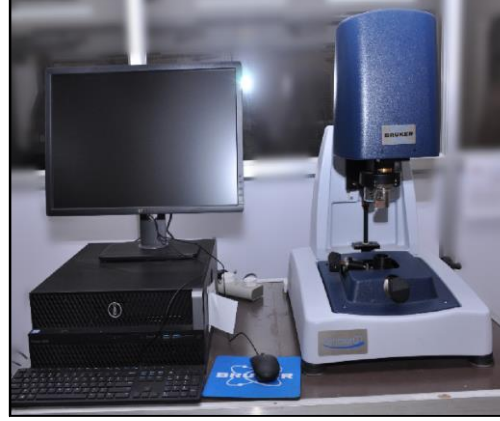
2 AXES AUTOMATED LINEAR STAGE
Year: 2020; Rs. 6.5 lakh

Production Department New Building	Rs. 10,00,00,000/-
CAM Lab Rewiring	Rs. 2,50,000/-
Additional Flood lights	Rs. 1,37,501/-
Embedded and IOT Lab additional electrical points	Rs. 2,88,782/-
Welding Additional Electrical Connection	Rs. 5,00,008/-
Central Workshop Renovation	Rs. 3,00,00,000/-

6.1 Major Equipment (UGC-UPE)



**5 Axes CNC Machine,
2019 (60 L)
17 Projects**



**Non-Contact Roughness
Tester, 2019 (40 L)
66 Projects**



**Ultrasonic Welding,
2018 (25 L)
09 – PG Projects**



**6 Axes Robot with
Torque Compliance Arm,
2019 (22 L)
Curriculum -Experiment**



**6 Axes ABB Robot,
2018 (22 L)
Curriculum -Experiment**



**CO-ORDINATE MEASURING
MACHINE (UGC – UPE)
(Contura)
05 Projects**



**4-AXES CNC
MILLING
MACHINE
2018 (BFW)
27 Projects**

Major Equipment UGC – UPE (443 Lakhs)

Workshop's Conducted – 48

Year	2017-18	2018-19	2019-20	2021-22	2022-23
EXPRO	07	07	05	05	06
PISTOBOLTZ	--	04	05	04	05

6.2 Maintenance

From:-
 24.06.2021
 Dr.C.Nandakumar
 Assistant Professor
 Dept. of Production Technology
 MIT Campus, Chromepet
 Anna University, Chennai-44

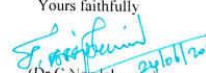
To,
 The Head
 Dept. of Production Technology
 MIT Campus, Chromepet
 Anna University, Chennai-44

Sub:- AMC for Abrasive Water Jet Machine-Required -Reg.

Sir
 Abrasive Water Jet Machine was purchased and installed in the year of 2014 in Advanced machining Laboratory of our department. It is required for periodic maintenance of the machine. AMC for water jet machine had expired on 2017.

Hence it is requested to renew Annual Maintenance contract for the year 2021-2022.

Thanking you

Yours faithfully

 (Dr.C.Nandakumar)
 Faculty in-charge Advanced Machining Lab

*To Mrs G/S / Mr FF
 prepare enquiry & provide
 necessary maintenance
 for
 machine*

CLAIM BILL

PAYABLE AT ANNA UNIVERSITY, CHENNAI - 25.

Month : September 2022 Month : September

NAME OF ACCOUNT : GENERAL FUND / A & CE / DEBT & DEPOSIT
 Computer Code No. : []
 HEAD OF ACCOUNT : M.H. No. 4-2-53 Dept. of Production Technology.
 (Major, Head, Subhead, Detailed Head) : (ix) Computer Maintenance/Equipment Maintenance
 REGISTRAR / DIRECTOR : San. Proc. No. 10/MIT/PT/GF/XIX/2022
 DEAN / HOD / PROF. / I/c : Date: 30/08/2022
 LIB / P & EO / : AMC for Abrasive Water Jet Machine Model No: 1515
 PROCES. NO. & DATE : for CAH Lab in the Dept. of PT
 : W. O. No. 10/ MIT/PT/GF/XIX/2022, Date: 30/08/2022

Item Details
 Supply Order No. & Date : BK-003, 12 Sep 2022
 Invoice No. & Date : M/s. BGR Technologies
 Name of the firm : Rs. 82,506/- [Eighty two thousand five hundred and six]
 Amount (Figures & in words) : M/s. BGR Technologies, Chennai - 600042.
 Name of the Payee : Rs. 10,00,000
 Appropriation (B.E / R.E) 2022 2023 : Rs. 6,85,728
 Amount spent so far including this bill : IT Deduction
 : Rs. 3,14,272 Total Bill Amount : 82,506/-
 Balance amount Available : Rs. 1,398.4
 : IT 2/- 81,107.6

(UNDER RUPEES Eighty two thousand five hundred and seven only 81,107.6)

CERTIFIED THAT :

1. THE AMOUNT CLAIMED IN THIS BILL HAS NOT BEEN DRAWN PREVIOUSLY
 2. THE CONTINGENT BILL IS PRE - RECEIPTED
 3. NO ADVANCE IS PENDING SETTLEMENT.

IN CASE OF ADVANCE
 Entered in Advance Register at Page No. _____ SI No. _____ in University Office.
 Asst. Supdt. A.R. / D.R. 21/07/22

FOR UNIVERSITY OFFICE USE ONLY
 Entered in Appropriation Register Voucher No. _____
 Folio No. _____ year 20 ____ 20 ____ Paid No. _____
 Passed for and Pay Rs. _____ Rupees _____ Cheque No. _____
 _____ Date _____ for Rs. _____

Asst. Supdt. A.R. / D.R. F.O. R Asst. Supdt. A.R. / D.R. F.O. R

INVOICE

BGR Technologies

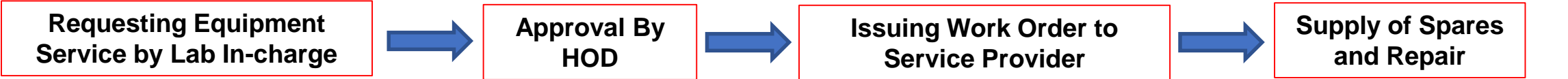
No.636, Sokalingam street, Nazarethpet, Chennai -600123.
 Ph.No - 9884628140. Email - bgrtechnologies20@gmail.com
 GSTIN : 33GYGPK4507L1Z8

Client Name : The HOD Date : 12-SEP-2022
 Address : Department of Production Technology Invoice No : BK-003
 MIT Campus, Chrompet
 Chennai - 600 044.
 GSTIN : NA

W.O.No.10/MIT/PT/GF/XIX/2022-AMC for Abrasive Water Jet Machine, Dated-30/08/2022.

S.No	Description	HSN Code	Qty	Rate	Amount
1	Annual Maintenance Contract for Abrasive Water Jet CNC Machine for period 1 Year (Model No:1515)	9987	1	Rs.73,600/-	Rs.73,600/-
	(-) Discount @ 5%			Rs.3,680/-	Rs.3,680/-
Total Value:					Rs.69,920.00/-
Add : GST					18% Rs.12,585.60/-
Grand Total					Rs.82,506/-

Amount in Words: Rupees Eighty two Thousand five Hundred and six Only



6.2 Condemnation of items

UNIVERSITY DEPARTMENTS OF ANNA UNIVERSITY : CHENNAI
MIT CAMPUS: DEPARTMENT OF PRODUCTION TECHNOLOGY,
CHROMEPET, CHENNAI – 600 044

Ref: No. Dt.

Note to Agenda

To consider the approve the condemnation of 1 item belonging to Dept. of Production Technology, MIT Campus, Anna University, Chennai – 44, costing more than Rs.5 lakhs each – as per the Chapter IX, finance & Accounts manual of Anna University, Chennai.

A committee under the headship of Dr. R. Sivaramakrishnan, Head of the Department, Dept. of Production Technology – has been formed (Regr. Proc. No.12414/PP1/2019, dt.21.05.2020) to inspect the items / equipment and to give proposal / recommendation regarding the utility value of these items. The Inspection Committee Members were Dr. J. Jancirani, Professor, Dept. of Production Technology, MIT Campus, and Dr. Senthil Kumaran, Professor, Dept. of Mechanical Engineering, CEG Campus, Chennai – 25.

Accordingly, the expert committee inspected the items and vide its letter No. Nil, Dt. 23.01.2020 from the HOD, Dept. of Production Technology, MIT Campus and had send a proposal to the University recommending condemnation of 146 items. The details are given below.

- 1. 1 item costing more than Rs.5 lakh.

and the item has been procured more than 10 years.

While the University has been authorized to approve the condemnation of items costing more than Rs.5.00 lakhs as per the F & A Manual of Anna University, Chennai (Chapter IX, Para No.112).

The details of the items – costing more than Rs.5 lakhs each – recommended for condemnation is given below:

Sl.No.	Item Sl. No.	Name and Description of the article	Qty.	Cost at the time of Purchase (Rs.)
1	46	Gramach 3D Co-ordinate Measuring Machine Alpha 540 Manual Version Date of Purchase: 08.01.1994 Fund UGC VIII Plan Schemes, II C 3 Major Plan Schemes	1 No.	7,65,556/-

The above item was procured in 08.01.1994 and has been utilized. Once service was done in 2003 for Rs. 35,000/-. Since 2005, equipment has not been in use and could not be repaired as instrumentation, hardware and software was incompatible and was uneconomical. Also, Original Equipment Manufacturer, M/s Gramach closed their production and service by 2008. Further, the item was damaged due to water log during December 2015 flood. Hence, the above mentioned obsolete item which cost more than Rs. 5 Lakhs at the time of procurement, has been recommended by experts of the condemnation committee for condemnation.

Therefore, the matter of condemnation of the above cited utility is put up to the Syndicate for condemnation.

Submitted for Approval:

[Signature]
4/6/2020
HOD, PT, MIT

[Signature]
4/6/2020
REGISTRAR
ANNA UNIVERSITY

Approved / Not-Approved

[Signature]
VICE-CHANCELLOR
ANNA UNIVERSITY

Year/No. & Item	Reference to Register	Description of Apparatus	Serial No.	Serial No.	Year of purchase	Year of Receipt	Manufacturer's Name & Address	Number of Agents	Rate	Remarks
		Alpha 540 Co-ordinate Measuring Machine					GRAMACH LTD 500, WESTGATE CHENNAI-600016			
		...								
		...								
		...								

Necessary entries will be made in the stock register to segregate the items condemned. A copy of condemned items list & Registrar approval is given

A committee formed with the Registrar's approval will be inspecting the list of items and authorise the condemnation after asserting the book value.

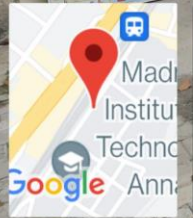
After due approval from the purchase section of the University, public auction of the items that are to be condemned is taken up.

6.3 Safety measures in laboratories

SAFETY YELLOW LINES IN LABORATORIS



FIRE DRILL

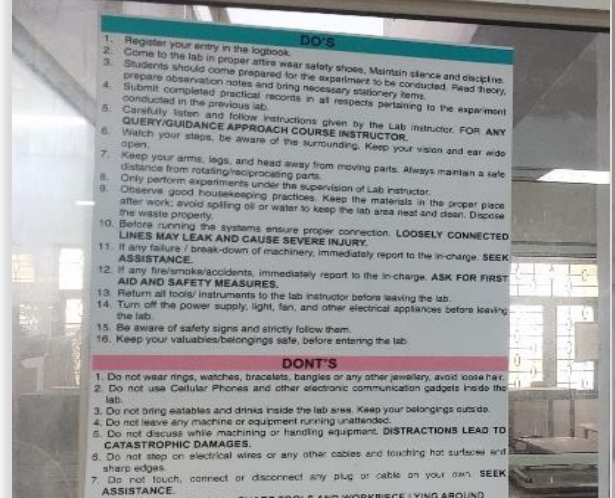


Chennai, Tamil Nadu, India
Dept of Production Technology, Railway, MIT campus, Chromepet, Chennai, Tamil Nadu 600044, India
Lat 12.950001°
Long 80.140237°
10/05/23 11:30 AM

FIRE EXTINGUISHERS



FIRST AID BOX



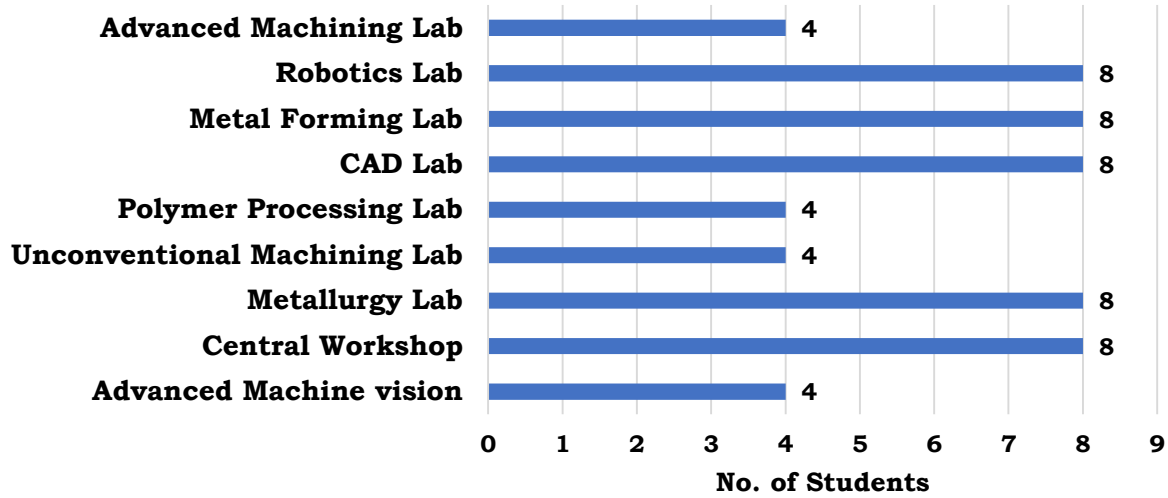
SAFETY INSTRUCTIONS IN LABORATORIES



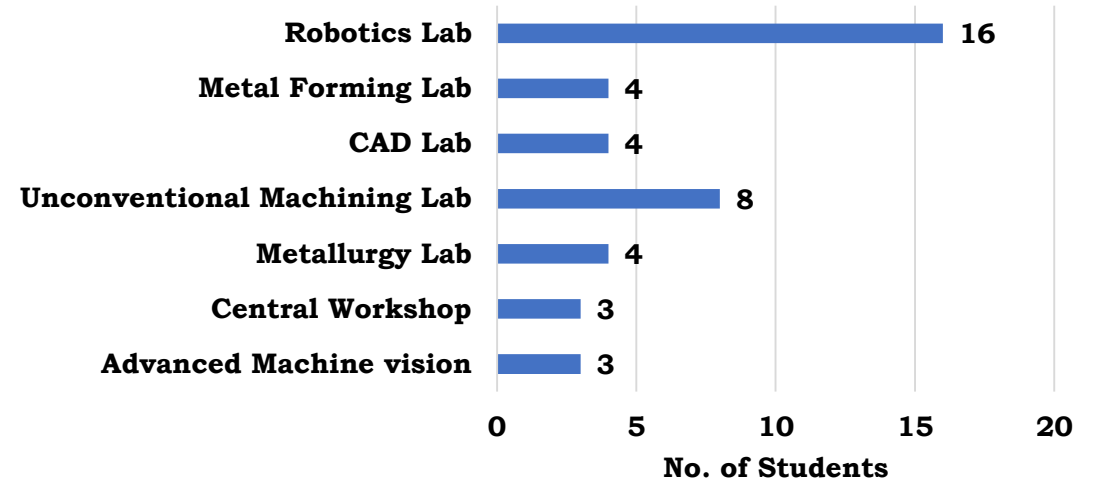
CCTV MONITOR IN HOD CABIN

6.4 Project laboratory/ facilities - Utilization for Project

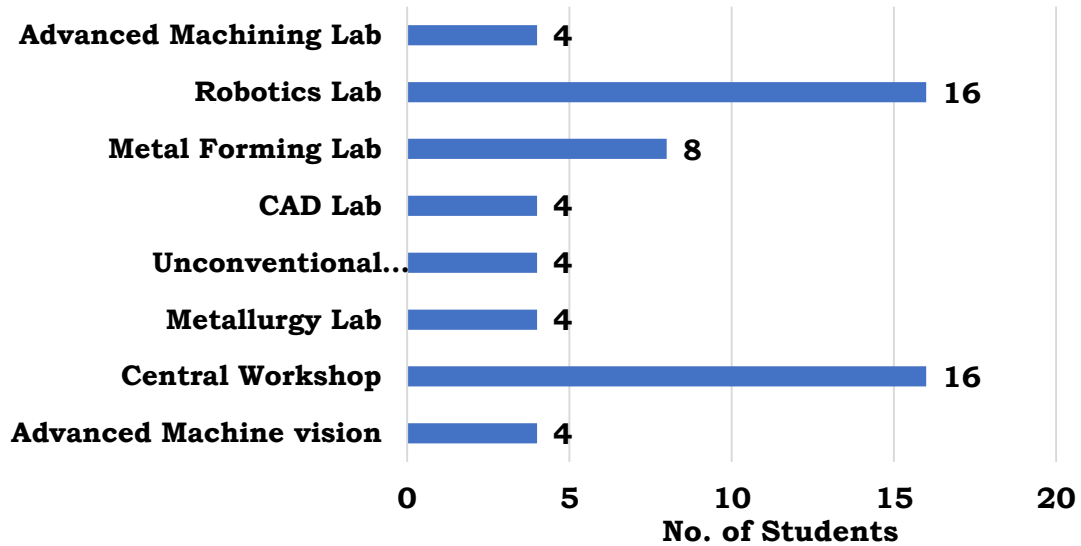
2019-2020



2020-2021



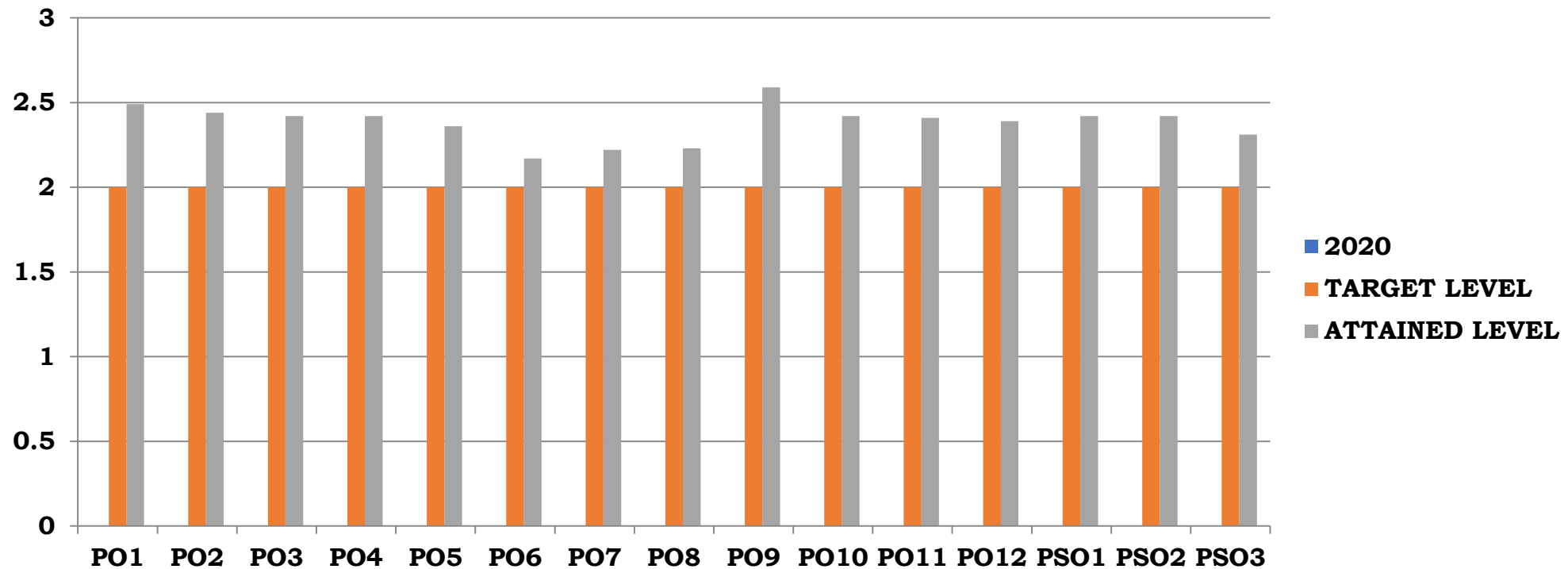
2021-2022



JAN 2022 – DEC 2022	
No. of students Completed Training	19
No. of students Utilized	64

7.1 Target Level

- In 2019 passed out batch, Out of 54 students, 25 got placed in industries and 8 opted for higher studies.
- Placement and higher studies percentage = $(25 + 8)/54 = 61\%$.
- Hence target for 2020 has been increased and fixed as 66 %.



- Since all PO's & PSO's attained the target, the target for 2016-2021 has been slightly increased and fixed as 70 %

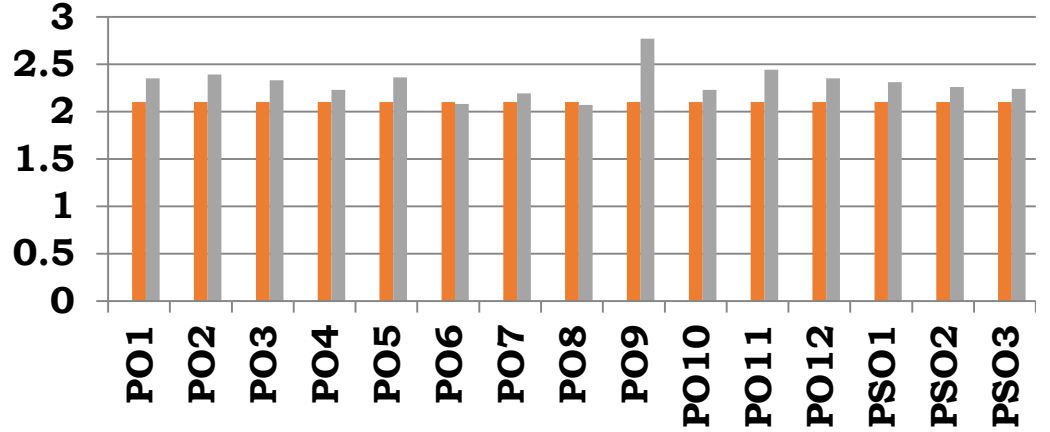
PO's & PSO's - Attainment Levels and Target Levels – 2020 to 2023

Target \ Year	2021	2022	2023
Percentage	70	70	75
On 3 point scale	2.1	2.1	2.25

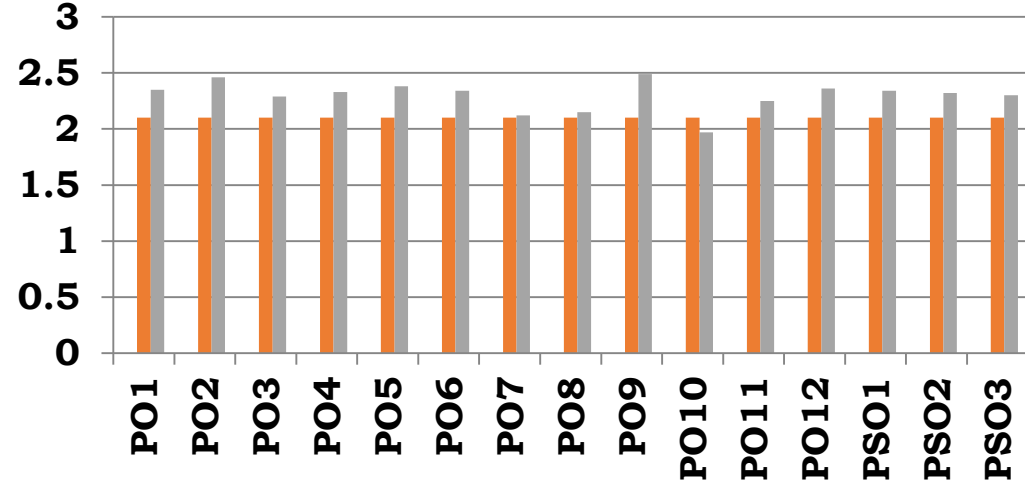
➤ In 2021, 2 PO's are not attained the target and also due to COVID, the same target of 70 % has been fixed for 2022 also.

➤ Since all PO's except PO10 attained the target in 2022, the target for 2023 has been increased and fixed as 75%

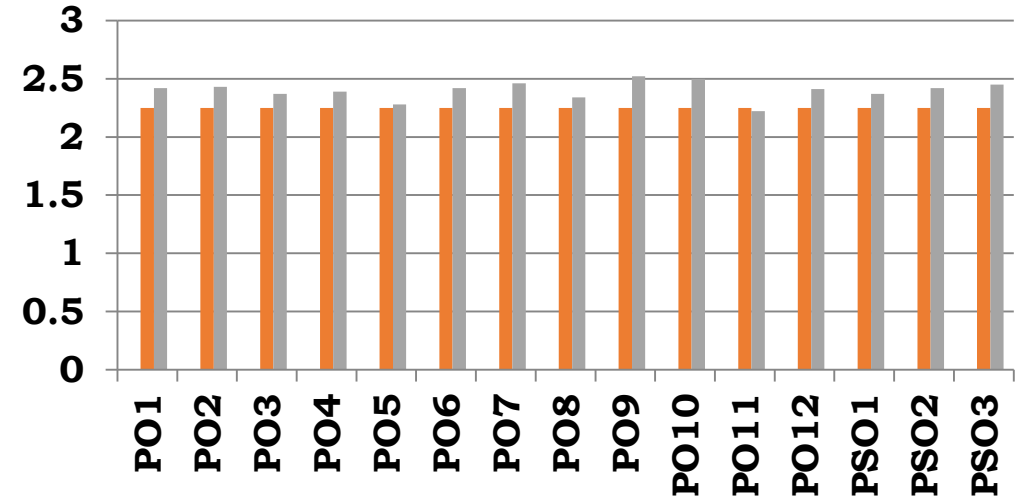
TARGET LEVEL (Orange bar)
ATTAINED LEVEL (Grey bar)



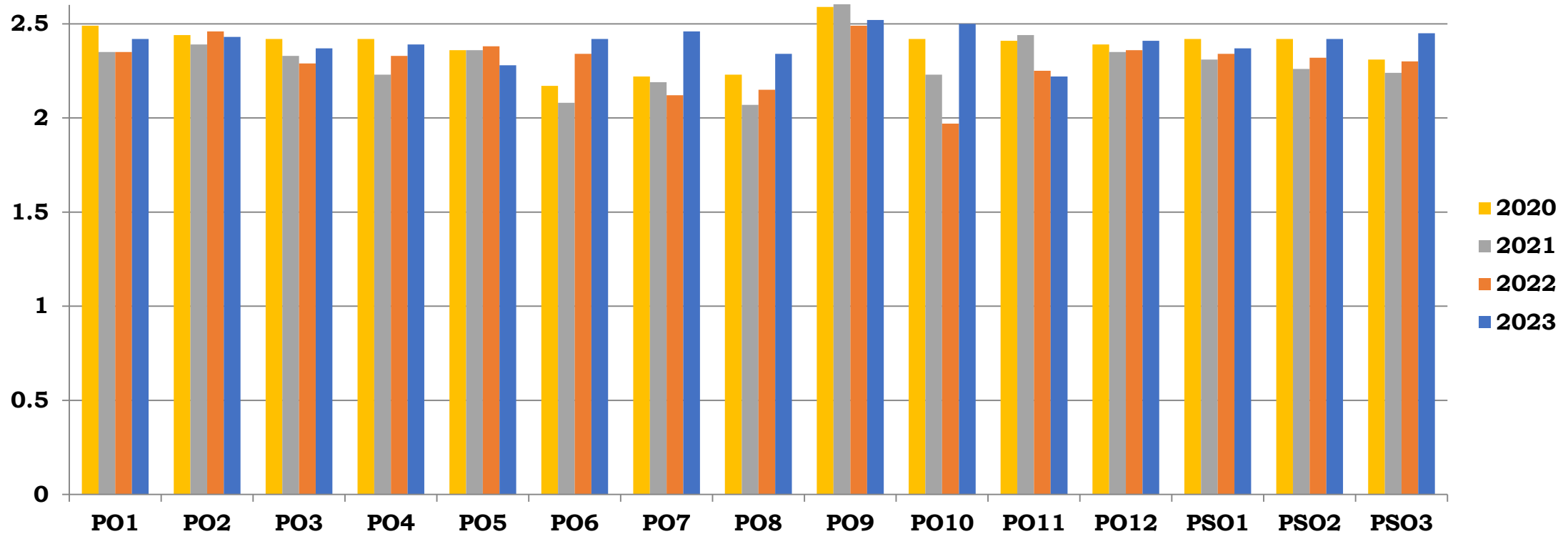
2021 : PO6 & PO8 not attained



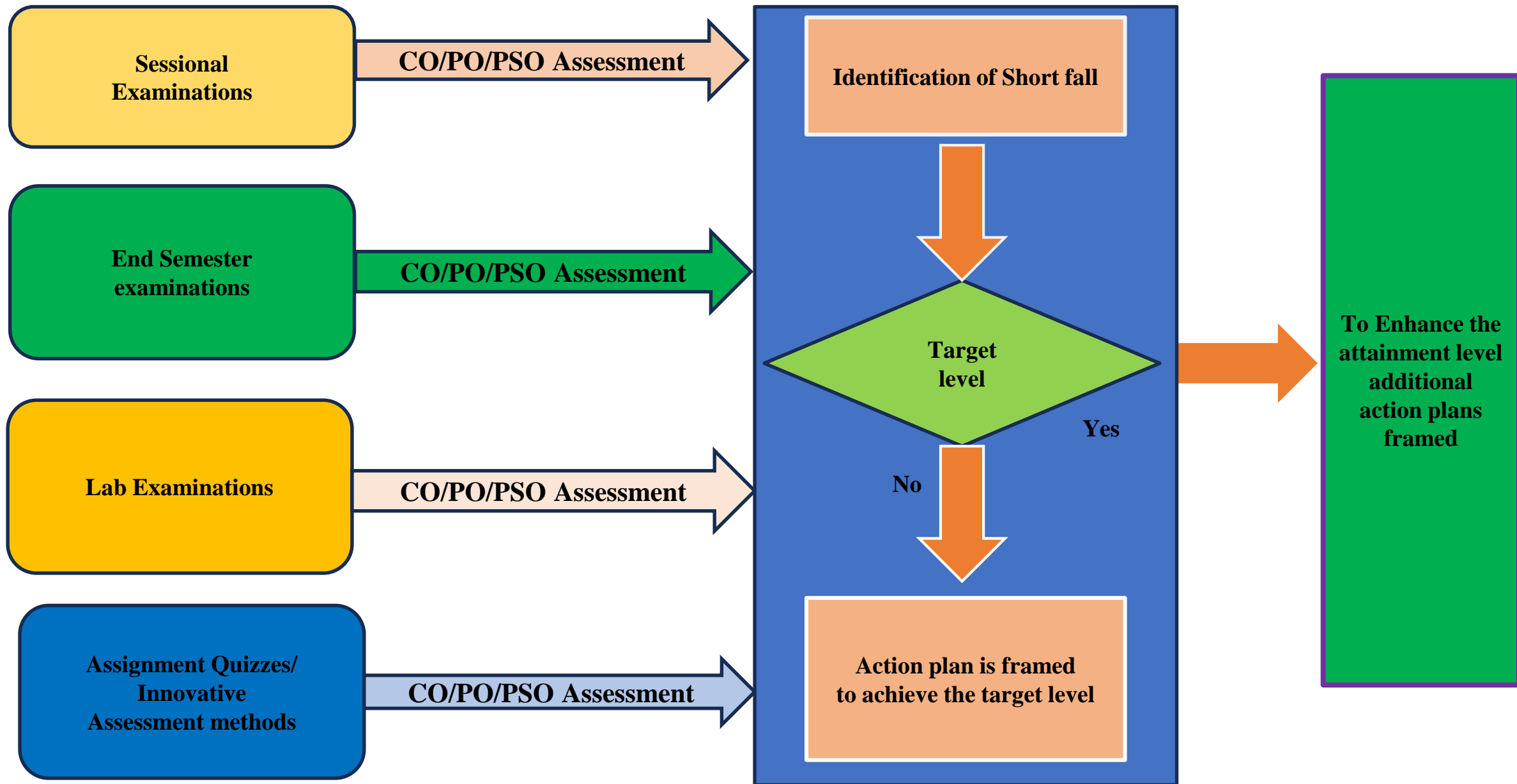
2022 : PO10 not attained



2023 : PO11 not attained



- ❖ **Except PO2, PO3, PO5, PO9 and PO11, other PO's & PSO's are shown increasing trend year by year from 2021.**
- ❖ **Accordingly actions have been taken in the respective subjects towards improvements in the respective PO's.**
 - **Laboratory courses target has been increased from 75% to 80% and then to 82% by introducing experiments using Modern tools.**
 - **Theory cum Lab courses have been introduced in R 2023 regulations**
 - **Industry Internships has been made as compulsory, etc.**
 - **Mentoring the students to do value added courses.**



7.1 Actions taken based on the results of evaluation of each of the POs and PSOs

Sheet metal forming **Guest Lecture** by Prof. K.Narasimhan, IIT Bombay

<https://mitindia.edu/images/mit/Departments/PT/Archive/Guest.pdf>

Guest lecture on "Design of Fretting Fixture" by Dr. Vadivuchezhian Kaliveeran - NIT Suratkal.

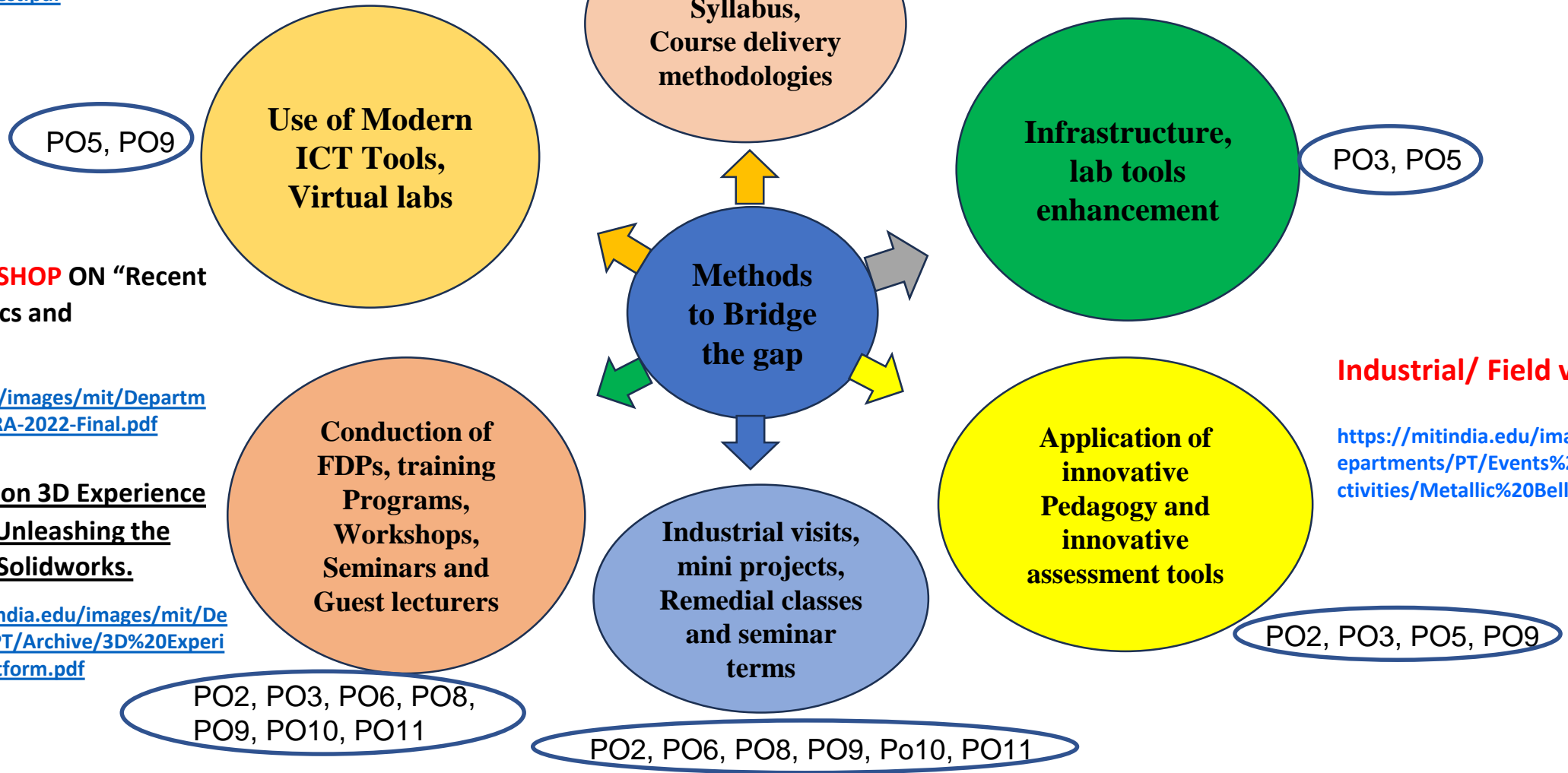
<https://mitindia.edu/images/mit/Departments/PT/Archive/vadivu.jpg>

ONE DAY **WORKSHOP** ON "Recent Trends in Robotics and Automation"

<https://mitindia.edu/images/mit/Departments/PT/Archive/RTRA-2022-Final.pdf>

Seminar on 3D Experience Platform Unleashing the Power of Solidworks.

<https://mitindia.edu/images/mit/Departments/PT/Archive/3D%20Experience%20Platform.pdf>



Industrial/ Field visits

<https://mitindia.edu/images/mit/Departments/PT/Events%20and%20Activities/Metallic%20Bellows.jpg>

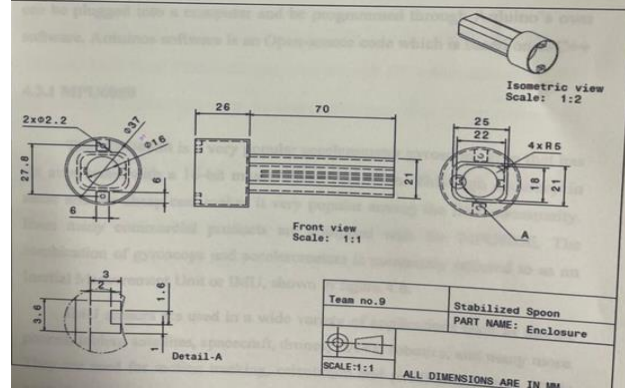
Design and Fabrication of Stabilizing Spoon for People Impaired with Motor Skills– Learning outcomes

PO1: Engineering knowledge

Course	Application
AU5352 – Mechanics of Solids	Strength analysis
PR5451 – KDM	Linkages and mechanisms
PR5503 – Machine Component Design	Spoon, Motor Mount
PR5701 – Mechatronics for Automation	Actuators, controllers
PR5603 – Computer Aided Design and Analysis	Modelling of stabilized spoon

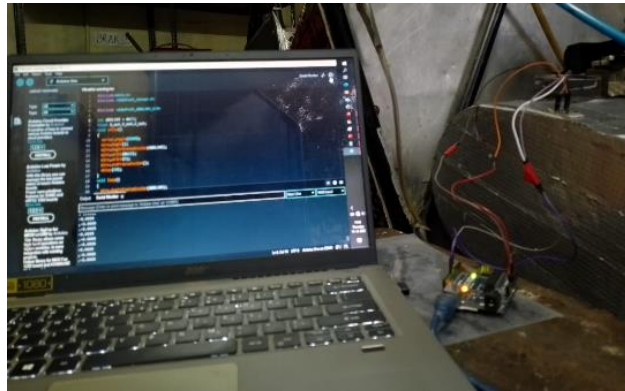
PO2: Problem Analysis

Problem: linkage mechanism and maintain stability
Analysis: MEMS gyroscope working is based on the Coriolis effect.



PO3: Design/Development of solutions

To **design a spoon** by considering impaired/ Parkinson's disease affected peoples to assist food feeding.



PO4: Conduct investigation of complex solutions

Analysing the stabilizing spoon to maintain good stability.

PO5: Modern tool usage:

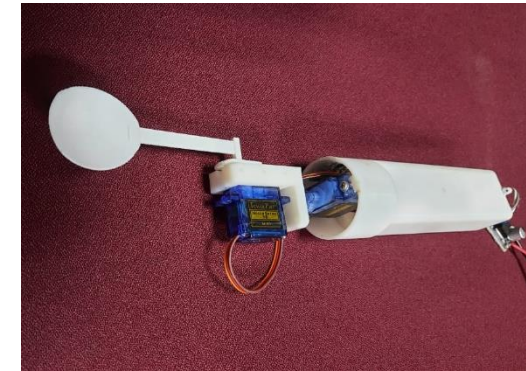
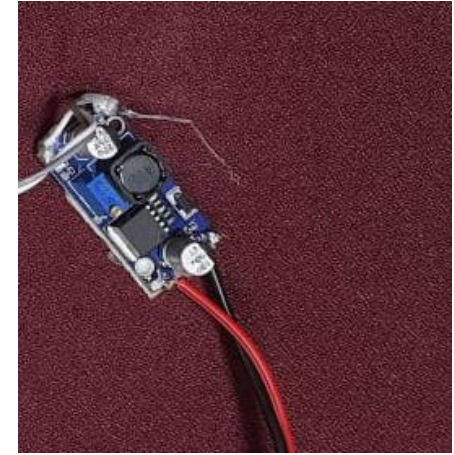
Tool	Application
CAD	Design Analysis of Spoon
MATLAB	MPU6050 with Arduino

PO6: The Engineer and Society

To Design and Fabrication of Stabilizing Spoon for impaired People that focuses on **human health and safety** by making Quality Function Deployment

Correlations	
Positive	+
Negative	-
No Correlation	■
Relationships	
Strong(5)	●
moderate(3)	○
Weak(0)	▽

SCALE OF IMPORTANCE	Customer Requirements (Explicit and Implicit)	Engineering Requirements						Competitor rating
		Modifying roll cage	Changing steering ratio	Ergonomic study	Introducing more electronic demands	Crank Assisting Electric Motor	Hydraulic steering		Optimised Transmission
3	Large Cockpit Area	●	▽	○	▽	▽	▽	3
5	Low steering effort	▽	●	▽	▽	▽	●	5
5	Better Seating Position	●	▽	●	▽	▽	▽	3
1	More Electronic Interface	○	▽	▽	●	●	▽	1
3	Less Cranking Effort	▽	▽	▽	○	●	▽	3
5	High Fuel efficiency	▽	▽	▽	○	○	●	5
Relative Weight		43	25	34	29	35	25	25



PROJECT PROGRAM OUTCOMES

PO7: Environment and Sustainability



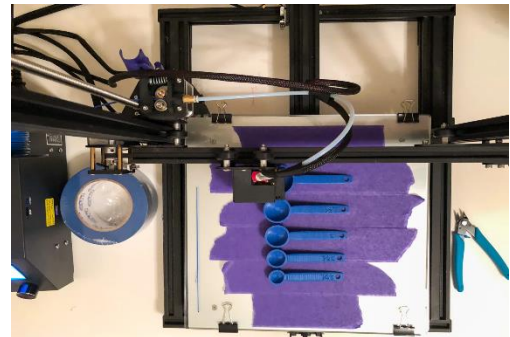
Bio polymer has been used as Eco friendly materials for this project.

PO8: Ethics



The rules and guidelines are insisted for the development of the product.

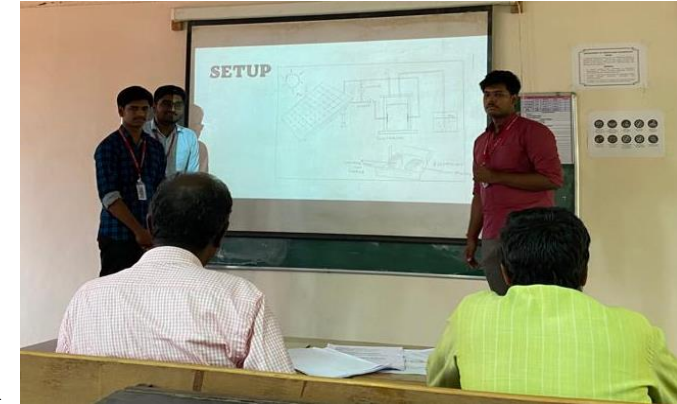
PO9: Individual and team work



Individual members take responsibilities and coordinates with other members as a team

PO10: Communication

The team effectively communicates the project output to the project evaluation committee.



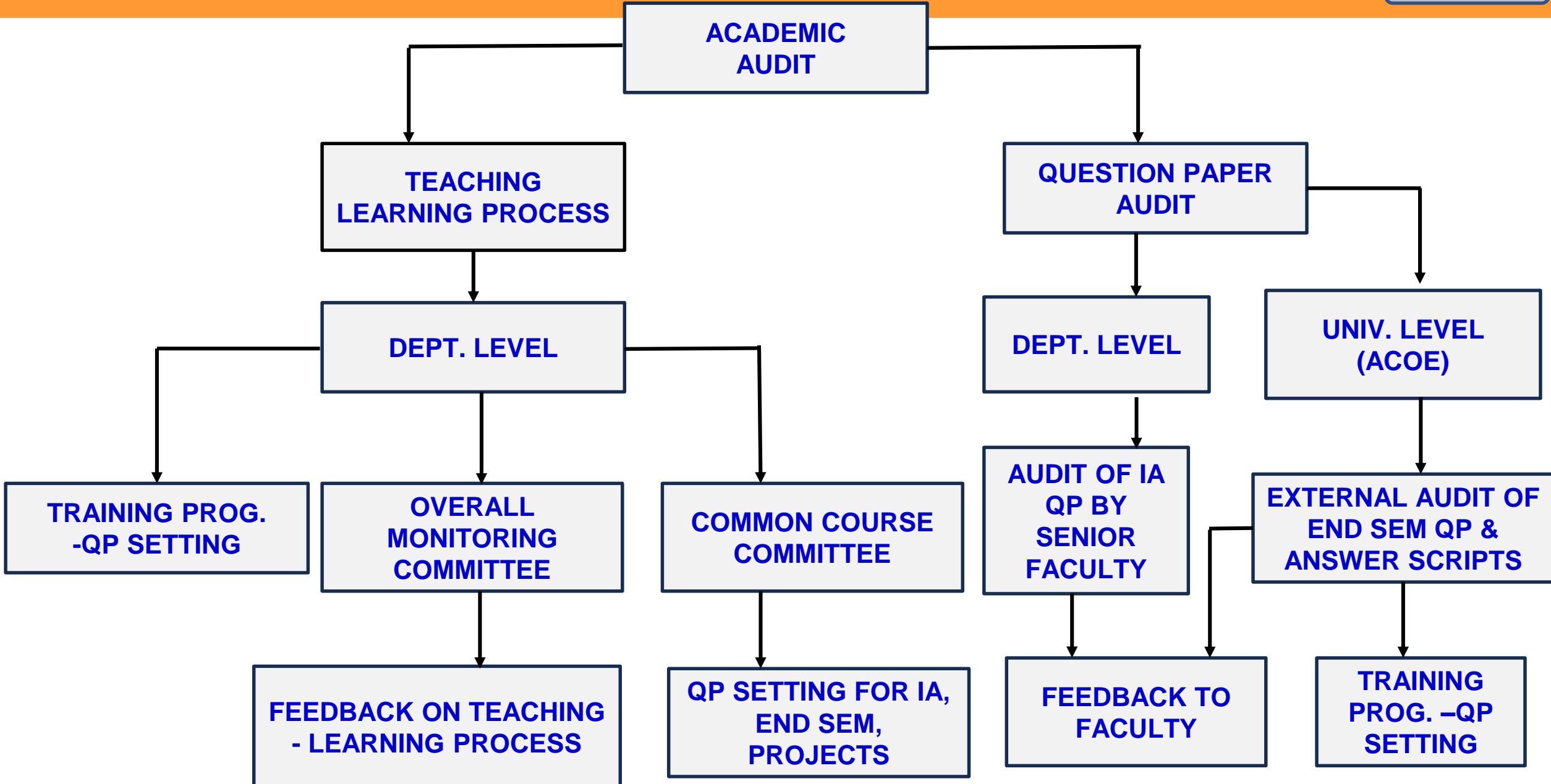
PO11: Project management and finance

Project goals are into short term and long term. Managing the works to be done on time and the financial constraints were supported by the department.

PO12: Life-Long learning

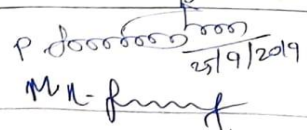
Only with our past experiences and professional approach, progress can be achieved. Updating and meeting the alumni ensures life long learning

TASK TITLE	START DATE	DUE DATE	DURATION	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY
General	01/08/22	10/01/23	159						
Brainstorming and conceptual design	01/08/22	26/08/22	19						
Design modification, CAD and subbook check	21/08/22	10/09/22	19						
Prototyping round	11/09/22	18/09/22	7						
VCR and Static reports	15/09/22	15/12/22	60						
Final assembly and design validation	21/11/22	25/11/22	4						
Testing and tuning	30/11/22	16/01/23	47						
Sponsorship and fundraising	16/08/22	30/12/22	110						
Rollage	01/09/22	26/11/22	89						
Prototyping, Fixtures and process planning	01/09/22	19/09/22	18						
Fabrication of coil spring and Engine Bay	30/09/22	25/10/22	26						
Drivetrain, Suspension & Steering and safety mounts	26/10/22	20/11/22	24						
Finalize creative and posters	20/11/22	30/12/22	10						
Diverison	11/09/22	20/11/22	69						
Prototype of Gearbox and Transfer case	11/09/22	15/09/22	4						
Gearbox, Gears and shafts machining	25/09/22	25/10/22	30						
Powertrain shafts and throttle pedal fabrication	01/11/22	20/11/22	19						
CVT testing and tuning	20/09/22	31/10/22	41						
Suspension	19/09/22	15/11/22	56						
Procurement of Bearings, CV joints and Tyres	19/09/22	24/09/22	5						
Welding of Knuckle, Hubs and Shab	22/09/22	25/10/22	23						
Fabrication of control arms	26/10/22	15/12/22	19						
Steering	19/10/22	31/10/22	21						
Procurement of CV joint, bearings and tubes	10/10/22	15/10/22	5						
Machining of Rack, Pitman and Caster	16/10/22	31/10/22	15						
Fabrication of steering wheel, Column and Tie rod	30/10/22	31/10/22	11						
Brakes	19/10/22	20/11/22	40						
Procurement of Master cylinder, Brake lines and brake pads	19/10/22	20/10/22	10						
Fabrication of brake disc and mount	26/10/22	05/11/22	9						
Fabrication of brake pedal and RAC mount	09/11/22	20/11/22	11						




Assessment QP Audit

QUESTION PAPER AUDIT CHECKLIST

ACADEMIC SESSION	July - 2019 - Nov - 2019	
ACADEMIC PROGRAMME	B.E. production Engg.	
SUBJECT CODE SUBJECT NAM	AU 7303 Engg Thermodynamics & Thermo.	
SEMESTER	2/4/6/8 (Please tick the appropriate semester)	
POINTS TO BE CHECKED	ASSESSMENT 1	ASSESSMENT 2
1. Syllabus has been uniformly covered over the two assessment tests	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
2. The student can answer the questions within the stipulated time	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
3. The question paper contains a judicious mix of lower order (remembrance type) questions and higher order (analytical type) questions	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
4. Mark distribution to the different units covered in the question paper is uniform	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
5. Question paper is free of grammatical and typographic errors	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
6. Mark split-up for the various subdivisions is mentioned clearly	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
7. CO, PO mapping of the Question Paper is correctly done as per syllabus requirements	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
8. Bloom's taxonomy levels of the questions have been correctly specified in the question paper	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
9. Overall standard or difficulty level of the question paper on a scale of 1 - 10. 1 - Very poor; 5 - Average; 10 - Very good	9	8
10. Any other remarks (If the question paper is below the required standard, suggestions to improve the same)	Multiple questions QP is above the standard. Theory questions and derivations may be given importance in part A may be avoided.	
NAME AND SIGNATURE OF THE ACADEMIC AUDIT COMMITTEE MEMBER	 25/9/2019 M.R. Swaminathan	

Dr. M.R. Swaminathan, M.E., Ph.D.
 Professor
 Internal Combustion Engineering Division,
 Department of Mechanical Engineering,
 College of Engineering, Guindy,
 Anna University, Chennai-600 025.

End Semester QP Audit

 OFFICE OF THE ADDITIONAL CONTROLLER OF EXAMINATIONS (UNIVERSITY DEPARTMENTS) ANNA UNIVERSITY : CHENNAI 600 025 ACADEMIC AUDIT REPORT 2020 Dr. S. SANJEEVI ACOE (UDs) Ph. No. : 044-22357850, 54 DEPARTMENT OF PRODUCTION TECHNOLOGY	
Campus	MIT
Academic Program	B.E/B.TECH
Department offering the course	PRODUCTION TECHNOLOGY
Semester No	5
Course Code	ME7502
Course Name	Metrology and Measurement
Question Paper Setter Name and Department	Dr. D SAMUEL RAJ
Answer Script Evaluator Name and Department	Mr.A. VISAGAN
Academic session	November / December 2019
1. The extent (percentage) to which the Question Paper covers the syllabus (Unit wise)?	Between 75% & 100%
2. Questions can be answered in the stipulated time	Yes
3. Clarity and Unambiguity of the question paper	Good
4. Standard of the Question Paper (Whether conform to the degree / program for which it is set)	Average
5. Percentage of Descriptive Vs Problem based questions?	90% Vs 10%
6. Question paper is set according to the format specified (including the distribution of marks for subdivisions, if any)	Yes
7. Enough attention has been given to ensure that there are no grammatical / typo graphical mistakes	Yes
8. Any other remarks:	Course outcome (CO) should have five points covering entire syllabus; Mapping between CO, PO and PSO should be included as per NBA format Questions should be framed following Bloom Taxonomy concept prescribed by NBA and NAAC; Application oriented questions to check the understanding level of the students must be asked
9. Specific suggestion for improvement of the Question paper	
1. Valuation of the answer scripts is uniform and fair	Yes
2. Marks are distributed for the various steps/stages of answers	Yes
3. The overall valuation is	Normal
4. Any Other Remarks:	Some of the answers not relevant to the questions.

7.2 Action taken based on QP Audit

Written Explanations from the respective faculty members have been obtained and the same should be cross-checked in the subsequent semester subjects Question papers.

	OFFICE OF THE ADDITIONAL CONTROLLER OF EXAMINATIONS (UNIVERSITY DEPARTMENTS) ANNA UNIVERSITY : CHENNAI 600 025 ACADEMIC AUDIT REPORT 2020
	Ph. No. 1 044-22357050, 54
Dr. S. SANJEEVI ACOE (UDs)	Please follow the NBA and NAAC guidelines while designing the curriculum and setting the Question papers and it will be easier later when we go for accreditation process.

SUBMITTED TO HOD

Remarks	Replies
(1)	shall be considered for 2023 syllabus
(2)	The pattern is followed uniformly in the department.
(4)	Co shall be refined in 2023 following ACOE guidelines for accreditation process (ANBA & NAAC)

Dr. A. SIDDHANTIAN
Assistant Professor
Department of Production Technology
MIT Campus, Anna University,
Chennai, Chennai - 600 011.

FROM
Dr. P. GANESH (Staff ID 63402)
ASSISTANT PROF
DEPT OF PROD. TECH
MIT CAMPUS.
ANNA UNIVERSITY
CHENNAI 600 011

TO
THE HEAD OF THE DEPT.
DEPT OF PROD. TECH.
MIT CAMPUS.
ANNA UNIVERSITY
CHENNAI 600 011.

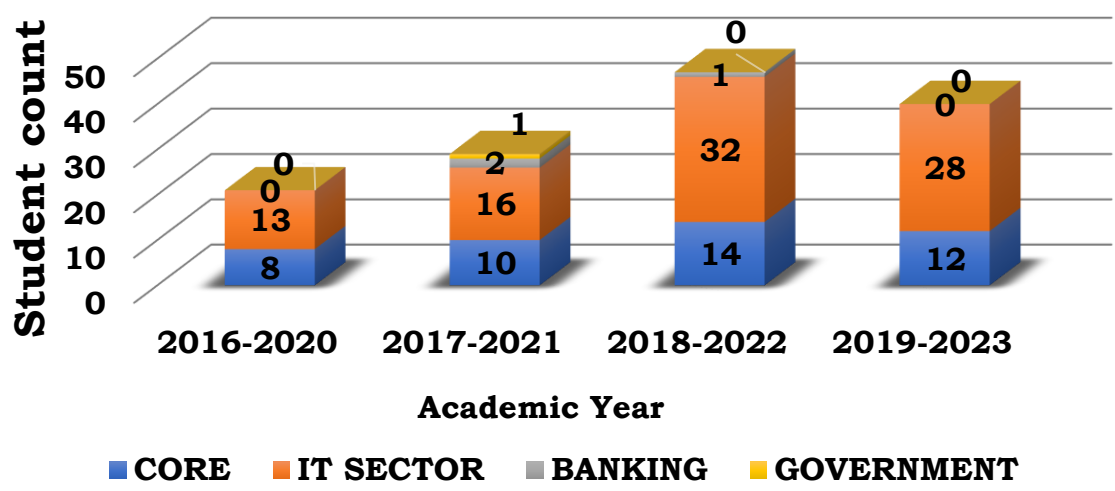
Dear Sir,
Sub: Academic Audit Report
Nov/Dec 2018
Nov/Dec 2019 - Reg.

Based on the Academic Audit Report for the subject titled 3 code MET751 - First Element Analysis for the session Nov/Dec 2018, Nov/Dec 2019, Academic session (9) Improvement of the question paper, Based on the audit Report I will ask indirect questions and application oriented questions in future question papers.

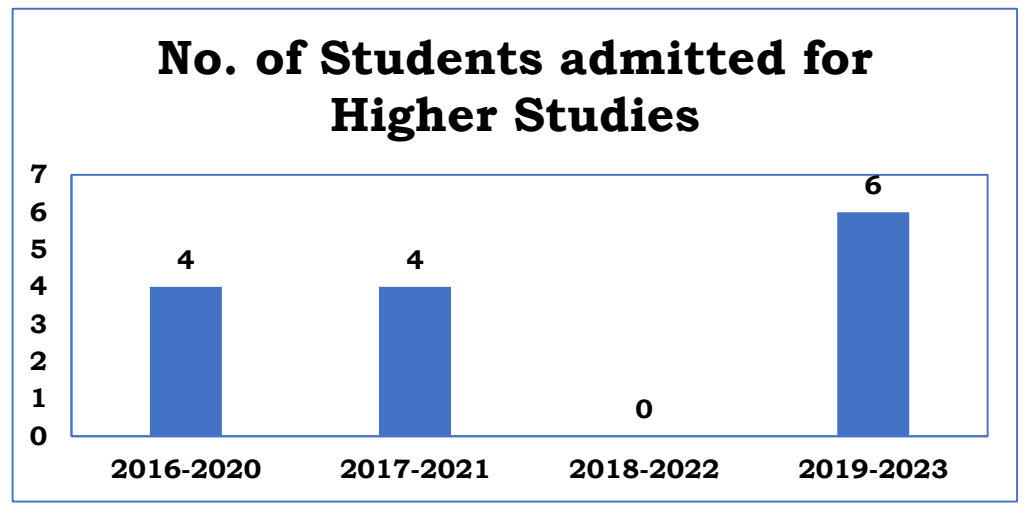
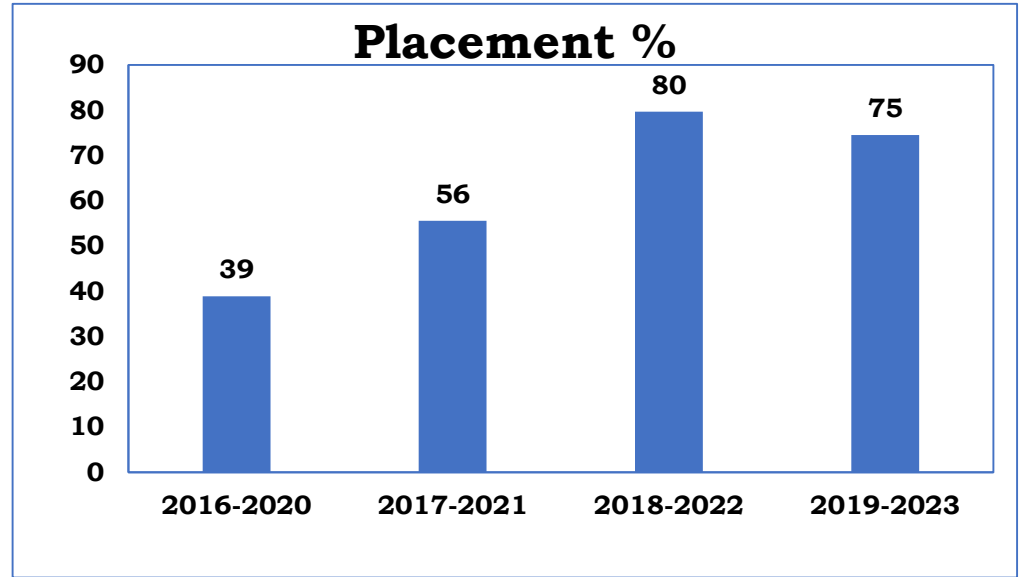
Thanking You

7.3 PLACEMENTS – HIGHER STUDIES

DISTRIBUTION OF PLACEMENT AMONG DIFFERENT VERTICALS



HIGHEST PACKAGE(LPA)
 2016-2020: **Rs.9.48** (M/s Caterpillar India)
 2017-2021: **Rs.10.35** (M/s Caterpillar India)
 2018-2022: **Rs.10.35** (M/s Caterpillar India)
 2019-2023: **Rs.28** (M/s Tolaram)



7.3 Improvement in Placement & Higher Studies

Criterion : 07

Placement and Carrier guidance – 10.06.2022

https://mitindia.edu/images/mit/Departments/PT/Archive/Carrier_Guidance.pdf



GATE Coaching 12.12.2022 to 03.02.2023

<https://mitindia.edu/images/mit/Departments/PT/Archive/GATE-2023.pdf>



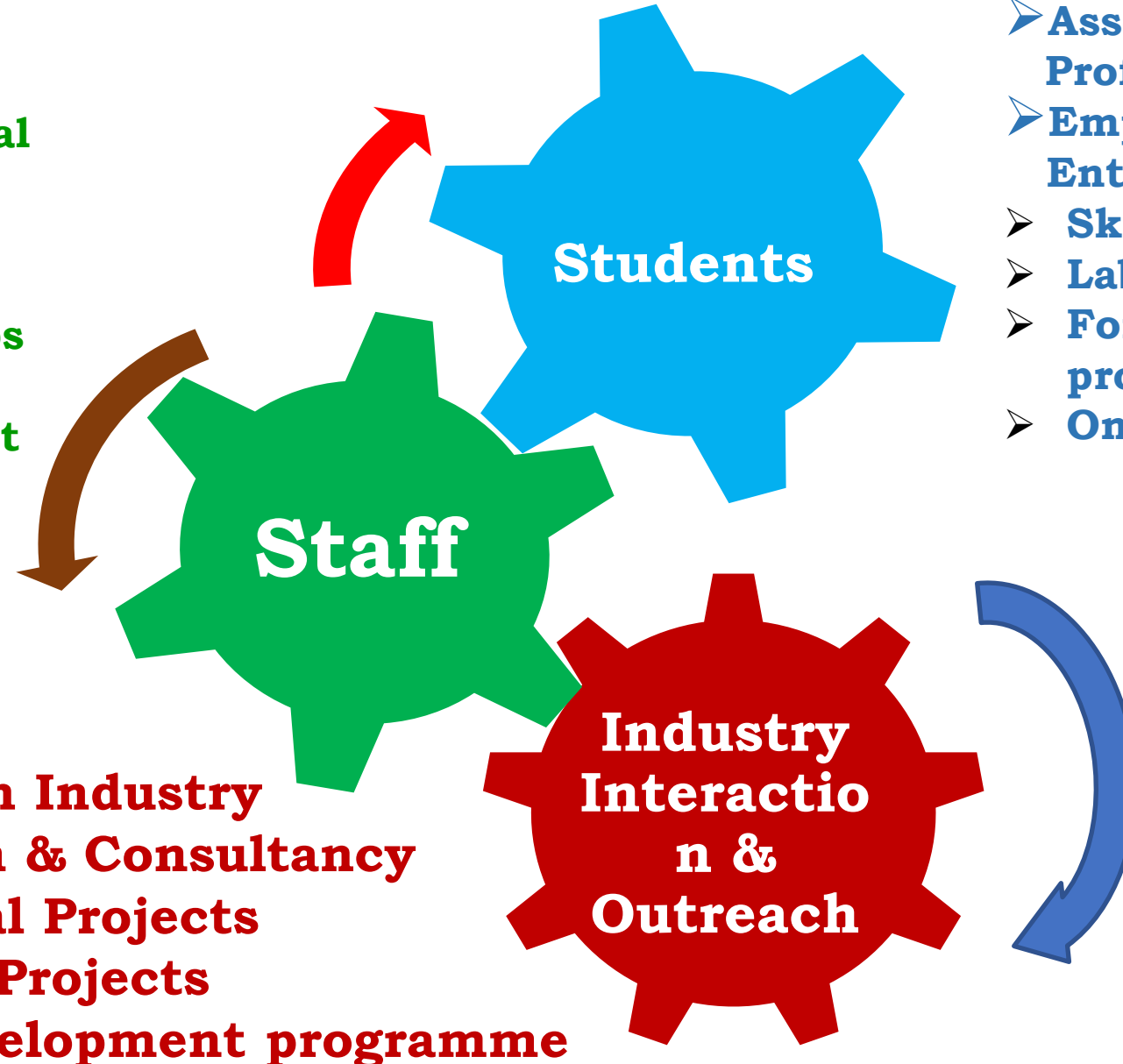
STUDENTS ADMISSION SCORE DETAILS

TNEA (Cut-off from Physics [100], Mathematics [50] and Chemistry [50] marks of HSC)

		2019-2020	2020-2021	2021-2022	2022-2023
State Level Higher Secondary Examinations (HSC)	No. of Students admitted	52	50	50	51
	Opening Score/Rank	190 / 656	190 / 356	193 / 2822	195 / 546
	Closing Score/Rank	162 / 21448	169 / 16015	184.57 / 17608	172 / 31423
	Average cut - off	179.97	183.03	187.95	185.40

ROADMAP FOR NEXT 5 YEARS

- Continuing Education Programme
- National & International Networking
- Funded Projects
- International Conferences/Workshops
- Patents
- E Content Development
- Technology Transfer
- Increasing Utilization Facilities



- MoU with Industry
- Research & Consultancy
- Industrial Projects
- Student Projects
- Skill development programme

- Association with Int. Professional Societies
- Employability/ Entrepreneurship
- Skill Based Curriculum
- Lab Integrated Courses
- Foreign exchange programme
- Online Courses

