

(An Autonomous Institution) Affiliated to JNTUA, Anantapur & Approved by AICTE, New Delhi (An ISO 9001-2008 Certifies Institution) Post Box No. 14, Angallu, Madanapalle – 517325. Ph. 08571-280255, 280706, Fax: 08571-280433 Web: <u>www.mits.ac.in</u> **DEPARTMENT OF MECHANICAL ENGINEERING**

CIRCULAR

Date: 14-07-2022

It is hereby informed to all the faculty members that **Industry Alumni Advisory Board (IAAB)** meeting is scheduled on 16-07-2022 at 03:00 pm (Online Mode) for reviewing the course structure and syllabus for third year (I semester & II semester) R20 syllabus.

Agenda:

- 1. Discuss about the PO/PSO attainment of 2017-21 batch
- 2. Reviewing third year R-20 syllabus
- 3. Discussion on fourth year R-20 course structure
- 4. Discussion on department vision and mission

Meeting Link:

<u>https://teams.microsoft.com/l/meetup-</u> join/19%3a1c1c4fa1440140089b7b0a223f18f7db%40thread.tacv2/1657809853944?context=%7b %22Tid%22%3a%22b637c4f6-57b7-44dc-bce4fec0cd202460%22%2c%22Oid%22%3a%22205b8fe6-a118-4427-ae3d-1aa481a284c9%22%7d

The following IAAB members are requested to attend the meeting.

SI. No.	Name of the Member	Designation			
1.	Dr. P. Ramanathan	Vice Principal Academics, MITS			
2.	Dr. M. Lakshmana Rao	Professor & Head, ME, MITS			
3.	Mr. M. Hari Prasad	Former Scientist, Aeronautical			
	(Industry Expert)	Development Establishment (ADE),			
		Bangalore			
4.	Dr. R. Thundil Karuppa Raj	Professor, Automotive Engineering, VIT,			
	(Academic Expert)	Vellore			
5.	Mr. M. Venkata Satyanarayana	MITS Alumni, Principal Engineer – R&D,			
		Sahajanand Medical Technologies, Surat			
6.	Mr. Anand Swaroop Donepudi	MITS Alumni			
7.	Dr. G. Harinath Gowd	Professor, ME, MITS			
8.	Dr. I. Arun	Professor, ME, MITS			
9.	Dr. Ram Krishna	Assoc. Professor, ME, MHTS			
10.	Dr. S. Baskaran	Assoc. Professor, ME, MITS			
11.	Dr. R. Prithivi Rajan Assoc. Professor, ME, MITS				
12.	Dr. K. V. Nagesha	Assoc. Professor, ME, MITS			



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13.	Dr. P. Sivaiah	Assoc. Professor, ME, MITS
14.	Dr. Muralidhar Singh. M	Sr. Asst. Professor, ME, MITS
15.	Dr. Shince V. Joseph	Asst. Professor, ME, MITS
16.	Dr. Pradeep Gupta	Asst. Professor, ME, MITS
17.	Dr. Subodh Kumar	Asst. Professor, ME, MITS 🚍 Kumay
18.	Dr. Kamlesh Kumar	Asst. Professor, ME, MITS Kamler
19.	Dr. Shanmukhasundaram V. R.	Asst. Professor, ME, MITS
20.	Dr. Bageerathan T	Asst. Professor, ME, MITS
21.	Dr. Suresh kannan.V	Asst. Professor, ME, MITS
22.	Dr. Arun Kumar.D	Asst. Professor, ME, MITS D.
23.	Dr. Anantha Raman L	Asst. Professor, ME, MITS
24.	Dr. Satyajit Pattanayak	Asst. Professor, ME, MITS
25.	Dr. Rahul Singh	Asst. Professor, ME, MITS

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Dr. M. Lakshmana Rao Professor & Head, Department of ME Mechanical Engineering Madampale Institute of Technology & Science MADANAPALLE - 517 325

Copy to

- The Principal
- The Vice-Principal (Academics)
- IAAB & Department file



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Date: 14-07-2022

COMPOSITION AND APPROVAL OF INDUSTRY ALUMNI ADVISORY BOARD (IAAB)

The following members are nominated and approved for constitutions of Industry Alumni Advisory Board (IAAB).

1.	Dr. P. Ramanathan Vice Principal Academics, MITS	
2.	Dr. M. Lakshmana Rao	Professor & Head, Mechanical Engineering, MITS
3.	Mr. M. Hari Prasad	Former Scientist, Aeronautical Development Establishment
	(Industry Expert)	(ADE), Bangalore
4.	Dr. R. Thundil Karuppa Raj	Professor, Automotive Engineering, VIT, Vellore
	(Academic Expert)	
5.	Mr. M. Venkata Satyanarayana	MITS Alumni, Principal Engineer – R&D, Sahajanand Medical
		Technologies, Surat
6.	Mr. Anand Swaroop Donepudi	MITS Alumni
7.	Dr. G. Harinath Gowd	Professor, Mechanical Engineering, MITS
8.	Dr. I. Arun	Professor, Mechanical Engineering, MITS
9.	Dr. Ram Krishna	Assoc. Professor, Mechanical Engineering, MITS
10.	Dr. S. Baskaran Assoc. Professor, Mechanical Engineering, MITS	
11.	Dr. R. Prithivi Rajan Assoc. Professor, Mechanical Engineering, MITS	
12.	Dr. K. V. Nagesha	Assoc. Professor, Mechanical Engineering, MITS
13.	Dr. P. Sivaiah	Assoc. Professor, Mechanical Engineering, MITS
14.	Dr. Muralidhar Singh. M	Sr. Asst. Professor, Mechanical Engineering, MITS
15.	Dr. Shince V. Joseph	Asst. Professor, Mechanical Engineering, MITS
16.	Dr. Pradeep Gupta	Asst. Professor, Mechanical Engineering, MITS
17.	Dr. Subodh Kumar	Asst. Professor, Mechanical Engineering, MITS
18.	Dr. Kamlesh Kumar	Asst. Professor, Mechanical Engineering, MITS
19.	Dr. Shanmukhasundaram V. R.	Asst. Professor, Mechanical Engineering, MITS
20.	Dr. Bageerathan T	Asst. Professor, Mechanical Engineering, MITS
21.	Dr. Suresh kannan.V	Asst. Professor, Mechanical Engineering, MITS
22.	Dr. Arun Kumar.D Asst. Professor, Mechanical Engineering, MITS	
23.		
24.	Dr. Satyajit Pattanayak	Asst. Professor, Mechanical Engineering, MITS
25.	Dr. Rahul Singh	Asst. Professor, Mechanical Engineering, MITS
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Responsibilities of the committee:

- 1. Monitors attainment of COs, POs & PSOs.
- 2. Evaluate program effectiveness and process necessary changes.
- 3. Preparation of periodic reports, records on program activities, progress, and status reports.

Dr. M. Lakshmana Rao Professor & Hendi Department Madanapale Institute of Technology & Science Copy to

- The Principal
- The Vice-Principal (Academics)
- PAC & Department file

Dr. C. Yuvaraj Principal, MITS Principal Madanapalle Institute of Technology & Science MADANAPALLE



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Date: 20-07-2022

Industry Alumni Advisory Board (IAAB) Minutes of meeting held on 16-07-2022, 03:00 PM – 05:30 PM & Action taken report Venue: Microsoft Teams (Online Meeting)

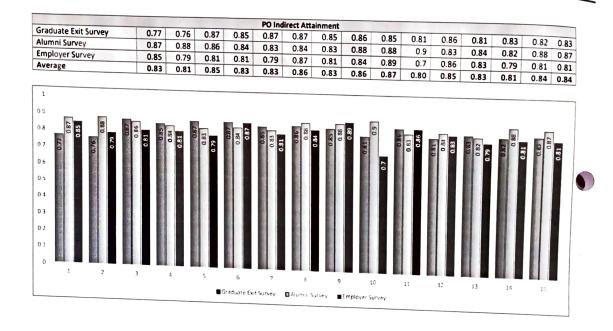
Agenda:

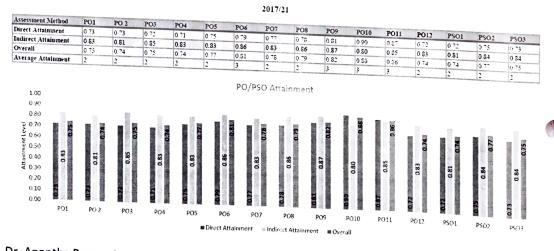
- 1. Discuss the PO/PSO attainment of the 2017-21 batch
- 2. Reviewing third year R-20 syllabus
- 3. Discussion on fourth-year R-20 course structure
- 4. Discussion on department vision and mission

Minutes:

- 1. The Head of the Department, Dr. M. Lakshmana Rao welcomes all members to the IAAB meeting.
- 2. Dr. M. Lakshmana Rao introduced external expert members to the department faculty.
- 3. Dr. M. Lakshmana Rao introduced department faculty to the external expert members.
- 4. Dr. M. Lakshmana Rao presented an overview about the institution, department, recent activities and achievements.
- 5. Dr. M. Lakshmana Rao presented the agenda of the IAAB meeting.
- 6. Dr. M. Lakshmana Rao handed the session to Dr. Anantha Raman L., academic coordinator to present PO/PSO attainment of 2017-2021 B.Tech. Mechanical batch.
- 7. Dr. Anantha Raman L. presented the overall and subject-wise PO/PSO attainment of 2017-2021 B.Tech. Mechanical batch.
- 8. PO6, PO9, PO10, and PO10 have attainment levels "3" and the remaining PO attainment levels were "2".
- 9. It has been observed that the PO/PSO attainment levels were low for PO/PSOs mapped with analytical subjects with higher bloom levels.
- 10. The PO/PSO as well CO levels of 46 subjects were presented and discussed.
- 11. The mapping procedure and calculations involved in direct, indirect, and overall attainment levels were also discussed.
- 12. The PO/PSO levels of 2015-19, 2016-20, and 2017-20 were compared.
- 13. The PO/PSO attainment levels for the 2017-2021 batch are mentioned below:







- 14. Dr. Anantha Raman L. presented the course structure for R20 3-1, 3-2, 4-1, and 4-2 semesters and presented syllabi for all subjects to be offered in 3-1 & 3-2 semesters.
- 15. The summer internship is mandatory for all students. Every student must undergo an internship during their 2-2 & 3-2 semesters vacations. They need to submit a report on the internship undergone during the upcoming semester, i.e., 3-1 & 4-1.
- 16. The course structure for 3-1, 3-2, 4-1 & 4-2 semesters are mentioned below:



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				Hours Per Week			Veek	
S. No.	Category	Course Code	Course Title	L	т	Ρ	Total	Credits
1	PCC	20ME109	Design of Machine Elements	2	1	0	3	3
2	PCC	20ME110	Manufacturing Technology-II	3	0	0	3	3
3	PCC	20ME111	Heat Transfer	2	1	0	3	3
4	OE		Open Elective-I (Annexure-II)	3	0	0	3	3
5	PE		Professional Elective-I (Annexure-III)	3	0	0	3	3
6	РСС	20ME208	Manufacturing Technology-II Laboratory	0	0	3	3	1.5
7	PCC	20ME209	Thermal Engineering Laboratory	0	0	3	3	1.5
8	SC		Skill Oriented Course-III (Annexure-IV)	1	0	2	3	2
9	мс	20CE901	Disaster Management	2	0	0	2	0
10	PROJ	20ME701	Summer Internship-I *	0	0	3	3	1.5
	Total 16 2 11 29							21.5

III Year I Semester

* 2 Months internship during 2nd-year summer vacation and to be evaluated in III Year I Semester

III Year II Semester

		Course		Но	urs	Per ۱	Neek	
S. No.	Category	Code	Course Title	L	Т	Ρ	Total	Credits
1	PCC	20ME112	CAD/ CAM	3	0	0	3	3
2	РСС	20ME113	Automation and Robotics	3	0	0	3	3
3	PCC	20ME114	Machine Learning for Mechanical Engineering	3	0	0	3	3
4	OE		Open Elective-II (Annexure-II)	3	0	0	3	3



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			Professional Elective-II					
5	PE		(Annexure-III)	3	0	0	3	3
6	PCC	20ME210	CAD/ CAM Laboratory	0	0	3	3	1.5
7	PCC	20ME211	Robotics Laboratory	0	0	3	3	1.5
8	PCC	20ME212	Engineering Metrology and Measurements Lab	0	0	3	3	1.5
9	SC		Skill Oriented Course-IV (Annexure-IV)	1	0	2	3	2
10	MC	20HUM902	Universal Human Values	2	0	0	2	0
	Total 18 0 11 29					21.5		

IV Year I Semester

S.		Course		Но	urs F			
No.	Category	Code	Course Title	L	т	Ρ	Total	Credits
			Professional Elective-III					
1	PE		(Annexure-III)	3	0	0	3	3
			Professional Elective-IV					
2	PE		(Annexure-III)	3	0	0	3	3
			Professional Elective-V					
3	PE		(Annexure-III)	3	0	0	3	3
			Open Elective-III					
4	OE		(Annexure-II)	3	0	0	3	3
			Open Elective-IV					
5	OE		(Annexure-II)	3	0	0	3	3
	OE-		Open Elective-V (Taken from					
6	нѕмс		Humanities	3	0	0	3	3
			& Social Science) (Annexure-II)					
			Skill Oriented Course-V					
7	SC		(Annexure-IV)	1	0	2	3	2
8	PROJ	20ME702	Summer Internship-II	0	0	6	6	3
	Total 19 0 8 27 23							

* 2 Months' internship during 3rd-year summer vacation and to be evaluated in IV Year I Semester



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IV Year II Semester

				H	ours	Per \	Neek	
S. No.	Category	Course Code	Course Title	L	т	Ρ	Total	Credits
1	PROJ		Project Work, Seminar, and Internship in Industry (6 months)	0	0	24	24	12
	Total					24	24	12

17. The list of Open Elective-I subjects offered for 3-1 semester is listed below. These subjects will be offered as MOOCs by SWAYAM NPTEL.

- a. Management Information system
- b. Introduction to Research
- c. Introductory Field Structural Geology
- d. Plastic Waste Management
- e. Software Testing
- f. Software Project Management
- g. Principles of Human Resource Management
- h. Introduction to Industry 4.0 and Industrial Internet of Things
- i. Wastewater Treatment and Recycling
- j. Automation in Production Systems and Management
- k. Intellectual Property Rights and Competition Law

18. The list of Professional Elective-I subjects offered for 3-1 semester is listed below.

	Professional Elective – I					
SI. No. Course Code Course Title						
1.	20ME401	Production Planning and Control				
2.	20ME402	Computational Fluid Dynamics				
3.	20ME403	Engineering Analysis				
4.	20ME404	Fluid Power Systems				
5.	20ME405	Finite Element Methods				
6.	20ME406	Fundamentals of Automotive Engineering				



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19. The list of Skill Oriented Course-III subjects offered for 3-1 semester is listed below.

Skill Oriented Course– III					
SI. No.	Course Code	Course Title			
1	20ME602	Computer Modeling for Mechanical Engineering-I Laboratory			

20. The list of Open Elective-II subjects offered for 3-2 semester is listed below.

		OPEN ELECTIVE – II					
(To be offered under Conventional mode)							
SI. No.	Course Code	Course Title	Course Offered by Department of				
1	20MAT301	Advanced Numerical Methods	Mathematics				
2	20MAT302	Engineering Optimization	Mathematics				
3	20PHY301	Optical Physics and its Applications	Physics				
4	20PHY302	LASER Physics and Advanced LASER Technology	Physics				
5	20CHE301	Introduction to Petroleum Industry	Chemistry				
6	20CHE302	Green Chemistry and Catalysis for Sustainable Environment	Chemistry				
7	20CE301	Ground Improvement Techniques	Civil				
8	20CE302	Environmental Impact Assessment	Civil				
9	20CE303	Watershed Management	Civil				
10	20EEE301	Industrial Electrical Systems	EEE				
11	20EEE302	Introduction to MEMS	EEE				
12	20ECE301	Bio-Medical Electronics	ECE				
13	20ECE302	VLSI Design	ECE				
14	20CSE301	Database Management Systems	CSE				
15	20CSE302	JAVA Programming	CSE				

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- 21. The list of Professional Elective-II subjects offered for 3-2 semester is listed below. These subjects will be offered as MOOCs by SWAYAM NPTEL.
 - a. Experimental Stress Analysis
 - b. System Design for Sustainability
 - c. Material Characterization
 - d. Design and Analysis of Experiments
 - e. Industrial Safety Engineering
 - f. Non-Conventional Energy Resources
 - g. Operations Management
 - h. Nano Technology Science and Applications
- 22. The list of Skill Oriented Course-IV subjects offered for 3-2 semester is listed below.

Skill Oriented Course– IV						
SI. No.	Course Code 20ME603	Course Title Computer Modeling for Mechanical Engineering-II				
1.	201012000	Laboratory				

23. The list of courses for Honors in Mechanical Engineering (20 Credits) has been discussed and listed below:

Honors	in	Mechanical	Engineering
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		Course Code Course Title			1.1			
SI. No	Category		Course Title	L	т	Ρ	Total Contact Hours	Credits
			III Year I Semester					
1	Professiona I Elective	18HDME101	Advanced Welding Technology	3	0	0	3	3
2	Course (Choose	18HDME102	Advanced Optimization Techniques	3	0	0	3	3
3	any two from three	18HDME103	Combustion and Emissions	3	0	0	3	3
		Sub	Total	6	0	0	6	6
	III Year II Semester							
4		18HDME104	Ergonomics	3	0	0	3	3



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5	Professiona I Elective Course (Choose	18HDME105	Gas Dynamics Fracture Mechanics	3	0	0	3	3	_
	anu turo		Total	6	0	0	6	6	
14.24			IV Year I Semester						
7	Professiona I Elective	18HDME107	Powder Metallurgy	3	0	0	3	3	
8	Course (Choose	18HDME108	Advanced Fluid Mechanics	3	0	0	3	3	
9	any one from three	18HDME109	Modeling of SI and CI Engines	3	0	0	3	3	
10	Project	18HDME701	Mini Project	0	0	10	10	5	
			Sub Total	3	0	10	13	8	1
		Total				10	25	2	1

24. The list of courses for Minors in Mechanical Engineering (20 Credits) has been discussed and listed below. It has been decided to offer minors in only 2 streams, 1. Digital Manufacturing and 2. Energy Engineering.

Minors in Mechanical Engineering (Applicable to CE, EEE, ECE, CSE, CST & CSIT) Stream Name: Digital Manufacturing

				5					
SI. No	. No Category	/ Course Code	Course Title	L	т	Ρ	Total Contact Hours	Credits	
	III Year I Semester								
1	Professional Core Course	18MDME106	Computer Aided Manufacturing Process	3	0	0	3	3	



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		1	Total	15	0	10	25	20
7	Project	18MDME701	Mini Project	0	0	6	6	3
6	Professional Core Course	18MDME110	Smart Sensors and Industry 4.0	3	0	0	3	3
	- 9 ⁵¹		IV Year I Semester				, all	
5	Professional Core Course	18MDME202	Computer Aided Design and Manufacturing Laboratory	0	0	4	4	2
4	Professional Core Course	18MDME109	Big Data Analytics for Manufacturing	3	0	0	3	3
3	Professional Core Course	18MDME108	Digital Manufacturing Planning and Control	3	0	0	3	3
			III Year II Semester	-				Ann a chu
2	Professional Core Course	18MDME107	Product Design and Development	3	0	0	3	3

Minors in Mechanical Engineering (Applicable to EEE, ECE, CSE, CST & CSIT) Stream Name: Energy Engineering

				pede -	Hours	Per V	Veek	
SI. No	Category	Course Code	Course Title	L	т	Ρ	Total Contact Hours	Credits
			III Year I Semester					
1	Professional Core Course	18MDME121	Fluid Mechanics and Hydraulic Machinery	2	1	0	3	3



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			Total	10	5	10	25	2
7	Project	18MDME701	Mini Project	0	0	6	6	3
6	Professional Core Course	18MDME125	Design of Gas Turbine	2	1	0	3	3
			IV Year I Semester	6-4	16			
5	Professional Core Course	18MDME205	Thermal Engineering Laboratory	0	0	4	4	2
4	Professional Core Course	18MDME124	Computational Fluid Dynamics	2	1	0	3	3
3	Professional Core Course	18MDME123	Heat Transfer	2	1	0	3	3
			III Year II Semester					
2	Professional Core Course	18MDME122	Applied Thermodynamics	2	1	0	3	3

25. Dr. Anantha Raman L. presented syllabus of each subjects in detail.

- 26. 20ME109 Design of Machine Elements:
 - Dr. Anantha Raman L. has presented the syllabus for Design of Machine Elements to the members.
 - Mr. Hari Prasad enquired about prerequisites to Design of Machine Elements subjects. The students have studied Materials Science and Engineering in 2-1 semester.
 - Mr. Hari Prasad asked about CAM design.
 - Mr. Anand Swaroop Donepudi asked whether Machine elements II subject is available.
 - Dr. M. Lakshmana Rao & Dr. S. Baskaran has explained that CAM is covered in Theory of Machines in 2-2 semester. In previous regulation, there were 2 subjects kinematics of machinery and dynamics of machinery but now combined as theory of machines offered in 2-2 semester.



- Mr. Hari Prasad asked why gears are kept in both Machine elements and Theory of machines.
- Dr. Baskaran & Dr. R. Prithivi Rajan explained that in theory of machines they study only about types and nomenclature. But here they will design it.
- 27. 20ME110 Manufacturing Technology-II:
 - Dr. Anantha Raman L. has presented the syllabus for Manufacturing Technology-II to the members.
 - Mr. Hari Prasad enquired about the inclusion of metrology in Manufacturing Technology-II.
 - Dr. R. Prithivi Rajan & Dr. Anantha Raman L. have explained that due to addition of new subject in 3-2 semester, existing metrology subject has been removed and a short version of metrology is included here in 3-1 semester.
 - Mr. Hari Prasad asked whether metrology module will fit inside manufacturing technology header.
 - Dr. M. Lakshmana Rao & Dr. Anantha Raman L. have explained that due to constraint of new subject inclusion, it has been done so. Also the students are studying manufacturing technology as 2 subjects in 2-2 & 3-1 semester. Hence this inclusion will not affect manufacturing technology syllabus.
 - Mr. Anand Swaroop Donepudi asked about the placement of metrology lab.
 - Dr. Anantha Raman L. explained that it has been kept in 3-2 semester.
- 28. 20ME111 Heat Transfer:
 - Dr. Anantha Raman L. has presented the syllabus for Heat Transfer to the members.
 - Mr. Hari Prasad asked whether 40 / 45 lecture hours is correct for 3 credits subject.
 - Dr. Anantha Raman L. has explained that for 3 credit subjects 45 lecture hours and for 4 credit papers 60 lecture hours is corrects as per AICTE curriculum.
 - Members said the syllabus is standard and no changes are needed.
- 29. 20ME208 Manufacturing Technology-II Laboratory:
 - Dr. Anantha Raman L. has presented the syllabus for Manufacturing Technology-II Laboratory to the members.
 - Mr. Hari Prasad asked whether gear cutting facility is available in the lab with indexing mechanism.
 - Dr. M. Lakshmana Rao & Dr. Baskaran has explained that facilities are available, and students are doing the same in experiment no.7.
 - Mr. Hari Prasad explained the importance of learning about gears which are applied in mechanical and automotive industries.
 - Mr. Hari Prasad suggested to include few experiments related to unconventional machining in the experiments list.
 - Dr. Ram Krishna explained about various unconventional machining facilities available in the department.



- Mr. Hari Prasad asked about CNC machines related experiments.
- Dr. Anantha Raman L. has explained that CNC simulation and experiments as Skill Oriented Course where students will study them in detail.
- 30. 20ME209 Thermal Engineering Laboratory:
 - Dr. Anantha Raman L. has presented the syllabus for Thermal Engineering Laboratory to the members.
 - Mr. Hari Prasad and Mr. Anand Swaroop Donepudi said combining two main labs together will dilute the contents of both labs.
 - Mr. Anand Swaroop Donepudi asked when the students are studying theory related to IC Engines and Heat Transfer.
 - Dr. Anantha Raman L. has explained that students will study IC Engines fundamentals in Thermodynamics 2-1 semester. There is no separate core subject offered to study about IC engines. Students are studying Heat Transfer in 3-1 semester.
 - Dr. R. Thundil Karuppa Raj suggested to keep both IC Engiunes and Heat Transfer labs separately. He has explained the importance of understanding different experiments related to compressors, refrigeration, boilers etc.,
 - Dr. Anantha Raman L. accepted to keep both labs separate if possible based on credits availability.
 - Mr. Hari Prasad advised to include thermal related keywords like thermos mechanical performance etc., for experiments to match the lab title and objective.
- 31. Open Elective I Subjects (SWAYAM NPTEL):
 - Dr. Anantha Raman L. has presented the list of subjects offered as open elective I from SWAYAM NPTEL.
 - Mr. Hari Prasad enquired about the list of subjects, evaluation methods and credits allotted. Also he suggested to keep subjects relevant to mechanical engineering students.
 - Dr. Anantha Raman L. has explained about the shortlisted courses, proctored evaluation methods and 3 credits are allotted for this open elective I subject.
- 32. Professional Elective I Subjects:
 - Dr. Anantha Raman L. has presented the list of subjects offered as professional elective I. He has explained the detailed syllabus of all professional elective I subjects.
- 33. 20ME401 Production Planning and Control:
 - Dr. Anantha Raman L. has presented the syllabus for Production Planning and Control.
 - Mr. Hari Prasad suggested to include software used in industries especially ERP, SAP etc., under unit V. He suggested students should gain introductory knowledge about ERP software before entering industries.
 - The same has been included in Unit V.
- 34. 20ME402 Computational Fluid Dynamics:
 - Dr. Anantha Raman L. has presented the syllabus for Computational Fluid Dynamics.



- Dr. R. Thundil Karuppa Raj suggested to include methods to solve continuity, momentum and energy equations, SIMPLE algorithms, FVM, FDM, Grid independence test, validation with analytical methods and Turbulence modelling.
- Dr. R. Thundil Karuppa Raj suggested to reduce 1st unit content since it is not possible to cover within 11 hours.
- Dr. R. Thundil Karuppa Raj suggested to include validation and errors study in Unit V.
- All suggestions were included in the syllabus.
- 35. 20ME403 Engineering Analysis:
 - Dr. Anantha Raman L. has presented the syllabus for Engineering Analysis.
 - Mr. Anand Swaroop Donepudi asked whether linear interpolation is included.
 - Dr. Anantha Raman L. explained that it is already available under unit III.
 - Dr. M. Lakshmana Rao explained that the subject is a combination of mathematics and python programming.
 - Mr. Hari Prasad asked where the students are learning about python programming.
 - Dr. M. Lakshmana Rao and Dr. Anantha Raman L. explained that the students are learning python programming and c programming fundamentals in 1-1 semester and 1-2 semester.
 - Mr. Hari Prasad suggested to include at least one python exercise at the end of each unit.
 - All suggestions were included in the syllabus.
 - 36. 20ME404 Fluid Power Systems:
 - Dr. Anantha Raman L. has presented the syllabus for Fluid Power Systems.
 - Mr. Hari Prasad enquired about the books followed for the subject.
 - Mr. Hari Prasad asked whether solenoid valves are included. The same is available in unit IV.
 - Mr. Hari Prasad suggested to include methods and software used to draw hydraulic and pneumatic circuits at the end of unit IV and unit V.
 - All suggestions were included in the syllabus.
 - 37. 20ME405 Finite Element Methods:
 - Dr. Anantha Raman L. has presented the syllabus for Finite Element Methods.
 - Mr. Hari Prasad enquired about any labs are available to do FEM practically.
 - Dr. Anantha Raman L. explained that the students will do experiments related to FEM in CADCAM lab in 3-2 semester.
 - Mr. Hari Prasad enquired about the software available / used.
 - Dr. M. Lakshmana Rao and Dr. Anantha Raman L. explained that ANSYS and FEAST software are used to teach the students.
 - 38. 20ME406 Fundamentals of Automobile Engineering:
 - Dr. Anantha Raman L. has presented the syllabus for Fundamentals of Automobile Engineering.



- Mr. Anand Swaroop Donepudi asked whether the subject is elective and if a student is not picking the subject will he study about cooling system and lubrication system in any other subject.
- Dr. Anantha Raman L. gave explanation that no other subject contains such contents other than this subject.
- Mr. Anand Swaroop Donepudi suggested that cooling and lubrication systems must be included in some subject somewhere so that all students can student and get knowledge on these fundamentals.
- Mr. Hari Prasad and Dr. R. Thundil Karuppa Raj suggested to include contents related to chassis, brakes, clutches etc., since the subject name is automobile engineering. If the same syllabus has to be followed, then the title can be changed to Fundamentals of Automotive Engineering.
- Mr. Hari Prasad and Dr. R. Thundil Karuppa Raj suggested to include electric vehicle related content under unit V or offer a separate elective to study about electric vehicle.
- Dr. Anantha Raman L. has agreed to change the subject name to Fundamentals of Automotive Engineering. The elective related to electric vehicle is offered as open elective by electric engineering department and hence there is no need to offer under mechanical curriculum.
- 39. 20ME112 CAD-CAM:
 - Dr. Anantha Raman L. has presented the syllabus for CAD-CAM.
 - Mr. Anand Swaroop Donepudi asked whether any topics related to load analysis / stress analysis are included here.
 - Mr. Hari Prasad suggested not to include any analysis related topics in CAD-CAM. He
 has suggested to include introduction to industry standard software, CAD-CAM
 software.
 - Mr. Anand Swaroop Donepudi suggested to include industry diagram analysis (video tutorials) as second part in unit V.
 - Mr. Hari Prasad suggested to elaborate GD&T more so that students will have good knowledge on GD&T which is much important in industry drawings.
 - Mr. Hari Prasad suggested to include topics related to Industry 4.0 in unit 5.
 - All suggestions were included in the syllabus.
- 40. 20ME113 Automation and Robotics:
 - Dr. Anantha Raman L. has presented the syllabus for Automation and Robotics.
 - Mr. Hari Prasad suggested to move contents of unit 5 to unit 3 and include contents related to industrial robots, case studies and their applications under unit 5. Unit 3 rename it as sensors and actuators.
 - All suggestions were included in the syllabus.
- 41. 20ME114 Machine Learning for Mechanical Engineering:



- Dr. Anantha Raman L. has presented the syllabus for Machine Learning for Mechanical Engineering.
- Mr. Hari Prasad suggested to include few topics that correlate machine learning with mechanical engineering, some applications, case studies.
- Dr. M. Lakshmana Rao explained the importance of learning machine learning by mechanical engineering students.
- Mr. Anand Swaroop Donepudi suggested to include applications in all 5 units. He also asked about data collection and processing techniques availability in syllabus.
- Dr. M. Lakshmana Rao and Dr. Anantha Raman L. have explained it.
- Dr. Ram Krishna requested Mr. Anand Swaroop Donepudi to share more information related to data collection techniques and Mr. Anand Swaroop Donepudi agreed to share references to the department.
- Mr. Hari Prasad suggested to add connectivity between python and machine learning in unit 5. Also, he suggested to include information about public data banks and their accessibility techniques in unit 5.
- All suggestions were included in the syllabus.
- 42. 20ME210 CAD-CAM Laboratory:
 - Dr. Anantha Raman L. has presented the syllabus for CAD-CAM laboratory.
 - Mr. Hari Prasad suggested to include milling under CAM experiments.
 - Mr. Hari Prasad suggested to change 2nd experiment with simply supported beam geometry. He also suggested to include beam and plate for modal analysis in 6th experiment.
 - All suggestions were included in the syllabus.
- 43. 20ME211 Robotics Laboratory:
 - Dr. Anantha Raman L. has presented the syllabus for Robotics laboratory.
 - Mr. Hari Prasad suggested not to use Arduino names and instead use terminologies like testing and analysis, testing and evaluation for all experiments. He also suggested to procure at least one robot for programming and testing.
 - Mr. Hari Prasad to make the students to program and understand kinematics. He also suggests including CAD programs for testing. He also suggested to remove weather monitoring and IoT from experiments.
 - Mr. Hari Prasad suggested to keep experiments like evaluation of robot sensors, Evaluation of robot DC motors, and one experiment to develop Arduino based robot.
 All suggestions were included in the syllabus.
- 44. 20ME212 Engineering Metrology and Measurements Laboratory:
 - Dr. Anantha Raman L. has presented the syllabus for Engineering Metrology and Measurements laboratory.
 - Mr. Hari Prasad suggested to include Johnson set sine bar and slip gauges as one experiment.



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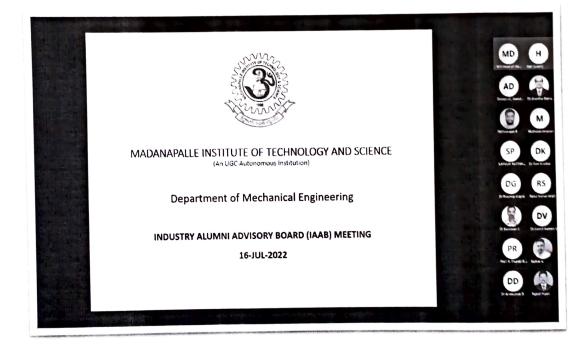
DEPARTMENT OF MECHANICAL ENGINEERING

- Mr. Hari Prasad suggested to remove surface flatness using spirit level. He suggested to use other standard instruments. He also suggested to remove air flow measurement experiment.
- Mr. Hari Prasad asked about alignment tests and which alignments are tested / measured.
- Dr. S. Baskaran explained about it that alignments of spindle will be measured using dial indicators.
- Mr. Hari Prasad suggested to give students turned specimens and find straightness, circularity, eccentricity levels at different positions using dial indicators as a team.
- Mr. Hari Prasad suggested to remove calibration word from 4 and 5 experiments.
- Mr. Hari Prasad asked about strain gauges and types. Dr. S. Baskaran explained about the type.
- Mr. Hari Prasad suggested to remove alignment related experiments.
- Mr. Hari Prasad asked about the magnification value of microscope. Dr. S. Baskaran explained it.
- Mr. Hari Prasad suggested to check and study about gear teeth profiles under microscope.
- All suggestions were included in the syllabus.
- 45. Open Elective II Subjects:
 - Dr. Anantha Raman L. has presented the list of subjects to be offered as open elective II under 3-2 semester.
 - Mr. Hari Prasad suggested to promote and motivate MEMS to students.
- 46. Professional Elective II Subjects (SWAYAM NPTEL):
 - Dr. Anantha Raman L. has presented the list of subjects to be offered as professional elective II under 3-2 semester.
- 47. Skill Oriented Courses (SOC):
 - Dr. Anantha Raman L. has presented the list of subjects to be offered as skill-oriented courses.
- 48. 20ME602 & 20ME603 Computer Modelling for Mechanical Engineering- I & II Laboratory:
 - Dr. Anantha Raman L. has presented the syllabus for Engineering Computer Modelling for Mechanical Engineering- I & II Laboratory.
 - Mr. Hari Prasad asked which software packages are used.
 - Dr. Anantha Raman L. explained that CATIA package along with 3D experience.
 - Mr. Hari Prasad told to remove slider crank mechanism and robotic arm assembly which is repeating in both I & II.
 - Mr. Hari Prasad suggested to toughen few experiments in II lab. He also suggested to limit mechanisms and include models like aircraft models, two-wheelers model, sheet metal modules etc., (Bending, Blank development exercises).
 - All suggestions were included in the syllabus.



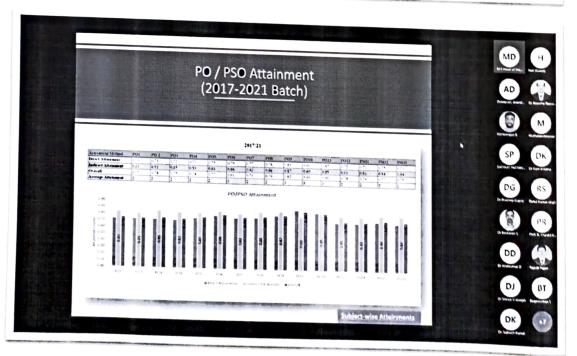
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- 49. Dr. Anantha Raman L. presented the department's vision and mission.
- 50. The members recommended not to make any changes to the department's vision and mission statements and recommended keeping it as it is.
- 51. Dr. M. Lakshmana Rao concluded the meeting and thanked all the members for attending and contributing to the improvement of the curriculum and syllabus.
- 52. The committee discussed the conduction of the BoS meeting and has decided to schedule the IAAB meeting on 30-07-2022 via Online mode.
- 53. The revised subject-wise syllabus of all 3-1 & 3-2 subjects has been attached with the minutes for reference.
- 54. Few screenshots of online meeting are displayed below:

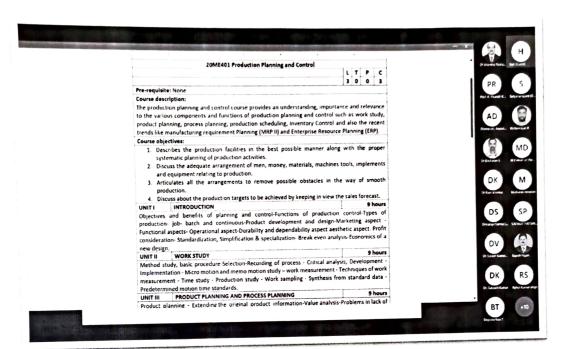


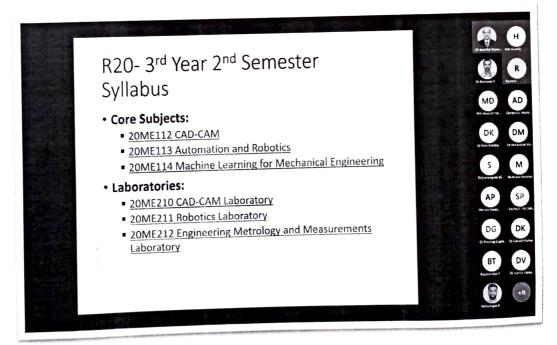














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Approval:

The above-mentioned meeting minutes have been approved by the following members of the Industry Alumni Advisory Board (IAAB).

SI. No.	Member Name	Designation	Signatura
1.	Dr. P. Ramanathan	Vice Principal Academics, MITS	Signature P. P. aver Cano
2.	Dr. M. Lakshmana Rao	Professor & Head, Mechanical Engineering, MITS	pilies
3.	Mr. M. Hari Prasad (Industry Expert)	Former Scientist, Aeronautical Development Establishment (ADE), Bangalore	, Approval via email
4.	Dr. R. Thundil Karuppa Raj (Academic Expert)	Professor, Automotive Engineering, VIT, Vellore	Approval via email
5.	Mr. M. Venkata Satyanarayana	MITS Alumni, Principal Engineer – R&D, Sahajanand Medical Technologies, Surat	Approval via email
6.	Mr. Anand Swaroop Donepudi	MITS Alumni	Approval via email
7.	Dr. G. Harinath Gowd	Professor, Mechanical Engineering, MITS	1 hori
8.	Dr. l. Arun	Professor, Mechanical Engineering, MITS	
9.	Dr. Ram Krishna	Assoc. Professor, Mechanical Engineering, MITS	
10.	Dr. S. Baskaran	Assoc. Professor, Mechanical Engineering, MITS	Even
11.	Dr. R. Prithivi Rajan	Assoc. Professor, Mechanical Engineering, MITS	Hor I
12.	Dr. K. V. Nagesha	Assoc. Professor, Mechanical Engineering, MITS	Northyle a
13.	Dr. P. Sivaiah	Assoc. Professor, Mechanical Engineering, MITS	PE
14.	Dr. Muralidhar Singh. M	Sr. Asst. Professor, Mechanical Engineering, MITS	JA.
15.	Dr. Shince V. Joseph	Asst. Professor, Mechanical Engineering, MITS	Dim
16.	Dr. Pradeep Gupta	Asst. Professor, Mechanical Engineering, MITS	1-l-d.



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17.	Dr. Subodh Kumar	Asst. Professor, Mechanical Engineering, MITS	S. Kirman
18.	Dr. Kamlesh Kumar	Asst. Professor, Mechanical Engineering, MITS	Kamles
19.	Dr. Shanmukhasundaram V.	Asst. Professor, Mechanical Engineering, MITS	MOENS
	R	Asst. Professor, Mechanical	the
20.	Dr. Bageerathan T	Engineering, MITS	-Fat
21.	Dr. Suresh kannan.V	Asst. Professor, Mechanical Engineering, MITS	Mar
22.	Dr. Arun Kumar.D	Asst. Professor, Mechanical Engineering, MITS	D.M.L
		Asst. Professor, Mechanical	IA.K
23.	Dr. Anantha Raman L	Asst. Professor, Mechanica Engineering, MITS	H. Jon.
24.	Dr. Satyajit Pattanayak	Asst. Professor, Mechanical Engineering, MITS	Asthingthe
25.	Dr. Rahul Singh	Asst. Professor, Mechanical Engineering, MITS	2.1.

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Dr. M. Lakshmana Rao Professor and Participation of Mechanical Engineering Vadenatale Institute of Technology & Science Copy totADANAPALLE = 617-325

- The Principal
- The Vice-Principal (Academics)
- IAAB & Department file

Dr. C. Yuvaraj Principal, MITS Principal Madanapalle Institute of MADANAPALLE