



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE

(An Autonomous Institution)

Affiliated to JNTUA, Anantapur & Approved by AICTE, New Delhi

(An ISO 9001-2008 Certified Institution)

Post Box No. 14, Angallu, Madanapalle – 517325.

Ph. 08571-280255, 280706, Fax: 08571-280433

Web: www.mits.ac.in

DEPARTMENT OF MECHANICAL ENGINEERING

CIRCULAR

Date: 18-07-2022

It is hereby informed to all the faculty members that **Board of Studies (BoS)** meeting is scheduled on 30-07-2022 at 02:00 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:

<https://teams.microsoft.com/l/meetup-join/19%3a1c1c4fa1440140089b7b0a223f18f7db%40thread.tacv2/1658830601778?context=%7b%22Tid%22%3a%22b637c4f6-57b7-44dc-bce4-fec0cd202460%22%2c%22Oid%22%3a%22205b8fe6-a118-4427-ae3d-1aa481a284c9%22%7d>

The following BoS members are requested to attend the meeting.

Sl. No.	Name of the Member	Designation
1.	Dr. C. Yuvaraj	Professor & Head of the Institution, MITS
2.	Dr. M. Lakshmana Rao (BoS - Chairman)	Professor & Head of the Department, ME
3.	Dr. P. Ramanathan	Vice Principal Academics, MITS
4.	Dr. B. Durga Prasad (JNTUA University Nominee)	Professor, Mechanical Department, JNTUA CEA, Ananthapuramu.
5.	Dr. E. Anil Kumar (Subject Expert)	Professor, Mechanical Engineering, IIT, Tirupati.
6.	Dr. B. Venkatesham (Subject Expert)	Professor, Mechanical and Aerospace Engineering, IIT, Hyderabad.
7.	Mr. Kashinath M Patnasetty (Industry Expert)	Head, VAS Application Support Ace Designers Limited, Bangalore.
8.	Mr. Anand Swaroop Donepudi (Alumni)	Product and Application Engineer CBRE South Asia Pvt. Ltd.,
9.	Dr. G. Harinath Gowd	Professor & Controller of Examinations-MITS
10.	Dr. I. Arun	Professor & Research Coordinator-ME



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11.	Dr. Ram Krishna	Assoc. Professor & Head-IIIC-MITS	<i>Am</i>
12.	Dr. S. Baskaran	Assoc. Professor & IQAC Coordinator-MITS	<i>Am</i>
13.	Dr. K. V. Nagesha	Assoc. Professor & NBA Coordinator-ME	<i>Am</i>
14.	Dr. P. Sivaiah	Assoc. Professor & Workshop Incharge-ME	<i>Am</i>
15.	Dr. R. Prithivi Rajan	Assoc. Professor & Project Coordinator-ME	<i>Am</i>
16.	Dr. Muralidhar Singh. M	Sr. Assistant Professor & Placement Coordinator-ME	<i>Am</i>
17.	Dr. Shince V. Joseph	Assistant Professor & OBE Incharge-ME	<i>Am</i>
18.	Dr. Pradeep Gupta	Assistant Professor & Mentor-Mentee Coordinator-ME	<i>Am</i>
19.	Dr. Subodh Kumar	Assistant Professor & ISTE Coordinator-ME	<i>Am</i>
20.	Dr. Kamlesh Kumar	Assistant Professor & GATE Coordinator-MITS	<i>Am</i>
21.	Dr. Shanmukhasundaram V. R.	Assistant Professor & Placement Coordinator-ME	<i>Am</i>
22.	Dr. Suresh Kannan.V	Assistant Professor & Timetable Coordinator-ME	<i>Am</i>
23.	Dr. Anantha Raman L	Assistant Professor & Academic Coordinator-ME	<i>Am</i>
24.	Dr. Arun Kumar.D	Assistant Professor & IQAC Coordinator-ME	<i>Am</i>
25.	Dr. Bageerathan T	Assistant Professor & AICTE 360 Coordinator-ME	<i>Am</i>
26.	Dr. Satyajit Pattanayak	Assistant Professor	<i>Am</i>

Dr. M. Lakshmana Rao

Professor & Head, Department of ME

Head of the Department

Mechanical Engineering

Madanapalle Institute of Technology & Science

MADANAPALLE - 517 325

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



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DEPARTMENT OF MECHANICAL ENGINEERING

Date: 18-07-2022

COMPOSITION AND APPROVAL OF BOARD OF STUDIES (BoS)

The following members are nominated and approved for constitution of Board of Studies (BoS).

Sl. No.	Member Name	Designation
1.	Dr. C. Yuvaraj	Professor & Head of the Institution, MITS
2.	Dr. M. Lakshmana Rao (BoS - Chairman)	Professor & Head of the Department, ME
3.	Dr. P. Ramanathan	Vice Principal Academics, MITS
4.	Dr. B. Durga Prasad (JNTUA University Nominee)	Professor, Mechanical Department, JNTUA CEA, Ananthapuramu.
5.	Dr. E. Anil Kumar (Subject Expert)	Professor, Mechanical Engineering, IIT, Tirupati.
6.	Dr. B. Venkatesham (Subject Expert)	Professor, Mechanical and Aerospace Engineering, IIT, Hyderabad.
7.	Mr. Kashinath M Patnasetty (Industry Expert)	Head, VAS Application Support Ace Designers Limited, Bangalore.
8.	Mr. Anand Swaroop Donepudi (Alumni)	Product and Application Engineer CBRE South Asia Pvt. Ltd.,
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10.	Dr. I. Arun	Professor & Research Coordinator-ME
11.	Dr. Ram Krishna	Assoc. Professor & Head-IIIC-MITS
12.	Dr. S. Baskaran	Assoc. Professor & IQAC Coordinator-MITS
13.	Dr. K. V. Nagesha	Assoc. Professor & NBA Coordinator-ME
14.	Dr. P. Sivaiah	Assoc. Professor & Workshop Incharge-ME



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15.	Dr. R. Prithivi Rajan	Assoc. Professor & Project Coordinator-ME
16.	Dr. Muralidhar Singh. M	Sr. Assistant Professor & Placement Coordinator-ME
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21.	Dr. Shanmukhasundaram V. R.	Assistant Professor & Placement Coordinator-ME
22.	Dr. Suresh Kannan.V	Assistant Professor & Timetable Coordinator-ME
23.	Dr. Anantha Raman L	Assistant Professor & Academic Coordinator-ME
24.	Dr. Arun Kumar.D	Assistant Professor & IQAC Coordinator-ME
25.	Dr. Bageerathan T	Assistant Professor & AICTE 360 Coordinator-ME
26.	Dr. Satyajit Pattanayak	Assistant Professor

Responsibilities of the committee:

1. Monitors attainment of COs, POs & PSOs.
2. Evaluate program effectiveness and process necessary changes in mechanical department curriculum.


Dr. M. Lakshminarayana Rao
Chairman, BoS, Professor & Head, Department of ME
Madanapalle Institute of Technology & Science
MADANAPALLE - 517 325

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


Dr. C. Yuvaraj

Principal, MITS

PRINCIPAL

Madanapalle Institute of Technology & Science
PO Box NO. 14, Kadiri Road, Angallu
MADANAPALLE - 517 325 A.P.



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DEPARTMENT OF MECHANICAL ENGINEERING

Date: 30-07-2022

Board of Studies (BoS)

Minutes of meeting held on 30-07-2022, 02:00 PM – 03:4 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 welcomed all members to the BoS meeting.
2. Dr. M. Lakshmana Rao introduced external members to the participants.
3. Dr. M. Lakshmana Rao introduced internal members to the participants.
4. Dr. M. Lakshmana Rao presented an overview of the institution, department, recent activities, and achievements.
5. Dr. M. Lakshmana Rao presented the agenda of the BoS 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 recommendations of PAC & IAAB at the BoS meeting.
8. Dr. Anantha Raman L. presented the overall and subject-wise PO/PSO attainment of 2017-2021 B.Tech. Mechanical batch.
9. PO6, PO9, PO10, and PO10 have attainment levels "3" and the remaining PO attainment levels were "2".
10. It has been observed that the PO/PSO attainment levels were low for PO/PSOs mapped with analytical subjects with higher bloom levels.
11. The PO/PSO as well CO levels of 46 subjects were presented and discussed.
12. The mapping procedure and calculations involved in direct, indirect, and overall attainment levels were also discussed.
13. The PO/PSO levels of 2015-19, 2016-20, and 2017-20 were compared.
14. The PO/PSO attainment levels for the 2017-2021 batch are mentioned below:

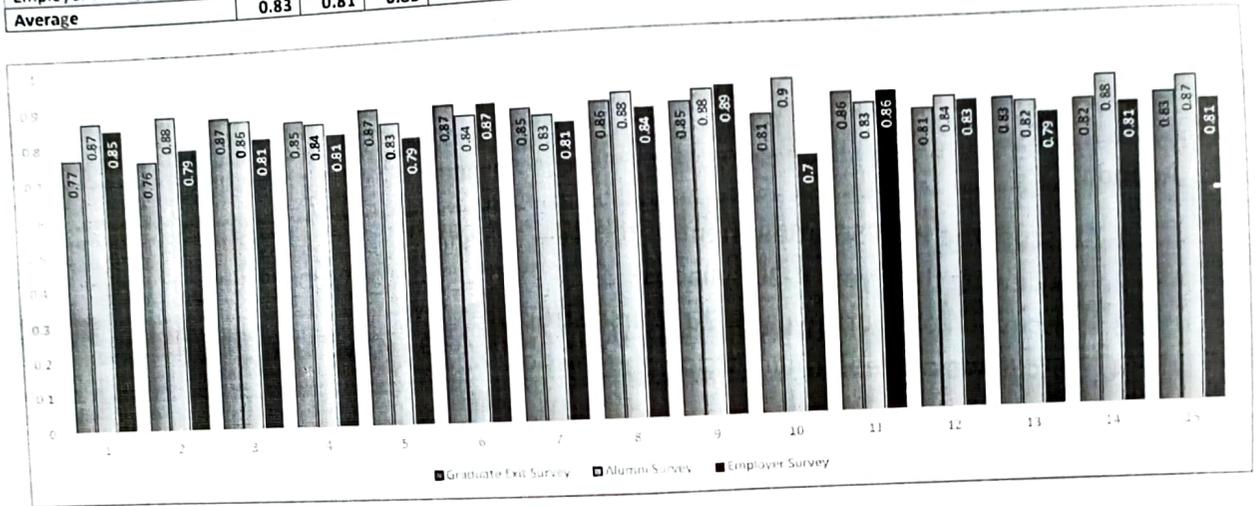
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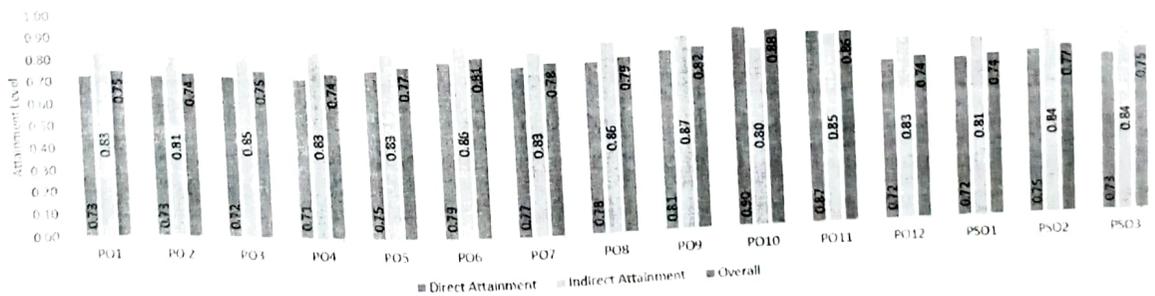
	PO Indirect Attainment															
Graduate Exit Survey	0.77	0.76	0.87	0.85	0.87	0.87	0.85	0.86	0.85	0.81	0.86	0.81	0.83	0.82	0.83	
Alumni Survey	0.87	0.88	0.86	0.84	0.83	0.84	0.83	0.88	0.88	0.9	0.83	0.84	0.82	0.88	0.81	
Employer Survey	0.85	0.79	0.81	0.81	0.79	0.87	0.81	0.84	0.89	0.7	0.86	0.83	0.79	0.81	0.81	
Average	0.83	0.81	0.85	0.83	0.83	0.86	0.83	0.86	0.87	0.80	0.85	0.83	0.81	0.84	0.84	



2017/21

Assessment Method	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Direct Attainment	0.73	0.73	0.72	0.71	0.75	0.79	0.77	0.75	0.81	0.90	0.87	0.72	0.72	0.75	0.73
Indirect Attainment	0.83	0.81	0.85	0.83	0.83	0.86	0.83	0.86	0.87	0.80	0.85	0.83	0.81	0.84	0.84
Overall	0.78	0.74	0.78	0.74	0.77	0.81	0.78	0.79	0.82	0.85	0.86	0.74	0.74	0.77	0.78
Average Attainment	2	2	2	2	2	3	2	2	3	3	3	2	2	2	2

PO/PSO Attainment



- 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.
- 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.
- Dr. Anantha Raman L. presented the inclusion of mandatory course universal human values in the curriculum as per AICTE directions.
- The course structure for 3-1, 3-2, 4-1 & 4-2 semesters are mentioned below:



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III Year I Semester

S. No.	Category	Course Code	Course Title	Hours Per Week				Credits
				L	T	P	Total	
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	PCC	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	MC	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

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

III Year II Semester

S. No.	Category	Course Code	Course Title	Hours Per Week				Credits
				L	T	P	Total	
1	PCC	20ME112	CAD/ CAM	3	0	0	3	3
2	PCC	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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5	PE		Professional Elective-II (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. No.	Category	Course Code	Course Title	Hours Per Week				Credits
				L	T	P	Total	
1	PE		Professional Elective-III (Annexure-III)	3	0	0	3	3
2	PE		Professional Elective-IV (Annexure-III)	3	0	0	3	3
3	PE		Professional Elective-V (Annexure-III)	3	0	0	3	3
4	OE		Open Elective-III (Annexure-II)	3	0	0	3	3
5	OE		Open Elective-IV (Annexure-II)	3	0	0	3	3
6	OE- HSMC		Open Elective-V (Taken from Humanities & Social Science) (Annexure-II)	3	0	0	3	3
7	SC		Skill Oriented Course-V (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

S. No.	Category	Course Code	Course Title	Hours Per Week				Credits
				L	T	P	Total	
1	PROJ	20ME703	Project Work, Seminar, and Internship in Industry (6 months)	0	0	24	24	12
Total				0	0	24	24	12

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

Professional Elective – I		
Sl. 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

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

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

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



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22. The list of Skill Oriented Course-IV subjects offered for 3-2 semester is listed below.

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

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

Honors in Mechanical Engineering

Sl. No	Category	Course Code	Course Title	Hours Per Week				Credits
				L	T	P	Total Contact Hours	
III Year I Semester								
1	Professional Elective Course (Choose any two from three courses)	20HDME101	Advanced Welding Technology	3	0	0	3	3
2		20HDME102	Additive Manufacturing Technology	3	0	0	3	3
3		20HDME103	Combustion and Emissions	3	0	0	3	3
Sub Total				6	0	0	6	6
III Year II Semester								
4	Professional Elective Course (Choose any two from three courses)	20HDME104	Ergonomics	3	0	0	3	3
5		20HDME105	Gas Dynamics	3	0	0	3	3
6		20HDME106	Fracture Mechanics	3	0	0	3	3
Sub Total				6	0	0	6	6



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IV Year I Semester								
7	Professional Elective Course (Choose any one from three courses)	20HDME107	Powder Metallurgy	3	0	0	3	3
8		20HDME108	Advanced Fluid Mechanics	3	0	0	3	3
9		20HDME109	Modeling of SI and CI Engines	3	0	0	3	3
10	Project	20HDME701	Mini Project	0	0	10	10	5
Sub Total				3	0	10	13	8
Total				15	0	10	25	2

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

Sl. No	Category	Course Code	Course Title	Hours Per Week				Credits
				L	T	P	Total Contact Hours	
III Year I Semester								
1	Professional Core Course	20MDME106	Computer Aided Manufacturing Process	3	0	0	3	3
2	Professional Core Course	20MDME107	Product Design and Development	3	0	0	3	3



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III Year II Semester								
3	Professional Core Course	20MDME108	Digital Manufacturing Planning and Control	3	0	0	3	3
4	Professional Core Course	20MDME109	Big Data Analytics for Manufacturing	3	0	0	3	3
5	Professional Core Course	20MDME202	Computer Aided Design and Manufacturing Laboratory	0	0	4	4	2
IV Year I Semester								
6	Professional Core Course	20MDME110	Smart Sensors and Industry 4.0	3	0	0	3	3
7	Project	20MDME701	Mini Project	0	0	6	6	3
Total				15	0	10	25	20

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

Sl. No	Category	Course Code	Course Title	Hours Per Week				Credits
				L	T	P	Total Contact Hours	
III Year I Semester								
1	Professional Core Course	20MDME121	Fluid Mechanics and Hydraulic Machinery	2	1	0	3	3
2	Professional Core Course	20MDME122	Applied Thermodynamics	2	1	0	3	3



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III Year II Semester								
3	Professional Core Course	20MDME123	Heat Transfer	2	1	0	3	3
4	Professional Core Course	20MDME124	Computational Fluid Dynamics	2	1	0	3	3
5	Professional Core Course	20MDME205	Thermal Engineering Laboratory	0	0	4	4	2
IV Year I Semester								
6	Professional Core Course	20MDME125	Design of Gas Turbine	2	1	0	3	3
7	Project	20MDME701	Mini Project	0	0	6	6	3
Total				10	5	10	25	2

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

26. 20ME109 Design of Machine Elements:

- Dr. Anantha Raman L. has presented the syllabus for Design of Machine Elements to the members.
- All members accepted the syllabus as it is.

27. 20ME110 Manufacturing Technology-II:

- Dr. Anantha Raman L. has presented the syllabus for Manufacturing Technology-II to the members.
- Mr. Anand Swaroop Donepudi asked whether composite materials-related content is included / students are studying it somewhere.
- Dr. M. Lakshmana Rao and Dr. Anantha Raman L. explained that the students are studying composites in material science subject offered in 2-1 semester.
- Mr. Kashinath M Patnasetty suggested including applications of limits/metrology under unit V.
- All suggestions given by the members were implemented.

28. 20ME111 Heat Transfer:

- Dr. Anantha Raman L. has presented the syllabus for Heat Transfer to the members.



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- Dr. E. Anil Kumar suggested combining conduction as a single unit. Also, he suggested separating 2-phase flows and heat exchangers into 2 separate units. Also, he suggested expanding the convection unit to include non-dimensional boundary layers, fundamental terminologies, and related content.
 - Dr. E. Anil Kumar suggested including analogous between heat transfer and mass transfer and a few introductions on mass transfer.
 - Dr. B. Durga Prasad suggested combining units 1 & 2 into a single unit. Also, he suggested including mass transfer as unit V.
 - All suggestions given by the members were implemented.
29. 20ME208 Manufacturing Technology-II Laboratory:
- Dr. Anantha Raman L. has presented the syllabus for Manufacturing Technology-II Laboratory to the members.
 - Mr. Kashinath M Patnasetty suggested including how components are qualified as a study experiment at the last. Awareness on topics like CPK, tolerance, and quality can be included.
 - All suggestions given by the members were implemented.
30. 20ME209 Thermal Engineering Laboratory:
- Dr. Anantha Raman L. has presented the syllabus for Thermal Engineering Laboratory to the members.
 - Dr. B. Durga Prasad asked whether any thermal-related laboratories are there in the 2nd year. Also, he asked about the thermal engineering laboratory in 3rd year.
 - Dr. Anantha Raman L. explained that there are no thermal-related labs in 2nd year. Also, the thermal engineering laboratory is a combination of heat transfer lab and IC engines lab.
 - Dr. B. Durga Prasad suggested including a heat balance test instead of a performance test on 2-stroke engines under main experiments.
 - Dr. C. Yuvaraj suggested removing the minimum experiment notification mentioned wrongly in brackets for each category.
 - Mr. Anand Swaroop Donepudi suggested including subjects related to upcoming electric vehicle technology for mechanical engineering students.
 - Dr. C. Yuvaraj explained that the same has been discussed with BoS chairman Dr. M. Lakshmana Rao and asked Dr. M. Lakshmana Rao to discuss the plan to include EV technology in the curriculum.
 - Dr. M. Lakshmana Rao explained that EV technology is significant for mechanical engineering students. He suggested including lab and theory related to electric vehicle technology under 4-1 semester.
 - Mr. Kashinath M Patnasetty and Dr. B. Durga Prasad suggested including it in 3-2 or 4-1 semester. They also suggested lab should come along with/after the theory.



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- Dr. C. Yuvaraj informed us that the institution is going to establish an EV laboratory and related facility within 3 or 4 months. He suggested BoS chairman incorporate the EV theory lab suitably in the mechanical engineering curriculum.
 - Mr. Kashinath M Patnasetty suggested forming an EV-based incubation centre that will benefit students to become entrepreneurs in the future.
 - Mr. Kashinath M Patnasetty also suggested ensuring the battery must be charged by solar not non-renewable energy. It should be 100 percent eco-friendly.
 - Dr. M. Lakshmana Rao accepted all the suggestions related to EVs and explained the recent projects developed by students which include solar and EV technologies.
 - All suggestions given by the members were implemented.
31. Professional Elective I Subjects:
- Dr. Anantha Raman L. has presented the list of subjects offered as a professional elective I. He has explained the detailed syllabus of all professional elective I subjects.
32. 20ME401 Production Planning and Control:
- Dr. Anantha Raman L. has presented the syllabus for Production Planning and Control.
 - Mr. Anand Swaroop Donepudi suggested including capacity planning and resource management under unit III.
 - Mr. Kashinath M Patnasetty also suggested including capacity planning and resource management under unit III. Additionally, he suggested including material handling also under unit III.
 - Mr. Anand Swaroop Donepudi suggested including topics in the order of material handling, capacity planning, and resource planning.
 - All suggestions given by the members were implemented.
33. 20ME402 Computational Fluid Dynamics:
- Dr. Anantha Raman L. has presented the syllabus for Computational Fluid Dynamics.
 - Dr. E. Anil Kumar has suggested including a grid independence study under unit III.
 - All suggestions given by the members were implemented.
34. 20ME403 Engineering Analysis:
- Dr. Anantha Raman L. has presented the syllabus for Engineering Analysis.
 - Dr. E. Anil Kumar suggested checking the aptness of the title with content.
 - Dr. M. Lakshmana Rao explained the subject syllabus and its importance.
 - Dr. Anantha Raman L. agreed to check the aptness and alter the title of the subject accordingly.
 - All suggestions given by the members were implemented.
35. 20ME404 Fluid Power Systems:
- Dr. Anantha Raman L. has presented the syllabus for Fluid Power Systems.
 - Mr. Anand Swaroop Donepudi asked whether students would study these topics under core papers.



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- Dr. Anantha Raman L. explained that students are studying pumps and turbines in fluid mechanics subject in 2-1 semester. This subject is an advanced elective to give more information on actuators and other sub-systems.
 - Dr. B. Durga Prasad suggested looking for possibilities to make this subject a core subject.
 - Mr. Kashinath M Patnasetty suggested reducing the content and time allotted for pumps and actuators unit. Increase contents and add application-oriented topics under hydraulic and pneumatic units.
 - All suggestions given by the members were implemented.
36. 20ME405 Finite Element Methods:
- Dr. Anantha Raman L. has presented the syllabus for Finite Element Methods.
 - No comments received.
37. 20ME406 Fundamentals of Automobile Engineering:
- Dr. Anantha Raman L. has presented the syllabus for Fundamentals of Automobile Engineering.
 - Dr. E. Anil Kumar asked whether students have any electives related to electric vehicles.
 - Dr. Anantha Raman L. explained that such a course is offered as an open elective by the electrical department, which mechanical engineering students can choose.
 - Dr. E. Anil Kumar asked whether the students have studied cooling and lubrication systems earlier.
 - Dr. Anantha Raman L. explained this is the first subject in which the students are studying such topics.
 - Mr. Kashinath M Patnasetty suggested including braking, safety, and aerodynamics-related contents.
 - Dr. B. Durga Prasad suggested removing engine fundamentals since the students already study the same in thermodynamics. Instead, he suggested keeping steering systems, transmission systems, and other external automobile-related topics.
 - Mr. Anand Swaroop Donepudi and Mr. Kashinath M Patnasetty suggested including suspension systems also under this subject.
 - All suggestions given by the members were implemented.
38. 20ME112 CAD-CAM:
- Dr. Anantha Raman L. has presented the syllabus for CAD-CAM.
 - Mr. Kashinath M Patnasetty suggested doing 3D modeling and machining simultaneously using soft materials like Aluminium.
 - Mr. Kashinath M Patnasetty asked whether modeling and simulation happen using a 3d STL file or 2D manual machining.



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- Dr. Anantha Raman L. explained CAD/CAM theory and CAD/CAM labs are different and no STL export/import machining facility is available. CNC operations are done separately.
 - No changes are required in this subject.
39. 20ME113 Automation and Robotics:
- Dr. Anantha Raman L. has presented the syllabus for Automation and Robotics.
 - The syllabus is good. No changes are required.
40. 20ME114 Machine Learning for Mechanical Engineering:
- Dr. Anantha Raman L. has presented the syllabus for Machine Learning for Mechanical Engineering.
 - Mr. Anand Swaroop Donepudi suggested including machine learning in the cloud. Also, he suggested including applications under each unit.
 - Mr. Kashinath M Patnasetty suggested delivering this subject as practical / lab rather than theory which students can do self-study.
 - All suggestions given by the members were implemented.
41. 20ME210 CAD-CAM Laboratory:
- Dr. Anantha Raman L. has presented the syllabus for the CAD-CAM laboratory.
 - The syllabus is good. No changes are required.
42. 20ME211 Robotics Laboratory:
- Dr. Anantha Raman L. has presented the syllabus for the Robotics laboratory.
 - The syllabus is good. No changes are required.
43. 20ME212 Engineering Metrology and Measurements Laboratory:
- Dr. Anantha Raman L. has presented the syllabus for Engineering Metrology and Measurements laboratory.
 - Mr. Kashinath M Patnasetty asked whether CMM machines are available. He suggested arranging video lectures / industrial visits to have good knowledge of CMM machines.
 - The syllabus is good. No changes are required.
44. 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 semesters.
 - Mr. Kashinath M Patnasetty suggested promoting operations management subjects that will improve employability.
45. Skill Oriented Courses (SOC):
- Dr. Anantha Raman L. has presented the list of subjects to be offered as skill-oriented courses.
46. 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.



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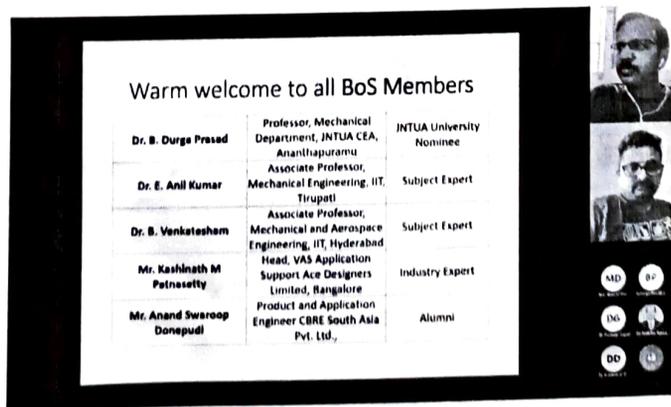
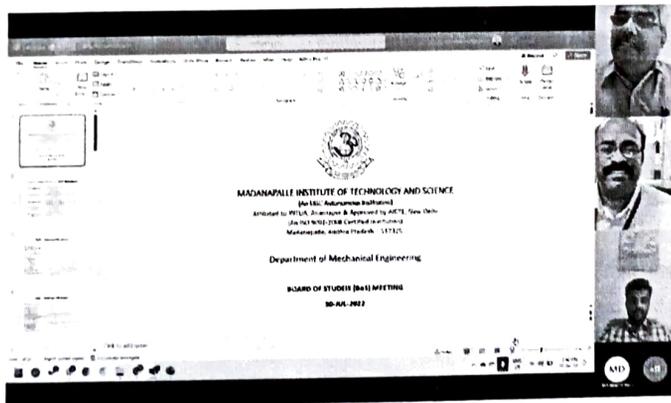
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- Mr. Kashinath M Patnasetty suggested including torque wrenches in any lab and explained their importance in industrial applications.
 - Dr. Anantha Raman L. agreed to include it as a tool study experiment in the engineering workshop.
47. Dr. Anantha Raman L. explained the credits distribution semester-wise and category-wise to all the members.
 48. Dr. Anantha Raman L. presented the department's vision and mission.
 49. Mr. Kashinath M Patnasetty suggested changing the vision statement beginning as "To be a preferred center of excellence"
 50. Dr. M. Lakshmana Rao concluded the meeting and thanked all the members for attending and contributing to the improvement of the curriculum and syllabus.
 51. The revised subject-wise syllabus of all 3-1 & 3-2 subjects has been attached with the minutes for reference.
 52. A few screenshots of the online meeting are displayed below:





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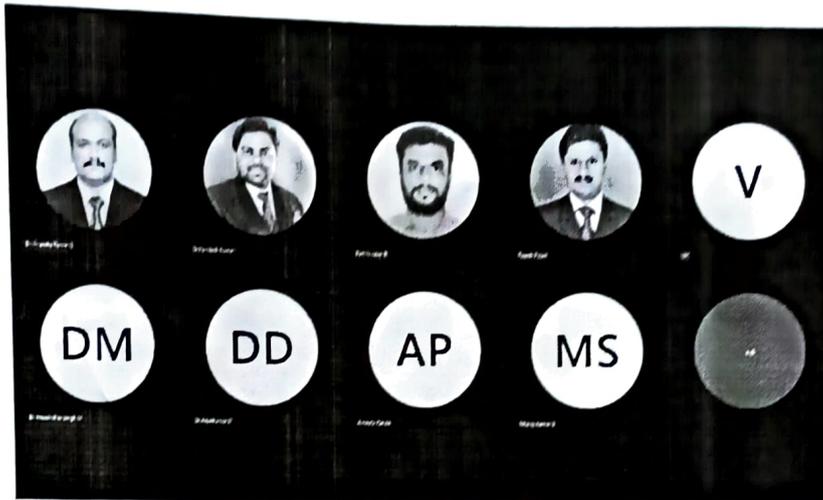
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R20- 3rd Year 1st Semester Course Structure

III Year 1st Semester

S. No.	Category	Course Code	Course Title	Hours Per Week			Credits
				L	T	P	
1	ME	ME66105	Survey of Machine Elements	2	0	0	2
2	ME	ME66110	Manufacturing Technology II	2	0	0	2
3	ME	ME66111	Heat Transfer	2	0	0	2
4	SE	ME66112	Professional Practice	2	0	0	2
5	ME	ME66113	Manufacturing Technology II	2	0	0	2
6	ME	ME66114	Laboratory	0	0	2	1.5
7	ME	ME66115	Thermal Engineering Laboratory	0	0	2	1.5
8	SE	ME66116	Professional Practice	2	0	0	2
9	ME	ME66117	Quality Management	2	0	0	2
10	ME	ME66118	Business Mathematics I*	0	0	2	1.5
Total				16	0	12	21.5

* If Monthly Examinations are conducted, the total credits will be 20.00.

Credits Distribution

Year	Semester	Electives	Core	Engineering	General	Self	Industry	Open	Professional	Project	Total
I	Semester 1-1	3	2.5	8							19.5
	Semester 1-2	1	2.5	10							19.5
II	Semester 2-1	3	3	3	13.5	2	0				21.5
	Semester 2-2	3	3	3	13.5	2	0				21.5
III	Semester 3-1				14	2	0	3	3	1.5	21.5
	Semester 3-2				13.5	2	0	3	3	1.5	21.5
IV	Semester 4-1	3				2		5	9	3	23
	Semester 4-2									1.7	12
TOTAL CREDITS (if category wise)		10	23	21	52.5	10	0	12	15	16.5	160
CATEGORY WISE DISTRIBUTION %		6%	14%	13%	33%	6%	0%	8%	9%	10%	



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Approval:

The above-mentioned meeting minutes have been approved by the following members of the Board of Studies (BoS).

Sl. No.	Member Name	Designation	Signature
1.	Dr. C. Yuvaraj	Professor & Head of the Institution, MITS	
2.	Dr. M. Lakshmana Rao (BoS - Chairman)	Professor & Head of the Department, ME	
3.	Dr. P. Ramanathan	Vice Principal Academics, MITS	✓
4.	Dr. B. Durga Prasad (JNTUA University Nominee)	Professor, Mechanical Department, JNTUA CEA, Ananthapuramu.	Approval via email
5.	Dr. E. Anil Kumar (Subject Expert)	Professor, Mechanical Engineering, IIT, Tirupati.	Approval via email
6.	Dr. B. Venkatesham (Subject Expert)	Professor, Mechanical and Aerospace Engineering, IIT, Hyderabad.	Approval via email
7.	Mr. Kashinath M Patnasetty (Industry Expert)	Head, VAS Application Support Ace Designers Limited, Bangalore.	Approval via email
8.	Mr. Anand Swaroop Donepudi (Alumni)	Product and Application Engineer CBRE South Asia Pvt. Ltd.,	Approval via email
9.	Dr. G. Harinath Gowd	Professor & Controller of Examinations-MITS	
10.	Dr. I. Arun	Professor & Research Coordinator-ME	
11.	Dr. Ram Krishna	Assoc. Professor & Head-IIIC-MITS	
12.	Dr. S. Baskaran	Assoc. Professor & IQAC Coordinator-MITS	
13.	Dr. K. V. Nagesha	Assoc. Professor & NBA Coordinator-ME	
14.	Dr. P. Sivaiah	Assoc. Professor & Workshop Incharge-ME	
15.	Dr. R. Prithivi Rajan	Assoc. Professor & Project Coordinator-ME	
16.	Dr. Muralidhar Singh. M	Sr. Assistant Professor & Placement Coordinator-ME	



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17.	Dr. Shince V. Joseph	Assistant Professor & OBE Incharge-ME	
18.	Dr. Pradeep Gupta	Assistant Professor & Mentor-Mentee Coordinator-ME	
19.	Dr. Subodh Kumar	Assistant Professor & ISTE Coordinator-ME	
20.	Dr. Kamlesh Kumar	Assistant Professor & GATE Coordinator-MITS	
21.	Dr. Shanmukhasundaram V. R.	Assistant Professor & Placement Coordinator-ME	
22.	Dr. Suresh Kannan.V	Assistant Professor & Timetable Coordinator-ME	
23.	Dr. Anantha Raman L	Assistant Professor & Academic Coordinator-ME	
24.	Dr. Arun Kumar.D	Assistant Professor & IQAC Coordinator-ME	
25.	Dr. Bageerathan T	Assistant Professor & AICTE 360 Coordinator-ME	
26.	Dr. Satyajit Pattanayak	Assistant Professor	

Dr. M. Lakshmana Rao
BoS Chairman, Professor & Head,
Department of ME – MITS

Head of the Department
Mechanical Engineering
Madanapalle Institute of Technology & Science
MADANAPALLE - 617 325

Copy to

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

Dr. C. Yuvaraj
Principal, MITS

PRINCIPAL
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