



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS)




Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
Recognised Research Center, Accredited by NBA, NAAC for CSE, ECE, EEE, ME & MBA
World Bank funded Institute, Recognised by UGC under the sections 2(f) and 12(B) of the UGC act 1956
Recognised as Scientific & Industrial Research Organization by DSIR of DST


Department of Mechanical Engineering

Date: 23.08.2020

Members of the Board of Studies for the Academic Year 2020-21

S No	Name of the member	Composition as per the UGC – Autonomous guidelines	Designation & Address
1	Dr. T. N. Sreenivasa	Head of the Department concerned (Chairman)	Professor, HOD & Dean, Department of Mechanical Engineering, MITS
2	Dr. G. Harinath Gowd	Subject Expert – Design Specialization	Professor & COE, Department of Mechanical Engineering, MITS
	Dr. P. Suryanarayana Raju	Subject Expert – Thermal Specialization	Professor, Department of Mechanical Engineering, MITS
	Dr. S. Thamizhmanii	Subject Expert – Manufacturing & Production Specialization	Professor, Department of Mechanical Engineering, MITS
3	Dr. Anil Kumar Emadabathuni	Expert in subject nominated by Academic Council	Associate Professor, IIT –Tirupati, anil@iittp.ac.in , 08 77 2500 387
	Dr. B. Venkatesam	Expert in subject nominated by Academic Council	Associate Professor IIT, Hyderabad Venkatesham@iith.ac.in +91 (40) 23016110
4	Dr. N. N. Kishore	One expert to be nominated by the Vice-Chancellor from a panel of six recommended by the college Principal	Professor, IIT, Tirupati. nnk@iitk.ac.in , 0877 2503012
5	Mr. Kashinath M. Patnasetty	Representative from Industry/Corporation sector/allied area relating to placement	Head-VAS-Application Support Group, Ace Designers Limited kashinathp@acedesigners.co.in Mobile:+91 98440 48876
6	Mr. D. Anand Swaroop Kumar	One postgraduate meritorious alumnus to be nominated by the Principal	Product and Application Engineer, CBRE South Asia Pvt. Ltd. ananddonepudi@gmail.com , Mobile: 9962992272.


Deat & HOD,
Mechanical Engineering,
MITS
Dr. T. N. Sreenivasa
Professor, HOD & Dean
Mechanical Engineering
MITS, Madanapalle


Dr. C. Yuvaraj
Professor & Principal
MITS, Madanapalle
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: 29.01.2020


Members of the Board of Studies for the Academic Year 2019-20

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1	Dr. T. N. Sreenivasa	Head of the Department concerned (Chairman)	Professor, HOD & Dean, Department of Mechanical Engineering, MITS
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29.01.20
Dr. T. N. Sreenivasa

Professor, HOD & Dean
Mechanical Engineering
MITS, Madanapalle

Head of the Department
Mechanical Engineering
Madanapalle Institute of Technology & Science
MADANAPALLE - 517 325


Dr. C. Yuvaraj
Professor & Principal
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Department of Mechanical Engineering

Date: 02.05.2018

Members of the Board of Studies for the Academic Year 2018-19

S No	Name of the member	Composition as per the UGC – Autonomous guidelines	Designation & Address
1	Dr. P. Suryanarayana Raju	Head of the Department concerned (Chairman)	Professor & HOD, Department of Mechanical Engineering, MITS
2	Dr. G. Harinath Gowd	Subject Expert – Design Specialization	Professor & COE, Department of Mechanical Engineering, MITS
	Dr. Prasanna Kumar D	Subject Expert – Thermal Specialization	Professor, Department of Mechanical Engineering, MITS
	Dr. S. Thamizhmanii	Subject Expert – Manufacturing & Production Specialization	Professor, Department of Mechanical Engineering, MITS
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4	Dr. N. N. Kishore	One expert to be nominated by the Vice-Chancellor from a panel of six recommended by the college Principal	Professor, IIT, Tirupati. nnk@iitk.ac.in , 0877 2503012
5	Mr. Rajiv Aramadaka	Representative from industry/corporation sector/allied area relating to placement	Academia Programs Specialist - Dassault Systems, aajiv.aramadaka@jds.com , 9900205055,8043067031.
6	Mr. D. Anand Swaroop Kumar	One postgraduate meritorious alumnus to be nominated by the Principal	Product and Application Engineer, CBRE South Asia Pvt. Ltd. ananddonepudi@gmail.com , 9962992272.

Dr. P. Suryanarayana Raju

Professor & HOD
Mechanical Engineering
MITS, Madanapalle

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Mechanical Engineering
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Department of Mechanical Engineering

Minutes of the meeting and Action taken report

of

Board of Studies (BoS)-2020 held on 23rd August 2020, 10:00 AM – 3:30 PM

Agenda:

1. Welcome and Introduction of new members by Dr. T N Sreenivasa, Dean and Head, at 10.00AM
(5 Min)
2. Brief profile of the Department by Dr. T N Sreenivasa, Dean and Head, at 10:05AM (15 Min)
3. Assessment of Programme UG Outcomes and PAC recommendations by Dr. Suryanarayana Raju P, Professor, at 10.20 AM (15Min).
Discussion on attainment and remedial actions, at 10.35AM (15Min)
4. Review of student placements by Dr. Kulmani Mehar, Sr. Assistant Professor, at 10:45 AM (5 Min)
Discussion on Placements and improving them, at 10:50 AM (10 Min)
5. Review of student mentoring program by Dr. V Shankernath, Sr. Assistant Professor, at 11:00 AM (5 Min)
Discussion on mentoring program, at 11:05 AM (10 Min)
6. Review of Department Research Activities, Dr. S Baskaran, Associate Professor, at 11:15 AM (10 Min)
Discussion on department research directions, at 11:25 AM (10 Min)
7. Teaching & Learning, Extra and Co-Curricular activities, and Student Clubs in the Department by Dr. Prasanna Kumar Duvvi, Professor, at 11:35 AM (15 Min)
Discussion T&L and student activities at 11:50 AM (10 Min)
8. Review of student projects and internships by Dr. R. Prithivirajan, Sr. Assistant Professors, at 12:00 PM (5 Min)
Discussion on projects and internships in the Department, at 12:05 PM (10 Min)
9. Review of UG curriculum, IAAB Recommendations and proposed changes by Dr. Uday Krishna Ravella, Associate Professor, at 12:15 PM (25 Min)
Discussion on UG curriculum, at 12:40 PM (50 Min)

BREAK (1:30 PM – 2:00 PM)

10. Review of PG Curriculum and proposed changes by Dr. S Thamizhmanii, Professor, 2:00 PM (20 Min)
Discussion on PG Curriculum - at 2:20 PM (20 Min)
11. Review of plans for Engineering Workshop by Dr. P Naresh, Sr. Assistant Professor, at 2:40 PM (5 Min)
Discussion on Workshop at 2:45 PM (5 Min)
12. Overall Recommendations of BoS by External members, at 2:50 PM (20 Min)
13. Concluding Remarks and Department Road map by Dr. T. N. Sreenivasa, Dean and Head, at 3:10 PM (10 Min)
14. Vote of Thanks by Dr. T.N.Sreenivasa, Professor and Head at 3:20 PM

Resolutions:

1. Greetings from the Chairman, BoS Dr T.N.Sreenivasa
2. Greetings and welcome note by the Principal Dr. C. Yuvaraj
3. Introduction to the Department of Mechanical Engineering by the Dean and HOD, Dr T. N. Sreenivasa
4. Welcoming the BoS members and briefing the affiliations of the external members
5. List of BoS Members
 - i. Dr. N. N. Kishore, Professor, Dept. of ME, IIT Tirupati and JNTU Nominee.
 - ii. Dr. E Anil Kumar Emadabathuni, Associate Professor, Dept. of ME, IIT Tirupati
 - iii. Dr. Venkatesam B, Associate Professor, Dept. of Mechanical and Aerospace Engineering, IIT Hyderabad
 - iv. Mr. Kasinath Patnasetty, Head, VAS Application support, Ace Designers Ltd, Bangalore
 - v. Mr. D Anand Swaroop Kumar, Product and Application Engineer, CBRE South Asia Pvt. Ltd.
6. All the external members of BoS expressed their greetings
7. Dean and HOD presented the profile and legacy of the Mechanical Engineering Department.
8. Dean and HOD presented the highlights of the department, organizational chart at department level, faculty introduction, department committees, SWOC and road map for three years of the department etc.
9. Presentation on process and results of outcome attainments (OBE) by Dr. Suryanarayana Raju P
10. Discussion on Outcome Based Education (OBE)
 - a. Introduction to OBE
 - b. Outcomes of UG programme
 - c. Compliance of curriculum with outcomes
 - d. Assessment of outcomes (COs and POs)
 - e. Results of Assessment and Actions Taken
 - f. Recommendations PAC

- g. Solicitation of Advise
 - h. Seeking guidance on improving the strategies for improving OBE, suggestions to improve PEOs, PSOs, suggestions for improving attainment of outcomes and review of PAC recommendations.
11. Presentation on review of student placements by Dr, Kulmani Mehar
- a. Placements 2020
 - b. Year wise placements
 - c. Placement companies both core and IT
 - d. Action plan for placements
 - e. Career support opportunities
 - f. APSSDC SIEMENS TSDI
12. Presentation on Student Mentoring System by Dr. V Shankernath
- a. Professional guidance
 - b. Career advancement
 - c. Advice on course work
 - d. Responsibilities of mentor
 - e. Role of Head of the Department
 - f. Mentoring activities
 - g. Mentor mentee form and mentor system in Toyota
13. Presentation on Department Research Activities by Dr. S Baskaran
- a. Research highlights
 - b. Funded projects (Major & Minor)
 - c. Consultancy
 - d. Patents
 - e. Student High Action Research Program (SHARP)
 - f. Project laboratories and facilities
 - g. Faculty publications and rewards
 - h. Intellectual meet
 - i. Seeking suggestions to improve research activities like funding projects, collaborative research, patent and consultancy.
14. Presentation on Teaching-Learning Process and Student Activities by Dr. Prasanna Kumar Duvvi
- a. Teaching-Learning Process
 - b. Exam evaluation scheme
 - c. Mechanical Engineering Laboratories
 - d. Student clubs
 - e. Student Co-Curricular and Extracurricular Activities

15. Presentation on Review of Internships and Projects by Dr. R Prithivirajan

- a. Projects and Internships Process
- b. In-house projects
- c. Full Semester Internships
- d. International Internships
- e. Quality of projects & Theses
- f. Outcome from projects and internships

16. Presentation on Review of UG Curriculum and proposed changes by Dr. Uday Krishna Ravella

- a. Curriculum is designed based on outcome based education, as recommended by NBA.
- b. Curriculum preparation, credit distribution
- c. Curriculum structure of I and II years
- d. Structure and syllabus of all III and IV year courses including Discipline Electives and Open Electives.
- e. Discussion on a new course 'Engineering Analysis' in III Year with a new regulation and L-T-P-C distribution of 2-0-2-3.
- f. Introducing a comprehensive handbook which could be used in lecture, tutorials as well as exams for all analytical courses
- g. Open Elective-I in III Year I semester, Discipline Elective-II in III Year II Semester and Open Elective-III in IV Year I semester, will be offered through MOOCS platforms.
- h. CAD/CAM course in III Year II Semester is also proposed to be offered with an L-T-P-C distribution of 2-0-2-3 by integrating theory and practical sessions. Changes made in syllabus: Removed two units from the R14 syllabus and introduced more hands-on topics like generating and loading the code in a CNC machine and machining the component.
- i. Thermal Engineering in III Year II Semester is also proposed to be offered with an L-T-P-C distribution of 2-0-2-3 by integrating theory and hands-on problem solving using computer programming with MATLAB/Python.
- j. Proposed Discipline Elective-II, III and Open Elective-II courses
- k. Introducing Mechanical Skills Laboratory and Robotics Laboratory
- l. Introducing virtual laboratory with zero credit
- m. Scheme for IV Year I Semester:
 - i. Engineering metrology in IV Year I Semester proposed to be offered with an L-T-P-C distribution of 2-0-2-3.
 - ii. Introducing a new course Machine Learning in Mechanical Engineering with an L-T-P-C distribution of 2-0-2-3.
 - iii. Proposed Discipline Elective-IV, V and Open Elective-III courses
 - iv. Proposed Thermal Engineering, Mechatronics Lab and Project Work-I

- n. Scheme for IV Year II Semester:
- i. Proposed Project Work-II and Discipline Elective-V1 and Open Elective IV courses
- o. Presented the list of Discipline Electives offered in different streams such as Manufacturing, Thermal, Industrial Engineering, Energy Science & Technology, Design Engineering.
- p. New courses will be added to Discipline Electives as and when required based on the evolving needs of the industry.
- q. Offering new elective courses on industrial & automobile battery systems, Solar energy for process heat & power generation, energy auditing, Design and analysis of welded structures, design of pressure vessels & Piping Systems, Internet of Manufacturing things, Industrial organization & management, Tool and Die design, Industrial Corrosion & Tribology and Design Thinking & Innovation.
- r. Presented the list of Open Electives offered, Open Electives-I & III are offered on MOOCS platform
- s. Presented comparison of proposed MITS R18 Vs AICTE model curriculum.
- t. Introducing Minor programs in Mechanical Engineering: proposed courses for Minor degrees in Electrical Vehicles, Energy Engineering, Mechatronics, Nano Technology, Digital Manufacturing and proposed structure for Engineering Entrepreneurship.
- u. Only those students with CGPA 8 and above (for General Category) and CGPA 7 (for SC/ST) are eligible to apply for Minor programs and to get Minors degree, student should earn 20 credits: 6 Courses of 3 Credits each & One Lab with 2 Credits.
- v. Introducing Honors program in Mechanical Engineering: proposed courses offered for Honors Program, 5 courses of 3 Credits each and Mini projects 5 Credits
- The student has to opt two courses out of four in III B.Tech. I Semester. Similarly, has to opt in III B.Tech. II Semester
 - The student has to opt one course out of four in IV B.Tech I Semester
 - Proposed one mandatory project work in IV B.Tech I Semester

17. Dr. Uday Krishna Ravella presented recommendations of IAAB and changes made in curriculum post IAAB meeting.

18. Suggestions made by Dr. N. N. Kishore

- i. Provide more freedom to the students so that they have more choice in selecting the elective courses.
- ii. For so many courses Tutorial is very important. So, incorporate for some courses.
- iii. Introduce vibrations lab along with a theory course on the topic.
- iv. Train students with theory and problems to qualify in GATE.
- v. Composite materials can be offered as open elective.

19. Suggestion made by Dr. E Anil Kumar Emadabathuni
 - i. Discussion on regulations of Minor programs.
20. Suggestion made by Mr. D Anand Swaroop Kumar
 - i. Interchange mechanical skill lab with manufacturing technology lab so that students have the required theoretical knowledge before starting the lab.
21. Suggestions made by Dr. Venkatesam B
 - i. Incorporate mechanical instrumentation laboratory
 - ii. Offer 3D printing course as open elective
22. Suggestions made by Mr. Kasinath Patnasetty
 - i. Record the student engagement in curricular activities using daily activity reports.
 - ii. Create groups with half of the students from rural and half from urban background and give tasks to them and analyse their analytical skills.
 - iii. Form a think tank with department faculty to discuss the impact of Artificial Intelligence on future of conventional Mech. Engg.
23. Presentation on Review of PG Curriculum and proposed changes by Dr. S Thamizhmanii
 - a. Structure of R 20- AMS curriculum
 - b. Discipline Electives
 - c. Seeking suggestions on the courses mentioned in the presentation
 - d. Placement of the courses is accepted by the IAAB members
 - e. Suggestions for improvement
24. Suggestion made by Dr. N. N. Kishore
 - i. Offer PG open elective courses to UG students
25. Suggestion made by Mr. Kasinath Patnasetty
 - i. Give a chance to students to interact with industry and society to identify needs of industry and society and maintain a library with the reports on such projects.
26. Presentation on Review of Plans for Engineering Workshop by Dr. P Naresh
 - a. History of Workshop
 - b. Trades available in workshop
 - c. Proposed new trades: Changing the syllabus according to the new trends/current trends
 - i. House Wiring
 - ii. Computer Hardware
 - iii. Introduction to Automation
 - d. Proposed plans for modernization of central workshop
 - i. Apprentice Training Activities: These apprenticeship trainers are engaged with the approval of Regional Directorate Apprenticeship Training (RDAT) for ITI students and board of apprenticeship training for diploma students.

- ii. Certificate will be provided after successful completion of the training program
 - iii. Socially relevant projects
 - iv. Central Fabrication Facility (CFF)
27. Suggestion made by Mr. D Anand Swaroop Kumar
- i. Include cloud storage technology in workshop.
28. Suggestions made by Dr. N. N. Kishore
- i. Implement hands on experience to I B.Tech. students by giving projects during induction program
 - ii. Encourage final year students to do interdisciplinary projects
29. Suggestions made by Mr. Kasinath Patnasetty
- i. Give small examples on industry related problems and challenges to introduce industry terminology in workshop
 - ii. Adopt an ITI college.
 - iii. Encourage students to work on some interdisciplinary projects
30. Suggestions made by Dr. Venkatesam B
- i. Encourage students to form interdisciplinary teams for doing projects and provide facilities and support to them for participating in competitions.
 - ii. Add introduction to Mechatronics.
 - iii. In labs encourage the individual students to record video of experiment conduction along with the description of apparatus, experimental procedure and its applications, and faculty should use these videos in evaluation.
31. Suggestion made by Dr. E Anil Kumar Emadabathuni
- i. Provide awareness to students on emerging trends in future
32. Suggestion made by Dr. N. N. Kishore
- a. Introduce projects and term papers for as many courses as possible.
 - b. Conduct annual meetings with curriculum committee to assess the continuous process of curriculum revision and to address any required corrective actions.
33. Concluding remarks by external members of BoS
34. Dean requested BoS members for approval to include student members into BoS as observers.
35. Vote of thanks and closing points by Dean and HOD Dr. T N Sreenivasa and expressed gratitude to external members of BoS on behalf of Mechanical Engineering Department, MITS for their presentations and valuable suggestions.

Action Taken Report

1. The students should be provided the option to take specialized Open Electives which would lead to a minor in a particular program (as exercised in IITs) rather than forcing the student to take extra 20

credits which requires spending an additional semester in college to complete the 20 credits. (Dr. Kishore)

- **Action Taken:** May not be possible because of JNTUA's regulatory mandate.

2. Increase the OE credits from 12 to 18 as per the AICTE recommendation. This will also give more freedom to the students in course selection and could potentially help students in getting minor degrees. Reduce the number of courses/credits for the minor program to around 12, as exercised in IIT's (Dr. Kishore & Dr. Anil).

- **Action Taken:** May not be possible because of JNTUA's regulatory mandate.

3. Tutorial hour should be added to all analytical courses like Machine Design, Mechanics of Solids etc. (Dr. Kishore)

- **Action Taken:** Tutorials were added for all analytical courses including in DE's where necessary.

4. Some experiments in stress analysis and vibrations should be included in the curriculum. Vibrations subject is essential for mechanical engineering and it may be made a mandatory course. (Dr. Kishore)

- **Action Taken:** Will be considered for R-22. Vibrations course is already offered as DE in R18. Few experiments are already added in the Dynamics Lab, offered in 2nd year.

5. To get the full benefit of the mechatronics lab, it is necessary to include the corresponding theory as well. (Dr. Kishore)

- **Action Taken:** Course is already available as a DE. For R-22 it will be considered.

6. Machine learning course should be added to the curriculum. (Dr. Kishore)

- **Action Taken:** Course is added.

7. Inherently multi-disciplinary courses like Operations Research and Composite materials can be offered through OE rather than DEs. (Dr. Kishore)

- **Action Taken:** Will be considered for R-22.

8. Interchange Mechanical skills laboratory with Manufacturing Technology Laboratory (Mr. Anand Swaroop).

- **Action Taken:** Will be considered for R-22.

9. Disaster management subject should be included in the curriculum (Mr. Anand Swaroop).

- **Action Taken:** Course is offered in Audit Mode.

10. Laboratory should follow in the next semester after the corresponding theory course. There should be consistency in the credits allotted for laboratory courses. (Dr. Venkatesham)

- **Action Taken:** Will be considered for R-22.

11. Make room for instrumentation theory, by making all labs as 1 credit. (Dr. Venkatesham)

- **Action Taken:** The course was offered in R-14. It was let go, to provide more room for novel courses.

12. Additive manufacturing can be offered as an OE for the benefit of the students from other departments.
(Dr. Venkatesham)
- **Action Taken:** For R-22 it will be considered.
13. Appropriate policies and procedures for exiting from a minor program should be made available to the students clearly stating the type of partial recognition that will be awarded for the completed courses under the minor curriculum. (Dr. Venkatesham)
- **Action Taken:** Needs to be further discussed with Academic Counsel, for regulatory changes.
14. Daily activity report for students can be implemented using an in-house software or a commercial one to measure, monitor and analyze the student engagement and involvement in the college related activities and correlate it with their performance. (Mr. Kashinath)
- **Action Taken:** Will be incorporated.
15. More inclusive activities, which do not over-emphasize on the English skills, should be given to students to increase their confidence by allowing them to focus on their problem solving skills using their own mother tongue, at least in the initial stages. This way students can feel accepted and appreciated for their talents first and with that confidence can progress to learn language skills as well. (Mr. Kashinath)
- **Action Taken:** Will be incorporated.
16. PG Electives should be open to UG students as well. (Dr. Kishore)
- **Action Taken:** Will be considered for R-22, based on the recommendations of JNTUA.
17. PG Projects related to industry and society must be encouraged and their reports should be stored in the department library and a copy should be provided to the industry where the student conducted his study. Students should interact with the industry and society to come up with relevant ideas and their choice of pursuing a particular idea or a project based on those interactions should be encouraged. (Mr. Kashinath)
- **Action Taken:** Will be Implemented in the Dept.
18. Cloud storage should be introduced in Workshop course along with other trades (Mr. Anand Swaroop).
- **Action Taken:** Will be done by R-22. Need to develop Resources (both human and infrastructure, meanwhile)
19. Support and encouragement should be provided to the students to empower them to publish their innovations done at the workshop as a paper (Mr. Anand Swaroop).
- **Action Taken:** Will be implemented.
20. Small projects like assembling and disassembling a bicycle and building a small airplane model should be encouraged during the induction program/Introduction to Engineering course. (Dr. Kishore)
- **Action Taken:** Will be incorporated.

21. Aesthetics, quality, performance, application, reliability and ethical values should be inculcated in the students' mind-set when they are building their projects. UG Student projects should be relevant to the local society needs. (Mr. Kasinath)
 - **Action Taken:** Will be incorporated.
22. Adopt a local ITI/ Polytechnic college and share our best practices, innovations with the ITI students (Mr. Kasinath)
 - **Action Taken:** Can be implemented.
23. Award prizes for the best 1st year workshop projects and/or projects done during induction program, on important events like Independence Day or Annual Day. (Dr. Venkatesam)
 - **Action Taken:** Will be incorporated.
24. Demo of Mechatronics, 3D printing, CNC should be included in the workshop curriculum. (Dr. Venkatesam, Dr. Anil)
 - **Action Taken:** Already partially incorporated.
25. Interdisciplinary projects should be encouraged in all years and guides could be from both the departments (Dr. Kasinath, Dr. Kishore)
 - **Action Taken:** Already Encouraged.
26. Engineering Equation Solver is suggested as an alternative to Python. (Dr. Anil)
 - **Action Taken:** Being an open source free software, Python is gaining popularity in industry. Also, it is the language of choice for Machine Learning which is also included in the curriculum.
27. For lab component of integrated software related courses, the students could be tested based on group projects instead of a final exam. (Dr. Anil, Dr. Venkatesham)
 - **Action Taken:** May not be possible because of JNTUA's regulatory mandate.
28. Do not give the code template in the exam for software related integrated courses. (Dr. Venkatesam)
 - **Action Taken:** Writing an algorithm/ code during examination might not be totally feasible.
29. Student Video recordings describing their experiment or project can be part of the project/laboratory assessment. (Dr. Venkatesam)
 - **Action Taken:** Will be implemented, at least for one Lab in each Semester.
30. To make the courses more interesting and engaging, term papers and projects should be made part of as many courses as possible. (Dr. Anil, Dr. Venkatesham)
 - **Action Taken:** Will be considered in due course following Departmental discussions.
31. One or Two good students can be invited as special invitees (from 3rd., 4th Year B. Tech & one from PG) during future BOS Meetings. (All)
 - **Action Taken:** Approved.

Approvals of BOS:

1. Proposal for inclusion of new trades to Engineering Workshop is appreciated and approved.
 - **Recommendation Status:** Approved
2. Curriculum of B.Tech is well discussed and approved.
 - **Recommendation Status:** Approved
3. Format, structure, and syllabus of Honors in Mechanical Engg. is approved.
 - **Recommendation Status:** Approved
4. Minors in Mechanical Engineering in following streams are well appreciated and recommended:
 - a) Electric Vehicles (Structure and Syllabus)
 - b) Mechatronics (Structure and Syllabus)
 - c) Nanotechnology (Structure and Syllabus)
 - d) Energy Engineering (Structure and Syllabus)
 - e) Digital Manufacturing (Structure and Syllabus)
 - f) Engineering Entrepreneurship (Structure)

It is recommended to add project component to the Minor, in 4th Year 1st Sem.

 - **Recommendation Status:** Approved
5. M. Tech AMS curriculum is discussed and recommended.
 - **Recommendation Status:** Approved

Appreciations of BOS:


1. Mentoring practices of Dept. are applauded.
2. Placement activities in the Dept. are appreciated.
3. Research activities in the Dept. are also upheld, with few suggestions to promote interdisciplinary research activities.
4. Teaching & Learning practices are welcomed.
5. Student Project promotions and related activities are well appreciated.
6. Dept. Road Map for next 3 years is appreciated and approved.
7. Dept. SWOC Analysis is discussed.

Dear Sir

I really appreciate your encouragement and involvement during our BoS held on 23 Aug 2020. All suggestions and feedback given during the meeting will be implemented with the approval of Academic Council (AC), however I am herewith enclosing the draft copy of the MoM and action taken report for your final feedback and approval, same will be submitted for ratification / vetted in the AC meeting on 31 Aug 2020.

Sir, line of confirmation is anticipated from all the BoS members.

Regards,



**Dean & HOD,
Mechanical Engineering,
MITS.**
Head of the Department
Mechanical Engineering
Madanapalle Institute of Technology & Science
MADANAPALLE - 517 325

Dr. T. N. Sreenivasa

Dear Sir:

The BOS meeting was conducted very well and all the issues were all well taken care.

I approve the minutes.

with regards

Dr. N. N. Kishore

Dear Sir,

I appreciate the hard work and efforts of the whole team. It was a good learning curve with everyone in the session sharing the points.

All points discussed are very well collated and I approve the BoS recommendations for implementation.

Regards...

Mr. D Anand Swaroop Kumar

Dear Sir

It was nice to be part of your BOS meeting. The draft of minutes of BOS meeting seems to be fine with, Hence I approve it for further action.

Thanks and regards

Dr. E Anil Kumar Emadabathun

Dear Sir,

Meeting conducted on 23/8/2020 was well planned and it was a great opportunity for me to have mindshare with expertise team. Your team collaborative work is really appreciable. All points discussed are very well collated and I approve the BoS recommendations for implementation.

With best regards

Mr. Kasinath Patnasetty


98440 48876

Dear Professor Sreenivasa,

I approve the BOS recommendation and Action Taken report.

Thanks & Regards

Dr. Venkatesam B


**Dean & HOD,
Mechanical Engineering,
MITS.**
Head of the Department
Mechanical Engineering
Madanapalle Institute of Technology & Science
MADANAPALLE - 517 325

Dr. T N Sreenivasa

Professor, Dean &
Head of the Department,
Mechanical Engineering, MITS

Madanapalle Institute of Technology & Science

Madanapalle

Department of Mechanical Engineering

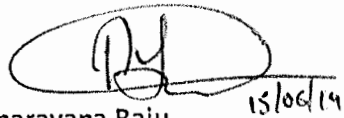
BOARD OF STUDIES MEETING

Minutes of The Meeting

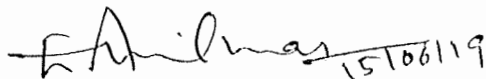
Date: 15th June, 2019

Venue: Board Room, MITS-Madanapalle

Timings: 11.00 AM to 17.00 PM



Dr. P Suryanarayana Raju
Professor & Head
Department of Mechanical
MITS, Madanapalle



Dr. Anil Kumar Emadabathuni
Associate Professor
Head of the department
Mechanical Engineering
IIT Tirupati
anil@iittp.ac.in
08772500387



Dr. D Anand Swaroop Kumar
Product & Application Engineer
CBRE South Asia Pvt. Ltd.
ananddonepudi@gmail.com
9962992272

Head of the Department
Mechanical Engineering
Madanapalle Institute of Technology & Science
MADANAPALLE - 517 325

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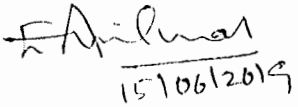

Department of Mechanical Engineering

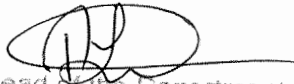
BoS Meeting – 15th June 2019

Agenda:

1. Discussion and approval of B.Tech second year curriculum and syllabus
2. Discussion of tentative structure and syllabus for 3rd and 4th year of B.Tech R18 regulation
3. Discussion and approval of 2nd year syllabus of M.Tech AMS R18 regulation

Board Of Studies (External Members)

Role	Name and Designation
Subject Experts	Dr. Anil Kumar Emadabathuni Associate Professor, IIT, Tirupati.  15/06/2019
	Dr. B. Venkatesam, Associate Professor IIT, Hyderabad <i>Absent</i>
University Nominee	Dr. N. N. Kishore, Professor, IIT, Tirupati. <i>Absent</i>
Industry Expert	Mr. Rajiv Aramadaka, Academia Programs Specialist Dassault Systemes <i>Absent</i>
Alumni	Mr. D. Anand Swaroop Kumar Product and Application Engineer CBRE South Asia Pvt. Ltd.  15/6/19


Head of the Department
Mechanical Engineering
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MADANAPALLE - 517 325.

BOS members were given handouts that included syllabus prepared as per the AICTE and APSCHE new norms.

The following items are going to be placed before the BOS members for consideration and suggestions

1. B. Tech. – Mechanical Engineering – (Semester I and II) Course structure and syllabus and also III and IV year course structure.
2. M. Tech. – Mechanical Engineering – I and II year (Semester I and II) Course structure & syllabus.

The minutes of the meeting were recorded and is as mentioned below

A. OVERALL STRUCTURE

HOD presented the brief description on the proposed Ilyr (Sem I and II) course structure and syllabus prepared as per the norms of APSCHE. The following suggestions were made on the overall course structure (II, III and IV year)

- a. In order to choose a proper course from the list of open electives, mentor guidance plays important role and the mentor should give proper guidance to the students.
- b. Open electives may be attested by the mentor in the registration form during the start of the semester.
- c. More courses may be included as audit courses
- d. Subject code 18ME114 (Heat Transfer) may be moved to 3-1 semester and 18ME112 (Applied Thermodynamics) may be moved to the 3-2 semester.
- e. Take care of formatting issues throughout the syllabus
- f. Open elective courses may also be chosen from the same department courses also

B. SYLLABUS

- a. 18ME103 ENGINEERING MECHANICS

Approved as it is

- b. 18ME104 BASIC THERMODYNAMICS

- Swap Unit IV with Unit V
- Rename “Properties of pure substance” as “Thermodynamic Cycles”
- Rename “Properties of gas mixture and psychometry” as “Thermodynamic Relations and Mixture of Gases”
- Take care of formatting issues

- c. 18ME102 DESIGN THINKING AND PRODUCTION INNOVATION

- L-T-P CHANGE: from 3-0-0 to 2-1-0
- Prof. Krishnaiah from IIT-Tirupati may be consulted for further suggestions and advices
- Faculty may be trained on how to handle this subject
- Tutorial sessions emphasized



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d. 18ME105 MATERIAL SCIENCE AND ENGINEERING

Approved as it is

e. 18ME201 MATERIAL SCIENCE AND ENGINEERING LABORATORY

- Check on the availability of the equipment
- Synthesis of Powder Metallurgy based samples may be moved to Manufacturing Process Laboratory
- Reframe experiments as “Study of microstructure of powder metallurgy based samples and Metal Matrix Composites”

f. 18ME202 3D MODELLING LABORATORY

- Add Reference text book
- Similar suggestion may be extended to all the practical courses

g. 14ME106 – **MECHANICS OF SOLIDS**

Approved as it is

h. 14ME107 – **MANUFACTURING PROCESS**

Approved as it is

i. 14ME108 – **THEORY OF MACHINES**

- In the Unit – III include “Governors”

j. 14ME109 - **FLUID MECHANICS AND FLUID MACHINERY**

Approved as it is

k. 14ME203 - **MECHANICS OF SOLIDS LABORATORY**

- Add text book in the references part
- Theory on springs need to be covered in the “Engineering Mechanics” of “Mechanics of Solids”


l. 14ME204 – **DYNAMICS AND ELECTRICAL MACHINES LABORATORY**

Approved as it is

m. 14ME205 - **MANUFACTURING PROCESS LABORATORY**

Include experiments on synthesis of samples via powder metallurgy route
Add text books in the reference part.

C. M.TECH Structure & Syllabus


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4/5

- Include one more subject on “Joining of Materials” in II – I semester.
- DFMA syllabus must be revised with emphasis on manufacturing of designing components
- Syllabus from IIT – Tirupati may be referred for the aforementioned.
- Remove “Optimization Research” and replace it with advanced operation research in II – I semester.
- Suitable alternative may be chosen for 180EP306 “Waste to Energy”

D. General Comments

All the four mandatory non- credit courses may be elective courses (mandatory non – credit electives). Students can complete these four mandatory courses at the time of their choice.

SL. Number	Name	Signature




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 Madanapalle Institute of Technology & Science
 MADANAPALLE - 517 325.

5/5

BOARD OF STUDIES MEETING MINUTES

Meeting held on 30 June 2018 at MITS Campus
Meeting commenced at 11AM

- | | |
|------------------------------------|--|
| Dr. P Suryanarayana Raju | Professor and Head,
Department of Mechanical,
MITS, Madanapalle |
| Dr. Anil Kumar Emadabathuni | Associate Professor,
IIT, Tirupati.
anil@iittp.ac.in ,
08 77 2500 387 |
| Dr. B. Venkatesam, | Associate Professor
IIT, Hyderabad,
Venkatesham@iith.ac.in
+91 (40) 23016110 |
| Mr. D. Anand Swaroop Kumar | Product and Application Engineer
CBRE South Asia Pvt. Ltd.
ananddonepudi@gmail.com ,
9962992272. |


Head of the Department
Mechanical Engineering
Madanapalle Institute of Technology & Science
MADANAPALLE - 517 325

B. Venkatesam *Anil Kumar* *ASB*

BoS Members were given handouts that included syllabus prepared as per the AICTE New norms.

The following items are going to be placed before the BoS members for consideration and suggestions

- I. B.Tech – Mechanical Engineering – 1 Year (Semester I & II) Course structure & Syllabus and II, III, IV Year course structure.
- II. M.Tech – Mechanical Engineering–I & II Year (Semester I & II) Course structure & Syllabus

1. ENTIRE STRUCTURE COMMENTS

1. BoS members suggested to consider credits for Program Core and Program Electives together.
2. Suggested to consolidate KoM & DoM, MD-I & MD-II as one subject respectively and incorporate the subject in-depth in electives.
3. BoS members reminded told reducing credits from 180 to 160 is to give more time to students for self-learning.
4. Suggested to incorporate integrated course structure, i.e. Theory + Lab. Theory shall be taught first followed by lab. They also suggested to look after logistics before implementing that integrated course.

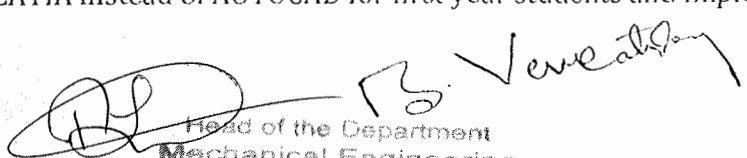
2. SYLLABUS COMMENTS

A. 1 Year

- **Induction program, Holistic development activities and virtual laboratory.**
Approved with the existing syllabus

Semester - I

- **18MAT101 Engineering Calculus**
 1. Unit 1 & Unit 2 titles should be different (Chapter names to be updated)
 2. BoS Members suggested to give names to topics as specific instead of generic names which will help the external person to set the question paper.
- **18PHY101 Engineering Physics**
 1. Unit 4 title name should be replaced with the name 'Electro Magnetism and Optics'
 2. Replace the topics in unit 4 (from diffraction to end of the chapter) with introduction to Electro Magnetism.
 3. BoS Members suggested to consult with physics department about the feasibility on suggestion made.
- **18ME101 Engineering Graphics**
Approved with the existing syllabus
 1. BoS Members suggested to take opinion from other departments to incorporate CATIA instead of AUTOCAD for first year students and implement accordingly.


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- **18CSE101 Python Programming**
Approved with the existing syllabus
- **18PHY201 Physics Laboratory**
Approved with the existing syllabus
- **18CSE201 Python Programming Laboratory**
Approved with the existing syllabus
- **18ME201 Engineering Workshop**
FOR MECHANICAL AND CIVIL

1. Update objectives and course outcomes according to the suggestions given below by BoS members.
2. **Group A:** Include introduction to 3D - Printing as experiment 13.
Demo on 3D - Printing at the end of experiment 13.
3. **Group B:** Rewrite the name of experiment 4 in a elaborative way.

FOR ECE AND EEE

1. **Group A:** Remove experiment 3 & experiment 6 and replace them with demo on 3D-Printing & CNC machine.
2. Update objectives and course outcomes accordingly
3. Textbooks: Verify and correct the author name of text book 1.

Semester - II

- **18ENG101 English for Professional Purposes**
Approved with the existing syllabus
- **18MAT107 Linear Algebra, Complex Variables and Ordinary Differential Equations**

1. Change course name
2. Separate paragraph from Laplace Transform till end of chapter

- **18CHE101 Engineering Chemistry**

1. BoS members suggested to keep the entire Chapter V into three paragraphs
Paragraph 1: From Cement Materials to pour point (Engineering materials)
Paragraph 2: From Nano Materials to SEM (Nano Characterization)
Paragraph 3: Remaining contents (Applications of Nano Materials)
2. **Reference books:** Make 'C' capital in Engineering Chemistry for book 4
Make the formatting consistent
3. In Unit III BoS members suggested to replace the name of 'Magnetic Resonance Imaging' topic to 'Nuclear Magnetic Resonance & Magnetic Resonance Imaging'.

- **18EEE101 Basic Electrical Engineering**

1. BoS members suggested to include theory more in at least any three units.

- **18CSE102 C Programming and Data Structures**

Approved with the existing syllabus

- **18CHE201 Engineering Chemistry Laboratory**

Approved with the existing syllabus

- **18EEE202 Electrical Engineering Laboratory**
Approved with the existing syllabus
- **18CSE202 C Programming and Data Structures Laboratory**
Approved with the existing syllabus

B. II, III & IV Year tentative course structure

Comments by BoS members

1. Dr Venkatesam suggested lab courses may be offered in the following semester after the corresponding Theory subject.
2. Dr Venkatesam recommended that credits in II year I semester are little high. Suggested to rework in having uniform credit distribution across the semesters (3-6 Semesters).
3. Dr. Anil Kumar E suggested to introduce Fluid Mechanics lab in an earlier semester in the curriculum.
4. Dr Venkatesam also recommended to explore the possibility of reshuffling thermal & hydraulics course and corresponding lab with DE between 7 and 6 semesters.
5. Dr. Anil Kumar E suggested to rename IC engines lab as Applied Thermal Engineering lab.
6. Dr. Anil Kumar E recommended Fluid mechanics syllabus to be revisited for possible condensation and adding topics on Fluid Machinery.

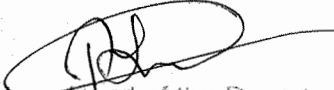
General COMMENTS

1. Dr. Anil Kumar E and Dr. B Venkatesam collectively suggesting in have few more courses into mandatory courses by combining two courses like KoM and DoM as Theory of Machines so that another course can be added.

C. COMMENTS ON M.TECH CURRICULUM


1. Dr Venkatesam suggested to change the course name 'Rapid Prototyping' to 'Additive Manufacturing'.
2. Dr Venkatesam recommended to incorporate Numerical Methods for Manufacturing as a mandatory course. (syllabus available with IIT Hyderabad for M.Tech IMD)
3. Also, CAE Lab may be introduced as follow up lab course for the Numerical Methods for Manufacturing theory course.

HoD thanked all the members for the active participation.


Head of the Department
Mechanical Engineering
Madanapalle Institute of Technology & Science
MADANAPALLE - 517 325.

S.No	Name
1.	Dr. P Suryanarayana Raju
2.	Dr. Anil Kumar Emadabathuni
3.	Dr. B. Venkatesam,
4.	Mr. D. Anand Swaroop Kumar

Signature
Head of the Department
Mechanical Engineering
Madanapalle Institute of Technology & Science
MADANAPALLE - 517 325



R. Anil Kumar

B. Venkatesam

