

DEPARTMENT OF MECHANICAL ENGINEERING

Date: 03.05.2025

Minutes of Board of Studies Meeting

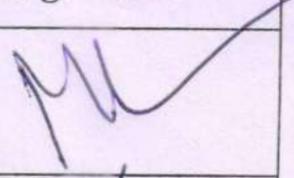
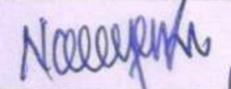
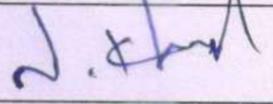
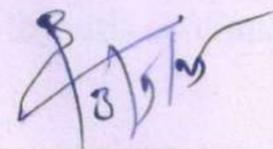
Board of Studies (BoS) meeting of B. Tech in Mechanical Engineering, B. Tech. in Robotics & Automation, and M. Tech. in Machine Design was conducted on 03.05.2025 in blended mode from 10.00 AM to 4.00 PM. The physical meeting will be held at U-Block, Ground Floor, (AGF-06).

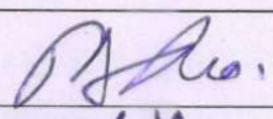
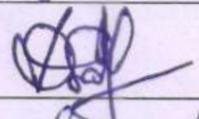
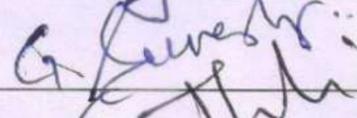
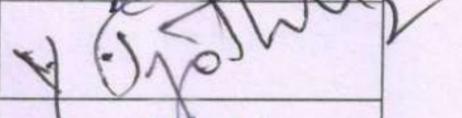
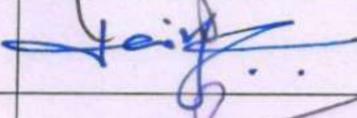
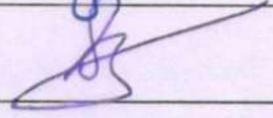
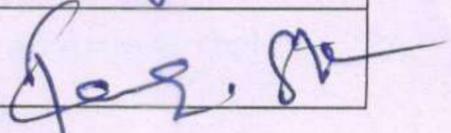
The ZOOM online link for the meeting is <https://us02web.zoom.us/j/89061262968>.

Agenda of the BoS Meeting:

1. To Discuss and finalize the curriculum structure and credits distribution of B. Tech in Mechanical Engineering, B. Tech. in Robotics & Automation, and M. Tech. in Machine Design programmes for the regulation 2025 (R25-C25).
2. To Discuss and finalize the elective courses list (Department/ Open/ Minor / Honour) and stream of B. Tech in Mechanical Engineering, B. Tech. in Robotics & Automation, and M. Tech. in Machine Design programmes for the regulation R25-C25.
3. To Discuss about the SDG and IKS components in the syllabus.
4. To approve the R25-C25 curriculum, syllabus and assessment schemes of B. Tech in Mechanical Engineering, B. Tech. in Robotics & Automation, and M. Tech. in Machine Design programmes and recommend to the Academic council.
5. Approval of new department elective courses for 2025-26 I Semester (IV Year) in Mechanical Engineering and Robotics & Automation branches under the R22 regulation.
6. Any other points with the permission of Chairperson.

The following members were present either thorough offline or online.

| Sl. No | Name and Designation of the member | Position | Signature |
|--------|--|--------------------------------------|---|
| 1 | Dr. M. Ramakrishna Professor and School Dean, VFSTR. | Chairperson |  |
| 2 | Dr. N. Narayan Rao HoD and Associate Professor, VFSTR. | Invited member (School Dean nominee) |  |
| 3 | Prof. Nagumothu Kishore Babu Professor & HoD, NITW | External member (Academia) |  |
| 4 | Dr. Brajesh Kumar Kanchan Assistant Manager, AmaraRaja Advanced Cell Technologies. | External member (Industry) |  |

| | | | |
|----|--|--------------------------------------|---|
| 5 | Dr. D. Ravi Kumar Associate dean and research & Associate professor, Mechanical Engineering, VNIT ,Nagpur | Invited member (Academia) | Attended in Online Mode |
| 6 | Prof. (Dr). V. Pandu Ranga, Professor & Dean, IIT Bhubaneswar. | Invited member (Academia) | Attended in Online Mode |
| 7 | Dr. B. Nageswara Rao Professor, VFSTR. | Internal member |  |
| 8 | Dr. D. Satyanarayana Professor, VFSTR. | Internal member |  |
| 9 | Dr. G. Suresh Officiating Professor, VFSTR. | Internal member |  |
| 10 | Dr. Y. Jyothi Associate Professor, VFSTR. | Internal member |  |
| 11 | Dr. MD. Faiyaz Ahmed Assistant Professor, VFSTR. | Invited member (Dean R&D nominee) |  |
| 12 | Dr. Sanjay Kumar Gupta Assistant Professor, VFSTR. | Internal member |  |
| 13 | Dr. K Durga Rao Assistant Professor, VFSTR. | Internal member | K Durga Rao |
| 14 | Dr. Sk Farooq Assistant Professor, VFSTR. | Member Secretary |  |

Chairperson Professor M. Ramakrishna, School Dean and Dr. N. Narayan Rao Head, department of Mechanical Engineering, VFSTR initiated the meeting by welcoming and introducing the external members and invitees to the internal members. Chairperson presented about the *NEP 2020 Compliant Regulation - R25-C25* which emphasis on creating *learning centric* (continuous learning and continuous assessment model), offering B.Tech., B.Tech. with Honours / Research Honours / Minor / Add-on Diploma, providing lateral entry and honourable exit.

The following points were discussed in the BoS meeting:

1. Regulation R25-C25.
2. Curriculum structure with credits, credits distribution (L-T-P-SL).
3. Significance of self-learning/Team work (SL/TW)
4. 2 Modules, Module-1 is fundamental with 2 units and Module-2 is fundamental with 2 units.
5. Assessment methods (Formative & Summative).
6. Grading Schemes.
7. Department Elective and Honour courses (streams/pools).
8. Open Elective and Minor courses (streams/pools).
9. Creative work-in-Liu-Course work
10. SDG Mapping and incorporation of IKS components
11. Consideration of new program outcomes (POs) as prescribed by the NBA

The following are the observations:

1. Major restructuring has taken place in the curriculum which is oriented towards continuous learning and assessment based on Module structure.

2. Major reformation has taken place in the curriculum by offering Honours/Specialization degree or Minor degree through 16 more credits with additional courses.
3. R25-C25 curriculum structure including list of professional core, department elective, open elective, Minor, Honour in B. Tech in Mechanical Engineering, B. Tech. in Robotics & Automation, and M. Tech. in Machine Design programmes in **Appendix – I**.
4. The curriculum is encompassing the courses that enable employability or entrepreneurship or skill development, provided in **Appendix - II**.
5. The total average percentage of syllabus revised was 74% for Mechanical Engineering, 67% for Robotics and Automation, and 76% for M.Tech in machine design compared to the previous curriculum provided in **Appendix - III**.
6. The significant changes are made in the content of all courses and hence the courses are considered as new courses provided in **Appendix - IV**.
7. **Indian Knowledge System (IKS)** components are incorporated in the relevant courses and the details are mentioned in **Appendix - V**.
8. The courses in the curricula are mapped with the **Sustainable Development Goals (SDG)** and the mapping details are provided in **Appendix - VI**.
9. BoS members inquired whether the Engineering Graphics course would be conducted purely conventionally or with software tools like AutoCAD, to which Dr. N. Narayan Rao, HoD of Mechanical Engineering, clarified that it would be offered in a blended mode, a point further supported by Prof. M. Ramakrishna, who confirmed that the university possesses sufficient infrastructure to facilitate this approach.
10. New department elective courses for 2025-26 I Semester (IV Year) in Mechanical Engineering and Robotics & Automation branches as Department Elective 7 & 8 under the R22 regulation:

| S. No. | Program | Course Name |
|--------|----------------------------|---|
| 1 | B.Tech in Mechanical Engg. | Predictive Maintenance And Fault Diagnostics Using AI |
| 2 | B.Tech in Mechanical Engg. | Modeling And Simulation of Manufacturing Systems |
| 3 | B.Tech in Mechanical Engg. | AI & ML for Mechanical Engineers |
| 4 | B.Tech in Mechanical Engg. | Optimization Techniques in Engineering Applications |
| 5 | B. Tech in R&A | Programmable Logic Controllers & Supervisory Control and Data Acquisition (PLC & SCADA) |
| 6 | B. Tech in R&A | Fluid Power Systems For Automation |
| 7 | B. Tech in R&A | Computer Aided Product Design |
| 8 | B. Tech in R&A | Blockchain Technology |

11. Feedbacks from various stakeholders are incorporated appropriately in the R25-C25 curriculum.

12. Information on NPTEL course offerings for the 2025-26 academic year, for B.Tech students in Mechanical Engineering and Robotics & Automation:

| S. No | Course Title | Credits |
|-------|--|---------|
| 1 | Materials Processing (Casting, Forming and Welding) | 3 |
| 2 | Metal Additive Manufacturing | 3 |
| 3 | Rapid Manufacturing | 3 |
| 4 | Sustainable Power Generation Systems | 3 |
| 5 | Automation in manufacturing | 3 |
| 6 | Introduction to Composites | 3 |
| 7 | Fundamentals of Manufacturing Processes | 3 |
| 8 | Sustainable Energy Technology | 3 |
| 9 | Microrobotics | 3 |
| 10 | Design of Mechatronic Systems | 3 |
| 11 | Artificial intelligence in industrial and management manufacturing | 3 |
| 12 | Ethics in Engineering Practice | 2 |
| 13 | Energy Conservation and Waste Heat Recovery | 3 |
| 14 | Deep Learning | 3 |
| 15 | Fundamentals of cost accounting | 3 |
| 16 | Solar Energy Engineering and Technology | 3 |

Note: NPTEL registered 3 credit course can be considered as 4 credits based on submission of additional assignments of the particular course.

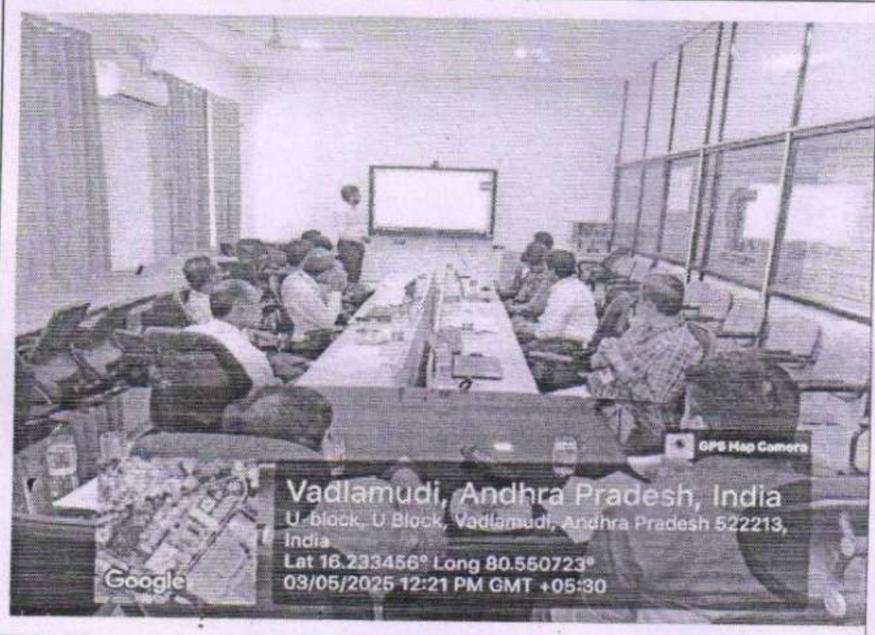
The following improvements are suggested: (Action Points)

1. External members suggested to create more awareness about IKS to the faculty members by conducting either department workshops or institute level workshops
2. BoS members suggested that Physical Metallurgy and Composite Materials course cannot be effectively combined into a single course, and recommended reviewing the curriculum to explore viable alternatives for separate course offerings.
3. BoS members recommended incorporating NDT, advanced welding, and additional materials science subjects in electives basket.

4. BoS members recommended renaming the course "Numerical methods for Mechanical Engineers" to "Numerical methods for Engineers".
5. BoS members recommended renaming the course "Design of Mechanical Components" to "Machine Design".
6. BoS members strongly recommended making mechatronics subjects core courses, specifically suggesting "Introduction to Mechatronics" as a core requirement for the RA program.

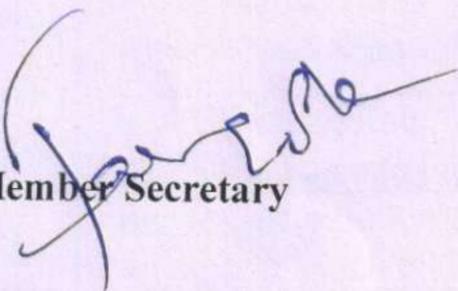
The following recommendations and approvals are made after the discussion:

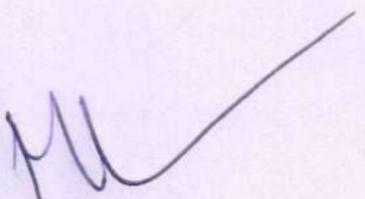
1. BoS Members approved the revised regulations, curriculum structure, syllabus, assessment schemes of B. Tech in Mechanical Engineering, B. Tech. in Robotics & Automation, and M. Tech. in Machine Design programmes and it follows based on the NEP 2020.
2. The details of elective courses (Department/ Open/ Minor / Honour) of B. Tech in Mechanical Engineering, B. Tech. in Robotics & Automation, and M. Tech. in Machine Design programmes for the regulation R25-C25 are approved.
3. SDG mapping and incorporation of the IKS components in the syllabus is approved.
4. Approved the new department elective courses for 2025-26 I Semester (IV Year) in Mechanical Engineering and Robotics & Automation branches under the R22 regulation.



Based on the suggestions given by the members, the chairperson of BoS told that, those suggestions would be incorporated appropriately in the curriculum and syllabi of the regulation R25 C25 and this will be recommended to the Academic Council of VFSTR for the approval.

There being no further points for discussion, the Chairperson thanks all the external, internal, invited members and announced that the meeting was concluded.


Member Secretary


Chairperson