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AMRITA VISHWA VIDYAPEETHAM
DEEMED TO BE UNIVERSITY UNDER SECTION 3 OF THE UGC ACT, 1956

Department of Mechanical Engineering
Amrita School of Engineering, Bengaluru

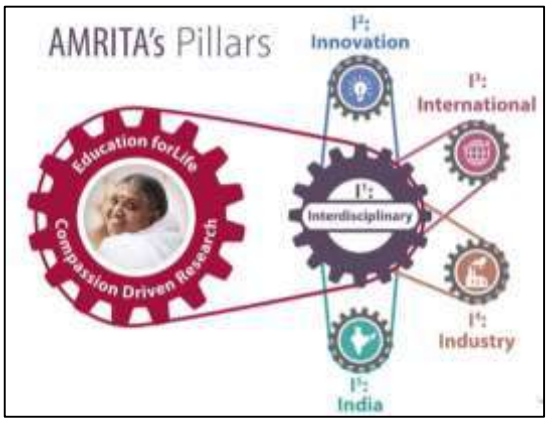
2025-26 Odd Semester

Amrita Vishwa Vidyapeetham

Amrita Vishwa Vidyapeetham (AVV) is a multi-campus, multi-disciplinary research academia that is accredited 'A++' by NAAC and is ranked as one of the best research institutions in India.

Founded by the world-renowned humanitarian, Sri Mata Amritanandamayi Devi, the multi-campus University was established to provide rigorous academic instruction in an ambience rooted from Indian cultural heritage.

The vision and mission of AVV focus on "Education for Life" and "Compassion Driven Research" while aligning with the concept of five I Pillars for holistic development of the organization.



AVV Bengaluru Campus

Amrita School of Engineering started its operation at Bengaluru in 2002. With the advancements in the fields, School of Computing and School of AI have been carved out of it. Together, the three technical schools in Bengaluru Campus offer B.Tech. programs in nine disciplines and M.Tech. programs in seven disciplines. They seek to prepare graduates with a solution-mindset and highest ethical standards, with an emphasis on value-based Education.

The Bengaluru campus has carved itself as a destination for technological advancements due to its advantage of being in the Silicon Valley of India. The students and faculty are exposed to a variety of opportunities which have resulted in industry-academia collaborations.

Mechanical Engineering Department

The Department of Mechanical Engineering started the first batch of B.Tech in Mechanical Engineering in the year 2007. In the due course, B.Tech program in Robotics and AI, and M.Tech program in Robotics and Automation have been introduced to cater to needs of the demands in the emerging and frontier fields.

It has been producing qualified engineers to face the challenges of the real world with sustainable solutions. Excellent laboratory facilities, modern computer clusters, systematically designed curriculum, and dedicated faculty members make this department a dynamic place to study.

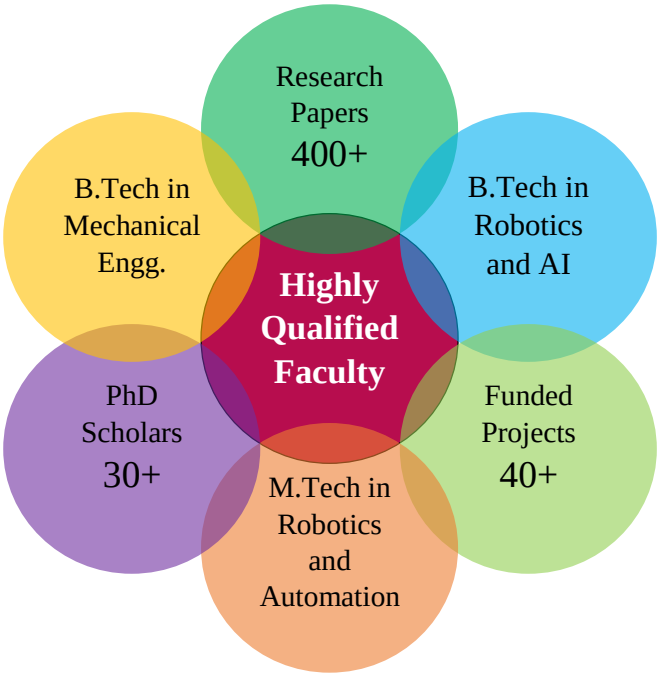
Vision:

To transform our students into outstanding mechanical engineers with **strong domain knowledge and skills, society-centric research intent, and exemplary ethical values**, making them the most desired professionals by research institutions, industry, and society.

Mission:

- To develop in each student, a profound understanding of fundamentals, motivation for continuous learning, and practical problem-solving skills for building a successful career.
- To create and share technical knowledge and collaborate with Industry and Institutions for the betterment of Society.
- To imbibe ethical values, leadership skills and entrepreneurial skills in students.
- To sustain a conducive environment to involve students and faculty in research and development.

Overview of the Department



Institute and Department Events

Briefing Session for ME/RAE Students

[Jul 2, 2025]

A briefing session for the students of ME Dept. (MEE second to final years, RAE second and third years) was conducted on the first working day of the semester. Dr. Sriram Devanathan and Dr. Rajeevlochana G. Chittawadigi covered the following topics:

- POs (Program Objectives)
- PSOs (Program Specific Objectives)
- PEOs (Program Educational Objectives)
- Mission and Vision of the Department
- Do's and Don'ts for Academic Performance Improvements
- Placement and Internship Related Information

The students also gave their feedback on a few aspects such as participation in co-curricular and extra-curricular activities, department level events, etc., which acted as a Town House. A few of them are reported below:

Dhyanesh Sekar (RAE23012): Summarised the discussion and emphasized on message by Principal on "Every student should try to participate in at least one student event/activity per semester".

Pranam Chajed (MEE24020): Emphasized on the need to develop entrepreneurial skills and looks forward to AICTE IDEA Lab and other avenues for the same.

Y. Lakshya (RAE24063): Shared her journey from being an introvert to participating in many student club activities. These have helped her to come out of her comfort zone. She also emphasized on the fact that many students miss their Breakfast and such things cause health and productivity issues and suggested the students to refrain from doing it.

Lavanya Velusamy (MEE23010): She highlighted that a point on Sports/Games was not mentioned in the Slides and requested to include the same. She also emphasized the importance of participation in sports and games and represent the department in inter-departmental competitions. She also requested to "come and cheer for your department sportspersons".

Jyothi Lakshmi K. L. (MEE22004): She motivated the students to volunteer in student club activities and try to become office bearers. Such experience always helps us in placements and also to lead a good professional life in corporate organizations in the years to come.

Anandan Babu (RAE23055): He shared his journey of how he overcame two arrears in his first year. Initially, he tried very hard to achieve many things at the same time. However, he realized that learning through projects and from his caring friends was the way forward. He has improved and enjoys the engineering as he sees it as a passion and not just as an imposition

Empty Cup Activity – Dheeksharambh' 25

[July 30, 2025]

As part of Dheeksharambh, the Empty Cup Activity was conducted in August 2025 for first-year RAE and ME students by their faculty advisors. The activity symbolized the importance of approaching college life with an open and receptive mindset. Students were encouraged to let go of preconceptions and be ready for new learning experiences. It served as a meaningful icebreaker, fostering reflection, humility, and curiosity. The session set a positive and thoughtful tone for their academic journey ahead.

Orientation Session for B.Tech and M.Tech Admitted Students

[Aug 2, 2025]

An orientation program was conducted for first-year B. Tech students of Mechanical Engineering and Robotics & AI, along with M. Tech students of Robotics and Automation, to familiarize them with the department, curriculum, and academic environment. The program commenced with lighting of the lamp, followed by a welcome address by the Chair of the Mechanical

Institute and Department Events

Engineering Department, Dr. Sriram Devanathan, who highlighted the importance of discipline, academic excellence, and holistic development. This was followed by a detailed introduction to the Mechanical Engineering Department, including an overview of the Program Outcomes (POs), Course Outcomes (COs), and Program Specific Outcomes (PSOs) of the respective courses, which was delivered by Dr. Rajeevlochana G. Chittawadigi, Vice Chair of the MEE Department.

He also explained the academic structure and expectations from the students. Subsequently, the department faculty members and staff were introduced along with their areas of specialization, enabling students to understand the academic expertise available within the department. In addition, the faculty coordinators of various student clubs introduced their respective clubs and explained the registration process and opportunities for student participation, encouraging students to engage in co-curricular and extracurricular activities.

To warmly welcome the first-year students, senior students performed songs and dances, adding a lively and friendly atmosphere to the program. Overall, the program was informative and interactive, helping students gain clarity about their academic journey and fostering a sense of belonging within the department.

Convocation / Graduation Day

[Aug 17, 2025]

The Convocation Day at Amrita Vishwa Vidyapeetham, Bengaluru Campus, was held on August 17, 2025, celebrating the graduation of MEE students. The event marked an important milestone in the academic journey of the graduates as they received their degrees in the presence of faculty, family, and dignitaries. The Chief Guest, T. G. Sitaram, Chairman of All India Council for Technical Education (AICTE), delivered an inspiring address encouraging students to contribute to innovation and nation-building. The ceremony highlighted the achievements and hard work of the graduating students. It concluded with pride and enthusiasm as the graduates stepped forward into their professional careers.

Freshers' Party

[Aug 22, 2025]

Yantrix, the Freshers' Party for first-year MEE, RAE and RAU students, hosted by the Department of Mechanical Engineering on August 22, 2025, provided a warm and welcoming start to campus life. The event fostered camaraderie, eased the transition into college, and helped students build early connections with peers and seniors.

The celebration featured interactive games, cultural performances, and fun activities that created an energetic and joyful atmosphere. Faculty members and senior students also addressed the newcomers, encouraging them to actively engage in academic and extracurricular opportunities.

Institute and Department Events

Fatigue Testing Machine

[Sept 17, 2025]

A Fatigue Testing Machine was installed in the Materials Testing Laboratory to evaluate the fatigue strength of metallic materials. This facility enables students to study fatigue behavior and related properties as part of their materials Science curriculum. Hands-on experimentation using the machine will help students gain a deeper and more practical understanding of fatigue concepts.

Ayudh Puja Celebration

[Sept. 30, 2025]

The Mechanical Engineering Department celebrated Ayudh Pooja with great devotion and enthusiasm on 30th September 2025. The ceremony was organized to honor machines, tools, and instruments, acknowledging their vital role in engineering education and professional practice.

The event commenced with a traditional pooja, followed by a havan, seeking divine blessings for knowledge, safety, and prosperity. This was followed by aarti and bhajan, which created a peaceful and spiritually enriching atmosphere within the department. On this auspicious occasion, clothes were gifted to the department staff as a token of appreciation and unity.

Subsequently, prasad vitaran was conducted, and the celebration concluded with a Bhandara, where faculty members, staff, and students shared the meal together. The Ayudh Pooja celebration strengthened cultural values, mutual respect, and a sense of togetherness among all members of the department.

Faculty Corner

Upskilling Program on Robotics at Reva University, Bengaluru

[Dec 3-6, 2025]

Dr. Rajeevlochana G. Chittawadigi, Dr. Prashant B. N., Dr. Puja Sengupta, and Dr. Bikram Singh Solanki successfully conducted a Skill Up cum Consultancy Program at REVA University, Bengaluru. The program was organized for 3rd Semester B.Tech students of Robotics and Artificial Intelligence (RAI) with the objective of enhancing their practical and technical competencies.

The training covered key emerging domains, including Introduction to Robotics, Mathematical Modelling and Simulation, Introduction to Drones and Robot Applications, ROS and Robot Programming, and Embedded Systems in Robotics. The program strongly emphasized hands-on training, enabling students to gain practical exposure to both hardware and software platforms related to the above-mentioned areas. The program concluded with a session-wise MCQ-based evaluation, ensuring assessment of the knowledge and skills gained by the participants.

Participation in Faculty Development Program (FDPs)

- Mr. Vinod Kotebavi successfully participated & completed AICTE Training and Learning (ATAL) Academy Faculty Development Program on Computational and Simulation Techniques at Bangalore Institute of Technology, Bangalore from 10/11/2025 to 15/11/2025.
- Mr. Vinod Kotebavi attended a seminar on Battery Modeling with COMSOL Multiphysics organized by COMSOL Multiphysics held at Hyatt Centric, MG Road, Bangalore on 28-11-25.
- Dr. Ulhas K. Annigeri has successfully completed a course in Digital Twins authorized by University of Michigan and offered through Coursera on November 9, 2025.
- Dr. Ulhas K. Annigeri has attended 9 days online FDP organized by IIITDM-Jabalpur from 15 to 23 November 2025 on the topic Industry 4.0, Sustainable and Green Manufacturing Approaches.
- Dr. Bikram Singh Solanki has attended the “4th International Research Workshop on Advances in Deep Learning and Its Application” from 15th to 19th December 2025, organized by PDPM IIITDM Jabalpur in offline mode.
- Dr. Puja Sengupta has attended 5-day workshop on Rehabilitation Robotics and Biosignal Processing from 10th to 14th September 2025 at Amrita Vishwa Vidyapeetham, Coimbatore campus.

Faculty Corner

Publications (2025)

List of Journals

1. M. M. Mahantesh, K. V. S. R. Rajeswara Rao, M. N. Gururaja, J. S. Srikantamurthy, S. Erannagari, S. Ramesh, V. L. J. Guptha, and B. N. Prashanth, "Enhanced tribological properties of nano-TiO_2 reinforced polymer composites fabricated via stereolithography," Journal of The Institution of Engineers (India): Series D, vol. 106, no. 3, pp. 1543–1555, 2025, doi: 10.1007/s40033-024-00752-2.
2. V. Kotebavi, P. S. Jakkareddy, and S. M. Mullai Venthan, "A CFD study of aerodynamic characteristics of elliptic cones in supersonic flow," Discover Mechanical Engineering, vol. 4, no. 1, 2025, doi: 10.1007/s44245-025-00162-y.
3. V. Kotebavi and P. S. Jakkareddy, "Experimental and CFD analysis of hypersonic flow over a circular cone at Mach 8: Aerodynamic and thermal behaviour at higher angles of attack," International Journal of Heat and Fluid Flow, vol. 116, 2025, doi: 10.1016/j.ijheatfluidflow.2025.109967.
4. S. Singh, M. Amalkar, M. C. Dutta, and D. E. Rendi, "Mechanically activated red mud based geopolymer for advanced concrete applications: Synthesis and properties," Iranian Journal of Science and Technology – Transactions of Civil Engineering, vol. 49, no. 6, pp. 5967–5980, 2025, doi: 10.1007/s40996-025-01794-6.
5. S. ShivaPrakash, S. Kumar, K. B. K. Naveen, M. Nagaral, N. Marakal, V. Auardi, T. H. Manjunatha, and B. P. Dileep, "Mechanical characterization of alumina and graphite dual particulates reinforced hybrid aluminum alloy (Al2219) matrix composites," Research on Engineering Structures and Materials, vol. 11, no. 5, pp. 1947–1963, 2025, doi: 10.17515/resm2024.328me0621rs.
6. S. R. V. Mantha, G. B. V. Kumar, R. Pramod, and C. S. P. Rao, "Mechanical, tribological, and corrosion studies of Al_2O_3 filled Al6061 MMCs with strengthening mechanisms," Advanced Engineering Materials, vol. 27, no. 20, 2025, doi: 10.1002/adem.202500559.
7. M. Prashanth, N. J. K. Prasad, B. S. A. Kumar, and N. Satish, "Effect of brass content and speed of cut on machining outcomes of copper–2% silver alloy," Journal of The Institution of Engineers (India): Series D, vol. 106, no. 2, pp. 1155–1161, 2025, doi: 10.1007/s40033-024-00729-1.
8. S. Jabiulla, L. J. Kirthan, R. G. Kumar, R. Hegde, M. M. Mahantesh, V. A. Girisha, S. Erannagari, and B. N. Prashanth, "Experimental and numerical evaluation of in-plane tensile mode stress intensity factor for edge crack using empirical formulation of displacement extrapolation method," Journal of The Institution of Engineers (India): Series D, vol. 106, no. 2, pp. 779–789, 2025, doi: 10.1007/s40033-024-00640-9.
9. M. Uday, H. R. Vitala, B. P. Dileep, V. Bharath, U. Devadiga, and V. Auradi, "Mechanical and wear characterization of nitrided Al–5%Ti–B metal matrix composite reinforced with Al_2O_3 particles," Research on Engineering Structures and Materials, vol. 11, no. 4, pp. 1427–1439, 2025, doi: 10.17515/resm2024.317me0612rs.
10. G. Biju, P. Marimuthu, A. D. Thampi, B. Sasidharan, and R. Rani, "Property evaluation of multi-staged chemically modified used coconut oil for bio-lubricant applications," Biomass Conversion and Biorefinery, vol. 15, no. 16, pp. 22849–22863, 2025, doi: 10.1007/s13399-025-06751-x.
11. S. K. Sahu, P. S. R. Sreekanth, Y. P. Deepthi, Q. Quanjin, and T. J. Erinle, "Tensile, flexural and free vibration characteristics of sustainable recycled polypropylene filled with spherical SiC," International Journal of Structural Integrity, vol. 16, no. 3, pp. 525–542, 2025, doi: 10.1108/IJSI-01-2024-0014.
12. Y. P. Deepthi, P. Kalaga, S. K. Sahu, J. J. Jacob, K. P. S., and Q. Quanjin, "AI-based machine learning prediction for optimization of copper coating process on graphite powder for green composite fabrication," International Journal on Interactive Design and Manufacturing, vol. 19, no. 6, pp. 4123–4130, 2025, doi: 10.1007/s12008-024-02032-5.
13. V. R. Varun Krishna, S. K. Sahu, P. S. R. Sreekanth, S. Menon, Q. Quanjin, and Y. P. Deepthi, "Modeling and finite element simulation of sustainable coronary stent with variation in unit cell design," International Journal on Interactive Design and Manufacturing, vol. 19, no. 6, pp. 3947–3956, 2025, doi: 10.1007/s12008-024-01944-6.
14. S. R. V. Mantha, G. B. V. Kumar, R. Pramod, C. S. P. Rao, M. S. Saharudin, and S. K. Sahu, "Comparison of the self-healing behaviour of 60Sn40Pb and 99.3Sn0.7Cu solder alloy reinforced Al6061 MMCs," Journal of Manufacturing and Materials Processing, vol. 9, no. 5, 2025, doi: 10.3390/jmmp9050141.
15. M. S. Reddy G., C. D. Prasad, P. Pavan Kumar, S. B. Sollapur, V. Vishwanatha, S. M. Mohan Kumar, G. S. P. Kumar, and M. H. Hussain, "Investigation of hot corrosion behavior of plasma sprayed cermet

composite coatings on titanium and special steel alloys," Surface and Coatings Technology, vol. 499, 2025, doi: 10.1016/j.surfcoat.2025.131883.

16. S. K. Sahu, P. S. R. Sreekanth, S. Sandiri, R. K. Ravi Kumar, R. K. Phanden, K. K. Saxena, and Q. Quanjin, "Assessment of mechanical properties by RVE modeling and simulation of recycled HDPE reinforced with carbon nanotubes," International Journal on Interactive Design and Manufacturing, vol. 19, no. 3, pp. 2143–2157, 2025, doi: 10.1007/s12008-024-02133-1.
17. P. Marimuthu, G. Sri Kurumurthy, M. Thenarasu, and M. Venkata Roshan, "Minimizing residual stresses in AISI 1045 steel through optimization of cutting parameters: A particle swarm optimization approach," Proc. IMechE, Part E: Journal of Process Mechanical Engineering, 2025, doi: 10.1177/09544089251318779.
18. M. M. Mahantesh, R. Sridhar, A. Bharatish, R. Halagani, S. G. D. Divya Sharma, J. R. Naik, M. Najeeb, and S. B. Sollapur, "Mechanical characteristics of SLA printed parts using photopolymer resin," Journal of The Institution of Engineers (India): Series D, 2025, doi: 10.1007/s40033-025-00954-2.
19. D. Pasupuleti, H. Mahzoon, K. Sakai, H. Ishiguro, Y. Bangi, R. G. Chittawadigi, and Y. Yoshikawa, "Gameplay with a socially supportive virtual robot enhances children's global self-esteem, peer relationships, interest and engagement," IEEE Robotics and Automation Letters, vol. 10, no. 10, pp. 9979–9986, 2025, doi: 10.1109/LRA.2025.3598645.

List of Conferences

1. K. S. Malakashetti, V. N. Kulkarni, G. J. Satish, and P. S. Jakkareddy, "A state-of-the-art review on advanced quality product planning in manufacturing and service industries," AIP Conference Proceedings, vol. 3325, no. 1, 2025, doi: 10.1063/5.0291817.
2. S. Narayanan, P. S. Jakkareddy, M. E. Shashi Kumar, V. R. Ravi Kumar, and S. M. Mohan Kumar, "Computational model for buoyancy-driven heat transfer in a bottom-mounted heater in a chamber," AIP Conference Proceedings, vol. 3325, no. 1, 2025, doi: 10.1063/5.0291723.
3. M. E. Shashi Kumar, S. M. Mohan Kumar, and V. R. Ravi Kumar, "Revolutionizing portable power generation: Unleashing the potential of advanced materials through automobile exhaust exploitation," AIP Conference Proceedings, vol. 3185, no. 1, 2025, doi: 10.1063/5.0240722.
4. K. Annigeri, T. Tatavarthy, and S. M. Mohan Kumar, "Study on effect of process parameters in milling of mild steel by design of experiments," AIP Conference Proceedings, vol. 3185, no. 1, 2025, doi: 10.1063/5.0240778.
5. C. M. Ramesha, P. Rajendra, H. S. Balasubramanya, S. M. Mohan Kumar, V. R. Ravi Kumar, and M. E. Shashi Kumar, "Enhancing thermal conductivity of aluminium 6063 alloy by adding titanium for advanced heat sink applications," in Advances in Science, Technology and Innovation, 2025, pp. 377–384, doi: 10.1007/978-3-031-73816-6_43.
6. R. Munirathnam, R. P. Jadhav, N. M. Mahajan, A. Barve, M. E. Shashi Kumar, and L. Natrayan, "Electric vehicle charging demand prediction using multiresolution sinusoidal neural network optimized with addax optimization," 2025, pp. 604–609, doi: 10.1109/ICTMIM65579.2025.10988104.
7. C. Anitha, G. Vipashi Kansal, S. U. Deokar, K. Sutaria, V. R. Ravi Kumar, and L. Natrayan, "Bi-directional power control in grid-connected electric vehicle on-board chargers using spider wasp optimization," 2025, pp. 517–522, doi: 10.1109/ICTMIM65579.2025.10988214.
8. N. B. Prakash, G. R. Hemalakshmi, S. U. Deokar, F. Bhavsar, V. R. Ravi Kumar, and R. Ramya, "Active and reactive power control in three-phase grid-connected electric vehicles using node-level capsule graph neural network," 2025, pp. 457–462, doi: 10.1109/ICTMIM65579.2025.10988152.
9. J. Y. Dharshan, A. R. Amarnath, P. S. S. Reddy, S. M. Rajagopal, and M. Prashanth, "Blockchain-enabled supply chain management with role-based access control and AES encryption," 2025, doi: 10.1109/COMP-SIF65618.2025.10969871.
10. P. K. S. Jashnavi, H. K. Singh, S. G. Divya Sharma, and S. Basavaraju, "Enhancing rural connectivity: A developmental leap for Achhepur through strategic transportation planning," Lecture Notes in Networks and Systems, vol. 1159, pp. 549–559, 2025, doi: 10.1007/978-981-97-8526-1_44.

A. Sivakumar, G. Bhavya Reddy, S. Bhanot, S. M. Rajagopal, and B. N. Prashanth, "Real-time threat management using deep Q-learning and Mininet," 2025, pp. 1765–1771, doi: 10.1109/IDCIOT64235.2025.10914831.

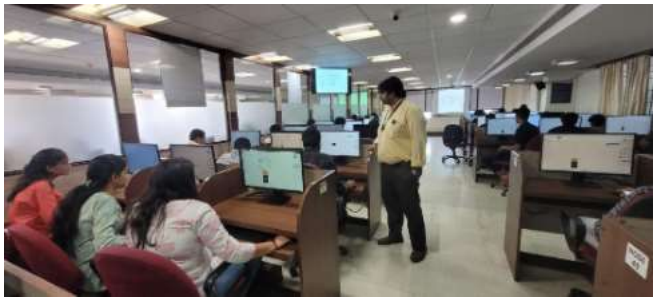
11. Y. Tanvi, B. Lakshmi Sowmya, B. N. Prashanth, and S. M. Rajagopal, "IoT-driven smart car parking system: Optimizing urban mobility and reducing environmental impact," 2025, pp. 733–738, doi: 10.1109/IDCIOT64235.2025.10914860.

Students' Corner

TinkerCAD

[July 30th, 2025]

A TinkerCAD session was organized on 30th July 2025 for first-year B.Tech students of Robotics and AI and Mechanical Engineering. The session was conducted by Dr. Pramod R with the objective of introducing students to basic digital design, 3D modeling, and electronics simulation using the TinkerCAD platform. During the session, students were familiarized with the user interface and key features of TinkerCAD, including 3D design tools and basic circuit simulation. Practical demonstrations were carried out to help students understand how virtual designs can be created, modified, and tested before physical implementation. The session emphasized hands-on learning, encouraging students to actively participate and explore design concepts independently. The session was interactive and informative, enabling students to gain foundational knowledge useful for engineering design, prototyping, and innovation-based projects. Overall, the TinkerCAD session successfully enhanced students' interest in computer-aided design and simulation tools, laying a strong foundation for future coursework and project-based learning.



Induction session for ME/RAE Students

[Aug 6, 2025]

An induction session for the students of ME Dept. (MEE and RAE first years). The Robotics Society Student Chapter and JIDO – The Automation Club conducted Induction. The Robotics Society Student Chapter organized a fun event named "Think-Thread-Thrive". In this event, we conducted a fun quiz where all the students participated enthusiastically. Further the students made DIY Robotic Arm.

Stewart Showdown – Kalarithi'25

[Aug 7, 2025]

As part of kalakrith'25, JIDO – The Automation Club conducted a hands-on workshop titled "Stewart Showdown" to introduce first-year students to automation technologies and basic robot kinematics. Participants built a 3-DOF Gough–Stewart platform using cardboard and syringes, giving them practical exposure to hydraulics, pneumatics, and coordinated robotic motion. By assembling and controlling the three-syringe mechanism, students gained a clear understanding of how movement is achieved through precise coordination. The workshop concluded with a friendly competition where teams were evaluated on platform design, completion time, communication, and teamwork. Operating the 3-DOF system required synchronized control, reinforcing the value of collaboration. Stewart Showdown provided students with a concise yet impactful introduction to automation and robotics, sparking interest in hands-on engineering.

Independence Day Celebration

[Aug 15, 2025]

The students of 1st Semester ME and RAE actively participated in the 79th Independence Day parade organised by the Squad Club under the mentorship of Dr. Shashi Kumar M E. marking the first official club event to begin the academic year.

Students' Corner

BAJA 2026 Workshop

[Sept 20 –21, 2025]

Five students from team Ameya attended a two-day SAEINDIA BAJA 2026 workshop at Saintgits College of Engineering, Kottayam, Kerala. The workshop served as an important learning platform as the team began its preparation for the upcoming BAJA competition. The sessions provided a clear overview of the SAEINDIA BAJA competition, including its structure, rules, and evaluation process. Students gained valuable insights into the complete process of designing and building an All-Terrain Vehicle (ATV), with detailed discussions on major subsystems such as the chassis, suspension, steering, drivetrain, and braking systems. Industry experts and experienced BAJA participants shared practical knowledge, highlighting common design challenges, safety considerations, and competition-specific strategies. These real-world insights helped the students understand how theoretical concepts translate into on-field performance. Overall, the workshop enhanced the team's technical understanding and confidence. The knowledge gained will play a key role in guiding their design and development process for SAEINDIA BAJA 2026.

SAEINDIA Collegiate Club Orientation

[Aug 21, 2025]

SAEINDIA club's first event of the academic year 2025–26, "GRID START" was organised to introduce SAE and its activities to mechanical engineering students. The session featured addresses by the Vice Chairman of the department, Dr. Rajeevlochana Chittawadigi, and club mentors, who highlighted the importance of SAE, its achievements, and future plans. A presentation outlined the club's mission, competitions, and activities, followed by the unveiling of the club's new logo, badge, and merchandise. Vehicles from past competitions were displayed to provide students with hands-on insights into design and fabrication. Grid Start concluded on a positive note, receiving enthusiastic participation from students and faculty.

Smart India Hackathon

[Sept 24, 2025]

The Smart India Hackathon (SIH) 2025 was successfully conducted. The event was organized by JIDO – The Automation Club in collaboration with the IEEE Innovation Club, serving as a prestigious national-level platform for students to demonstrate their technical expertise and problem-solving abilities.

The hackathon encouraged participants to address real-world challenges through innovative and practical solutions. A total of 32 teams competed across 6 evaluation panels, with their projects assessed by 12 judges representing diverse domains, including Mechanical, Electrical, Electronics, Artificial Intelligence, and Computer Science. This multidisciplinary evaluation ensured a comprehensive assessment of each solution's technical depth and

feasibility. SIH 2025 concluded successfully, offering students invaluable exposure to national-level competition, collaborative innovation, and real-world engineering problem-solving.

DDC Workshop

[Sept 27– 28, 2025]

Team VelAstra, the aerospace team of the SAE Collegiate Club of the institution, is actively participating in the SAEINDIA Southern Section (SAEISS) Drone Development Challenge (DDC). As part of Phase-1 of the competition, the team attended a two-day hands-on workshop conducted at NSS College of Engineering. This phase of the competition was structured as an experiential learning and evaluation stage, where participating teams were introduced to a fixed reference drone design. Using a standardized drone fabrication kit provided by SAEISS, teams were guided through the complete process of drone assembly and system integration. The sessions focused on explaining the design philosophy behind the reference configuration, including airframe layout, aerodynamic considerations, structural components, propulsion selection, and basic control systems. The hands-on activities emphasized correct assembly practices, teamwork, time management, and real-time problem-solving under competition constraints.

By working with an established design platform, Team VelAstra gained a strong conceptual and practical foundation that will be instrumental in developing and refining their own drone design for the subsequent phases of the Drone Development Challenge.

ChainZ – Dastaan Multifest

[Oct 10, 2025]

As part of Dastaan – National level multifest, an exciting competition titled "ChainZ" was conducted by The Robotics Society – Student Chapter, IEEE sight, Ingenium and ECCF. The challenge was inspired by concept of Rube Goldberg Machines – complex chain reaction setups designed to perform a simple final task. Participants were asked to design a continuous chain reaction, where each step triggered the next using mechanisms such as rolling balls, levers, pulleys, domino effects, etc. The final task assigned was to end the sequence by watering a plant. Judges evaluated the entries based on creativity, functionality, smoothness, sustainability. The winners were awarded by prizes worth 35,000/-. ChainZ competition not only entertained but also encouraged students to think critically.

Students' Corner


Torque Talks

[Oct 11, 2025]

Torque Talks, conducted during Dastaan '25, was an engaging automobile tuning workshop curated for true automotive enthusiasts. The session featured industry professionals from Bros Garage and Race Dynamics, who shared real-world insights into performance tuning and vehicle dynamics. Participants gained a clear understanding of tuning fundamentals, ECU behaviour, and performance optimization techniques. A major highlight of the event was a live-tuned rally car demonstration, where concepts were explained in real time. The arrival of a tuned Polo GT, roaring through the venue, elevated the excitement and brought theory to life. The sound, power, and precision left the audience captivated throughout the session. Torque Talks successfully blended technical depth with raw automotive passion, making it a standout event of the fest.

Ignition '25 – Autoshow

[Oct 11, 2025]

IGNITION'25, the Auto Show conducted during DASTAAN'25, was a dynamic showcase of sports cars, custom-tuned vehicles, and exotic motorcycles. The event featured an impressive lineup of high-performance machines, highlighting both aesthetic appeal and engineering excellence. Participants explored professionally modified and tuned cars, gaining insights into performance upgrades and customization trends. The display of exotic bikes added to the excitement, drawing attention to advanced design and cutting-edge technology. IGNITION'25 offered students a close look at real-world automotive innovation beyond textbooks. The show encouraged interaction, discussion, and learning among automobile enthusiasts. With its energetic atmosphere and striking exhibits, IGNITION'25 emerged as a major crowd-puller of the fest.

From Schematic to Solid – Dastaan

[Oct 10-12, 2025]

From Schematic to Solid, conducted on 10th, 11th, and 12th October 2025 as part of DASTAAN 2025, the college's national-level fest, was organized in collaboration with the ECCF. This three-day workshop was designed to provide participants with a complete and integrated learning experience in both software and hardware development. The workshop guided students through the entire product development cycle, starting from generating electronic schematics in Fusion to designing and 3D printing custom enclosures for PCB boards. Through hands-on sessions, participants gained practical exposure to modern design tools, rapid prototyping techniques, and real-world engineering workflows. From Schematic to Solid successfully bridged the gap between conceptual design and physical realization, reinforcing the club's mission of fostering innovation, technical proficiency, and practical engineering skills among students.


Drone Workshop – Aarohan'25

[Oct 29, 2025]

As part of Aarohan, school students were invited to explore advancements in science and technology through interactive workshops. JIDO – The Automation Club conducted a Drone Workshop to introduce them to the fundamentals of aerial robotics. Students learned about the physics behind drone flight, key components used in drone construction, and real-world applications of drone technology. After the briefing, participants assembled their own drones using the components

provided. The session continued with a flight simulation module, where students practiced controlling a drone using a transmitter in a virtual environment. Finally, they had the opportunity to fly real drones, experiencing hands-on control and understanding drone behaviour in action. The workshop offered young learners an engaging introduction to drone technology and its practical relevance.



Arm In Action – Aarohan

[Oct 29, 2025]

As part of Aarohan, an exciting workshop titled "Arm in Action" was conducted by The Robotics Society – Student Chapter. The workshop was exclusively for students of classes 8, 9, and 10 from various schools. Participants were provided with the components of – DOF robotic arm, and their task was to assemble the full robotic arm from scratch. They understood the function of each joint, placing the servo motors, aligning the links and understanding the arm movements. Arm In Action successfully ignited curiosity and confidence to many students as it was their first exposure to robotics.



RC Mania – Aarohan

[Oct 29 – 30, 2025]

RC Mania was organised as part of Aarohan to introduce students to automotive systems through interactive experience. The event featured a combination of a short automotive quiz and a hands-on RC rock crawler driving session. Based on the participants' performance, they were given the opportunity to drive RC vehicles on a custom designed track. The track included ramps and turns to simulate real off-road conditions, adding excitement and challenge. Timed laps created a fun competitive atmosphere among participants. The event witnessed enthusiastic participation from over 100 students across various schools. RC Mania successfully blended learning with entertainment and emerged as one of the most crowd-pulling events of Aarohan 2025.

Awards & Recognition

[Nov 8, 2025]

A student team comprising of Krishnapriya Vinod Pillai (RAE23019), Batchu B V Aashish (RAE23007), Dhruva Korla (RAE23011) and Harinarendran S S (RAE23015) from 5th SEM RAE presented their poster titled "A Mechatronic Approach to Rubik's Cube Solving Using Slider–Crank-Based Actuation". The team secured the Third prize in the student poster presentation competition at ICRM 2025 organized by Amrita Vishwa Vidyapeetham, Amritapuri Campus.

Placements




Jyothi Lakshmi	Nithyasri	Anoop Joseph	K. Bhargavaram
MEE22004	MEE22030	MEE22025	MEE22028
Honeywell India	**Honeywell India**	**Ingersoll Rand**	**Lam Research**

Parents' Points of View

Mrs. Praseela Vimal
Principal
Samsidh International School, HSR Branch
(Parent of Mr. Tanay Vimal, S2 MEE)

Article Title: From Machines to Minds: An Engineer's Journey into Leadership

When I look back on my journey, I am reminded that growth is never linear. It rarely announces itself. Instead, it unfolds quietly - through moments that seem unrelated at first but later form a pattern with surprising clarity. Today, as a principal leading a vibrant learning community, I can finally see how every phase of my life prepared me for this role - even the chapter that began in the world of mechanical engineering.

In my early years as a mechanical engineering student, I learned to value precision, understand design, and appreciate how every tiny component influences the functioning of a larger system. At the time, I thought these lessons were meant only for machines. Life, however, has an elegant way of revealing deeper meanings as we move forward.

One of the most profound gifts of my degree was the way it shaped my mind. Engineering trained me to think critically, analyse patterns, break down complex problems, and approach challenges systematically. This analytical lens has become one of my greatest strengths as a leader. Whether it is navigating school operations, understanding people, or making strategic decisions, my engineering mindset helps me remain objective, structured, and solution oriented.

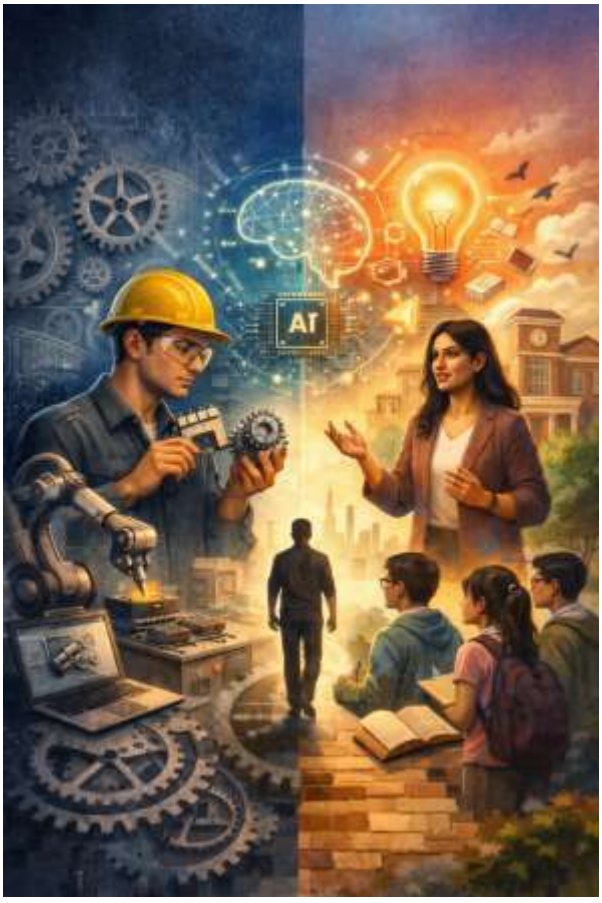
I still remember the subject that captured my heart from the very beginning - Engineering Graphics. I loved it to the core. Those endless hours spent with lines, angles, and projections were not struggles but invitations to sharpen my vision. Every drawing felt like a puzzle waiting to be solved. It taught me to visualize the unseen, to imagine a 3D structure from a 2D sketch, and to appreciate that clarity often arrives only when we view things from different angles. That subject was silently teaching me perspective - the very essence of leadership, where one must hold the big picture while honouring every small detail.

When I stepped into the world of education, I realized that schools are not so different from engines. Every student is a vital part, every teacher a key gear, and leadership is the energy that keeps the entire system running with purpose.

Transitioning from engineering to education taught me that knowledge alone doesn't make a leader. What matters more is taking responsibility, the humility to value every individual, and staying strong through challenges. These qualities elevate us beyond technical competence and prepare us for meaningful, compassionate leadership. The world will challenge you, but each challenge will shape you. Carry with you the discipline and analytical strength of engineering, but anchor them with integrity, empathy, and vision. Machines may run on fuel, but life runs on values.

Today's Gen Z stands at a remarkable intersection - empowered with technology, connected to the world, and supported by tools that earlier generations could only dream of. Artificial Intelligence is reshaping classrooms, expanding the way we think, learn, and innovate. Yet, with all this advancement, the true test lies not in what you know, but in who you are. Knowledge gives you power; skills give you direction; but values give you purpose. In a world racing toward innovation, your humanity will always be your greatest advantage.

Because in the end, it is not just the machines you design - it is the world you help shape.



International Affairs

Talk by Mr. Sanskar Srivastav, Director – Client Solutions & Innovation, Hotel Trader, Florida, USA

[Aug 13, 2025]

Sanskar Shrivastava, an alumnus of Amrita Vishwa Vidyapeetham, Bengaluru, and currently Director – Client Solutions & Innovation at Hotel Trader, Florida, USA, recently visited the Bengaluru campus and interacted with the S5 RAE students. During the session, he shared insights from his professional journey and spoke about how his academic experience at Amrita helped shape his path from a postgraduate student to a leadership role in the global hospitality technology industry. He highlighted how the strong technical foundation and analytical skills he developed during his M.E. program helped him effectively navigate complex challenges in his professional career.

Drawing from his international work experience, Sanskar discussed his role in leading client solutions and innovation initiatives at Hotel Trader, where he works closely with global hospitality partners to develop technology-driven strategies and improve hotel distribution and connectivity. He also emphasized that the leadership, teamwork, and problem-solving skills he cultivated during his time at his alma mater played a key role in his growth into a leadership position. Encouraging students to prepare for global opportunities, he advised them to focus on continuous learning, adaptability, and building a strong professional network.

Signing of MoU for alfaTKG R&D Center

[Nov 26, 2025]

Amrita Bengaluru and alfaTKG Co Ltd (Tokyo, Japan) are involved with multiple collaborative projects for the development of software for smart manufacturing solutions.

To take it to the next level, an MoU was signed with alfaTKG to establish "alfaTKG R&D Center" at IDEA Lab in Amrita Bengaluru.

This was held on the sidelines of alfaTKG Seminar at IIT Madras Research Park on Nov. 26, 2025, convened by Mr. Toshio Takagi (CEO) and Dr. Periasamy Thanapandi (CTO).

During the Seminar, the ongoing project "Motion planning of an industrial robot to perform welding in a CAD Environment" was also reviewed by alfaTKG and the demonstration of Robot Simulation Software developed by Amrita and alfaTKG together and the subsequent execution on a physical robot (TechMaster TM-12 cobot) was done.

Industry-Academia Partnership

Industry- Academic interaction: One-Day Seminar on "Advanced Metallic Materials for Aircrafts and Engines"

[July 19, 2025]

A seminar on Advanced Metallic Materials for Aircrafts and Engines was organised by HAL, Foundry and Forge Division at HAL Management Academy, HAL, Bengaluru. 39 students of Mechanical Engineering and RAE participated in the event which was coordinated by Dr. Mrudula Prashanth.

The event had participants from all over mechanical and aerospace industries essentially industrialists This was an opportunity for students that brought together Industry professionals and academia. It provided the students with valuable insights into India's ongoing efforts to achieve material indigenization under the Make in India initiative- particularly in the aviation and defence sectors.

Students could get an exposure to the real- world application of metallic materials in aircraft design and engine manufacturing, challenges and advancements in material development from industrial perspective, the sessions included the presentation on Material requirement for Aircrafts and Engines, Advance Metallic Materials, Forging, Casting, Material certification, Indigenous Development , supply chain and emerging technologies and special attention to additive manufacturing (metal 3D printing), which bridged the gap between academic curriculum and current aerospace practices and most importantly they could interact with experts from Organizations such as DRDO, CEMILAC, GTRE, NAL, ADA, MIDHANI, IISc and IITs. Holistically, it was a knowledge enriching experience for students.

Dr. Mrudula Prashanth and Mr. Raghavendra Ravi Kiran, Assistant Professors for Department of Mechanical Engineering accompanied to the venue back and forth. The event was organized under the banner of INGENIUM – A Mechanical Department Forum.

Invited Talk – UAM technology trends

[Sep 25, 2025]

The Tech Talk on "Urban Air Mobility (UAM): Transforming the Future of Urban Transportation" by Mr. Vinoth Bojan, from Honeywell, organised by The Robotics Society – Student Chapter.

The session began with Mr. Vinoth Bojan, from Honeywell, addressing the pressing issues of urban transportation, such as increased traffic congestion, reducing travel time, minimizing negative impact on environmental, and infrastructure limitations. Students were introduced to key technologies essential for UAM: electric propulsion for clean and quiet thrust, autonomous navigation systems for pilotless operation, advanced communication networks for traffic coordination, and efficient battery storage.

Then the session was continued by a talk from our Amrita Alumni, Snehith Reddy Jambula, currently in Honeywell, focused on autonomous and connected systems, particularly the role of sensors. Sensors act as the "eyes and ears" of drones, gathering environmental data for real-time decision-making.

The event concluded with a motivating talk by Dr. Rajeevlochana, who emphasized that hands-on experience (through Projects & Hackathons) is essential for mastering drone technology and applying theoretical concepts in real-world scenarios. Other students working on this field were also called on the stage to share their experiences and industry projects.

Industry-Academia Partnership

Industrial Visit to JANATICS

[Sep 18, 2025]

As part of an industrial visit, students toured a facility that designs and manufactures large-scale automated systems, gaining firsthand exposure to how automation operates in real industry settings. They were briefed on key automation technologies such as pneumatics, hydraulics, and the essential components used in automated setups.

The visit featured a live demonstration of a scaled-down production line, where a robotic arm picked and placed raw materials, moved them through various stages using a conveyor system, and finally classified the products based on size and material. The experience provided students with a clear and practical understanding of industrial automation and modern manufacturing processes.

CoreEL MathWorks Edu Summit

[Aug. 19, 2025]

Dr. Rajeevlochana G. Chittawadigi, Dr. Prashant B. N., and Dr. Bikram Singh Solanki attended one day seminar “CoreEL Edu Summit 3.0” on "Smart Systems in Motion" held on 19th August 2025 at Vivanta, Bangalore organized by CoreEL Technologies (I) Pvt Ltd, Bangalore in association with MathWorks. In the seminar CoreEL and MathWorks executive demonstrated the capabilities of Matlab to simulate the real time robotics solution using Simulink and ROS2. The emphasis was given to create 3D map of environment using visual and non-visual sensors and perform navigation. Dr. Rajeevlochana G. Chittawadigi was also invited to deliver a keynote session on “Robotics Education using MATLAB”.

Industry-Academia Partnership

MathWorks User Connect

[Aug. 19, 2025]

Dr. Rajeevlochana G. Chittawadigi, Dr. Puja Sengupta, and Dr. Bikram Singh Solanki participated in the MathWorks User Connect for MATLAB–Arduino Support on 13th November 2025 at 10:00 a.m., organized by MathWorks India Pvt. Ltd. at Embassy Tech Village, Blocks I & J, Trillium, Outer Ring Road, Bengaluru.

The event commenced with a brief address outlining the objectives and agenda of the User Connect program, followed by a networking session over high tea. Subsequently, team-wise interactive discussions were conducted between faculty members from various academic institutions and MathWorks representatives. These discussions focused on exploring the utility of Arduino in academic environments, the challenges faced during its integration in teaching and laboratory courses, and user expectations from Arduino support and Simulink-based solutions using MathWorks tools.

The interactive sessions enabled participants to share practical experiences, academic requirements, and suggestions for enhancing software support to better align with curriculum needs. The program continued with lunch, after which tokens of appreciation were presented to the attendees.

The event concluded with a summary of key outcomes and a discussion on future action plans by MathWorks to address user feedback and facilitate improved academic support through enhanced software features and training resources. Overall, the User Connect program served as a valuable platform for knowledge exchange and collaboration between academia and industry.

Ongoing Projects in the Department

Project SVR-1: "Integration of AMoRA (Amrita Modular Robotic Arm) with RoboAnalyzer® for Effective Robotics Education"
Project Investigator: Dr. Rajeevlochana G. Chittawadigi
Funding: Rs. 8,43,700
Collaborator: SVR Infotech, Pune
Duration: May 2023 to April 2026.

Project alfaTKG-A1: "Motion Planning of an Industrial Robot to Perform Welding in a CAD Environment"
Project Investigator: Dr. Rajeevlochana G. Chittawadigi
Funding: Rs. 9,40,000
Collaborator: alfaTKG Technology India Services Pvt Ltd, Chennai
Duration: June 2023 to May 2026.

Project alfaTKG-B1: "Further Development of a Software Library to Convert Orthographic Views to a 3D Model for AutoPilot3D"
Project Investigator: Dr. Rajeevlochana G. Chittawadigi
Funding: Rs. 14,75,000
Collaborator: alfaTKG Technology India Services Pvt Ltd, Chennai / alfaTKG Co. Ltd., Tokyo, Japan
Duration: March 2024 to Feb 2026.

Project Orangewood-1: "Setting up of Amrita-Orangewood Collaborative Robotics Lab"
Project Investigator: Dr. Rajeevlochana G. Chittawadigi
Project Co-investigator: Dr. Nippun Kumaar A. A. (CSE)
Funding: Rs. 16,00,000
Collaborator: Orangewood Labs, Noida
Duration: Feb 2024 to January 2029.

Project Honeywell-1: "Experimental investigations on characterization of pumps provided by Ms. Honeywell"
Project Investigator: Dr. Pradeep S. Jakkareddy
Project Co-investigator: Mr. Vinod M. Kotebavi
Funding: Rs. 3,41,680
Duration: November 2024 to December 2026.

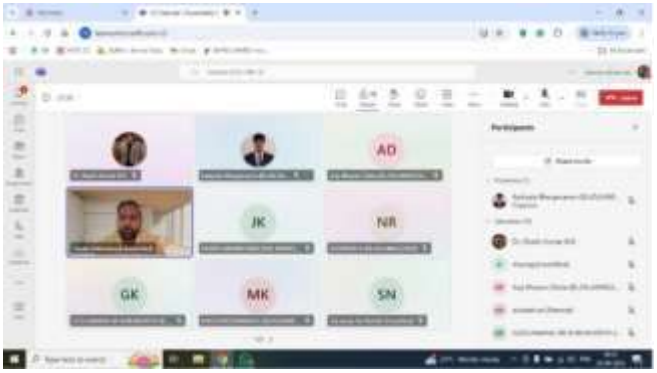
Project: AICTE Idea Lab
Chief Mentor: Principal
Coordinator: Dr. Rajeevlochana G. Chittawadigi
Funding: Rs. 30,00,000 (AICTE)
Duration: April 2025 – March 2027

Alumni Corner

Alumni Co-teaching

Mr. Sai Sri Harsha Pallerlamudi (Batch 2011–15), an alumnus of the department, co-taught the Sustainable Manufacturing course [19MEE345] for S7 Mechanical Engineering students, in the AY2025-26. Currently serving as Manager – Built Environment at RMI India Foundation, he brings strong expertise in sustainable energy systems, backed by advanced degrees from Eindhoven University of Technology and InnoEnergy. As part of the course, he trained students on the use of IFC EDGE software to analyze energy efficiency, following which students carried out project work as part of their end-semester evaluation.

He also shared insights from real-world green building projects and industry practices in sustainable design. His sessions helped students understand the practical application of energy efficiency concepts in the built environment. The interaction provided valuable industry exposure and enhanced students' understanding of sustainable engineering solutions.



Mr. Ganesh Vidwath interaction with MEE S1 Students

[Nov 26, 2025]

Mr. Ganesh Vidwath, an alumnus of the Mechanical Engineering Department from the 2019 batch, visited the campus on November 26, 2025. During his interaction with first-year Mechanical Engineering students, he shared his experiences of student life at Amrita Vishwa Vidyapeetham. He spoke about the academic environment, extracurricular opportunities, and how campus experiences shaped his professional journey.

He also highlighted potential career opportunities in core mechanical engineering sectors and discussed the industry expectations from young engineers. Emphasizing the importance of practical exposure, he encouraged students to actively participate in projects, internships, and technical clubs. He also advised them to focus on strengthening their fundamentals, communication skills, and problem-solving abilities. The interactive session allowed students to ask questions about career paths and industry trends. Overall, the talk was insightful and motivating for the budding engineers.

Catching up with our Alumni

Gali Jitendranath Reddy (Alumni of class 2023)

Vaishnavi Rajesh Mohite (Alumna of class 2023)

Anand Rex and Giriprasath (Alumni of class 2015)

Innovation in Teaching and Learning

Design Thinking for Projects for Based Learning

Design Thinking is taught as a course in the 3rd semester of Mechanical Engineering (MEE) and Robotics and AI (RAE). The final evaluation is based on innovative projects completed by the students. About 30 from MEE and 63 from RAE students participated in the inside and outside-college initiative. They collaborated with Comedkares Innovation Centre to conduct the program. The aim was to transform classroom theories into practical solutions. Students followed a typical design thinking journey: empathize, define, ideate, prototype, test. The collaboration provided access to maker spaces and prototyping tools. Mentors from Comedkares guided the teams with regular feedback. Projects addressed industry-relevant problems presented by mentors and faculty. The campus setting encouraged hands-on experimentation and rapid iteration. Teams documented their processes and showcased working concepts. The experience strengthened teamwork, communication, and problem-solving skills. Final presentations demonstrated tangible prototypes and user-centered designs. This initiative strengthened college-industry linkages and entrepreneurial thinking. The report highlights how external partnerships enrich the Design Thinking curriculum.

Course Projects for Experiential Learning

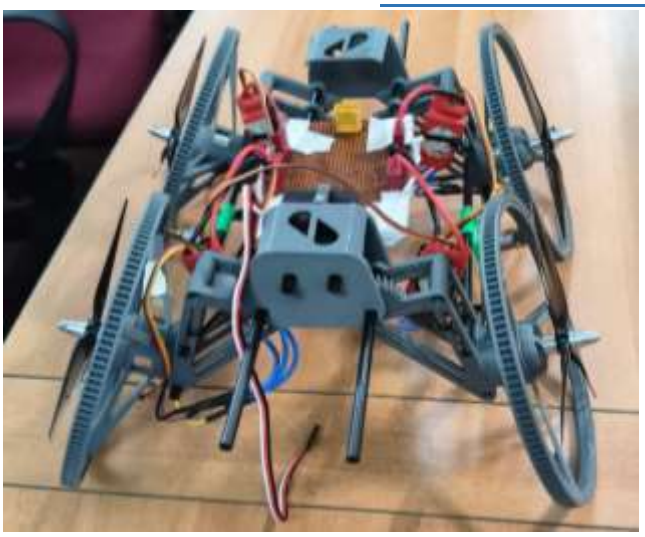
Amrita University encourages its students to take up course projects so that they can "Learn-by-Doing", i.e., through Experiential Learning. A few courses have an end-semester project as evaluation instead of a pen-and-paper written exam. This allows the students to learn deep into the aspects of such courses and develop a functional prototype. A few such projects carried out this semester are reported below:

Project 1: Hexapod Bot
Team: R Pranav, Atharv and Saikiran
Class: S3 RAE

This project describes the creation of an ESP32- driven hexapod robot that achieves stable movement through its tripod gait and operates via a smartphone app that supports multiple control methods. The six-legged platform operates on rough surfaces because it sustains static stability, which enables it to perform environmental monitoring, search-and rescue operations, and reconnaissance missions. The robot employs an ESP32 microcontroller for real-time control and wireless communication, in conjunction with a PCA9685 16- channel PWM driver to accurately actuate twelve MG90S servo motors, providing two degrees of freedom per leg. The robot can be operated through a Bluetooth mobile app, which offers joystick controls, gesture recognition, and voice commands for complete interaction without needing internet access or external hardware. The system includes a GPS module, which tracks outdoor positions in real time, allowing the robot's position to be viewed through the mobile device interface.

Project 2: Tactical Transformer Drone
Team: Dinesh Challagolla, Nandhith Karthikeyan and Dhyanesh Sekar
Class: S5 RAE

This project explores multi-modal mobility by creating a custom drone that mechanically transforms into a ground vehicle. We designed the entire system from scratch — developing the complex folding chassis, fabricating custom PCBs, and integrating a 4-axis flight controller with a separate ground-drive system.



Through multiple iterative design cycles, we overcame significant challenges in weight distribution, structural rigidity, and seamless transition mechanics to achieve stable flight. The final prototype adapts to its environment by flying to gain vantage points and folding its arms to drive into confined spaces or stealthily traverse terrain. This morphing capability extends operational range and mission versatility for defense applications where standard fixed-wing or quadcopter drones would be limited by battery life or obstacles.

Drone Basics: Build, Calibrate and Fly

[Nov 28-30, 2025]

The three-day hands-on workshop on Drone Basics: Build, Calibrate and Fly was successfully conducted by The Robotics Society – Student Chapter.

This workshop provided students with practical exposure to the fundamentals and applications of unmanned aerial vehicles (UAVs). The activity emphasized experiential learning, enabling participants—particularly from robotics and mechanical engineering backgrounds—to bridge the gap between theory and real-world implementation. Students were introduced to the core components of a drone, including motors, propellers, ESCs, flight controllers, batteries, and frames, and gained an understanding of their functions through guided assembly and system integration.

Over the course of the workshop, participants worked in teams to assemble and demonstrate their drones, with evaluations conducted by faculty members on the first and third days. The second day featured expert guidance from a resource person, focusing on calibration procedures, safety practices, and supervised flight operations.

Through assembly, calibration, flight practice, and evaluations, students developed essential skills in hardware integration, troubleshooting, control, and safe drone operation.

The workshop also encouraged interest in advanced applications such as aerial imaging, autonomous navigation, and research-oriented drone projects, laying a strong foundation for future innovation in UAV technologies.

Preparing Students for a Brighter Future

Winter Placement Training Sessions

[Nov 22 – Dec 1, 2025]

The Winter Placement Session was organized from 22nd November 2025 to 1st December 2025 with the objective of preparing VII Semester Mechanical Engineering students for internships, placements, and higher education opportunities. The placement-related activities included interactive discussions on internship opportunities, placement procedures, and exit feedback from students who had already participated in placement drives. Guidance was also provided to students aspiring for higher education, with special emphasis on preparation for the GATE examination. In addition, structured sessions on Group Discussions (GD), Technical Interviews, and HR Interviews were conducted to enhance students' employability skills. Throughout the semester, placement training sessions were conducted every Thursday, along with internship presentations by students. These sessions were well received and proved beneficial, as several students successfully cleared technical and HR interview rounds during the placement drive.

In addition to the regular weekly sessions, intensive Winter Placement Training Sessions were conducted from 22nd November to 1st December 2025. These sessions focused on in-depth technical training in core mechanical engineering subjects such as Computational Fluid Dynamics, Heat Transfer, Thermodynamics, Fluid Mechanics and Machinery, Internal Combustion Engines, Strength of Materials, CNC, Automation and IoT, Additive Manufacturing, Manufacturing Processes, Metallurgy and Materials Science, Robotics, Kinematics and Dynamics of Machines, and Design of Machine Elements. Training in Python and C programming was also provided. Dedicated sessions on resume preparation were conducted to help students align their profiles with industry requirements.

Alumni played an active role in the placement training by participating in mock Technical Interviews, Group Discussions, and HR interview sessions. Ms. Pranavi, with professional experience at Lam Research, currently pursuing an MBA at Amrita School of Business, Bengaluru, and placed at EY, significantly contributed to organizing and conducting the GD and HR interview sessions.

Mock Technical Interviews were conducted by alumni professionals, including Mr. K. Sriram (AeroX Engineer, Alstom), Mr. Manoj Adiga (Procurement Agent, Boeing), and Mr. V. Veera Raghava Sai (R&D Design Engineer, Prettl Mechatronics & Actuators), in collaboration with faculty members. These sessions provided valuable insights into industry expectations and helped final-year students assess their readiness for professional careers.

Overall, the Winter Placement Session was highly effective in enhancing students' technical competence, interview performance, and confidence, thereby contributing significantly to their placement preparedness.

B.Tech Program Objectives (POs)

[As mandated by AICTE/NBA]

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Educational Objectives (PEOs)

[Formulated by the ME Dept.]

PEO1: Apply their Knowledge in Science, Mathematics and Engineering to **address Industrial and Societal problems** with a strong emphasis on creativity, confidence, ethics, and responsibility.

PEO2: Apply latest **computational, analytical, simulation tools** and techniques to develop and improve products and processes.

PEO3: Solve **multidisciplinary** problems by working in cross functional teams.

PEO4: Develop and upgrade technical, intellectual, and emotional **skills for life-long learning** to compete in a rapidly evolving world.

PEO5: Nurture **entrepreneurial** ventures and **foster research** activities that support **sustainable** economic development to enhance the quality of life.

B.Tech in Mechanical Engg (MEE)

Mechanical Engineering is one of the earliest forms of engineering which was instrumental in all the industrial revolutions. Now, we are at a juncture where it is evolving rapidly under the influence of other inter-disciplinary topics and also with the application of AI and ML in Mechanical Engineering domain. B.Tech in Mechanical Engineering is designed to produce graduates with profound theoretical knowledge and good practical exposure to tackle and solve problems in the society.

Program Specific Objectives (PSOs - MEE)

PSO1 (MEE): Apply knowledge acquired in the field of Design, Manufacturing, Thermal, and Fluid sciences to solve real-world engineering problems using emerging technologies.

PSO2 (MEE): Extend and implement innovative thinking on product design and development with the aid of modern tools.

PSO3 (MEE): Apply the Science and Engineering knowledge for advanced materials design and processing for development of sustainable solutions and improvement of products and processes.

PSO4 (MEE): Augment the acquired domain knowledge with AI and Computational skills in order be ready with the changing interdisciplinary demands of the industry.

B.Tech in Robotics and AI (RAE)

Robotics deals with the design, development, control and testing of robots meant to perform repetitive tasks and as autonomous units. Robots are multi-purpose devices used in various applications. With the advancements in the fields of Artificial Intelligence (AI), robots can be further improved. B.Tech in Robotics & AI is a confluence of state-of-the-art in both fields and the graduates would be primely prepared to meet current & future industrial manufacturing and R&D requirements.

Program Specific Objectives (PSOs - RAE)

PSO1 (RAE): Design and develop cost-effective robotic systems catering to Industrial and Societal requirements.

PSO2 (RAE): Develop cost-effective, safe, and efficient AI-based automation systems for manufacturing applications, focusing on product development and process improvement.

PSO3 (RAE): Apply the acquired knowledge and skills in AI to address real-life multidisciplinary engineering problems.

M.Tech in Robotics and Automation (RAU)

Robotics is an inter-disciplinary field and hence can be effectively pursued as a specialization by B.Tech / B.E students from Mechanical, Electrical, Electronics and Computer Science domains. M.Tech in Robotics and Automation is a curated program to introduce the core competencies required to develop robotics systems and to program them to perform various applications. The course aims to develop individuals who can take the robotics research and development to greater heights.

M.Tech Program Outcomes (POs - RAU)

PO1 (RAU): Ability to independently conduct research and develop solutions to practical problems.

PO2 (RAU): Ability to write and present substantial technical reports and documents effectively.

PO3 (RAU): Demonstrate advanced mastery in the program specialization beyond undergraduate level requirements.

Program Specific Objectives (PSOs - RAU)

PSO1 (RAU): Design and develop robotic systems for diverse applications.

PSO2 (RAU): Implement automated systems integrating IoT, advanced communication, and AI/ML to address industrial and societal challenges.

Program Educational Objectives (PEOs - RAU)

PEO1 (RAU): Provide an interdisciplinary curriculum integrating Mechanical, Electronics & Instrumentation, and Computer Science engineering to build strong technical foundations in robotics.

PEO2 (RAU): Develop student expertise in next-generation robotics and automation systems through a comprehensive educational environment.

PEO3 (RAU): Foster a holistic approach to robotics by exposing students to diverse disciplines, preparing them as skilled professionals, researchers, and leaders in a technology-driven world.

Mr. Bhanu Prakash S.
- Heat Transfer
- Fluid Mechanics
- Thermoelectric Modules

Dr. Bikram Singh Solanki
- Robotics
- Smart Manufacturing

Dr. Deepthi Y. P.
- Polymer Composite Materials
- Industrial Engineering

Dr. Dileep B. P.
- Ferrous-based Metal Matrix Composites
- Powder Metallurgy
- Industrial Automation

Ms. Divya Sharma S. G.
- Supply Chain Engineering
- Total Quality Management
- Lean Manufacturing
- Optimization

Dr. Gopalakrishnan E. A.
- Nonlinear Dynamics
- Complex Systems
- Combustion Instabilities
- Stochastic Systems

Dr. Mohan Kumar S.
- Composite Materials
- Fracture Mechanics
- Material Science
- Finite Element Method

Dr. Mrudula Prashanth
- Composite Materials
- Alloys
- Cryogenics
- Manufacturing

Dr. Pradeep S. Jakkareddy
- Inverse Heat Transfer
- Experimental Heat Transfer
- Cooling of Electronic Systems

Dr. Prakash Marimuthu
- CAD /CAM
- Manufacturing
- AI / ML in Mechanical Domain

Dr. Pramod R.
- Composite Materials
- Fracture Mechanics
- Finite Element Analysis
- Computational Mechanics

Dr. Puja Sengupta
- Robotics
- BCI

Dr. Prashanth B. N.
- Product Lifecycle Management
- CAD/CAM
- Robotics & Industrial Automation
- Wind & Solar Energy Systems

Mr. Raghavendra Ravi Kiran K.
- Composite Materials
- CAD / CAM
- Robotics & Industrial Automation

Dr. Rajeevlochana Chittawadigi
- Robotics
- Kinematics and Dynamics of Multi-body Systems
- CAD and Graphics

Dr. Ravi Kumar V.
- Nano Composites
- Mechatronics and Sensors
- Machine Design

Dr. Shali S.
- Aeroelasticity
- Vibration Analysis in Sub-sonic and Super-sonic flow

Dr. Shankara
- Waste Management
- Pollution Research
- Geo-environmental Engineering

Dr. Shashi Kumar M. E.
- Composite Materials
- Concurrent Engineering
- Complex Products Development

Dr. Smita Singh
- Geo-polymer Technology using Industrial Wastes
- Structural Engineering

Dr. Sriram Devanathan
- Data Reconciliation & Gross Error Detection
- Groundwater Transport
- Low-cost Materials

Dr. Ulhas K. Annigeri
- Composite Materials
- Metal Matrix Composites
- Tool Design

Mr. Vinod Kotebavi
- Shock Wave and Hypersonic flow
- Renewable Energy

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