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AMRITA

VISHWA VIDYAPEETHAM

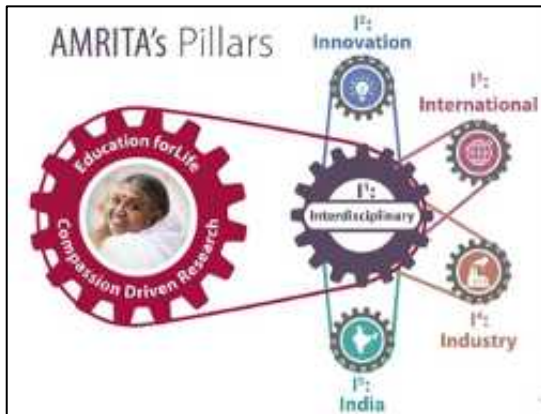
Department of Mechanical Engineering
Amrita School of Engineering, Bengaluru
2025-26 Even Semester

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.

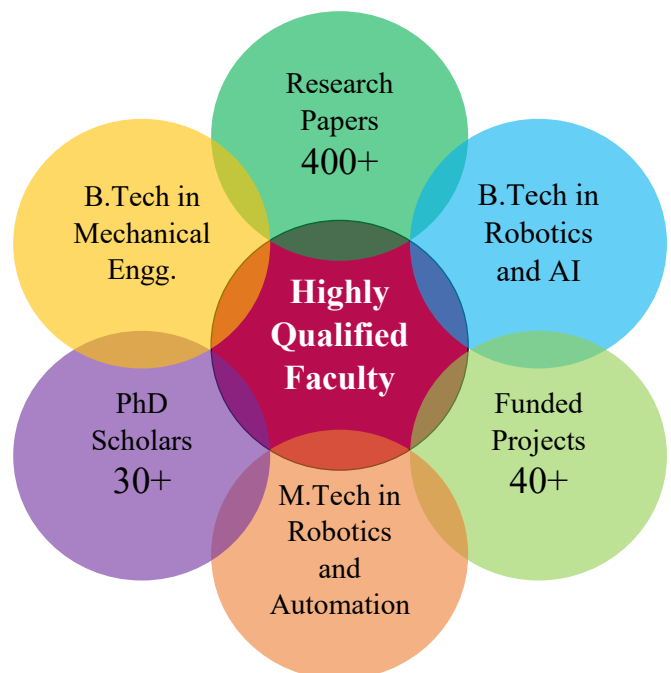
Vision:

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

[Jan 5, 2026]

A briefing session for the students of ME Dept. (MEE first to final years, RAE first to 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:

C. Ram Kalyan (MEE23004): He requested if special consideration (attendance) can be given if summer internship from a reputed company (through CIR) extends beyond 4-6 weeks. He was answered that under special considerations, there have been instances of the same.

Lavanya Velusamy (MEE23010): She appealed to the department students to participate in inter-departmental sports, games, dance and music competitions.

Upendra Traka Sai (MEE23013): He suggested students to join SAE BAJA/GKDC team to gain access to SolidWorks and ANSYS software license (student license). He also suggested that "Generative Design" be included in curriculum of CAD/Graphics courses. A bridge course on the same can also be planned.

Soumya Dubey (MEE23015): She suggested to have better "Time Management" while participating in curricular and extra-curricular activities.

Sruthisaagar M (MEE23016): He requested the students to follow SAE Teams (Ameya, Vegam and Velstra) on Instagram and other online platforms. He also made a pitch for more members to join them.

Y. V. S. Sri Vara (MEE23021): He gave tips to the audience on how to participate in external competitions and also shared his journey of winning Inter-Amrita Cultural Competition (Classical Singing). However, he raised a concern on why he was not shortlisted for AIU to represent Amrita University.

K. Sreenidhi (MEE23024): She requested for extended timing for SAE (girls) to work in E-Mobility Center. She was asked to send a fresh set of requests.

Vamsi Krishna Chalasani (MEE23026): He formally acknowledged and thanked Alumni for sponsoring SAE BAJA Team worth Rs. 3 Lakhs. He requested for a dedicated bank account or better way to disburse or reimburse the purchase, and the latter was agreed upon.

A Nescadon GiveIndia account/page for ASEB ME Dept. may also be created to reach out to the Dept. Alumni.

J. Nithish (MEE24029): He suggested to have bridge+course/workshop on FIGMA (related to mobile application development) that can help in Design Thinking course too. He was answered that AICTE IDEA Lab would include most of the equipment their batch had used in their Design Thinking sessions at Coimbatore.

Mudiana Sahasra (MEE25020): She requested if UPI facility be made available in Canteen. She was answered that it may happen in the near future. She also requested for extension in the outing timing (upto 19:30) to which she was answered that it will be discussed in the concerned meetings.

R. V. R. K. Preetham (MEE25011): He suggested that Amritadhara club details (info to join, videos, etc.) be made available on Amrita BLR website or associated online media so that students can decide on which club(s) to join.

Amogh Mishra (MEE25023): He requested if "Electrical Kettle" can be allowed in the Hostel Rooms to which he was answered that it will be reviewed.



Institute and Department Events

AICTE IDEA Lab Inauguration

[Jan 14th, 2026]

The AICTE IDEA Lab at Amrita Vishwa Vidyapeetham, Bengaluru Campus, was inaugurated on 14 January 2026, marking a significant milestone in strengthening the institute's innovation and experiential learning ecosystem. The initiative aims to encourage students to explore creative ideas, develop practical solutions, and gain valuable experience through hands-on learning and experimentation.

The event was graced by Mr. Velayudham B., Founder and Director of S-Box Pvt. Ltd. and Founder of Sameta Sheetmetal, as the Guest of Honour. The inauguration was attended by Dr. Manoj P, Institute Director; Dr. Sriram Devanathan, Principal, School of Engineering; Dr. Gopalkrishnan E. A., Principal, School of Artificial Intelligence; Dr. Rajeev Lochana and Dr. Vivek Venugopal, Coordinators of the AICTE IDEA Lab; mentors Dr. Deepthi, Mr. Vishnu, Dr. Puja Sengupta, and Dr. Bikram Singh Solanki, along with faculty members, staff, and students.

The establishment of the IDEA Lab provides a collaborative platform for innovation, product development, prototyping, and interdisciplinary research, fostering entrepreneurship and hands-on learning across the campus.



E-Cell Amrita Inauguration

[Jan 31st, 2026]

E-Cell Amrita Bengaluru was inaugurated on 31 January 2026 to promote innovation, entrepreneurship, and the startup ecosystem among students and faculty. The cell functions under the mentorship of E-Cell IIT Madras and operates in collaboration with the Institution's Innovation Council (IIC), AICTE IDEA Lab, and ACE Club to foster entrepreneurial and innovation-driven initiatives on campus. Through these collaborations, the cell aims to provide opportunities for students to develop ideas, enhance their entrepreneurial skills, and engage with the wider innovation ecosystem.

The inauguration was graced by Mr. Charles Antony, Co-founder and CEO of STEM Smart Labs, as the Chief Guest, and Mr. Parthasarathy, Co-founder and CTO of STEM Smart Labs, as the Guest of Honour. The event was presided over by Dr. Sriram Devanathan, Principal, Amrita School of Engineering, Bengaluru, with the esteemed presence of Mr. Divyanshu Sharma and the E-Cell IIT Madras team.

The launch marks a significant step towards building a vibrant culture of innovation and entrepreneurship at the institute and encouraging students to transform creative ideas into meaningful solutions and potential ventures.



Institute and Department Events

Amrita Industry Conclave [April 17th-18th, 2026]

The second edition of the Amrita Industry Conclave was organized at Amrita Vishwa Vidyapeetham, Bengaluru Campus, on 17–18 April 2026, in coordination with the AICTE IDEA Lab and the constituent schools of the campus. The two-day conclave brought together academic and industry experts to strengthen academia–industry collaboration and develop strategies for producing industry-ready, future-skilled, deployable, and competent graduates.

The first day focused on curriculum design, pedagogy, and assessment, with industry experts providing structured inputs to enhance undergraduate and postgraduate programmes and make them more skill-based and aligned with industry requirements. The second day featured thematic discussions on emerging areas including Robotics and Smart Manufacturing, AI, IoT and Security, Digital Twins, Sustainable Advanced Materials, E-Mobility, Computational Methods, and Embedded and VLSI Systems.

For the Mechanical Engineering domain, discussions emphasized application-oriented education, advanced manufacturing, automation, system integration, industry-driven laboratories, internships, real engineering challenges, and industry-supported projects. The conclave also highlighted certifications in areas such as Industrial Automation, Lean Manufacturing, Welding and Robotic Welding, and Metal 3D Printing.

The discussions further emphasized the need for stronger faculty exposure to contemporary industrial practices, collaborative research, and real manufacturing environments. Students were encouraged to develop miniature systems and laboratory setups from scratch and to be evaluated based on parameters such as quality, productivity, cost, innovation, and creativity.

The conclave also explored opportunities for research collaboration, product and process development, upskilling, consultancy, and testing services through sustained engagement with participating industries. Student projects, research posters, and product exhibitions provided opportunities to showcase innovations and explore potential industry collaborations and expert guidance.

The event served as a valuable platform for knowledge exchange, networking, identification of industry-

relevant challenges, and establishing meaningful pathways for future collaborative initiatives.



Institute and Department Events

Farewell Ceremony for Graduating B. Tech Students **[April 30th, 2026]**

The Mechanical Engineering Department (MEE) organized a heartfelt Farewell Ceremony for the graduating B. Tech students on 30 April 2026 at Sudhamani Hall. The event was attended by the graduating students, Dr. Sriram Devanathan, Principal, School of Engineering, Dr. Rajeev Lochana, Vice Chair, faculty members, and staff of the department. The occasion celebrated the achievements and memorable journey of the graduating batch through inspiring addresses, student interactions, and moments of appreciation.

Faculty members conveyed their best wishes and encouraged the students to uphold the values of excellence, integrity, and lifelong learning as they embarked on their professional careers and higher education. The ceremony concluded with heartfelt goodbyes and best wishes for a successful future.



Farewell Ceremony for Faculty and Staff **[May 14th, 2026]**

The Department of Mechanical Engineering organized a heartfelt Farewell Ceremony on 14 May 2026 to honour the dedicated service and valuable contributions of Dr. R. Pramod, Assistant Professor, Mr. S. N. Gurumurthy Sharma, and Mr. B. M. Moni, Instructor. The gathering was addressed by Prof. Sriram Devanathan, Chair, Department of Mechanical Engineering, and Dr. Rajeevlochana, Vice Chair, who expressed their appreciation for the professionalism, commitment, and lasting impact of the departing members on the department.

Faculty members and staff joined in extending their gratitude and best wishes, celebrating the contributions of the honourees while wishing them continued success in their future endeavours. The ceremony concluded with warm memories, heartfelt tributes, and a token of appreciation.



Faculty Corner

Amrita-Nurture Programme **[Feb 5th -7th , 24th -26th, 2026]**

Amrita-Nurture successfully organized a three-day Hands-on Workshop on Robotics and Drones to inspire scientific curiosity and foster technological innovation among students of Vivekananda Girijana Kalyana Kendra School, B. R. Hills, Chamarajanagar District, during February 5–7, 2026. Sponsored by IHFC, IIT Delhi, the workshop promoted experiential STEM learning through interactive sessions, practical demonstrations, team-based activities, and hands-on robotics and drone applications.



As part of the Amrita-Nurture initiative, a three-day Hands-on Workshop on Robotics and Drones was conducted for students at Ekalavya Model Residential

School, Sollepura, H. D. Kote, Mysuru District, during February 24–26, 2026. Sponsored by IHFC, IIT Delhi, the workshop inspired students through experiential STEM education, practical robotics and drone activities, interactive demonstrations, programming exercises, collaborative learning, and innovation-oriented problem-solving, encouraging greater interest in emerging technologies and engineering careers.



Faculty Corner

Participation in Faculty Development Program (FDPs)/ Quality Improvement Programme (QIP)/ Workshop

Mr. Vinod Kotebavi and Dr. Dileep BP, participated in the Faculty Exclusive Industrial visit to Ather Energy, jointly organised by Capabl x Ather Energy, on 20 January 2026 at Ather's Tech Experience Center, Bengaluru.

Dr. Ulhas K. Annigeri underwent a training programme on “Advancements in 3D Printing & Vacuum Casting”, held on 13th and 14th February 2026. The training provided valuable insights into recent developments in additive manufacturing, 3D printing technologies, vacuum casting processes, material selection, and rapid prototyping techniques. The programme enhanced understanding of emerging manufacturing methods and their applications in product development, tooling, prototyping, and advanced manufacturing. The knowledge gained through the training contributes to enriching classroom teaching, laboratory activities, and student project guidance in the Department of Mechanical Engineering.

Dr. Ulhas K. Annigeri has successfully completed a course in Intelligent Machining and Advanced Manufacturing Enterprise, offered by the University at Buffalo, SUNY through Coursera in March 2026.

Dr. Ulhas K. Annigeri has successfully completed a workshop organized by NPTEL through IIT, Guwahati on the topic mastering resilience amid workplace stress on 14th March 2026.

Mr. Raghavendra Ravi Kiran K. participated in the All Amrita Campus IAM Meditation Teacher Training Programme conducted at Amritapuri on 31st March to 2nd April 2026. Through this three-day training programme, he gained valuable knowledge and practical experience in the Integrated Amrita Meditation Technique (IAM 20) and developed a deeper understanding of its role in promoting physical, mental, and emotional well-being

Dr. Ulhas K. Annigeri has successfully completed a course in Cyber security in manufacturing, offered by the University at Buffalo, SUNY through Coursera on 11th April 2026.

Dr. Vinod Kotebavi attended 2 days FDP on “Charging Infrastructure Management in Electric Vehicles” conducted by SkyySkill Labs from 15th May to 16th May 2026.

Dr. Ulhas K. Annigeri successfully completed the Digital Manufacturing & Design Technology Specialization, offered by the University at Buffalo through Coursera, in June 2026. The specialization

provided comprehensive exposure to the Digital Manufacturing and Design (DM&D) paradigm and its application across the product life cycle. The programme covered key areas including Digital Thread Components and Implementation, Advanced Manufacturing Process Analysis, Intelligent Machining, Advanced Manufacturing Enterprise, Cybersecurity in Manufacturing, and Model-Based Systems Engineering (MBSE). It emphasised the integration and sharing of digital data across the product life cycle to enable data-driven decision-making, improve manufacturing efficiency, accelerate product development, and enhance industrial competitiveness.

Dr. Deepthi Y. P. has successfully completed the AICTE Quality Improvement Programme (QIP) Certification in Artificial Intelligence and Data Science conducted by IIIT Kottayam from January to June 2026. She successfully cleared all five courses offered under the programme. The certification enhanced my knowledge in Artificial Intelligence, Machine Learning, and Data Science. It provided valuable insights into applying AI techniques to engineering and research. The programme has strengthened my teaching and research capabilities in emerging technologies. I am grateful to AICTE, IIIT Kottayam, and my institution for this opportunity.



Dr. Vinod Kotebavi participated in the NI Academic Bengaluru Tech Connect 2026 – “Driving Future Research: Intelligent Test Systems, Advanced Wireless Communication & Electric Vehicle Research” held on 30th June 2026, Bengaluru. This was Organized by VVDN Technologies, in collaboration with NI, this event aimed to promote academic excellence and hands-on learning in modern test, measurement, and simulation technologies.

Faculty Corner

Workshop on "AI+ Pedagogy in Teaching and Learning"

[April 4th, 2026]

Prof. Sriram Devanathan, Chair, Department of Mechanical Engineering, conducted a three-hour workshop on "AI+ Pedagogy in Teaching and Learning" for mechanical engineering department faculty members. The workshop focused on leveraging Artificial Intelligence to enhance classroom teaching, improve student engagement, and promote interactive, learner-centric pedagogical practices.

Participants explored innovative AI-powered teaching strategies, effective classroom interactions, and methods to foster deeper conceptual understanding among students. The session also highlighted the responsible integration of AI tools in education to enrich the teaching-learning process and create a more engaging and effective learning environment. Through practical discussions and examples, faculty members gained insights into using AI for lesson planning, content creation, personalized learning, assessment, and providing meaningful feedback.

The workshop encouraged participants to critically evaluate emerging AI technologies and integrate them thoughtfully into their existing teaching methodologies. Overall, the session provided valuable perspectives on transforming conventional classroom practices through responsible and effective use of AI, while preparing educators to address the evolving needs of digitally enabled and future-ready learners.



Recognition

Dr. Prashanth B. N. was invited as the Chief Guest for the Robotics Workshop organized as part of the Golden Jubilee Celebrations – ADVAIT 2026 at Vivekananda Institute of Technology (VKIT), Bengaluru, on March 25, 2026. During the event, he delivered a keynote address highlighting the emerging trends, applications, and future opportunities in robotics and automation. He also evaluated innovative student projects as a judge, providing valuable feedback and constructive suggestions to the participants. His interaction with students encouraged them to explore emerging technologies, develop practical solutions, and pursue innovation in robotics and related domains. The event provided an enriching platform for knowledge sharing, project demonstration, and meaningful interaction between academia and students.



Faculty Corner

Dr. Rajeevlochana Chittawadigi served as the Central Referee at the DD Robocon India 2026 competition, hosted by IIT Delhi from 2–5 July 2026. In this prestigious national robotics championship, he played a pivotal role in ensuring the fair, transparent, and accurate conduct of matches by overseeing rule implementation, match proceedings, and competition adjudication. The event brought together leading engineering institutions from across the country to compete in advanced robotics challenges under the ABU Robocon 2026 theme. His appointment as Central Referee reflects his expertise, professional credibility, and recognition in the field of robotics and engineering education, bringing pride and distinction to the department. His contribution also supported the smooth execution of the competition and encouraged excellence, innovation, and sportsmanship among participating teams.



Mr. Vinod Kotebavi successfully defended his Ph.D. thesis titled "Flow and Thermal Investigations on Elliptic Cone in Hypersonic Flow" on 29th April 2026, under the guidance of Dr. Pradeep S. Jakkareddy, Department of Mechanical Engineering, Amrita Vishwa Vidyapeetham, Bengaluru Campus. The study involved detailed experimental investigations conducted in a hypersonic shock tunnel at Mach 8, complemented by Schlieren flow visualization to capture shock structures and flow patterns in real time, along with extensive CFD simulations to validate and extend the experimental findings. A significant part of the work involved establishing and calibrating the hypersonic shock tunnel facility itself to ensure accurate and repeatable Mach 8 test conditions.

A central focus of the thesis was a comparative evaluation of circular and elliptic cone configurations in hypersonic flow. While axisymmetric circular cones produced concentrated heat flux and predictable but comparatively less efficient shock patterns at the nose region, elliptic cones exhibited pronounced asymmetric shock structures and crossflow effects along their major and minor axes, leading to a more uniform distribution of surface heat flux and reduced peak windward heating.

These findings hold significant practical value for the design of thermal protection systems (TPS) in hypersonic and atmospheric re-entry vehicles, where minimizing localized thermal loads while sustaining aerodynamic efficiency remains a key design challenge, and they contribute meaningfully to the growing body of knowledge on non-axisymmetric hypersonic vehicle configurations, opening avenues for further research into optimized cone geometries for next-generation aerospace applications.



Students' Corner

AchFesto Expotainer Mobile Exhibition **[Jan 20th, 2026]**

The Festo Expotainer Mobile Exhibition, organized by The Robotics Society – Student Chapter and JIDO – The Automation Club, was conducted on our campus and saw active participation from students across various branches. The exhibition featured a specially designed mobile unit equipped with advanced demonstration models, offering a unique and engaging learning experience. Inside the expotainer, students explored a variety of pneumatic systems and automation technologies used in modern industries. Live demonstrations showcased the working of components such as actuators, valves, and control mechanisms, helping students understand their real-world applications beyond classroom theory. The interactive nature of the exhibition allowed students to ask questions, observe systems in action, and gain insights into industrial automation and manufacturing processes.



International Rover Challenge **[Jan 28th – Feb 2nd, 2026]**

Team Odyssey proudly represented the institution at the International Rover Challenge (IRC) 2026, held at Manipal Institute of Technology (MIT), Manipal, from 28 January to 2 February 2026. IRC is a space-robotics competition that challenges student teams to design, build and operate rovers in Mars-simulated environments, putting their engineering knowledge, teamwork and problem-solving abilities to the test. The competition featured 33 rover teams, with participants undertaking demanding rover missions and field challenges. Seven students from the Mechanical Engineering Department were part of Team Odyssey and played an important role in the rover's mechanical design, development, fabrication, assembly, testing and field preparation. The three-day challenge phase provided the team with an opportunity to put classroom concepts into practice while tackling demanding terrain, mission requirements and real-time engineering problems. Throughout the competition, the Mechanical team worked closely with members from other subsystems to ensure the rover's mobility, mechanisms and overall mechanical reliability. The journey involved continuous cycles of designing, building, testing, identifying failures and improving the system, giving students valuable hands-on exposure to real-world engineering. Beyond the technical experience, IRC 2026 strengthened the team's abilities in collaboration, communication, troubleshooting, decision-making and working under pressure.



Students' Corner

Drone Design Competition

[Feb 20th - 22nd, 2026]

Team Velastra proudly participated in the SAEISS Drone Development Challenge 2026, held in February 2026 at KCG College of Technology. The competition provided an excellent platform for students to design, develop, and evaluate drones in a highly competitive environment. Our team participated in the Regular Category and secured an impressive All India Rank 17 (AIR 17).

The competition was a valuable learning experience that gave us practical exposure to the complete drone design and development process. Through this journey, we gained a deeper understanding of how drones perform under different operating conditions and how crucial every design decision can be. We learned that even small modifications in the design can significantly influence the overall performance of an aircraft.

The experience also introduced us to fundamental concepts of Computational Fluid Dynamics (CFD), structural loading, aerodynamic design, and other important aspects of drone development. Beyond technical knowledge, the competition gave students an opportunity to collaborate as a team, work under pressure, meet strict deadlines, and adapt quickly to challenging situations.

Overall, the SAEISS Drone Development Challenge was an enriching experience for Team Velastra, strengthening both our technical knowledge and teamwork while motivating us to continue learning, innovating, and striving for greater achievements



Go Kart Design Challenge

[Feb 20th - 24th, 2026]

Team Vegam from the SAE Club participated in a prestigious national-level motorsports event organized by ISNEE Motorsports from February 20–24, 2026, at Kari Motor Speedway, Coimbatore. Competing against 80 teams from across the country, the team demonstrated exceptional technical expertise, teamwork, innovation, and competitive spirit, securing an impressive All India Rank (AIR) 10.

The team was guided by mentors Mr. Vinod Kotebavi and Dr. Dileep B. P., whose continuous guidance, technical support, and encouragement played a key role in this remarkable achievement. The accomplishment reflects the students' dedication to engineering design, vehicle development, testing, and motorsports, while highlighting the department's commitment to experiential learning and industry-oriented technical excellence.



Students' Corner

SAEINDIA BAJA 2026

[Feb 24th -March 1st, 2026]

Team AMEYA proudly represented Amrita School of Engineering, Bengaluru, at SAE BAJA INDIA 2026 (mBAJA Category). Under the guidance of highly motivated students, the team came up with an innovative and fully student-designed and fabricated all-terrain vehicle (ATV) that performed well during the national level competition.

After months of hard work and dedication, the team managed to score well in the national competition. Competing with other top engineering colleges and institutions from across India, the team managed to secure 33rd position overall. The ranking is the result of dedication and innovation on the part of Team AMEYA and reflects the team's hard work.

Through the campaign, the team gained valuable practical experience in various aspects of engineering and problem-solving. The support from faculty members, sponsors, alumni and institutions helped in accomplishing the mission in a positive way. Every obstacle faced by the team during the season made them more resilient and technically stronger.



Annual Sports Day – March Past

[Feb 21st, 2026]

The Department of Mechanical Engineering proudly secured **Second Place** in the **March Past** event during the **Annual Sports Day 2026**, demonstrating exemplary discipline, teamwork, and coordination. The participants displayed outstanding commitment, precision, and unity throughout the event, reflecting the department's spirit of excellence and sportsmanship. Building on the remarkable achievement of securing **First Place** in the previous year, the department once again delivered a commendable performance. This accomplishment stands as a testament to the dedication and collective efforts of the students and serves as a motivation to strive for even greater success in the years ahead.



Students' Corner

Robocon

[July 4th - 5th, 2026]

The academic year 2025–26 was a remarkable journey of perseverance, innovation, teamwork, and hands-on learning for the ROBOCON Team. Driven by a shared passion for robotics and engineering, the team transformed challenges into opportunities for learning, improvement, and technical growth. The journey began with an impressive performance in the Stage 1 submission, where the team secured a score of 82/100. This achievement reflected the team's strong technical preparation and understanding of the competition requirements, earning them qualifications for Stage 2 of PRAKALP.

The next phase presented new challenges. During PRAKALP Stage 2, the team underwent a demanding evaluation process. Although the first submission did not meet the required benchmark, the team responded with determination and a commitment to improvement. Through redesigning, troubleshooting, and continuous refinement, the team made a second attempt and secured 35/100, resulting in an overall score of 52/100.

Beyond the competition stages and scores, the team also had the opportunity to participate at IIT Delhi, gaining valuable exposure to a highly competitive technical environment. Interacting with teams from across the country provided valuable insights into innovation, collaboration, engineering practices, and the rapidly evolving field of robotics. The ROBOCON journey during 2025–26 was not defined only by achievements and scores, but also by the lessons learned throughout the process. From securing a strong Stage 1 score and qualifying for PRAKALP Stage 2 to learning from setbacks, improving through repeated efforts, and gaining national-level exposure at IIT Delhi, every milestone contributed to the growth of the team. The experiences of this academic year have laid a strong foundation for future challenges and achievements. With renewed enthusiasm and the knowledge gained through experimentation, design, testing, and teamwork, the ROBOCON Team continues its journey of building, innovating, and learning.



Students' Corner

Students Achievements

The IEEE ACROM RAS Robotics Club, with active participation from members of our class, was recognized as the Best Small RAS Student Chapter in Bangalore. The chapter was led by Office Bearers Anirudh A. C. and Anandan Babu, with dedicated support from executive members Sanskar Deopuje, Nandhith Karthikeyan, and V. Siddhartha Varma, whose collective efforts contributed to this achievement.

Venkata Rami Reddy (RAE23038), 6th SEM RAE qualified in GATE 2026 with an All-India Rank of 6358 in the DA (Artificial Intelligence and Data Science) branch.

A. C. Anirudh (RAE23003), 6th SEM RAE achieved a commendable performance in GATE 2026, securing an All-India Rank of 2323 in the DA (Data Science and Artificial Intelligence) branch.

Team Vegam had participated in Prakalp'26 on 10/4/2026, winning the 3rd place overall in the Hardware category. The 25-member team was represented by Dhyanesh Sekar, Abijith VR, Advik Shivakumar, Tanay Vimal and Agastya Nambiar. The team focused on the design and manufacturing aspects of the Go-Kart, the teamwork section in the event as well as the rigorous testing and prototyping for the vehicle. The innovative components of the vehicle, Paddle shifter, Ram-Duct intake and 3D printed body panel mounts, provided added value towards achieving the result.



KS Viswa (RAE24024) and J Anwita Reddy (RAE24023) developed a Noise-Aware Hierarchical Path Optimization (NAHPO) framework that uniquely exploits real-time sensor noise to enhance path optimization, enabling navigation accuracy and trajectory quality to remain robust—and even improve under noisy conditions. This hybrid A + SGD approach enables smoother, more reliable motion for low-power autonomous robots and has applications in industrial AMRs, warehouse automation, autonomous vehicles, and search-and-rescue robotics. They won 3rd prize in prakalp (in software category) designed and demonstrated path planning algorithm in a mobile robot.



Ms. Mahitha Verma, 2nd Sem, M. Tech, RAU achieved a remarkable milestone by emerging as a winner at the Infineon Drive 2026, held at Amrita Vishwa Vidyapeetham, Coimbatore. The three-day event brought together talented students from various campuses to compete in a series of technical challenges, including a hackathon and interviews. As a member of Team 7, alongside Alladi Mahesh and Yeswanth Raj Selvaraj, Mahitha participated in the challenge “Defend the Kingdom,” which required the development of an intelligent strategy system for resource management



Parents' Points of View



Mr. D. Murali
Sr. Manager, Powerica Ltd,
Hyderabad
(Parent of Mr. Devulapalli Sri
Paranava Karthikeya, S6 MEE)



Mr. Prasad Korla
Senior Manufacturing Engineer/
Tool Design lead
Caterpillar Inc.
(Parent of Mr. Dhruva Korla, S6 RAI)

Title: From Site to Strategy: The Journey of a Modern Heavy Engineer

"Entering the heavy engineering sector requires shifting from textbook formulas to understanding how engineering drives real business value. In an era where AI easily handles basic technical calculations, the most valuable engineers are those who blend rigorous on-site execution with sharp communication and technical marketing skills. Companies executing multi-crore turnkey power projects do not just need calculators; they need professionals who can connect physical hardware with corporate strategy.

A standout engineer must deeply understand real-world machinery variations, such as the operational differences between prime, standby, and continuous power. This expertise is proven directly on-site. The engineer must meticulously check site allowances, determine the precise structural placement of the generator for optimal ventilation and acoustics, and oversee the complex electrical connections and synchronization panels linking the unit to the grid. Whether analyzing how diesel or gas alternators handle sudden load spikes or verifying voltage stability through PMG or Shunt excitation systems, the engineer ensures the physical installation is flawless.

However, field execution is only half the battle. Because engineering does not exist in a vacuum, an engineer must possess the communication skills to translate complex technical specifications into clear, jargon-free language for corporate clients. You cannot sell a massive 2000 kVA generator purely on engine horsepower; you must sell it on its Value Proposition. By mastering financial modeling—contrasting upfront Capital Expenditure (CapEx) with long-term Operating Expenses (OpEx)—the engineer uses Total Cost of Ownership (TCO) and fuel efficiency curves to prove the business case to stakeholders.

To stay competitive, next-gen engineers use AI and Large Language Models (LLMs) as efficiency multipliers to rapidly draft technical whitepapers, compliance documents, and multi-million-dollar project tenders. By combining hands-on site installation knowledge with the marketing fluency required to pitch to executives, an engineer transitions from a traditional technician into an irreplaceable strategic asset."

Article Title: The industry 4.0 revolution requires mechanical/Robotics engineers who can bridge the gap between physical machinery and automated systems.

The job prospects for mechanical engineers in the robotics industry are highly promising and expanding rapidly. The United States Bureau of Labor Statistics (BLS) projects a 9% to 10% growth rate for mechanical engineers involved in robotics through 2034. This demand is driven by the explosive growth of automation, artificial intelligence (AI) integration, and the commercialization of intelligent electromechanical systems across multiple industries.

Mechanical engineers are highly valued in robotics because a robot is fundamentally a physical machine that must interact with the real world. Key sectors looking for mechanical/Robotics engineers include

- **Manufacturing and Industrial Automation:** Designing industrial arms, robotic grippers, and conveyor systems for assembly line automation. Leading robotics manufacturers like the "Big Four"—ABB, FANUC, KUKA, and Yaskawa—frequently hire structural and design engineers.
- **Assistive and Medical Robotics:** Developing surgical robots, exoskeletons, smart prosthetics, and robotic rehabilitation equipment.
- **Humanoid and Consumer Robotics:** Engineering safe, compliant mechanical joints for collaborative robots (cobots) and consumer robots meant to function alongside human beings.

A message to students

As parents and mechanical industry professionals, we passionately urge our aspiring mechanical engineers to boldly embrace the rewarding challenges and vast opportunities offered by the core sectors. Your drive and determination will shape the future of our industry rise to the occasion and let your ambition lead the way.

Parents' Points of View



Mr. Batchu Sunil Rao
Sr. Marketing Analyst

Oracle

(Parent of Mr. Batchu B V Aashish,
S6 RAI)

Article Title: Mechanical Engineering, Robotics, and Automation: Shaping the Future Through Intelligent Innovation

The world today is undergoing a rapid digital transformation, making Computer Science and Marketing two of the most promising and influential domains of the future. With technological advancements and changing consumer behavior, industries are increasingly relying on digital solutions, data-driven strategies, and intelligent systems to grow and innovate.

The rise of Artificial Intelligence (AI), Machine Learning (ML), Cloud Computing, Cybersecurity, Data Science, and Automation has positioned Computer Science at the center of industrial progress. Governments and private organizations alike are investing heavily in digital infrastructure, software development, and smart technologies. Companies such as tech giants and startups continuously seek professionals skilled in programming, analytics, and intelligent system development.

Key emerging areas in Computer Science include:

- Artificial Intelligence & Machine Learning
- Data Science and Big Data Analytics
- Cybersecurity and Ethical Hacking
- Cloud Computing and DevOps
- Robotics and Internet of Things (IoT)
- Web and Mobile Application Development
- Blockchain and Quantum Computing

Likewise, Marketing is no longer limited to traditional advertisements and promotions. The emergence of Digital Marketing, Consumer Analytics, Brand Strategy, and Social Media Management has completely transformed how businesses connect with customers. Organizations now use advanced tools and algorithms to understand customer preferences, predict market trends, and create personalized experiences.

Important advancements in Marketing include:

- Digital and Social Media Marketing
- Search Engine Optimization (SEO) and Content Strategy
- Influencer and Brand Marketing
- Data-Driven Consumer Analytics
- E-commerce and Performance Marketing
- AI-powered Customer Relationship Management (CRM)
- Market Research and Behavioural Analysis

The integration of Computer Science with Marketing has also created exciting interdisciplinary opportunities. Concepts such as AI-driven advertisements, recommendation systems, customer behavior prediction, and marketing automation demonstrate how technology and business strategies are becoming interconnected. This collaboration allows businesses to make smarter decisions, improve customer engagement, and expand globally.

Moreover, these industries offer significant career growth and employment opportunities for students. As the demand for digital transformation continues to rise, professionals who can combine technical expertise with communication, creativity, and strategic thinking will be highly valued.

As parents and professionals, we encourage students to explore these evolving domains with curiosity and determination. The future belongs to those who can innovate, adapt, and solve real-world challenges. Whether through intelligent technologies or impactful marketing strategies, students today have immense opportunities to shape tomorrow's world and contribute meaningfully to society.

By embracing continuous learning, creativity, collaboration, and ethical responsibility, they can build successful careers, drive positive change, and become confident leaders capable of addressing the complex challenges of an increasingly dynamic global future, while developing resilience, critical thinking, communication skills, and a lifelong passion for innovation, excellence, and meaningful societal progress.

International Affairs and Industry Academia Partnership

Students Interaction with Industry Representatives/CEO

An interactive session was organized by STEM Smart Labs, represented by Mr. Charles Antony and Mr. Parthasarathy, for the M.Tech Robotics and Automation (RAU) students. The session provided students with valuable insights into current industry practices, emerging technologies, career opportunities, and the skills expected by robotics and automation companies.

The interaction also facilitated meaningful discussions between students and industry professionals, helping them understand real-world applications of their academic knowledge. The session subsequently led to opportunities for industry internships, enabling students to gain practical exposure, enhance their technical competencies, and develop professional skills through hands-on industrial experience.



Mr. Velayudham B., Founder of Sameta Sheetmetal and S-Box Tech Pvt. Ltd., addressed the M.Tech (Robotics and Automation) and B.Tech Mechanical Engineering S6 students on the emerging areas of Industrial Engineering, Industrial Automation, and Artificial Intelligence.

The session provided students with valuable insights into current industrial practices, automation technologies, AI-enabled manufacturing systems, and the evolving skill requirements of modern industries. He discussed the practical applications of automation and AI in improving productivity, quality, efficiency, and decision-making in manufacturing environments.

The interaction also encouraged students to understand the importance of multidisciplinary skills and industry-oriented learning. In addition, Mr. Velayudham B. interacted with the B.Tech Mechanical Engineering S8 students to explore potential internship opportunities, providing them with a platform to connect their academic knowledge with real-world industrial challenges and gain meaningful professional exposure.

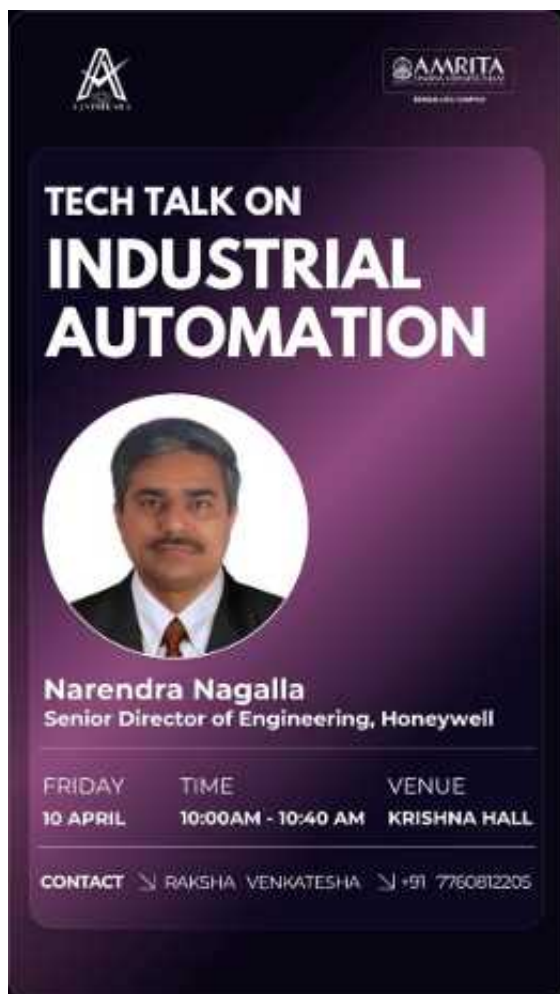


Tech Talk on Industrial Automation **[April 10th, 2026]**

As part of its commitment to strengthening academic–industry collaboration, the Department of Mechanical Engineering organized a Tech Talk on Industrial Automation at Krishna Hall. The session was delivered by Mr. Narendra Nagalla, Senior Director of Engineering, Honeywell, who shared valuable insights from over two decades of experience in industrial automation, energy systems, and engineering innovation. The talk provided students and faculty with an overview of emerging trends in industrial automation, smart manufacturing, digital transformation, and the evolving skill sets required by the industry. The interactive session bridged the gap between academic learning and industrial practice,

International Affairs and Industry Academia Partnership

offering participants a deeper understanding of real-world engineering challenges and career opportunities in the automation sector.



Funded Projects

1. AICTE: “AICTE IDEA Lab, Amrita Bengaluru”; Total Budget is Rs. 90 Lakhs; Chief Mentor: Dr. Sriram Devanathan; Coordinator: Dr. Rajeevlochana G. Chittawadigi; Co-coordinator: Dr. Vivek Venugopal (ECE).
2. alfaTKG Co. Ltd. (Japan): “alfaTKG R&D Center @ Amrita” as a part of AICTE IDEA Lab on campus; Amount: Rs. 8,69,000 per year; Project Investigator: Dr. Rajeevlochana G. Chittawadigi
3. alfaTKG Co. Ltd. (Japan): “Further Development of a Software Library to Convert Orthographic Views to a 3D Model for AutoPilot3D”; Amount: Rs. 14,75,000; Project Investigator: Dr. Rajeevlochana G. Chittawadigi
4. IHFC-IIT Delhi: “Amrita Nurture Workshop on Robotics and Drones to Kindle Interest in School Children”; Amount Rs. 3,54,000; Coordinators: Dr. Rajeevlochana G. Chittawadigi and Dr. Prashanth B. N.
5. Reva University: “Four-days Skill Development Course for B.Tech 6th Sem Robotics and Automation Students”; Amount Rs. 62,000; Coordinators: Dr. Rajeevlochana G. Chittawadigi, Dr. Prashanth B. N., Dr. Bikram Singh Solanki and Dr. Puja Sengupta
6. The Robotics Society: “TRS-SCALE Funding to Conduct Hands-on Workshop on Drones”; Amount Rs. 40,000; Coordinators: Dr. Prashanth B. N. and Dr. Vivek Venugopal (ECE).
7. Honeywell: “Experimental Investigations on pump Characteristics”; Amount Rs. 3,41,680; Project Investigator: Dr. Pradeep S. Jakkareddy and Mr. Vinod M. Kotebavi.

Industrial Visit Organized

Sl. No.	Company / Organization / Event	Date	Students / Class
1	BASF India Ltd. & BPCL	16–18 Jan 2026	2nd & 3rd Year B.Tech Mechanical Engineering and Robotics & AI Engineering
2	IMTEX FORMING 2026, BIEC	21–25 Jan 2026	Students from Mechanical Engineering / Robotics-related programs
3	Carl Zeiss, Bengaluru	4 Feb 2026	Mechanical Engineering students
4	IISc Open Day 2026	7 Mar 2026	Students from Mechanical/Robotics-related programs
5	CynLr	14 Mar 2026	Students from Mechanical/Robotics-related programs
6	Anscer Robotics	28 Feb 2026	M.Tech Robotics & Automation, 2nd Sem; B.Tech Robotics & AI, 6th Sem
7	Difacto Robotics & Automation Pvt. Ltd.	24–25 Mar 2026	Mechanical Engineering, Robotics & AI Engineering, and Robotics & Automation students
8	KSRTC Regional Workshop, Kengeri	25 Mar 2026	2nd Sem B.Tech students
9	Makenica	4 Apr 2026	Mechanical Engineering students
10	HAL – Foundry & Forge Division	11 Apr 2026	Mechanical Engineering students
11	Drone Expo 2026, BIEC	17 Apr 2026	Robotics-related students
12	Volvo Trucks Manufacturing Facility, Hoskote	24 Apr 2026	Mechanical Engineering students

Alumni Corner

National Youth Day – Meet the Speaker Session

Alumni Catchups

[Jan 13th, 2026]

As part of the National Youth Day celebrations, the Department of Mechanical Engineering organized a "Meet the Speaker" session on 13 January 2026 at Amriteswari Hall, featuring Mr. Vijay Andrews, an alumnus of the 2015 Mechanical Engineering batch. A distinguished Hybrid Athlete, Certified Fitness Trainer, and the 14th Fastest Indian in the history of HYROX Pro Singapore, he delivered an inspiring talk on sports, fitness, discipline, and mindset. Sharing his remarkable journey of perseverance, determination, and continuous self-improvement, he highlighted the importance of setting meaningful goals, maintaining consistency, and overcoming challenges through resilience and hard work.

He emphasized how physical fitness, mental well-being, and disciplined daily habits contribute significantly to personal growth. The interactive session witnessed enthusiastic participation from students, who actively engaged in discussions and sought practical advice on balancing academics, fitness, and career aspirations. The session concluded with an engaging question-and-answer interaction, leaving participants motivated to adopt a healthy lifestyle, develop a positive mindset, and pursue holistic development by integrating physical wellness with intellectual and professional growth.



B. Tech ME 2025 Batch



B. Tech ME 2020 Batch



B. Tech ME 2021 Batch



Innovation in Teaching and Learning

Industrial Visit

BASF and BPCL Visit

[Jan 15th - 19th, 2026]

Ingenium, the Mechanical Department Forum, organized a three-day industrial visit from 16th to 18th January 2026 for second- and third-year students of Mechanical Engineering and Robotics & Artificial Intelligence Engineering. The visit aimed to provide students with practical exposure to the chemical and petroleum industries while highlighting the diverse roles played by engineers in these sectors. Students visited BASF India Ltd., where they gained insights into chemical manufacturing processes, industrial safety systems, sustainability initiatives, process automation, and plant operations. The visit offered a valuable understanding of how mechanical and automation engineering principles are applied in large-scale industrial environments.

The second day featured a visit to Bharat Petroleum Corporation Limited (BPCL), where students observed LPG bottling operations, automated filling systems, cylinder inspection processes, and stringent safety practices. The visit demonstrated the importance of automation in enhancing operational efficiency and reducing human exposure in hazardous environments. Beyond technical learning, the trip also included a visit to the historic Udipi Sri Krishna Temple and nearby beaches, providing students with an opportunity to relax and engage in informal interactions. Overall, the industrial visit broadened students' awareness of career opportunities in the petroleum and chemical sectors while strengthening their understanding of industrial safety, automation, teamwork, and professional work culture.



IMTEX Visit

[Jan 24th, 2026]

JIDO – Automation Club and The Robotics Society – Student Chapter organized an industrial visit to IMTEX FORMING 2026, held at the Bangalore International Exhibition Centre (BIEC). The event, conducted from January 21 to 25, 2026, is one of Asia's premier exhibitions focused on metal forming and manufacturing technologies.

Students had the opportunity to explore cutting-edge industrial innovations, including machine tools, robotics, automation systems, and advanced manufacturing solutions.

A major highlight of the visit was the live demonstration of robotic arms, showcasing their applications in processes such as welding, cutting, material handling, and precision operations. These demonstrations helped students visualize how automation is implemented in real industrial environments.

The exhibition featured participation from numerous national and international companies, offering insights into modern manufacturing practices and emerging trends in automation and smart engineering.

Overall, the visit provided valuable exposure beyond classroom learning, enhancing students' understanding of real-world industrial applications and inspiring interest in advanced manufacturing technologies.



Innovation in Teaching and Learning

Carl Zeiss Visit **[Feb 4th, 2026]**

As part of the Metrology and Computer Aided Inspection course, students of Mechanical Engineering undertook an industrial visit to Carl Zeiss, Bengaluru, on 4th February 2026. Organized by Ingenium, the Mechanical Department Forum, the visit provided students with firsthand exposure to advanced metrology systems and modern quality inspection technologies used in manufacturing industries. Through expert-led sessions and live demonstrations, students gained valuable insights into the role of precision measurement in ensuring product quality, reliability, and compliance with industrial standards.

A major highlight of the visit was the demonstration of Coordinate Measuring Machines (CMM), contact and non-contact measurement systems, optical scanners, and machine vision technologies. Students observed how advanced inspection tools are used for dimensional verification, surface analysis, reverse engineering, and automated quality control.

Interactions with Zeiss engineers further enhanced their understanding of calibration procedures, environmental control, inspection planning, and the integration of computer-aided inspection systems in modern manufacturing environments.

The visit successfully bridged the gap between classroom concepts and industrial practice, enabling students to appreciate the importance of metrology in reducing defects and maintaining manufacturing consistency.

It strengthened their knowledge of precision engineering, automation, and quality assurance while providing valuable exposure to emerging career opportunities in metrology and advanced manufacturing. Overall, the visit proved to be an enriching learning experience that contributed significantly to students' academic and professional development.



IISc Open Day **[March 7th, 2026]**

The JIDO – Automation Club and The Robotics Society – Student Chapter organized a visit to the IISc Open Day 2026 held at the Indian Institute of Science, Bengaluru. The event took place on 7th March 2026 (9 AM to 5 PM) and was open to students and the public, attracting a huge number of visitors from across the city. As students, it was an amazing experience to walk through one of India's top research institutes and explore various departments. The campus was filled with live experiments, technical demonstrations, poster presentations, and interactive exhibits, giving us a glimpse into cutting-edge research and innovation.

One of the most exciting parts of the visit was seeing real laboratory setups and advanced equipment, along with demonstrations explaining how scientific concepts are applied in real-world research. We also got the opportunity to interact with researchers and students, which made the experience even more engaging and informative. Overall, the visit to IISc Open Day was highly inspiring and insightful. It not only enhanced our understanding of science and engineering but also motivated us to explore research and innovation beyond our regular academic curriculum.



Innovation in Teaching and Learning

CynLr Visit

[March 14th, 2026]

Ingenium organized an industrial visit to CynLr, a pioneering robotics and artificial intelligence company, to provide students with exposure to cutting-edge automation technologies and intelligent robotic systems. During the visit, students gained firsthand experience of how advanced computer vision, machine learning, and robotics are integrated to create smart manufacturing solutions. The sessions offered valuable insights into CynLr's innovative concept of *Object Intelligence*, which enables robots to identify, analyze, and manipulate unfamiliar objects with minimal human intervention, making industrial automation more flexible and efficient. A key highlight of the visit was the demonstration of robotic vision systems, 3D perception technologies, and intelligent robotic arms used in modern production environments. Students learned how cameras, sensors, and machine-learning algorithms work together to recognize object features, determine optimal grasping strategies, and execute precise movements. The interaction with industry professionals provided deeper understanding of motion planning, automation, and the role of perception in enabling robots to perform complex industrial tasks safely and accurately.

The visit successfully bridged the gap between theoretical concepts and industrial practice by showcasing real-world applications of robotics, artificial intelligence, and computer vision in manufacturing. It broadened students' perspectives on emerging technologies, strengthened their technical knowledge, and inspired them to explore future opportunities in intelligent automation and advanced manufacturing systems. Overall, the experience was both informative and motivating, reinforcing the importance of innovation in shaping the future of industry.



Anscer Robotics Visit

[February 28th, 2026]

The M.Tech (Robotics and Automation, 2nd sem) and B.tech (Robotics and AI, 6th sem) students of Amrita Vishwa Vidyapeetham, Bengaluru, visited Anscer Robotics under the guidance of Dr. Bikram Solanki and Mr. Raghvendra Ravikiran k. The visit began with a briefing session by co-founder Mr. Raghu Venkatesh, who shared the inspiring journey of building the company, along with insights into its vision, collaborations, and innovative product lines such as the AR and PSR series.

Students were introduced to real-world applications of Autonomous Mobile Robots (AMRs) and Automated Guided Vehicles (AGVs) through engaging presentations and product demonstration videos. The session highlighted how Anscer Robotics integrates its solutions with industry partners to optimize material handling and automation processes. The visit then moved to the assembly and testing areas, where students observed the step-by-step manual assembly of AGVs and understood the role of various components in their functioning. A live demonstration of AGV training and operation provided deeper insight into navigation, control, and industrial deployment.

One of the most exciting moments was the interactive session, where students engaged directly with the robots, observed their movements, and clarified technical queries with the team. This hands-on exposure bridged the gap between classroom learning and industrial practice.

The visit proved to be an enriching experience, offering valuable insights into robotics applications, industry practices, and the journey of a successful startup founded by Amrita alumni.



Innovation in Teaching and Learning

Difacto Robotics Visit

[March 24th, 2026, and March 25th, 2026]

Ingenium organized industrial visits to Difacto Robotics and Automation Pvt. Ltd. for Mechanical Engineering, Robotics & Artificial Intelligence Engineering, and Robotics & Automation students to provide practical exposure to advanced industrial automation and robotic systems. The visits offered students an opportunity to observe how robotics, control systems, and smart manufacturing technologies are implemented in real-world industrial environments.

Through expert interactions and guided sessions, students gained valuable insights into automation solutions, robotic integration, industrial safety practices, and the growing role of Industry 4.0 technologies in modern manufacturing.

A major highlight of the visits was the exposure to industrial robotic arms, automated production lines, vision-based automation systems, and robot programming techniques. Students observed robotic applications such as material handling, assembly, inspection, and automated manufacturing operations. Demonstrations on robot programming, motion planning, calibration, and intelligent vision systems helped participants understand how automation improves productivity, precision, safety, and operational efficiency.

Interactions with engineers further provided insights into automation project development, system integration, emerging technologies, and career opportunities in robotics and automation.

The visits successfully bridged the gap between theoretical learning and industrial practice by enabling students to connect classroom concepts with real-world applications. Participants developed a deeper understanding of industrial robotics, automation workflows, smart manufacturing, and professional engineering practices.

Overall, the visits served as an enriching learning experience that enhanced technical knowledge, encouraged innovation-oriented thinking, and inspired students to pursue future opportunities in robotics, automation, and advanced manufacturing technologies.



Innovation in Teaching and Learning

KSRTC workshop Visit [March 25th, 2026]

To provide students with practical exposure to automotive engineering, vehicle maintenance, and industrial workshop practices, the Department organized an industrial visit to the KSRTC Regional Workshop, Kengeri, for second-semester B.Tech students. The visit provided an excellent opportunity to understand how theoretical concepts learned in the classroom are applied in the maintenance, inspection, repair, and servicing of large commercial vehicles.

Students gained valuable insights into engine reconditioning, systematic maintenance procedures, fault diagnosis, and the evolution of Bharat Stage (BS) emission norms. They observed important processes such as engine dismantling and cleaning, cylinder reboring, rust removal, component inspection, recalibration, assembly, and performance testing. The students also gained exposure to advanced automotive components and systems, including Common Rail Direct Injection (CRDI) systems, fuel injection pumps, turbochargers, electronic fuel injection technologies, and associated control mechanisms.

Demonstrations of transmission and drivetrain systems, engine calibration procedures, exhaust smoke analysis, diagnostic equipment, and vehicle testing highlighted the increasing integration of mechanical, electrical, and electronic systems in modern automobiles. Experts at the workshop explained the importance of preventive maintenance, accurate fault identification, timely replacement of worn components, and adherence to safety and quality standards.

The visit also emphasized the role of precision engineering, quality control, emission reduction, fuel efficiency, and sustainable automotive practices in the transportation sector. Students were able to interact with technical personnel and gain a better understanding of the challenges involved in maintaining a large public transportation fleet. Overall, the industrial visit provided a valuable experiential learning opportunity and inspired students to explore innovation and future career opportunities in automotive and transportation engineering.



Makenica Visit [April 04th, 2026]

Mechanical Engineering students visited Makenica on 04/04/2026 to gain firsthand exposure to cutting-edge additive manufacturing and smart manufacturing technologies. The visit provided students with an opportunity to witness industrial-scale 3D printing processes, including Fused Deposition Modeling (FDM), Stereolithography (SLA), and Selective Laser Sintering (SLS), and understand their applications in rapid prototyping and product development.

Students explored the complete digital manufacturing workflow—from CAD model submission and automated quotation generation to material selection, process planning, additive manufacturing, post-processing, quality inspection, and final product delivery. The visit also highlighted the role of Industry 4.0 technologies in integrating digital design, automation, and intelligent manufacturing for enhanced productivity and customization. Practical demonstrations of post-processing techniques and discussions on common printing defects such as warping, delamination, and surface irregularities reinforced the importance of process optimization and quality assurance.

The industrial visit successfully complemented classroom learning by connecting theoretical concepts with real-world industrial practices. It enhanced students' understanding of advanced manufacturing technologies while inspiring them to explore emerging opportunities in digital manufacturing, product innovation, and smart engineering.



Innovation in Teaching and Learning

HAL Foundry and Forge division Visit

[April 11th, 2026]

The Hindustan Aeronautics Limited (HAL) industrial visit provided Mechanical Engineering students with valuable exposure to advanced aerospace production processes and enabled them to understand how engineering principles are applied in high-precision, defence-grade manufacturing environments.

Through interactions with HAL engineers and guided facility tours, students gained insights into the stringent quality, safety, and reliability standards that govern aerospace component production.

A major highlight of the visit was the exploration of the Ring Production Division, where students observed the complete manufacturing cycle of seamless rings used in aircraft engines, missiles, and satellite launch vehicles. They also visited the machine shop and non-destructive testing facilities, gaining firsthand knowledge of precision machining, heat treatment, quality inspection, and advanced testing methods such as Magnetic Particle Inspection,

Fluorescent Penetrant Inspection, and Ultrasonic Testing. The visit further introduced students to aircraft brake pad manufacturing using powder metallurgy and diffusion bonding techniques, showcasing modern material processing technologies used in aerospace applications.

The visit successfully bridged the gap between classroom learning and industrial practice by exposing students to advanced manufacturing processes, material engineering concepts, and aerospace quality standards.

It enhanced their understanding of forging, machining, testing, and production workflows while providing valuable insights into career opportunities in the aerospace and defence sectors. Overall, the experience was highly informative and professionally enriching, strengthening students' technical knowledge and appreciation for India's aerospace manufacturing capabilities.



Drone Expo 2026 Visit

[April 17th, 2026]

The Robotics Society – Student Chapter organized a visit to Drone Expo 2026, held at the Bangalore International Exhibition Centre (BIEC). The event brought together leading organizations, startups, researchers, and industry experts from the drone and unmanned aerial systems (UAS) sector, providing students with an opportunity to explore the latest advancements in drone technology and aerial automation.

Students witnessed live demonstrations of various drones, including applications in aerial surveillance, precision agriculture, mapping and surveying, logistics, infrastructure inspection, and disaster management. These demonstrations showcased the capabilities of autonomous flight systems, intelligent navigation, payload integration, and real-time data acquisition, helping students understand how drones are transforming industries through automation.

The exhibition featured participation from numerous national and international companies, offering insights into emerging technologies such as AI-enabled drones, swarm robotics, autonomous navigation, drone communication systems, and advanced sensing solutions. Students also interacted with industry professionals and gained exposure to current trends, innovations, and career opportunities in the rapidly evolving drone ecosystem.

Overall, the visit provided valuable practical exposure beyond classroom learning, enhancing students' understanding of drone technologies, real-world industrial applications, and the future of autonomous aerial systems.



Innovation in Teaching and Learning

Volvo Truck plant Visit [April 24th, 2026]

Ingenium, the Mechanical Department Forum, organized an industrial visit to the Volvo Trucks Manufacturing Facility at Hoskote, Bengaluru, providing students with firsthand exposure to modern automotive manufacturing practices. The visit offered valuable insights into the production of heavy commercial vehicles, enabling students to observe how theoretical concepts in mechanical engineering are translated into real-world industrial applications. Through guided tours and interactions with industry professionals, students gained an understanding of manufacturing workflows, plant layout, material selection, quality assurance systems, and industrial safety practices followed in a globally recognized automotive company.

A key highlight of the visit was the opportunity to observe the complete truck manufacturing process, including cabin fabrication, welding, painting, chassis assembly, powertrain integration, and final vehicle testing. Students learned about welding techniques such as MIG and spot welding, multi-layer coating processes, structured assembly line operations, and rigorous quality control measures adopted to ensure reliability and performance.

The visit also introduced participants to important industrial engineering concepts such as lean manufacturing, line balancing, ergonomics, process standardization, and workforce skill development, all of which contribute to efficient and high-quality production systems.

The industrial visit successfully bridged the gap between classroom learning and industrial practice by exposing students to advanced automotive manufacturing technologies and professional engineering environments. It enhanced their understanding of production systems, quality assurance, safety standards, and supply chain integration while broadening awareness of career opportunities in automotive and manufacturing industries. Overall, the experience was highly informative and enriching, strengthening students' technical knowledge and industry readiness.



Innovation in Teaching and Learning

Students Projects

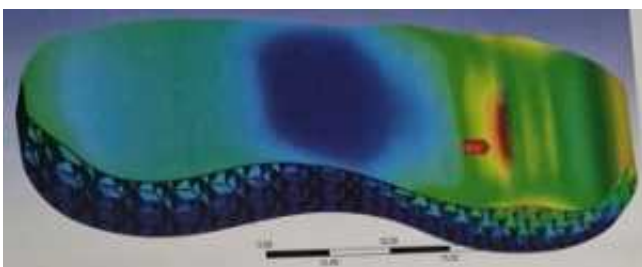
1. Shoe Soles Optimization

L Nikhil, M Kiran Raj
8th Sem, B. Tech, ME

This project presents a lightweight and comfortable 3D-printed shoe sole developed through CAD modeling, Finite Element Analysis (FEA), topology optimization, and machine learning. FEA is used to study stress, deformation, and load distribution under walking and standing conditions.

Topology optimization reduces material usage while maintaining the sole's strength and cushioning performance. The optimized design is fabricated using flexible TPU and experimentally tested to evaluate its mechanical performance, durability, and comfort. Machine learning further predicts the sole's mechanical behavior, reducing the need for repeated FEA simulations and accelerating the design process.

The project's novelty lies in integrating simulation, optimization, additive manufacturing, experimental validation, and ML-based prediction within a single design framework. The approach can support customized orthopedic, sports, diabetic, rehabilitation, and industrial safety footwear, while also promoting material efficiency, rapid prototyping, and cost-effective development of high-performance footwear solutions. Furthermore, the integration of machine learning enables faster performance prediction and reduces dependence on repeated computational simulations. This integrated methodology can facilitate efficient design iterations, improve product customization, minimize material wastage, and accelerate the development cycle for application-specific footwear.



2. Rehabot

Chivukula Abhay Aditya, Batchu B V Aashish,
and Dharshavardhan
6th Sem, B. Tech, RAE

The Robotic Exoskeleton for Rehabilitation is a wearable robotic system designed to assist patients with stroke, neuromuscular disorders, and hand mobility impairments. The system combines EMG sensors, flex sensors, pressure sensors, servo motors, and pneumatic actuation to provide controlled and adaptive rehabilitation movements. An ESP32 microcontroller processes sensor signals and controls the actuators in real time. EMG sensors detect muscle activity, flex sensors track finger movements, and pressure sensors monitor applied force to ensure patient safety. The exoskeleton uses a lightweight PLA-based frame with fabric straps for improved comfort and portability. A hybrid rigid and soft actuation approach provides controlled movement while maintaining flexibility. The system also supports wireless monitoring for rehabilitation data. The prototype demonstrates accurate movement assistance, reliable sensor operation, force-limited safety, and low power consumption, providing a low-cost and scalable solution for rehabilitation in clinical and home environments.



Innovation in Teaching and Learning

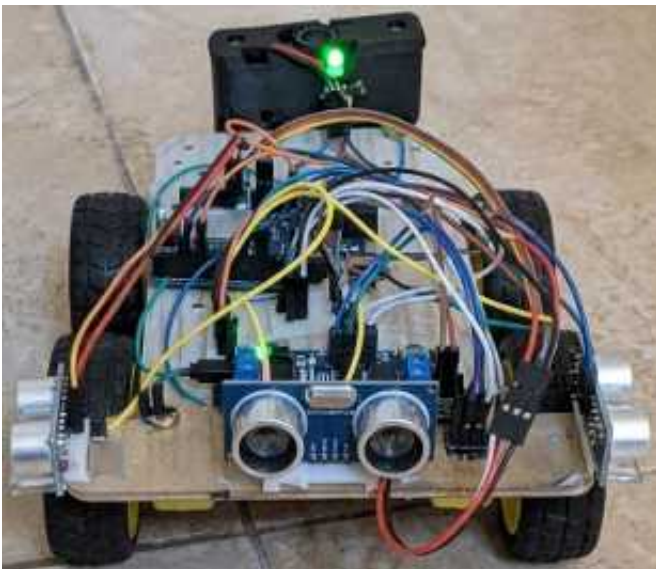
3. RadarBot

A K Shanmukh, Jaithra Jayadeep & K Sai Kowshik
4th Sem, B. Tech, RAE

RadarBot RadarBot is a compact mobile robot developed using the Arduino UNO R4 WiFi, integrating manual wireless control, autonomous shape tracing, real-time radar scanning, and IMU-based path mapping. The project combines multiple robotic functionalities within a single, low-cost embedded platform.

The robot creates its own Wi-Fi hotspot and hosts a web-based control interface, allowing users to operate it directly from a smartphone or laptop without requiring an app or internet connection. A servo-mounted ultrasonic sensor continuously scans the surroundings and displays detected obstacles through a live radar interface, providing real-time environmental awareness.

An onboard gyroscope tracks the robot's orientation and estimates its travelled path using dead-reckoning principles. The robot can also autonomously trace predefined shapes, such as squares, triangles, and circles, through precisely timed motor control and programmed movement sequences. Built on a single microcontroller, RadarBot demonstrates the effective integration of wireless communication, sensing, navigation, motion control, and real-time visualization. The project serves as an educational and practical platform for exploring embedded robotics, autonomous navigation, obstacle detection, and intelligent mobile robot system development.



4. Analog Cave Probe

Madasu Aman, Rochan Kumar and Daram Varshith
2nd Sem, B. Tech, RAE

This project presents the design and development of an Analog Cave Probe capable of collecting and transmitting real-time environmental data from confined and difficult-to-access spaces such as caves. The probe integrates four sensors, namely temperature, pressure, humidity, and object detection/distance measurement housed in a compact, field-deployable tube casing with a wireless transmission module.

The collected data is streamed to a custom-built desktop telemetry application, where live graphs display each parameter in real time along with signal conditioning and noise filtering to reduce measurement noise. The application also provides minimum, maximum, and running-average statistics and includes a dedicated Cave Map tab for spatial awareness during exploration missions.

The system was developed through iterative hardware prototyping, beginning with breadboard-level sensor and joystick-based manual control testing before integration into the final probe. The platform is intended for environmental monitoring, cave exploration, post-disaster search and rescue, mine and tunnel inspection, and pre-entry hazard assessment in confined industrial spaces.

The team is currently extending the platform into a compact ESP32-based version with onboard wireless connectivity for improved field deployability, longer-range telemetry, extended battery operation, and enhanced cave mapping.



Preparing Students for a Brighter Future

Career Guidance Session for Placement Preparation [Jan 22nd, 2026]

Dr. Sriram Devanathan, Principal, School of Engineering, addressed the sixth-semester Mechanical Engineering (MEE) and Robotics and Automation Engineering (RAE) students in an interactive career guidance session. He shared valuable insights on placement preparation, career planning, and the importance of developing strong technical, communication, and problem-solving skills to meet industry expectations.

During the session, Dr. Sriram Devanathan encouraged students to identify their individual strengths and areas for improvement and to prepare systematically for recruitment opportunities. He highlighted the importance of building a strong academic foundation, staying updated with emerging technologies, and gaining practical exposure through projects, internships, and other learning opportunities. He also emphasized the significance of effective communication, teamwork, adaptability, and a positive professional attitude in achieving long-term career success.

Emphasizing continuous learning, professionalism, and confidence, he motivated students to prepare strategically for recruitment opportunities and future career growth. The interactive session provided students with an opportunity to reflect on their career goals and understand the expectations of the professional world. Overall, the session inspired students to approach their placements with determination, confidence, and a clear vision for professional success.



Placement: B. Tech ME 2026 Batch

Roll No	Name	Company Details
BL.EN.U4MEE22002	Gudlanarva Sri Kurumurthy	Inteva Products
BL.EN.U4MEE22004	Jyothi Lakshmi K K	Honeywell
BL.EN.U4MEE22005	Jaikesh S	Quest Global
BL.EN.U4MEE22007	K Sai Deepak	Gray
BL.EN.U4MEE22010	Nimmagadda Venkata Naga Sai Sri Poojitha	Swapp Design
BL.EN.U4MEE22015	Sriramula Sai Nishith	Hyundai Motor India Engineering
BL.EN.U4MEE22021	Lisitty Nikhil	Marut Air Systems
BL.EN.U4MEE22025	Anoop Varghese Joseph	Ingersoll Rand
BL.EN.U4MEE22027	Anurag Veena Raj	Unlox Academy
BL.EN.U4MEE22028	Kadiyala Bhargavaram	LAM Research
BL.EN.U4MEE22030	Nithyasri R	Honeywell
BL.EN.U4MEE22034	Vishal Dahire	Movidu Technology
BL.EN.U4MEE22035	Arja Bhavani Datta	BirlaNu



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 to 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 primarily 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.

Faculty

Specialization



Mr. Bhanu Prakash S.

- Heat Transfer
- Fluid Mechanics
- Thermoelectric Modules



Dr. Bikram Singh Solanki

- Robotics
- Smart Manufacturing
- Polymer Matrix Composites



Dr. Deepthi Y. P.

- Polymer Composite Materials
- Industrial Engineering



Dr. Dileep B. P.

- 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. Puja Sengupta

- Robotics
- BCI



Dr. Prashanth B. N.

- Product Lifecycle Management
- CAD/CAM
- Robotics & Industrial Automation
- Wind & Solar Energy Systems

Faculty

Specialization



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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