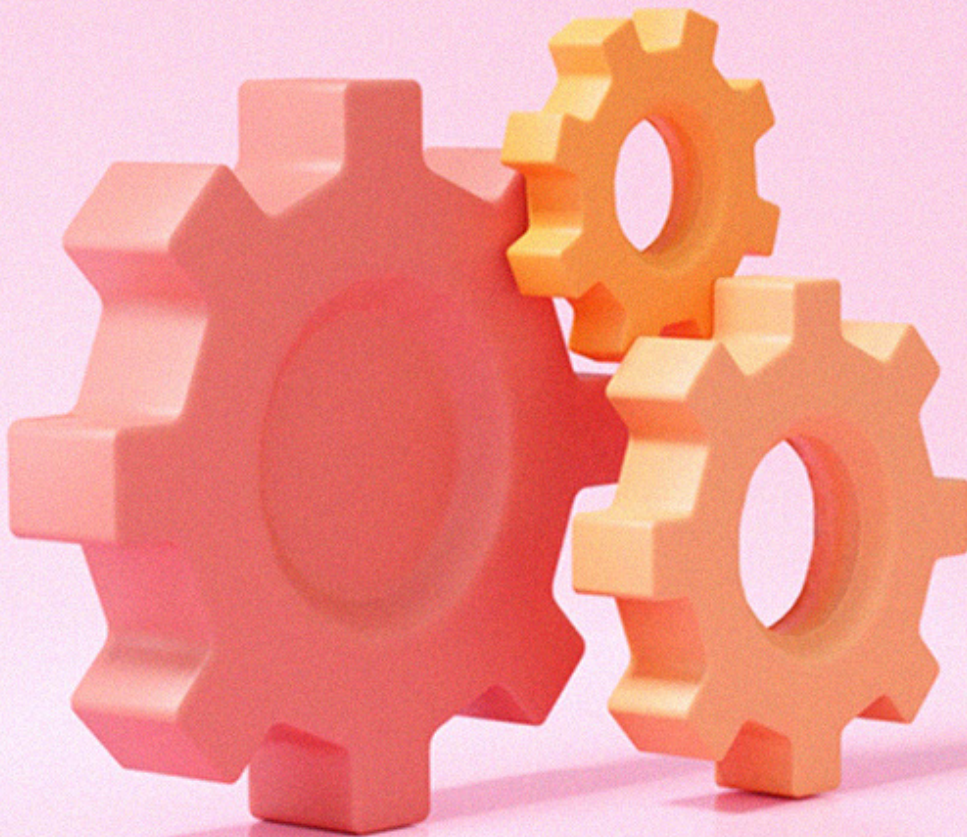




ENGINEERING **EDUCATION SEMINAR**

EMPOWERING NEXT GENERATION ENGINEERS

31st August, 2024 | LNMIIT Jaipur, Rajasthan

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EXECUTIVE SUMMARY

The ASME India Engineering Education steering committee in association with the LNM Institute of Information Technology, Jaipur organised a one-day seminar 'Empowering the Next Generation Engineers' on August 31, 2024 at LNMIIT, Jaipur.

The event saw 100+ participants from 15 colleges and universities including directors, researchers, faculty members and students and senior executives and leaders from a number of enterprises and two public sector industries, GAIL and BHEL.

The seminar aimed at bringing together industry leaders and academia to understand and bridge the gaps in mechanical engineering curriculum and the needs of the Industry 4.0, deliberating on setting up centres of excellence for future engineers and the multidisciplinary approach in mechanical engineering programs.

The panel discussions focused on preparing engineering students for digital transformation roles, with speakers bringing their decades of experience in academia and expertise in industry on the single platform to give incisive insights to enable the institutes in training industry-ready engineers.

It was discussed that engineers are the architects of tomorrow and the traditional field of STEM (Science, Technology, Engineering and Mathematics) has transformed to STEAM to include the Arts in the digital world.

With the emergence of AI, machine learning and IoT, the demands of manufacturing and automobile industries are becoming interdisciplinary as the focus has shifted to product design, aesthetics and functionality.

Currently, there is a need for mechanical engineers to work in cross-cultural, cross-functional global teams to build sustainable products, keeping the social impact in mind.

The panelists highlighted the value of industry-driven research projects and on-field internships and explored the future opportunities for mechanical engineering students and manufacturing industries in the country with the vision of 'Viksit Bharat 2047' backed by 'Make in India' push.



INAUGURAL SESSION

Welcome Remarks by Prof. Rahul Banerjee Director, LNMIIT Jaipur

Prof. Rahul Banerjee, Director, LNMIIT Jaipur inaugurated the ***‘Engineering Education Seminar: Empowering Next Generation Engineers’***. Prof. Banerjee talked on the interdisciplinary nature of modern engineering, emphasising the integration of various disciplines such as computer science, electronics, communication, and material science in the development of advanced technologies like autonomous vehicles. He discussed the importance of a balanced and dynamic educational structure to prepare students for diverse career paths, including research and entrepreneurship.



About LNMIIT Jaipur

LNMIIT (LNM Institute of Information Technology) is a deemed university in Jaipur, Rajasthan, known for its focus on engineering, science, and technology. It was established in 2002 as a collaboration between the Government of Rajasthan and the Lakshmi and Usha Mittal Foundation. LNMIIT offers undergraduate, postgraduate, and doctoral programs in disciplines such as Computer Science, Electronics, Communication, Mechanical Engineering, and Mathematics. The institute encourages research through its various labs and research centres, focusing on areas like AI, Data Science, and Embedded Systems. Notably, ASME’s first E-fest was organised at LNMIIT in 2017.

Interdisciplinary Collaboration in Engineering

- ⦿ There is an interplay of multiple disciplines in modern engineering, no single discipline can claim all the credit for advancements.
- ⦿ If we study the historical development of engineering, from internal combustion engines to the integration of electronic devices and instrumentation in EVs, we observe how computer science, electronics, communication, and mechanical engineering come to work together.

The Role of Education in Developing Future Engineers

- ⦿ Forward-thinking institutions, practitioners, and industry pioneers must go beyond classroom teaching to create thinkers and problem solvers for the future.
- ⦿ There is a need for a balanced curriculum that prepares students for dynamic career paths including research and entrepreneurship.

Challenges in Teaching and Engaging Students

- ⦿ It is challenging to make theoretical subjects interesting and engaging for students.
- ⦿ Teachers must translate their knowledge effectively to students, making the learning experience engaging and meaningful.

The Importance of Practical Experience and Real-Life Examples

- ⦿ Practical projects and real-life examples in teaching engineering subjects make the learning experience more engaging and relevant.
- ⦿ Teachers who can effectively communicate the relevance of their subjects to students ensure their students are engaged and motivated.

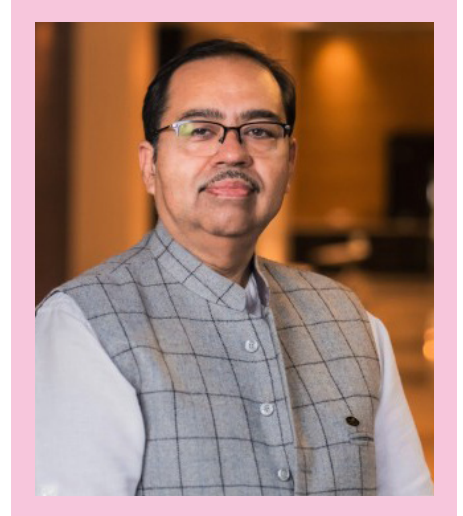
The Need for Continuous Improvement and Adaptation

- ⦿ There is an urgent need for improvement and adaptation in engineering education as the field is constantly evolving.
- ⦿ The integration of feedback from industry pioneers is needed to improve the educational process, ensuring that the curriculum is updated and relevant.

Mr. Madhukar Sharma, President and Director, ASME India Private Limited

'I'm Working On Bridging The Gap'

Mr Sharma laid the foundation of the discussions in the seminar. He said there is a need to evolve engineering education to meet the demands of the modern manufacturing and technological landscape. He emphasised the importance of integrating various engineering disciplines, such as mechanical, electrical, and mechatronics, with advanced technologies like AI and machine learning. He further mentioned that the seminar aimed to address the gap in what is being taught to engineers and what is actually needed to work in the industry and explore how to prepare engineers for the future, particularly in the context of India's ambition to become a manufacturing powerhouse.



Challenges and Future of Engineering Education

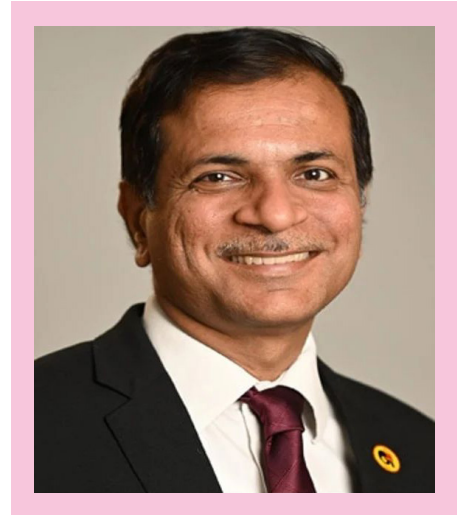
- There is a need to reevaluate the approach to engineering education with a focus on integrating all disciplines of engineering including new technologies like AI and machine learning
- Explore opportunities for students to gain practical experience through apprenticeships or other programs.
- Engage with stakeholders to better understand challenges and work on solutions together.
- The goal is to transform India from an IT-enabled services nation to a manufacturing and research powerhouse.



KEYNOTE ADDRESS

Keynote Address by Guest of Honour Mr. Ayush Gupta, Director HR, GAIL India Limited

The keynote address to the 'Engineering Education Seminar: Empowering Next Generation Engineers' was presented by Mr Ayush Gupta, Director HR, GAIL India Limited, drawing from his 30+ years of experience in Engineering and HR.



'We Come Together In Building The World Around Us'

Engineers are the 'Architects of Tomorrow'. The choices we make today will shape the world around us in the future - determining how people live and commute.

'Today, Engineering Branches Are Blurred'

Engineers are the problem-solvers in all fields - industries, research and services. There is a need for multidisciplinary education system today, as the traditional 'STEM' learning approach has shifted to 'STEAM' (Science, Technology, Engineering, Arts and Mathematics), realising the power of imagination and aesthetics to make the end experience more immersive and enjoyable.

What is Engineering?

Engineering education is more than applying the concepts of mathematics and physics, it is about understanding global challenges and creating solutions for those real-world problems around us. Engineering education equips students with the power of imagination, analytical abilities and problem-solving skills. Today, engineers play a very important role in building sustainable cities and providing advanced healthcare systems, using AI to diagnose medical problems.

Making A Conscious Call About Career

- ⦿ An engineering career is not only about high salary and perks, but the contribution to society is also important. Students often don't have the right perspective - faculty members should be mindful about guiding students into right career orientation.

Most public sector companies pay starting salary of over ₹15 lakh per annum as compared to the average starting salary of about ₹4 lakh offered by private companies. Parents also influence the decisions of our students based on comfort and safety of home, but students should take on challenges and ready to move to remote places.

Quality of Education and Faculty

- ⦿ Quality faculty manning in institutions is important to maintain the quality of education and the image of Indian engineers globally.
- ⦿ Qualified and skilled people should take up teaching as a profession, with a focus on making classrooms interesting and engaging.
- ⦿ Industry and academia should work on developing programs for faculty sabbaticals in industry and opportunities for industry practitioners to teach in engineering colleges.

Future of Mechanical Engineering as we move to 'Viksit Bharat 2047'

- ⦿ India is known for importing raw materials for supporting its industries but now there is an emphasis on manufacturing in the country with government initiatives like 'Make in India' and 'Digital India'. As we move towards, 'Viksit Bharat 2047', there is a huge demand of expert mechanical engineers in the infrastructure and manufacturing sectors but there is a lack of interest by students in choosing core branches. Also, with the rise of AI in the recent years, there is downward-trend in hiring in the IT companies.

Industry-Driven Research and Internships

- ⦿ Universities should commission industry-driven research projects to enhance the quality of education.
- ⦿ Industry internships should be mandatory for engineering students to get practical experience and bridge the gap between expectations and reality.

Chief Guest Address by **Dr Anuj Saxena (IAS)** **Joint Secretary, Government of Rajasthan, Higher and Technical Education Department**

Dr Saxena emphasised the need for feedback from experts in engineering and technical fields to improve education policies. He highlighted the gap between academic training and industry demands. He stressed the importance of interdisciplinary approaches and the need for updated policies to address evolving industry needs.



Here are the highlights from his address:

- ⦿ Professors and experts should submit official papers to the government with recommendations based on industry experience to help guide policymaking.
- ⦿ Develop plans and curriculum for new finishing schools program.
- ⦿ Provide input and recommendations on certification courses for emerging fields like AI.
- ⦿ The National Education Policy 2020 offers flexible system, allowing students to pursue interdisciplinary studies.
- ⦿ Government's focus on promoting innovation, startups, and encouraging youth to work within the country.





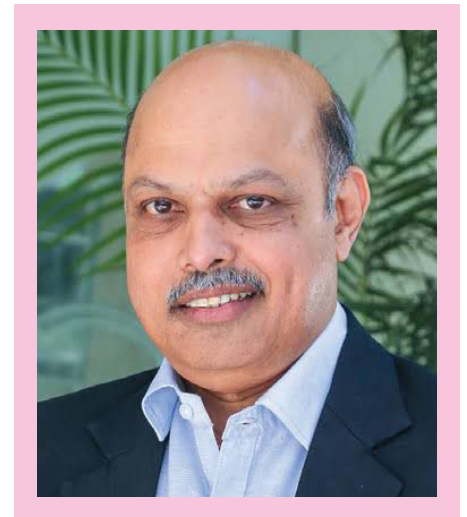
CORE SESSIONS

KEYNOTE TALK: Preparing engineering students for digital transformation roles and enabling our national endeavours towards knowledge economy

Mr. M.S Unnikrishnan
Chief Executive Officer,
IITB-Monash Research Academy

‘Practitioner decided to become preacher’

Mr Unnikrishnan, who has been the CEO of one of India’s foremost energy and environmental solutions companies, Thermax (2007-2020) before heading the IITB-Monash Research Academy, emphasised on the importance of digitisation in Industry 4.0. He said that there is no more mechanical engineering, it is a myth. Now engineering is borderless. He encouraged mechanical engineers to adapt to new technologies including AI and IoT.



‘Jack of all trades, master of none’

Mechanical engineers are called ‘Jack of all trades, master of none’, reflecting their flexibility and ability to adapt new technology. It is important for mechanical engineers to upskill in the rapidly changing digital world. More than 1 million engineers graduate annually from colleges and universities, however the employability in the engineering sector is significantly low, leading to secondary non-engineering career options.

The Future of Engineering and Role of AI and Machine Learning

- ⦿ IoT-enabled processes are replacing human interventions in factories, making operations more efficient and cost-effective.
- ⦿ AI and machine learning is helping companies in processing and analysing large amounts of data from IoT sensors.
- ⦿ AI can replace human intelligence in various tasks, making operations more efficient.

The Impact of Digitisation on Employment

- ⦿ Companies are reducing their workforce by implementing digitisation and automation.
- ⦿ India has cost arbitrage advantage due to low labor costs, but this advantage is diminishing with automation.
- ⦿ There is a need for engineers to be proficient in digitisation and automation to stay relevant in the job market.

The Importance of Personalised Learning

- ⦿ There is a shift from traditional teaching methods to personalised learning in the digitised world.
- ⦿ There is a need to create an ecosystem that supports learning rather than teaching
- ⦿ Companies are changing nomenclature from 'Training Department' to 'Learning Department'

Digitalisation is all pervasive: The Role of AI in Recruitment and Selection - A Case Study

Companies are replacing the army of HR Department with AI systems to shortlist candidates by ranking candidates based on their skills and qualifications, making recruitment process more efficient and cost-effective.

PANEL DISCUSSION 1

Panelist



Dr. Lokesh Agrawal,
Vice President and Head
Research & Development,
National Engineering
Industries Limited
(NBC Bearings)



Mr. Arnav Maheshwari,
Associate Vice President,
D&H Sécheron
Electrodes Private
Limited



Dr. Uday Shanker Dixit,
Professor of Mechanical
Engineering,
IIT Guwahati



Dr. Suman Singh,
Senior Principal
Scientist, CSIR-CSIO

Panel Chair



Mr. M. S. Unnikrishnan,
Chief Executive Officer,
IITB-Monash Research Academy

Setting up the centre of excellence in Industry 4.0 for preparing mechanical engineering students for digital transformation roles

The first panel discussion focused on updating mechanical engineering curriculum to emphasise more on practice-based learning, removing outdated topics and advocating for industry-oriented internships. The conversation also stressed on collaborating more between academia and industry to ensure curriculum is optimised for current demands.

Challenges in Mechanical Engineering and Data Utilisation

- ⦿ Mechanical engineers must focus on shop-floor problems and integrate digital solutions within budget constraints.
- ⦿ There is a gap in data utilisation as engineers often lack the knowledge of what data to use and how to interact with digital systems.
- ⦿ Mechanical engineers must learn adjacent fields, such as electronics and mechatronics, to understand multidisciplinary aspects of modern engineering.

Need for Problem-Based and Practice-Based Pedagogical Approaches

- ⦿ Engineering education must integrate problem-based and practice-based learning.
- ⦿ Practical approach in education is needed to bridge the gap between product research and industry needs.
- ⦿ Policy makers and government should provide infrastructure and facilities for practical learning.

The Role of Industry-Oriented Internships and Hackathons

- ⦿ Industry-oriented internships must be made mandatory to provide practical experience to students to equip them with the changing job market and industry needs.
- ⦿ Hackathons are extremely useful in preparing students for the future
- ⦿ Observing real-world problems and applying practical solutions is equally important.

The Future of Engineering Education and the Role of Gaming

- ⦿ Education system must focus on modern learning methods, including gaming-oriented learning to engage students and improve their learning outcomes.
- ⦿ Practitioners and teachers must create dynamic curriculum to make it relevant to the current job market.

Digital Transformation Case Studies

- ⦿ Larsen & Toubro has successfully implemented IoT, where every tool has a sensor, allowing for more efficiency and accountability in work assignments.
- ⦿ Rolls Royce uses sensors in their jet engines to reduce downtime and create predictive algorithms for machine maintenance.
- ⦿ The India Stack, which includes UPI, Fastag, e-bills, GST, and other integrated systems, is a unique example of state-driven digitisation that has boosted investor confidence.

PANEL DISCUSSION 2

Panelist



Prof. Rahul Banerjee,
Director, LNMIIT Jaipur



Mr. Mudit Gandhi,
Vice President, ER&D
Sales, Tata Technologies



Dr. U. Chandrasekhar,
Consultant,
Engineering Education,
AFI



Mr. Ratish Choulker,
Senior Vice President,
Sigma Electric
Manufacturing Corporation

Panel Chair



Prof PVM Rao,
Professor of Mechanical Engineering,
IIT DELHI

Multi-disciplinary approach to the design of mechanical engineering programs and its impact on employability

The discussion emphasised the necessity of multidisciplinary education and teamwork in engineering, highlighting the shift from discipline-centric learning to T-shaped learning. Key points included the integration of sustainability and AI into curricula, the importance of supply chain management, and the need for cross-functional projects.

Developing Interest in Engineering

- ⦿ Developing interest in learning from schools like in Japan where children are taken to industry museums.
- ⦿ Industrial internships should be mandatory in the engineering curriculum to generate interest and practical knowledge.

Multidisciplinary Education imagined as 'T-shaped' Learning

- ⦿ The concept of a “**T-shaped**” education is introduced, combining depth in Mechanical Engineering with breadth in other fields like sustainability and AI.

- ⦿ Universities offer minor areas of specialisation to Mechanical Engineers, allowing them to explore other relevant fields.

Industry leaders' Perspectives on 'industry-ready engineers'

- ⦿ Mr. Ratish Choulker shared his experience in the process industry, emphasising the importance of teaching supply chain management in engineering and the need for a broader education.
- ⦿ Mr. Mudit Gandhi stressed on the need for a multidisciplinary approach to learning engineering in terms of product experience, discussing the shift from mechanical to electronics-driven vehicles in the automotive industry.

Make in India and Global Engineers

- ⦿ Make in India' initiative is lauded, which has led to increase in number of global capability centres and labs in India
- ⦿ Focus on cultural understanding and teamwork to build better relationships and acceptability in global engineering teams

Industry's Role in Curriculum Development

- ⦿ Resource persons from industry should be invited to provide real-world problem-solving experiences to students
- ⦿ Experiential learning, collaborative learning, and social learning enhance students' skills

Curriculum Revision and Best Practices

- ⦿ 'Introduction to Engineering' as experiential learning, which involves students coming together to solve day-to-day problems.
- ⦿ 'CDIO' (Conceive, Design, Implement and Operate) Labs, where students are encouraged to solve problems using available tools and learn through practical experience.

Inspiring Student Projects from India

- ⦿ Development of monolithic rocket engines by IIT Madras-incubated company Agnikul Cosmos.
- ⦿ The Hyperloop project by 1st-year IIT Madras students to develop pods that can travel at the speeds of 1,000 km/hr.

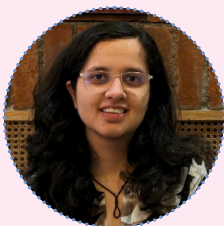
Final Thoughts and the Way Forward

- Institutions should focus on developing well-rounded engineers with high emotional and social quotients.
- Institutions should effectively communicate and market their capabilities to attract industry attention and placement opportunities
- Organise industry days to bridge the gap between academia and industry.
- Long-term engagement programs between faculty and industry to enhance student learning and employability.





Ms. Avni Malhotra,
Deputy Director,
ASME Foundation India



Ms. Vaishnavi Soni,
Engineer - Sections and
ECE Support, ASME

Education That Inspires - Sustainability in Engineering

The session 'Education That Inspires - Sustainability in Engineering' was presented by Ms. Avni Malhotra and Ms. Vaishnavi Soni. In this session, they informed about ASME Foundation's initiatives in India, focusing on sustainability and community impact. They elaborated on the ways that the foundation enhances engineering education and employability globally, supported by numerous events and programs through three main strategies: the education that inspires, careers that matter, and ideas that innovate.

ASME Foundation

- 🕒 The American Society of Mechanical Engineers (ASME) was established in 1880 and has 80,000+ members globally.
- 🕒 The foundation aims to impact the engineering community through three main strategies: education that inspires, careers that matter, and ideas that innovate.

Education That Inspires

- ⦿ ASME has various programs to reach different age groups, including K-12 outreach to engage school students in understanding engineering.
- ⦿ ASME is collaborating with Super 30-allied organisation to educate students about engineering and its branches, helping them become better and more employable engineers.
- ⦿ College programs like E-Fests and EFx are run and managed by students and include multidisciplinary workshops and technical competitions.
- ⦿ Competitions like SDC (Student Design Competition) and IAM3D (Innovative Additive Manufacturing 3D) foster collaboration and practical skills among engineering students.
- ⦿ ASME also offers scholarships to people of colour and women in mechanical engineering.

Careers That Matter

- ⦿ ASME offers Engineering for Change (E4C) fellowships focussed on sustainable development and aligned with SDGs (Sustainable Development Goals) to BTech graduates and final-year students.
- ⦿ E4C fellow Nishant Agarwal, an IIT Kanpur graduate who developed his startup lifeandlimb.ai, focussing on creating advanced prosthetics
- ⦿ ASME also offers Graduate Teaching Fellowship

Ideas That Innovate

- ⦿ ASME programs provide seed capital, technical expertise and business insights to early-stage social entrepreneurs.
- ⦿ ASME's ISHOW program promotes innovations and incubate innovation labs and PhD scholars to develop products from concept to launch.
- ⦿ Eight ISHOW innovations are shortlisted for a competition, with a panel of eight judges evaluating them and awarding \$10,000 to the winners.

ASME Membership and Benefits

- Membership offers access to 3 ASME-certified Learning and Development (L&D) courses every 6 months, enhancing students' portfolio.
- Discounted conferences, journals, and L&D courses provided for faculty members and PG students, benefiting both students and professionals.
- ASME has 113 student sections and 6 professional sections in India to enhance soft skills in students and leadership skills in professionals through various activities and events.
- ASME also hosts Mechanical Engineering Education Summits (MEEed) to brainstorm challenges in engineering curriculum to make students more employable.



KEY QUOTES

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“Digital transformation has become a buzzword to use technology to drive increased profits throughout systems.”

Mr. Arnav Maheshwari, Associate Vice President, D&H Sécheron Electrodes Private Limited

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“Companies are already creating sustainable products, therefore engineering students should learn about sustainability and social impact. You need to know what material you are using in the product, from where it is being sourced and how it is disposed. You cannot design a product if you have no understanding from where the material is coming and where will it go, what its half-life is and if it can be recycled it or not.”

“We have to produce global engineers in India, therefore mechanical engineering courses should include cross-cultural and cross-functional learning so that students have the experience of working with diverse people from multiple fields.”

Mr. Mudit Gandhi, Vice President, ER&D Sales, Tata Technologies

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“If we have to make digitisation successful in mechanical engineering, we should also decide what not to teach now. The curriculum should be optimised.”

“Thermodynamics is a huge topic in mechanical engineering because we started with steam engine. Steam Engine is basically the father of mechanical engineering. After that we had electrical, and now we have IoT. So digitisation must be there, and we have to think what has to be removed from syllabus, and that should be our focus.”

Dr. Uday Shanker Dixit, Professor of Mechanical Engineering, IIT Guwahati

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“

“Change mechanical engineering education from where freedom is available. Autonomy is given to you. Deemed University is given. Please change it. Freedom is available. Utilise everything that is written in NEP 2020 and you interpret the way you want it.”

Mr. M.S Unnikrishnan, Chief Executive Officer, IITB-Monash Research Academy

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“This is a good time for us to learn - learn what risks the engineering world is taking, and see where we wish to go. Do we wish to offer the same dry curriculum that most colleges follow? Or do we wish to create thinkers and problem-solvers who can think beyond what they learn in the classroom?”

Prof. Rahul Banerjee, Director, LNMIIT Jaipur

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बनाना' विषय पर सेमिनार आयोजित

सौम्य राष्ट्र

जयपुर। राजधानी जयपुर में शनिवार को इंजीनियरिंग शिक्षा को बढ़ावा देने के लिए 'अगली पीढ़ी के इंजीनियरों को सशक्त बनाना' विषय पर सेमिनार का आयोजन किया गया। आयोजन का उद्देश्य इंजीनियरिंग शिक्षा को बढ़ाने के साथ ही मुख्य इंजीनियरिंग उद्योग की उभरती मांगों के लिए छात्रों को बेहतर ढंग से तैयार करना है। एलएनएमआईआईटी जयपुर में आयोजित एक दिवसीय सेमिनार में प्रोफेसरों, उद्योग विशेषज्ञों, शिक्षाविदों सहित राजस्थान प्रदेश भर से 200 प्रतिभागियों ने भाग लिया।

इंजीनियरिंग डिपार्टमेंट एलएनएमआईआईटी के एचओडी मोहित मक्कड़ ने बताया कि यह बताने की कोशिश की गई है कि किस तरह से धीरे-धीरे इंजीनियरिंग एजुकेशन बदल रही है। इंजीनियरिंग पढ़ाई, इंडस्ट्री और एकेडमी के बीच के गेप को कैसे कम किया जाए, इसको लेकर भी विशेषज्ञों ने अपने-अपने विचार रखें। ताकि इंजीनियरिंग एजुकेशन के बाद इंडस्ट्री में जाने पर बच्चों को कुछ अलग नहीं लगना चाहिए। इसमें गवर्नमेंट की पॉलिसीज के बारे में भी जानकारी दी गई है। इससे एक मजबूत इंजीनियर बनकर आगे जाएगा, जो इंडस्ट्री के बारे अच्छे से समझ सकेगा।

एसएमई फाउंडेशन इंडिया, एलएनएमआईआईटी जयपुर और एसएमई इंजीनियरिंग एजुकेशन डिवीजन के सहयोग से 'अगली पीढ़ी के इंजीनियरों को सशक्त बनाना' विषय पर एक दिवसीय सेमिनार का आयोजन किया गया है। आयोजन का उद्देश्य इंजीनियरिंग शिक्षा को बढ़ाना और मुख्य इंजीनियरिंग उद्योग की उभरती मांगों के लिए छात्रों को बेहतर ढंग से तैयार करना है। जिसमें प्रोफेसरों, उद्योग विशेषज्ञों, शिक्षाविदों सहित राजस्थान राज्य भर से 200 प्रतिभागी शामिल हुए।

सेमिनार में शिक्षाविदों, संस्थान के कार्यकारी प्रबंधन के सदस्यों, प्राचार्यों, विभागों के प्रमुखों, मैकेनिकल और संबद्ध इंजीनियरिंग विषयों के डीन और राजस्थान भर के इंजीनियरिंग कॉलेजों के प्लेसमेंट सेल के प्रमुखों के लिए एक मंच के रूप में साबित होगा। जहां एक साथ आकर और उभरते कैरियर के अवसरों का पता लगा सकें। मोहित मक्कड़, एचओडी, इंजीनियरिंग डिपार्टमेंट एलएनएमआईआईटी ने बताया कि सेमिनार मुख्य इंजीनियरिंग क्षेत्रों में उभरती नौकरियों और कैरियर के अवसरों के बारे में जागरूकता पैदा करने पर केंद्रित रहा। वर्तमान प्लेसमेंट परिदृश्यों और शैक्षिक परिणामों के बारे में चर्चा की गई। जिसका लक्ष्य एक-दूसरे के अनुभवों से विचार करना और सीखना है। यह आयोजन अनुभवात्मक शिक्षण हस्तक्षेपों के माध्यम से इंजीनियरिंग शिक्षा को बढ़ाने के लिए कार्ययोजना और रोडमैप विकसित करने के लिए मूल्यवान अंतर्दृष्टि प्रदान करने वाला है। लोगों को पेशेवर रूप से पुरस्कृत कैरियर पथों की ओर छात्रों का मार्गदर्शन करने के लिए ज्ञान से लैस करने का प्रयास किया गया है। इससे मुख्य इंजीनियरिंग उद्योग को भी लाभ होगा।

इंजीनियरिंग एजुकेशन पर सेमिनार में भावी रोडमैप की जानकारी दी

आमेर। राजधानी जयपुर में इंजीनियरिंग शिक्षा को बढ़ावा देने के लिए "अगली पीढ़ी के इंजीनियरों को सशक्त बनाना" विषय पर सेमिनार का आयोजन किया गया। आयोजन का उद्देश्य इंजीनियरिंग शिक्षा को बढ़ाने के साथ ही मुख्य इंजीनियरिंग उद्योग की उभरती मांगों के लिए छात्रों को बेहतर ढंग से तैयार करना है। एलएनएम इंस्टीट्यूट ऑफ इन्फॉर्मेशन टेक्नोलॉजी (एल एन एम आई

आई टी) जयपुर में आयोजित एक दिवसीय सेमिनार में प्रोफेसरों, उद्योग विशेषज्ञों, शिक्षाविदों सहित राजस्थान प्रदेश भर से 200 प्रतिभागियों ने भाग लिया। एलएनएमआईआईटी, इंजीनियरिंग डिपार्टमेंट के एचओडी मोहित मक्कड़ ने बताया कि यह बताने की कोशिश की गई है कि किस तरह से धीरे-धीरे इंजीनियरिंग एजुकेशन बदल रही है।

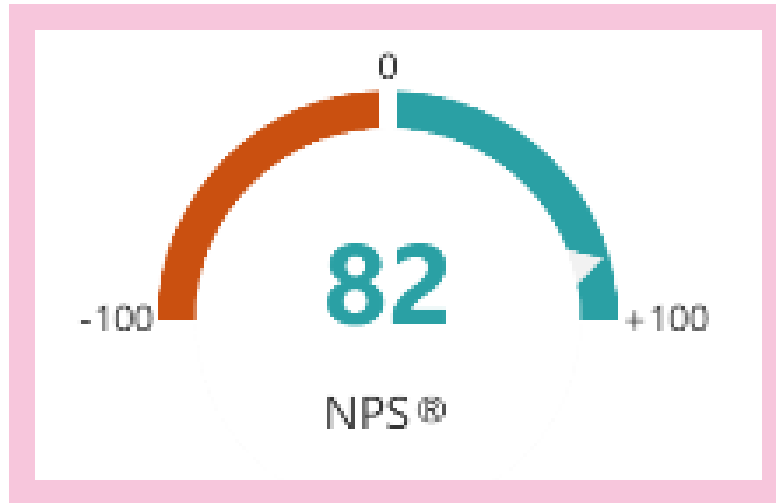
MEDIA COVERAGE

The ASME India Engineering Education steering committee in association with the LNM Institute of Information Technology, Jaipur organised a one-day seminar 'Empowering the Next Generation Engineers' on August 31, 2024 at LNMIIT, Jaipur to brainstorm the challenges in current engineering curriculum and the ways to make students more employable and industry-ready.

The event saw 100+ participants from 15 colleges and universities including directors and faculty members and senior executives and leaders from a number of enterprises and two public sector industries, GAIL and BHEL.

The event was covered in print and broadcast media including ETV Bharat, India News, Somya Rashtra, Satta Jagat and A1TV.

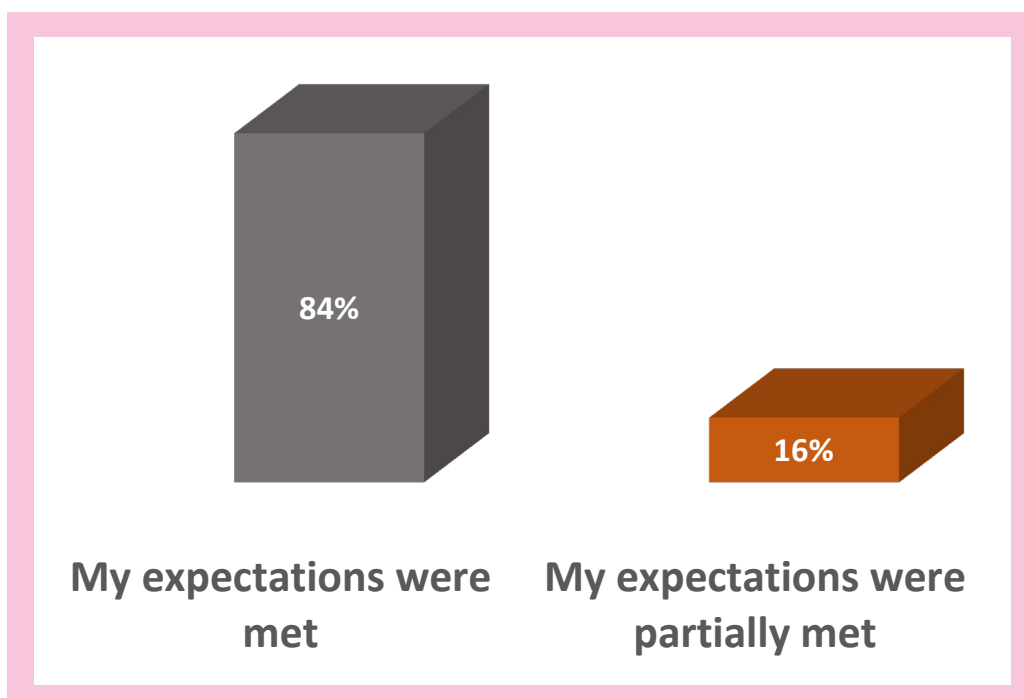
AUDIENCE FEEDBACK



Satisfaction and Expectation Met in LNM Institute Of Information Technology

To what extent did the event meet your expectations?

Overall, how satisfied are you with this Engineering Education Seminar?



Expected something else from this event (suggestions)

To know more about -

- ⦿ How Educational Institute will connect with core industries
- ⦿ How does the core Engineering Branches will perform in future
- ⦿ Opportunity for the engineering professionals currently in market
- ⦿ About the emerging technologies
- ⦿ More on the employment for freshers' candidates of core engineering branches.

Few Suggestions –

It's a wonderful event and looking forward to an international level conference in the future.

Expecting more sessions industrial entrepreneurs in future events like this.

At least two days sessions are required, one day is not sufficient to cover the details in depth.

You can include discussions on career opportunities in mechanical engineering, such as roles in project management, technical sales, engineering communication, or opportunities within the pharmaceutical sector.

RECOMMENDATION

Contemporary trends in engineering education show **declining interest of students in core engineering courses** in favour of computer science and IT programs, **seriously affecting the talent intake at the graduate level**. The efforts by engineering institutions and universities have not been able to address this concern effectively. On the other hand, manufacturing industries in India require skilled engineers with **competency in core fields** including manufacturing, design, quality control and automation as well as **expert knowledge of transformative technologies like AI, ML and IoT**. ASME brings academia and industries onto unified platforms for development of action plans through discussions to urgently address these concerns to empower the future generations of engineers.

Interdisciplinary collaboration in engineering curriculum:

There is a need to reevaluate the approach to engineering education, focussing on integrating core disciplines with transformative technologies like AI, IoT and machine learning.

Industry-driven research and internships:

Engineering institutes should commission industry-driven research projects to enhance the quality of education and make industry internships mandatory for students to develop their interest in engineering through practical experience and bridging the gap between expectations and reality.

Guiding policymakers:

Academia and industry experts should approach the government to influence policymaking to develop certification courses in AI and integrated curriculum for new finishing schools as the current focus is on promoting innovation and startups, and encouraging the talent to work in India.

Innovative pedagogical practices:

Academicians and practitioners should invite resource persons from the industry to create dynamic curriculum with a focus on modern learning methods including problem-based and practice-based learning along with gaming-oriented learning to keep the students engaged as well as making the curriculum relevant to the current industry needs.

Long-term engagement programs between faculty and industry:

Industry and academia must work collaboratively on developing programs for faculty sabbaticals in industry and industry leaders teaching in engineering universities.

