

MISSION AND VISION

Mission: The mechanical department is committed to:

Produce job ready engineers in the field of production, design, thermal, industrial and automation engineering by imparting basic sciences and engineering education.

Nurture students with creativeness, innovativeness and entrepreneurship skills to develop out-of-the-box thinking ability, respond effectively to the needs of the industry and the ever changing world scenario.

Conduct high quality research on interdisciplinary topics with core competency.

Vision:

To develop the department into an advance centre of learning by synergizing teaching, learning and research to produce competent mechanical engineers with an exposure to interdisciplinary engineering knowledge.

ICQPROM

Manav Rachna International University organized a three day International Conference on Quality, Reliability, Optimization and Modeling with a view to providing a forum for academia and industry to gain knowledge in recent researches in the said fields

January 5, 2017: The Department of Mechanical Engineering, Faculty of Engineering & Technology (FET), Manav Rachna International University (MRIU) organized an International Conference on Quality, Reliability, Optimization and Modeling from 5-7 January, 2017, themed on Journey Towards Excellence-Make in India. The inaugural day was graced by a galaxy of Senior dignitaries such as Dr K.R. Murali Mohan, Head, Big Data Initiatives Division, DST, who was the Chief Guest on the occasion; Dr N.C. Wadhwa, Vice Chancellor, MRIU; and Guests of Honour Dr. A. P. Mittal, Member Secretary, AICTE; and Dr. S. K. Goel, MD, Star Wire. Also present on the occasion were Dr M.K. Soni, Executive Director & Dean, FET, MRIU; Dr Manoj Nayak, HOD, Mechanical Engineering, FET, MRIU, researchers, scholars and students.



The International Conference technically supported by IEEE (Institute of Electrical and Electronics Engineers) and the first in the series from MRIU aims to provide a forum and interactive platform for academicians, researchers, industry personnel to share and gain knowledge on recent researches in Quality, Productivity, Optimization and Modeling. The deliberations at the Conference will not only provide the platform to validate the theories being followed but also iron out any anomalies and help develop fresh insights into these diverse fields.



Speaking at the inaugural session and welcoming all the Dignitaries at the Conference, Dr N.C. Wadhwa, said, The economy is moving in a new direction with the Make in India concept. Keeping this in view, the Conference will pave the way for knowledge sharing and provide new and innovative ideas across various fields. It will no doubt contribute significantly through the latest technology inputs and help integrate new concepts of Quality, Productivity, Optimization and Modeling into our journey towards the realization of the Make in India goal.

Chief Guest Dr K.R. Murali Mohan, while addressing the gathering on the inaugural day said, There is an urgent need to bridge the gap between Govt. Funding bodies like DST, DRDO, Academia and Industries to have a win-win situation for Honourable Prime Ministers dream of the Make in India initiative. An emphasis on indigenous designs and manufacturing is also the need of the hour to support the Make in India vision.

The first day witnessed keynote lecture sessions by Prof. (Dr.) Bhim Singh, IIT Delhi and Prof. (Dr.) A. Rajaopal, Head, SQC & OR Unit, ISI, Coimbatore along with Technical Sessions.

FOREWORD

VECTOR brings you all the contemporary news in and about the Mechanical Department, here, at Manav Rachna International University. VECTOR aims to bring to you the best advancements in the field of mechanical engineering coupled with riveting articles and exigent puzzles. Fueled by 3 inquisitive students **Ayush Narula, Harshwardhan Bhatia, Abhinav Singh Chauhan** under guidance of Assistant professor, **Robinson Bharadwaj** and Head of Department (ME), **Dr. Manoj Nayak**.

Definite Direction, Definite Magnitude : VECTOR.

THANKS

ACREX-17

Mechanical Engineering Department from Manav Rachna International University is responsible for organising many events in Collaboration with ISHRAE (Indian Society of Heating, Refrigeration & Air conditioning Engineers) such as job junction, expert lectures, technical quiz etc. We are also in the process of making MOU between MRIU & ISHRAE and in the process of setting up Heating, Ventilation & Air Conditioning (HVAC) centre of excellence in collaboration with ISHRAE in MRIU Campus.



ISHRAE had organised an International & National level Exhibition for HVAC (ACREX 17) in Greater Noida from 23rd to 25th February, 17 where all the top HVAC Companies of the country & abroad were exhibiting their products. The Mechanical Engineering Department decided that it would be of really helpful for our students of VIth Semester & faculty members if they visited the exhibition.

TEI QC Quiz

On March 5, 2016 Quality Circle Forum of India Delhi chapter and Department of Mechanical Engineering FET, MRIU organized TEI QC Quiz on Quality Concept at MRIU Campus Block B Seminar Hall. 55 Teams of Engineers from 16 core engineering companies like JCB India, Techumseh India, Tata power and Two teams Manav and Vidhyantriksha of faculty members from Mechanical Engineering Department participated in TEI QC Quiz.



Dr. M K Soni, ED & Dean FET was the chief guest of event and Dr. R V Singh, professor & HOD Mech. was among Jury members. Dr. M K Soni in key note address stressed upon the significance of quality in every sphere of the life. The Team Manav comprising of Prof. Virender Narula and Prof. Shweta Bisht of Mechanical Engineering Department, FET MRIU grabbed the position among Top five teams leaving behind 50 Teams of Engineers from JCB India, Tecumseh India and other teams from Industries. It was a rare event in history of TEI QC QUIZ when a team from academic institution have grabbed top position. Dr. R V Singh congratulated winning team members and presented prizes and merit certificates to winning Teams.

MECHANICAL DEPARTMENT At Glance...



IN A SERIES OF CONTINUATION IN ITS LEGACY MRIU IS AWARDED WITH 5 STARS IN QS RATINGS 2016. ANOTHER FEATHER IN ITS CAP, AFTER THE A GRADE ACCREDITATION BY NAAC. DEPARTMENT OF MECHANICAL ENGINEERING BOOSTS OF CONDUCTING VARIOUS EXTRA CURRICULAR ACTIVITIES BESIDES BEING A LEADER IN THE EDUCATION PROVIDER AS WELL.

Department of Mechanical Engineering organised an expert lecture on Zero Defect Zero Effect on 22.11.2016 held at Block-C Seminar Hall. Dr. Ashok Kumar Jain, Principal Advisor to Quality Council of India, shared his words of wisdom on the latest technique which is in line with the concept of MAKE IN INDIA. The production which aims at producing zero defect on the work piece and which in turn brings about zero effect on the environment which otherwise would have taken place in the process of quality control. Dr Jain apprised the attendees of the lecture with the basic concepts of ZED and the intricacies

involved in dealing with critical situation. He also called upon active participation from faculties to take up ZED to further heights and suggested to establish a ZED cell in the University.

Department of Mechanical Engineering (MED) in association with Sofcon India organised a two day Workshop on HVAC Design and Draughting from 03.11.2016 to 04.11.2016 at C Block Seminar Hall. The workshop was graced by the presence of ED & Dean Dr. M.K. Soni. Dr. Soni apprised students and the faculty members present at the workshop about the importance of HVAC and similar technologies and their wide arena of application. Also he appreciated the efforts of the team in organising such a highly specialised programme for the benefit of the students for their overall grooming to become fit for the industry.

ISHRAE JOB JUNCTION 09.11.2016 to 11.11.2016 Department of Mechanical engineering had successfully organized Job Junction 2016 participated by more than 200 students from North India. 13 HVACE leading companies visited MRIU Campus. Out of 51 students of our department 25 were shortlisted for placement/ final rounds.

Mrs. Seema Mehto & Mr. Joydeep Chakraborty attended a conference on Ventilation (VENTCONF 2016) organized by ISHRAE at India Habitat Centre, Delhi on 25.11.2016

Dr. Virender Narula, Associate Professor, MED has recently been awarded with PhD on his thesis titled Development, Application and Comparison of Six Sigma Methodology in Service Industry by YMCA, FARIDABAD on 29.11.2016

With an aim to explore the various industrial engineering techniques like 5S, Kaizen, just in time, value stream mapping, poke yoke and control charts an INDUSTRIAL TOUR was organised for 7th semester students on 5th November 2016 to Carrier India Pvt Limited. Mr. Kamal Manchanda, Senior Manager Carrier India apprised students about the basics of the techniques used by them, also he motivated students to come forward and take these techniques as their future project for making them a better fit for the placement.

Zero Defect Zero Effect

On November 22, 2016 an Expert Talk on Zero Defect Zero Effect was organized in Block - C Seminar hall, Faculty of Engineering and Technology at MRIU Campus Faridabad. Dr. Ashok Kumar Jain, Principal advisor to Quality Council of India shared his knowledge and experience with faculty and Student of FET, MRIU.

The event was organized by Department of Mechanical Engineering, FET-MRIU under the dynamic leadership of Dr. Manoj Nayak, HOD mechanical and able guidance of Dr. M K Soni, ED and Dean FET. Around 60 faculty members from various branches of FET participated in the event. The Coordinator of the event



Prof. Virender Narula, conveyed heartfelt thanks to Dr. Ashok Kumar Jain for such a valuable session on Zero Defect Zero Effect. The faculty members were very excited during the session and raised various questions during question answer session which was followed by Expert Talk.

TRANSCENDENCE



Manav Rachna Centre of Foreign Languages celebrated the spirit of togetherness, peace and unity at **Transcendence, 2017** a mosaic of global harmony on 28th February 2016 with great fervor and enthusiasm. With its vision to contribute positively towards the global community the eventful day started with Solidarity March a walk for peace which witnessed a massive participation of 600 students along with the faculty members from all the departments of the university. It was flagged off by Dr. Hanif Qureshi (Commissioner of Police, Faridabad), Mr. Ranjan Sodhi, Indian trap shooter and world cup champion, Ms. Shagun Chowdhary, an ace Indian shooter, Dr. Prashant Bhalla, Honble President, MREI, Dr. N.C. Wadhwa, Honble VC MRIU and Dr. Sanjay Srivastava, Honble MD MREI.

The day rolled off on a positive note with all the participants from various universities who were eager to participate in a plethora of events **Hunt-O-Mania, Mindtune, Cinematograph, Resonance, Dazzletainment, Sumo Wrestling et al.**



Hunt-O-Mania treasure hunt was a rage amongst the students in which 500 students participated. It was very meticulously planned with head-scratching puzzles which led to the next clues for the participants and the extensive routes covered the entire university. **Cinematograph a scintillating movie quiz** bought all the movie buffs under a single roof to compete with each other. As the name suggests cinematograph had some perplexing Bollywood and Hollywood questions which only the true movie maniacs could crack. **Resonance unveil the poet in you** was truly a competition of the intellectuals and noetics

who could be poets. It was amazingly colorful as the participants added flavor of different languages by reciting and interpreting their poems in French, Russian, English and Hindi.



Mindtune where the brush is mightier than sword invited students who could articulate their thoughts on world peace and harmony on a poster. The vibrant posters were indeed music for the sight. **Dazzletainment talent hunt** was a platform for the MREI students with oodles of talent and oomph. They displayed a vivid show of talent in dancing, singing, sketching, acting, miming, etc. Along with these competitions there were a lot of fun activities to enjoy like sumo wrestling, football, etc.

Transcendence had a lot to offer to each kind but every aspect resonated the feeling of global harmony, propelling all its partakers towards the path of oneness. The culminating event started with a **Symposium organized by Cambridge University Press** which was in fact thought provoking. It was followed by an extremely enlightening Panel Discussion with eminent panelists from all walks of life - **Mr. Momcilo Vukovic, Counselor, Embassy of Bosnia and Herzegovina, Ms. Gauri Sarin, President Approach Talent Solutions, Gurgaon, Ms. Birgit Gairola President, Proprietor, Orange Tree Consulting and Mr. Saurabh Bhattacharya, an eminent media professional.** The panel-



ists probed into issues like inner peace and technology. Amidst all the intellectual and enlightening discussions the audience was treated with a vibrant show of cultural mélange including dance and culture walk. Apart from gathering thunderous applause and appreciation from the audience, the winners of different events were given exciting prizes from Cambridge University Press and Studenting Era.

Even with the event coming to an end, the enthusiasm and the effervescence echoed through the walls of the auditorium with happy faces elated and excited. **Ms. Gauri Bhasin, Head Career Development Centre and Manav Rachna Centre of Foreign Languages rightly quoted**

Alone we can do so little but together we can do so much.

COMPUTATIONAL FLUID DYNAMICS: DEVELOPMENT, APPLICATION & ANALYSIS



A faculty development programmer was organized from 20th to 25th Feb, 2017 at University Institute of Engineering and Technology Kurukshetra on the above mentioned topic. This was a six days Faculty Development Programme on Computational Fluid Dynamics: Development, Application & Analysis, a very beneficial academic environment was experienced by the participants.

How to 'Start-up' for Dummies

by Harsh Vardhan Bhatia



Start-ups have suddenly become the thing for students, graduates and working class professionals. Primarily because of the numerous success stories such as PayPal, Flipkart, Ola Cabs etc. Little do they know what it takes to be the BIG GUNS.

Here are 10 tips to follow if you have a budding Elon Musk in you!

Desire: Create a start-up because you have a unique, ingenious idea. Not because Sharmaji ka beta has one. Most start-ups fail at their budding stages because of the lack of intent. Research well on your idea and make sure something similar does not exist. If it does, find out ways to further enhance it to the point where your adjustments make it better and different. Don't plagiarize!

Funding: The best way to raise money is to pitch your idea to investors. You may be required to invest some money from your end to build a prototype. This is seed money. You may also approach a bank for loan but make sure you have a steady income flow to pay back the loan and simultaneously run household.

Self-Discipline: Self-discipline is key if you want your idea to turn into a successful business venture. Create a budget and STICK to it. You don't want your company to be in debt before it is even recognized. Plan ahead. Build to-do lists and achieve daily/weekly/monthly targets.

Be Realistic: Be realistic in your approach. No you cannot build 10 apps a week with a 3-member team. Building a likeable product takes time and effort. Focus on quality rather than quantity. Find out what people want and build on it.

Don't hire too quickly: Greed, you cannot run a company on your own and you require some helping hands. But be careful who you hire. Don't hire your dad's friend's daughter just because she is from IIT. Hire someone who shares the same passion and vision as you. You do not want to end up at a workplace where you cannot trust your colleagues.

Test and Re-test: You want the people to receive the best out of you.

Make sure your product is tested multiple times under multiple conditions until failure. You do not want your inbox filled with bug reports that are too much for you. Sure, some errors might escape your fine judgment but always double check before you release a product.

Deliver when promised: Nothing blemishes the name of your company more than false promises. If you have promised Khanna Sahab 20 pieces of your product on the 1st of the month, then DELIVER it. Even if you have to pull a couple all-nighters. This not only makes you a trusted brand but also gains you more clientele.

You're Not the Only One: You are sure to have competition and more than often, a fierce one. Regularly innovate and devise new techniques to enhance your services. The market prefers those who deliver and deliver well.

Have a Plan B (C,D,E,F): Sure, your idea is fantastic but that does not mean that it will guarantee you a cover picture on the Time Magazine. Being optimistic is good but be realistic too. In the worst of scenarios if your plan doesn't work out, have something to fall back on.

Ground Rule: You want a successful business? Simple. Earn more than you spend!