

Skill development Program- 2nd July- 25th July 2018

In Association with ISHRAE Daikin and SAE

About the program: The seventh semester students of Mechanical Engineering, TIST were trained on IC Engines, Air Conditioning, Instrumentation & Aero Modelling to enhance the practical knowledge & hands on skill. The course contents are as follows.



IC Engines & Associated system: Basic theory of IC Engines – Fuel/lube oil/Air filter cleaning and replacement – Spark plug/ Fuel injector maintenance – Engine oil checking and changing -Bearing condition checking and renewal – Shaft alignment – Vibration measurement – Gland packing/ Mechanical seal renewal – Tappet setting – Butt clearance checking – Assembly & dismantling of engine

Air conditioning: Basic theories of Air conditioning and refrigeration – Refrigerants – Psychrometry – Components – types of Air Conditioners-Product Knowledge- Load Calculation for residential ACs- AC installation and maintenance – VRV and Inverter Technology-Practical session on flaring and charging

Instrumentation and Control: Circuit Continuity checking – Solenoid valve troubleshooting –Multimeter and Megger -Motor/Generator winding and Armature resistance -Electronics-PCBs and Soldering-Small electronic project- “DIY”

Aeronautical: Design and Fabrication of RC plane – Design and Fabrication of RC helicopter -Design and Fabrication of RC quad copter.

The five day **National Seminar on Sustainable Technologies** and **The Skill Development programme** were inaugurated by Mr.Alex Cyriac (Senior HVAC Consultant) on July 2nd, 2018 at 10 am, at the Tagore hall, TIST Cochin. The National seminar was intended to bring an insight into different technologies used for sustainable growth/development in various industrial domains. Technology plays a big role in sustainable development.

Association with technical chapters like ISHRAE, SAE, IIW etc., rovided the participants with real time industrial scenarios and case studies. The five day seminar was handled by experts like Mr. Ganapathy Subrahmaniam (representative from SAE), Mr. Kochu Baby Manjooran (Senior manager, Environment, BPCL, Kochin Refinery), Mr. Sudhi V R, Kochi Merto Rail Ltd (KMRL), Mr. A. Chandra Kumaran Nair, (Director of Operations, (Electrial, IT & Communications) Cochin International Airport), Dr.Ajith James (St.Berchmans college, Kottayam) etc. Faculty members, post graduate and graduate students from various colleges across over Kerala and industrial representatives attended the National seminar. The seminar came to an end on 6th July, 2018.

Workshop on Sixth Sense Robot on 14/02/2019

ASME student chapter of TIST had conducted a workshop on Sixth Sense Robot on 14/02/19, designed by Robokart in association with Innovation cell IIT-Bombay. The workshop is originated at MATLAB software and Embedded systems. The workshop was inaugurated by Vice Principal, Prof. Dr. Babu John. The workshop was conducted by Vaibhav Sawant (senior R & D Engineer at Robokart) and Jash Shah (R&D engineer at Robokart).



Sixth sense technology is coming forward as a Market-defining technology in robotics. This technology has a wide scope in future in a field of Automation and Sixth sense. This workshop teaches about Robotics as well as MATLAB programming to make a sixth sensed Robot to take his own decisions without any manual interference. The objective of the workshop is to teach students about Image Capturing and processing, Color recognition through this workshop. The workshop gave tremendous exposure to learn about MATLAB programming.

Over 180 students from various colleges attended this workshop

Technical talk on centrifugal pumps

Mr. Rajmohan S, Former DGM, BPCL delivered a technical talk on “Centrifugal Pumps – Operations & Maintenance”, for the sixth semester students of Mechanical Engineering on 27/02/2019.





Interactive session conducted by alumnus Mr. Sreejith R Menon, graduation batch 2011-15 on Challenges & Opportunities for Mechanical Engineers. He also shared reminiscent moments of his TIST Mechanical days. The students enjoyed the session and received valuable advice from Mr. Sreejith.



Technical Talk by Mr. E. K. Mathew, Asst. Engineer, HNL on 22nd March 2019.

A Technical talk was conducted for the students of ME, which was delivered by Resource person Mr. E. K. Mathew, a vibration Analyst in Hindustan Newsprint Ltd, Velloor. Vibration analysis plays a key role in condition monitoring, which is important for manufacturing plants, where the costs of machine failure can be very high. The session covered the theory of vibration, practical case analysis from the industry and the vibration probe used to pick-up the sound signals caused by vibration of machine elements. The procedure used for reading the vibration signature was also discussed in detail at the end of which the students were given a sample test on analysing a frequency graph. The session concluded with a practical demo on how the vibration probe was used for signal acquisition. This was carried out in the Fluid Machinery lab, where the vibrations of pumps and turbines were recorded and analysed.



AEROBLITZ Workshop



one-day workshop on Aeronautical Science was conducted by the Aeromodelling club, TIST, ME Dept as part of ADVAY, 2019. The Forenoon session was tech talk session with Resource persons: Asst Prof. Vivek V. Kumar (ME Dept), Group Captain L. K. Vitly (Indian Air Force) & CMDE Justin Xavier.

Asst. Prof. Vivek V. Kumar gave an insight into the Science of Aeronautics with a focus on Aerodynamics. Details on the NACA wing profiles, Aerodynamic parameters such as coefficients of lift, drag, etc were discussed in detail and how these affect the flight of an Aircraft.

Grp. Captain L. K. Vitly, a veteran pilot, with a long service record in flying the MIG Combat Aircraft & KIRAN Mk 2 Trainer Aircraft, from the Indian Air force, shared the experiences of a pilot and also inspired the audience with contributions of great scientists & Engineers in this field.

The last part of the FN session was handled by **Commodore (CMDE) Justin Xavier**, who had been present as the Chairman of AESI (Aeronautical Society of India), Kochi, Branch. The Commodore interacted with the students about the activities of AeSI and also how engineering students could associate more with the Navy.

Also present for the occasion was the Honorary Secretary of AeSI, Commander (Cdr) Sunil K. Raghav.

In the AN session, the students took part in a glider build and fly contest in which student teams were given materials to build and fly a mini-glider. There was track laid out for this and whichever team flies the glider for the maximum distance wins. This was followed by a flying demo of quad-copters which included Racing drones & a quad

drone, which was one of the successful student projects of the ME dept. One of the RC (Radio Controlled) drone pilots was Mr. Joshua Saji, from Thodupuzha, son of Mr. Saji Thomas who has been widely recognised for being the first person with disabilities to build and fly a microlight engine-driven glider plane. The other RC pilots were student C. A. Paulose (2nd Year ME) & staff Asst. Prof. Shajan K. Thomas.

The program concluded with certificate distribution ceremony by Vice Principal of TIST, Dr. Babu John.

HARDTECH 2019 Startup Conclave

Three students of Mechanical Engineering Department had attended the 2-day Startup Conclave – HARDTECH 2019, conducted by Maker Village, Ernakulam. It was highly informative and they had the opportunity to interact with the renowned delegates from the industry. The delegates represented major industries like Robert Bosh Engineering, Huawei India, Cochin Shipyard, INTEL, Start-up Mission & Maker Village.

There was also strong Government participation with Secretaries from various departments. There were sessions handled by venture capitalists wherein information was shared on funding sources and techniques of being a successful entrepreneur.



Certificates were awarded to the final year students of Mechanical Engineering on successful completion of Solidworks course conducted by CADD Centre in the department.

