





Department of Mechanical Engineering

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Newsletter

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PROGRAMMES ORGANIZED



 An Industrial Training to Academic faculty at M/s. Shri Saivik Industries, Coimbatore. was organized by the department on 17.02.2020. Dr. A. P. Arun, AP (II), Mr. K. Krishnamoorthi, AP (II) and Mr. R. S. Mohan Kumar, AP coordinated the event.

Mr. N. Harish - Incharge Training & Development, Shri Saivik Industries, Coimbatore trained the faculty members.

 A Guest Lecture on Non-Destructive Engineering was organized in the department on 01.02.2020.
Mr.Benjamin Issac, Director, M/s. 3Q Inspection Services, Coimbatore delivered the guest lecture.

Dr. C. Velmurugan, HoD and Dr. S. Balaji, AP coordinated the event.



 Another industrial training programme was organized by the same team (Dr. A. P. Arun, AP (II), Mr. K. Krishnamoorthi, AP (II) and Mr. R. S. Mohan Kumar, AP) on 18.02.2020 at Technology and Business Incubator, Coimbatore. Mr. A. P. Sasikumar, Training Incharge, TBI trained the faculty members.



 A Guest Lecture on "Importance of pursuing Higher studies" was organized on 20.02.2020. Dr.
G. Ramakrishnan, HoD/FT and Mr. R. S. Mohan Kumar, AP coordinated the event. Dr. S. Goshal, Dean, Jain University delivered the guest lecture.

MEXPRESS



 A Faculty Development Programme on "Enterprise & Entrepreneurship Development was organized along with the KCT – Business School between 10.02.2020 to 22.02.2020 sponsored by EDII, Ahmedabad under the aegis of NSTEDB, DST, Government of India. Dr. A. P. Arun, AP (II) coordinated the programme.



 Another Industrial visit was arranged to M/s. Microtech Precision Engineering, Coimbatore on 14.02.2020 for third year Mechanical Engineering Students. Dr. V. R. Muruganantham, ASP and Mr. P. D. Devan, AP coordinated the visit.

INDUSTRIAL VISIT



 An Industrial Visit to M/s. MJB Foundry, Kovilpalayam, Coimbatore was arranged to 1st year B. E. Mechanical Engineering students on 04.02.2020. Mr. Vinayagamoorthi M A, AP II, Dr. Balasubramanian S, ASP, Dr. Thirumuruga Veerakumar. S, ASP coordinated the event.



 Another Industrial visit to LMW (Foundry Division) was arranged to 1st year B. E. Mechanical Engineering students on 17.02.2020. Mr. T. Karuppusamy, AP (II) Mr. M. Thirumalai Muthukumaran, AP (II) coordinated the event.

Department Advisory Board (DAB) MEETING



 Department Advisory Board (DAB) meeting was organized in the department on 15.02.2020. Dr. B. Senthilkumar, Associate Professor coordinated the meeting.

Ph. D. Award



Mr. V. Manivelmuralidaran, AP (II) was awarded Ph. D. Degree for his work on "Prediction and Optimisation of Parameters Influencing Cold Crack in Gas Metal Arc Welding of HSLA 950A" under Anna University, Chennai.

PAPERS REVIEWED

- Dr. S. Balaji, AP reviewed a paper entitled "Evaluation of Pre-treatment Effects on Oil Absorption and Organoleptic Quality of Potato French Fries" for the African Journal of Food Science (International).
- Dr. V. Manivelmuralidaran, AP (II) reviewed a paper entitled "Detection and diagnosis of abnormal energy consumption for high efficiency operation of metal extruder" for Measurement Journal (International).
- Dr. C. Velmurugan, HoD reviewed a paper entitled "Energy consumption Analysis of Glass House using Electromic window in subtropical Area" for the Journal of Engineering, Design and Technology International (Emerald Publications)

PATENT FILED

 Mr. M. A. Vinayagamoorthi, Dr. V. Muthukumaran, Professor and Mr. T. V. Abinesh, IV Mech. C student filed a patent on "An Apparatus for holding and Dispensing Water from a Water Can" bearing patent application no. 202041001486 on 13.01.2020.

MOU SIGNED

 An MoU was signed on 01.02.2020 with M/s. Shree Varshini Technologies, Coimbatore. The event was coordinated by Dr. V. Muthukumaran, Professor, Dr. S. Balaji, AP, Dr. K. M. Senthilkumar, ASP.

PROGRAMMES ATTENDED



 Following faculty members participated in a Faculty Development Programme on "Orientation and Retraining of Teachers" conducted by Coimbatore Institute of Technology from 19.02.2020 to 25.02.2020.

Dr. V. Muthukumar, Professor, Dr. K. M. Senthil Kumar, ASP, Dr. K. K. Arun, AP (III), Dr. S. Balaji, AP, Mr. S. Prabhu, AP, Mr. V. R. Navaneeth, AP.



 Mr. P. Prashanth, AP participated in workshop on "Vibration Analysis using Fundamental Kit and Energy Harvesting" at Government College of Technology, Coimbatore from 24.02.2020 to 28.02.2020.



- Mr. M. A. Vinayagamoorthi, AP (II) and Mr. R. S. Mohankumar, AP participated in "Productivity Conclave – 2020" organized by the Coimbatore Productivity Council at Le Meridian, Coimbatore on 20th February 2020.
- Dr. S. Balaji, AP and Mr. M. Ramesh Kumar, AP along with our students in a Competition "FAME-Quad Bike Design Challenge" from 07.02.2020 to 11.02.2020 at Yash Motor Sports, Hyderabad.
- Mr. Ayyappan P R, AP (SRG) participated in a NITTTR/AICTE sponsored Workshop on "Senstisation workshop for technical teachers" on 24.2.2020 organized by National Institute of Technical Teachers Training and Research (NITTR), Chennai at Sri Krishna College of Technology, Coimbatore.
- Dr. K. Ulaganathan, AP (III) acted as an auditor for the scrutiny of answer scripts of UG/PG examinations held in Karunya University on 22.02.2020.



 Dr. S. Balasubramaniam, ASP, Mr. S. Sivakumar, AP participated in a Faculty Development Programme on "Enterprise & Entrepreneurship Development was organized along with the KCT – Business School between 10.02.2020 to 22.02.2020 sponsored by EDII, Ahmedabad under the aegis of NSTEDB, DST, Government of India.



 Dr. S. Balasubramanian and Dr. S. Thirumuruga Veerakumar ASP participated in national LPG Conclave 2020, organised by M/s. Indian Oil Corporation – Tamil Nadu State Office on 28th & 29th February 2020 at Aditya Convention Centre – Coimbatore. Dr. M. Balaji acted as Doctoral Committee Members in the first Doctoral Committee meeting convened by the Department of Industrial Engineering, Anna University, Chennai on 04.02.2020 for a research scholar.

MECHANICAL ENGINEERING ASSOCIATION

Following events were organized by Mechanical Engineering Association which were coordinated by Mr. S. Rajesh, AP.

- Mr. Mechanic (Intra Departmental Contest) 21.02.2020
- Entrepreneurship Empowerment Awareness Program – 27.02.2020
- CNC Technical Training 16.02.2020.

PAPERS PUBLISHED

- Mr. S. Suresh, AP published a paper entitled "An Experimental Investigation on Tribological Behaviour of Jatropha Bio-lubricant with Pyrolysed Cardanol Bio-lubricant at Varying Loads" in the IOP Conf. Series: Materials Science and Engineering 764 (2020) 012024, IOP Publishing, doi:10.1088/1757-899X/764/1/012024.
- Mr. S. Ramanathan, AP (II) published a paper entitled "A new method of acquiring perquisites of recirculation and vortex flow in sudden expansion solar water collector using vortex generator to augment heat transfer".

CNC WORKSHOP:

Mechanical Engineering Association (MEA) has organised a workshop on February 16, 2020. Mr. B. N. Sreeharan, AP (II) trained the students in the workshop. This workshop enabled the students to learn about CNC Programming. This workshop also enabled students to create a design and convert it to codes using CNC Softwares.



STAR GAZING SESSION:

MEA in association with SEDS_KCT conducted Star Gazing Session on February 12th, 2020. SEDS_KCT demonstrated about their telescope, facts about space science, time to see various planets, and much more. It provided a chance to gaze over the space with their telescope. Mr. Jeeva co-ordinated throughout the event.



Mr. MECHANIC:

MEA has organized an interdepartmental event named Mr. Mechanic to test the skills and knowledge in technical aspects and ability to convert the theoretical knowledge into practical one.



The event consists auditing fundamentals in general mechanics and carving metal to material. The event was conducted on 21.02.2020 and on 26.02.2020.

IMPORTS AND EXPORTS:

MEA has arranged for an Entrepreneurship development and training program on 27.02.2020.



Mr. Moosa Kaleemullah, Assistant Manager and Management Representative for M/s. Midas Safety Products and Units Development Manager for Oriental Metals Pvt Ltd. was the resource person for the program.

5's Football Tournament

Following teams had participated in 5's Football Tournament and the team from 3rd years secured 1st Position and won a cash Prize of Rs. 2000 conducted at Kumaraguru college of Technology from 3rd February, 2020 to 6th February, 2020.



- Students from 3rd Years: Mr. Nitin D, Mr. Naveen, Mr. Dhayalan, Mr. Kishore, Mr. Adithya, Mr.Pravin, Mr. Pavin
- Two teams from 2nd Years: Team 1: Mr. Karuttu Vinayaka Iyyapan, Mr. Srivathsan, Mr. Rogit Raj, Mr. Vishalnath Krishna, Mr. Jeshanth, Mr. Vishnu, Mr. Bavesh Kishore, Mr. Ganesh Raghul. Team 2: Mr. Joshua Peter, Mr. Naveen, Mr. Sreejith, Mr. Krishna Raagavendhar, Mr. Avanish Kiran, Mr. Niranjan, Mr. Abishek, Mr. Vinayak
- Students from 1st Years: Mr. Vivien, Mr. Mithun, Mr. George, Mr. Arfan, Mr. Vijay, Mr. Monish, Mr. Nishanth

Basket-Ball Tournament

 Students from 2nd Years: Mr. Arun Kumar, Mr. Adithya, Mr. Revanth, Mr. Mohan, participated in Basketball Tournament conducted at Kumaraguru College of Technology on 18th February, 2020.

Volley Ball

Mr. Sathish K from 3rd year has participated in Volleyball Tournament and Secured 3rd Position conducted at Hindustan College of Engineering and Technology on 28.02.2020 and 29.02.2020 and at RVS College of Technology on 15th February, 2020 and 16th February, 2020.



 He also participated in Volleyball and secured 1st position in SIICAA Tournament conducted at Kumaraguru College of Technology on 24th February, 2020.



Athletics

 Mr. Sivasakthi Surya from 3rd year has participated in Athletics (5000m) and secured 3rd position in SIICAA Tournament conducted at Kumaraguru College of Technology on 22nd February, 2020 and 23rd February, 2020.

Kabadi:

Mr. Varadharajan from 3rd year has participated in Kabaddi and secured 1st position in SIICAA Tournament conducted at KCT on 24.02.2020.



Poster Presentation:

 Mr. Gowtham S from 3rd year has participated in Poster Presentation on "Analysis of Nano structure Tungsten (W) thin layer coatings on mild steel to enhance its mechanical properties" at Ramakrishna Engineering college on 28.02.2020.

NCC:

 On January 26th, 2020, Republic day was celebrated at KCT. On behalf of ARMY WING BOYS OF KCT, our cadets: SGT S.Bala Karthikeyan (17BME057), LCPL S.Pradeep (17BME070), LCPL N.S.Thilesh (17BME091), LCPL J. Ajay (17BME093), CDT P. Abimani (18BME126), CDT B.Saran (18BME034), CDT A.Madhan (19BME127), CDT S.Naveen Kumar (19BME140), CDT G.Thibakaran (19BME119) had participated and submitted their respect.



 They exposed nationality by showcasing the symbols of Indian Armed Forces like symbol of Ashoka emblem, symbol of the Indian Army, Air, Navy and the Balidan symbol.



 On 08th February, 2020, CDT P. Abimani (18BME126) and CDT G. Thibakaran (19BME119) from Army Wing of KCT had participated in PARAAKRAM 2020 conducted by 2 (TN) BTY NCC by PSG College of Arts and Science, Coimbatore.



They participated in all the competitions like Contingent drill, Obstacle race, Flag area, Quiz, Best cadet, Culturals, Extempore, Cross country etc. In all these competitions, secured 1st place in Contigent drill, 1st place in Extempore, 2nd place in Cross country, 2nd place in Quiz competition and also secured overall Runner up trophy.



All these prizes were given by The Chief guest Col L C S NAIDU, Group Commander of the Kovai Group.

STUDENT ARTICLE: CAM SHAFTS



Krishna Prasad – 18BME105 1st Year Mechanical - A

Camshaft and its associated parts are used to control the opening and closing of both the inlet and outlet valves. The associated parts can be push rods, rocker arms, valve springs, and tappets.



For some solutions, the shaft also provides the drive to the ignition system and oil pump. The camshaft is driven by the crankshaft through timing gears. Cams are an integral part of the camshaft, and their design enables opening of the valves at the correct time and keeping them open for the necessary duration. Cam profile is designed using numerical calculations. Camshaft can be manufactured by machining, casting, or forging. Each camshaft is characterized by features such as timing, duration, lift, position, and number of cams.

Today the trend is toward dual-pattern designs with dedicated intake and exhaust lobe shapes that vary beyond mere differences in lift and duration. On the inlet side, the goal is to yank the inlet valve off the seat and accelerate it over the nose as quickly as possible while smoothly following the intended lobe profile shape. Avoiding destabilizing valve bounces mandates that the closing side be made smoother and gentler, especially as the valve approaches the seat.

New outlet-specific designs are definitely not "soft." These are still slightly softer at the seat compared to the newest inlet designs, but the entire curve is no longer soft, yielding more area under the curve. Collectively, this reduces exhaust pumping losses and yields a much flatter torque curve while still minimizing valve breakage and premature outlet seat wear. The dual pattern optimizes the overlap triangle shape, helping the headers perform their function of providing a low-pressure signal back to the inlet charge.

MEXPRESS



INSTITUTE VISION:

The vision of the college is to become a technical university of International Standards through continuous improvement.

INSTITUTE MISSION:

Kumaraguru College of Technology (KCT) is committed to providing quality Education and Training in Engineering and Technology to prepare students for life and work equipping them to contribute to the technological, economic and social development of India. The College pursues excellence in providing training to develop a sense of professional responsibility, social and cultural awareness and set students on the path to leadership.

DEPARTMENT VISION:

To emerge as a centre, that imparts quality higher education through the programme in the field of Mechanical Engineering and to meet the changing needs of the society.

DEPARTMENT VISION:

The department involves in sustained curricular and co-curricular activities with competent faculty through teaching and research that generates technically capable Mechanical Engineering professionals to serve the society with delight and gratification.

PROGRAM OUTCOMES (PO's):

- 1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. 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.
- 3. 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.
- 4. 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.

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- 7. 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.
- 8. 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.
- 9. Individual and teamwork: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- **10. 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.
- 11. 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.
- 12. 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 OUTCOMES (PEO's):

- **PEO 1** : Graduates will take up career in manufacturing and design related disciplines.
- **PEO 2** : Graduates will be involved in the execution of Mechanical Engineering projects.
- **PEO 3** : Graduates will take up educational programme in mastering Mechanical sciences and management studies.

PROGRAM SPECIFIC OUTCOMES (PSO's):

- 1. Apply the fundamentals of science and mathematics to solve complex problems in the field of design and thermal sciences.
- 2. Apply the concepts of production planning and industrial engineering techniques in the field of manufacturing engineering.