NEWSLETTER

MExpress

Department of Mechanical Engineering, KUMARAGURU COLLEGE OF TECHNOLOGY

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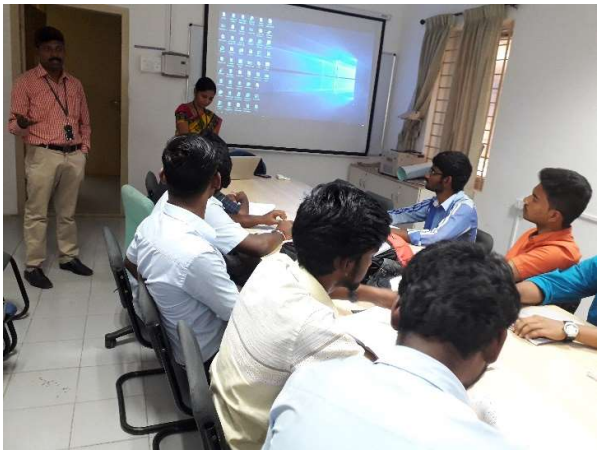
Editors: Dr. C. Velmurugan, Mr. B. N. Sreeharan **Associate Editors:** Mr. P. Kapil, Mr. K. Arun,

Events Organized

- Department invited Mrs. N. Saroja, AP/IT to provide to provide training in basics of PYTHON programming to the interested students in the department. She provided training in the title "Fundamentals on Python For Mechanical Engineers" on 03.04.2019.



Mr. M. A. Vinayagamoorthi, AP(II)/ME coordinated the event.

- Mr. B. Jeeva, AP/ME demonstrated Gas Chromatography for the UG and PG students of Bio-Technology Department on 04.04.2019 and 24.04.2019 respectively.

External Examiner

- Dr. K. K. Arun, AP (III)/ME acted as External Examiner for the end semester practical examination at Hindusthan College of

Engineering and Technology, Coimbatore on 08.04.2019.

- Dr. P. K. Giridharan, Prof./ME acted as External Examiner for the end semester practical examination at Government College of Technology, Coimbatore on 09.04.2019.

- Dr. N. Sangeetha, Sr. ASP/ME acted as External Examiner for B. E. (Mechanical Engineering) Final year project viva voce at Government College of Technology, Coimbatore on 09.04.2019.

- Dr. R. Manivel, Prof/ME, acted as External Examiner for the end semester practical examination at Government College of Technology, Coimbatore on 10.04.2019 and on 11.04.2019.

- Dr. V. R. Navaneeth, AP/ME, acted as External Examiner for the end semester practical examination at SNS College of Technology, Coimbatore on 10.04.2019

- Dr. V. R. Muruganantham, acted as External Examiner for the end semester practical examination at Government College of Technology, Coimbatore on 12.04.2019.

- Dr. K. K. Arun, AP (III)/ME, acted as External Examiner for the end semester practical examination at SNS College of Technology, Coimbatore on 12.04.2019.

- Dr. K. K. Arun, AP (III)/ME acted as Anna University Representative (AUR) for the end semester examination at Sri Ramakrishna Engineering College on 16.04.2019

- Dr. M. Balaji, ASP/ME, Dr. K. K. Arun, AP (III)/ME and Mr. M. Ramesh Kumar, AP/ME acted as external examiner for the end semester practical examination at Sri Ramakrishna Engineering College, Coimbatore on 24.04.2019, 27.04.2019 and 26.04.2019 respectively.

- Mr. K. Manikanda Prasath, AP/ME attended classes for PG Diploma in Financial Management during 25.04.2019 to 28.04.2019 at Annamalai University, Chidambaram.

- Mr. S. Kiranlan, AP/ME participated a three day workshop on "Vehicle Dynamics and Design Calculation" during 25.04.2019 to 27.04.2019 at UKF College of Engineering and Technology, Kerala.

Online Courses

- Following faculty members completed an online course on "Manufacturing Guidelines for Product Design"

  Dr. S. Balasubramanian, ASP/ME
  Mr. M. A. Vinayagamoorthi, AP (II)/ME
  Mr. R. S. Mohan Kumar, AP/ME

- Following faculty members completed an online course on "Teaching and Learning in Engineering (TALE)"

  Dr. V. R. Murugananthm, ASP/ME
  Mr. M. Thirumalaimuthukumaran, AP (II)/ME
  Mr. T. Karuppusamy, AP(II)/ME

Paper Presentation

- Mr. S. Sivakumar, AP (II)/ME presented a paper titled "Enhancing the heat transfer rate by coating of nano particles on a solar collector for drying applications" in the International Conference on Energy and Environment-ICEE 2019 organised by Hindusthan College of Engineering and Technology, Coimbatore on 11th and 12th April 2019.

- Dr. K. M. Senthilkumar, ASP/ME and Mr. P. D. Devan, AP/ME presented following technical papers in the International Conference on Mechanical and Building Sciences – 2019 on 27th and 28th April 2019 AT SNS College of Technology, COIMBATORE.

  1. "Multi Objective Optimization in Machining of Inconel 718 Using Taguchi Method"

  2. "Determination of Natural Frequencies of Spur Gear in Portal Axle Gearbox "

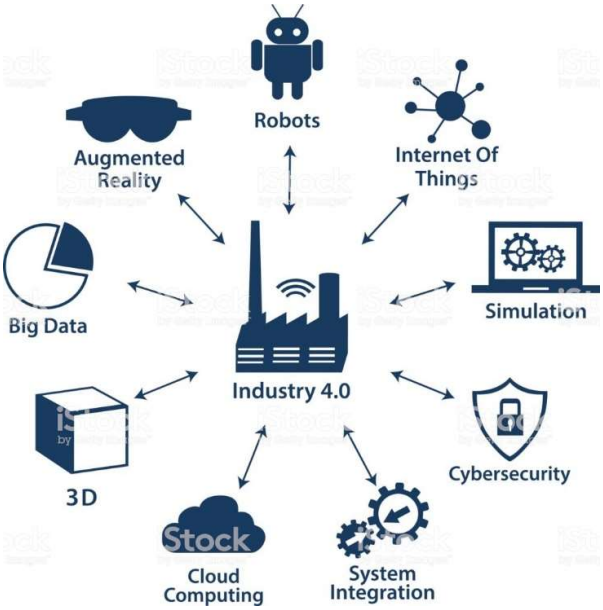
Industry Institute Interaction

A MoU Between KCT - Department of Mechanical Engineering and Coimbatore Productivity Council (CPC) on 24.04.2019.

Dr. S. Balasubramanian, ASP/ME and Mr. M. A. Vinayagamoorthi, AP (II)/ME coordinated the event.

Industry 4.0

Industry 4.0 is a name given to the current trend of automation and data exchange in manufacturing technologies. Industry 4.0 is commonly referred to as the fourth industrial revolution. It includes cyber-physical systems, the Internet of things, cloud computing and cognitive computing as shown in the figure given below



The term "Industry 4.0", originates from a project in the high-tech strategy of the German government, which promotes the computerization of manufacturing.

There are four design principles in Industry 4.0. These principles support companies in identifying and implementing Industry 4.0 scenarios.

Interconnection:

The ability of machines, devices, sensors, and people to connect and communicate with each other via the Internet of Things (IoT) or the Internet of People (IoP)

Information transparency:

The transparency afforded by Industry 4.0 technology provides operators with vast amounts of useful information needed to make appropriate decisions. Inter-connectivity allows operators to collect immense amounts of data and information from all points in the manufacturing process, thus aiding functionality and identifying key areas that can benefit from innovation and improvement.

Technical assistance:

First, the ability of assistance systems to support humans by aggregating and visualizing information comprehensively for making informed decisions and solving urgent problems on short notice. Second, the ability of cyber physical systems to physically support humans by conducting a range of tasks that are unpleasant, too exhausting, or unsafe for their human co-workers.

Decentralized decisions:

The ability of cyber physical systems to make decisions on their own and to perform their tasks as autonomously as possible. Only in the case of exceptions, interferences, or conflicting goals, are tasks delegated to a higher level.

Courtesy: B. N. Sreeharan, AP (II)/ME

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KUMARAGURU college of technology

COIMBATORE – 641 049

Department of Mechanical Engineering

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 center that imparts quality higher education through its program in the domain of Mechanical Engineering to meet the changing needs of the society.

DEPARTMENT MISSION

Bring about supremacy in curricular and co-curricular sustained activities with competent faculty through teaching and research, that generates technically capable mechanical engineering professionals to serve the society with delight and gratification.

PROGRAMME OUTCOMES (POS)

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.
5. **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.
6. **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.

7. **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.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** 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.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOS)

PEO 1 : Graduates will take up careers in manufacturing and design related sectors.

PEO 2 : Graduates will be involved in the execution of mechanical engineering projects.

PEO 3 : Graduates will take up educational programmes in mastering Mechanical Engineering Science and Management.

PROGRAMME SPECIFIC OUTCOMES (PSOS)

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.