



METRICS

A combined initiative by the staff and students of
The Mechanical Engineering Department

ABOUT MECHANICAL ENGINEERING DEPARTMENT

VISION

To develop human resource to meet regional and global requirement in the field of Mechanical Engineering.

MISSION

To Excel in academic and Research related to mechanical Engineering with special emphasis on energy, environment and front end technologies.

BRIEFLY

- Our third year students Mr Joseph Varkey and Mr Ashish Joy, achieved First Position in the event QRIOSITY of PINNACLE conducted as a part of KTU Tech-fest 2019 held at Government Engineering College Thrissur.
- On 25th January 2019 Agile Business Consultancy Conducted campus placement for Final semester students and Gokul Anilkumar got selected
- An online interaction session with faculties of Robotic firm SAK robotics in tie up with IIT Bhubaneswar is arranged for the second and third year students of our department on 22/2/2019
- Betson Philipose Thomas, Anu Nair P, Aby Alias, Manikandan S, Abhijith A “Experimental Analysis on the Effect of CU-ZSM5 on the control of SI engine Exhaust Emission” is accepted for the international conference on Material and Manufacturing Methods conducted by the Department of Metallurgical and Materials Engineering, National Institute of Technology, Tiruchirapalli, India, on July 5th, 2019
- Project Presentation as a part of curriculum for S8 Mechanical students started on 25/02/2019

Mechanical Engineers shape our physical environment from the cities we live in, the machines we use, the way we travel, the energy that powers these, to delivering the water we need. As an integral part of MBCCET, this discipline has attracted exceptional individuals and addressed the critical technological challenges of the day. Our particular interests evolve with time, but our core mission of training to the leaders of tomorrow and conducting fundamental research to address major technological roadblocks remain constant.

The Department of Mechanical Engineering at MBCCET campus was started in 2001. Over 200 students are currently enrolled in this undergraduate program. The competent and committed faculty in the department have extensive academic, research and industrial experience.

The department also has a team of dedicated and highly experienced supporting staff to help the students in laboratories. Research areas include 3D Printing and Composite Material. In addition, research is conducted on various fields of Thermal such as Gas Turbine Analysis, CFD and Non-Conventional Energy Sources. Students of the department are encouraged to read and publish papers in journals even at the undergraduate level. They are encouraged to work on projects, either individually or on teams.

The department is proud to have some of the most sophisticated lab equipment available today in its state of the art laboratories. A dedicated team of lab staff is available to guide the students in the laboratory course work. In addition to the campus library, the department has an extensive departmental library with books and subscriptions to current journals.

From the Principal



Newsletters are an essential tool for bridging the gap between the college and its stakeholders. I am so happy to see that staff and students of mechanical engineering department succeeded in publishing the new edition of department newsletter with nearly formatted, concise, easy to read articles

Dr.Pradeep C

From the HOD



I have great pleasure and pride to announce that the department of Mechanical Engineering, MBCCET is publishing our first newsletter. This newsletter will help to share the news, events and achievements of the department among the MBCCET fraternity. I would like to congratulate all the members of the editorial board for their sincere effort to realize this new venture. I earnestly wish and sincerely hope that this new publication turns out to be a resounding success.

Dr. Roja Abraham Raju

MECHANICAL ENGINEERING AND SUSTAINABILITY

- Shibin Shaji, Anu Nair P, Febin Felix, Biju Chacko, Anandhu Vijayakumar” Experimental Studies on the Effect of Mixed Metal oxide DeNox Catalyst on the Control of CI Engine Exhaust Emission” is accepted for the international conference on Material and Manufacturing Methods conducted by the Department of Metallurgical and Materials Engineering, National Institute of Technology, Tiruchirapalli, India, July 05, 2019
- Abdul Rahman, K. & Ramesh, A. (2017) Effect of reducing the methane concentration on the combustion and performance of a biogas diesel predominantly premixed charge compression ignition engine. Journal Fuel, Fuel 206 (2017) 117–132.
- Ajith Ramesh, Rojin Mathew, Anoop Pillai” Finite Element of modelling of Forming process of a thin circular disc used in Cyclic Loading and Unloading Application is accepted for the Second International conference of Material, Manufacturing and Modelling conducted by Vellore institute of Technology Vellore, March 28, 2019.
- Milan K John is Pursuing his PhD (Full Time) in the field of Energy Management in National Institute of Technology, Calicut

Amal Kuriakose (S4 Mechanical)

Mechanical engineering will evolve and collaborate as a global profession over the next 30 years through a shared vision to develop engineering solutions that foster a cleaner, healthier, safer and sustainable world. Mechanical engineers are critical to technologies that serve people. They are widely represented in both the traditional and alternative energy industries. They have the knowledge and skill needed to design new energy sources, make existing energy sources cleaner and improve the efficiency of current and emerging technologies.

Mechanical engineer can be at the forefront of developing new technologies to environmental remediation, farming and food production, housing, transportation, safety, security, healthcare and water resources. As they create these engineering solutions, mechanical engineers will need to be mindful of the experience of the previous generations.

It will require new cleaner technologies and new social systems to share the burden of developing sustainably. As a Mechanical Engineering student we should all know that “an engineer create that which never was”.



Closed-loop Flow Control for Micro Air Vehicles

Integrated closed-loop flow and flight control for stabilization and regulation of separated flows occurring on unmanned and micro air vehicle (UAV/MAV) wings. Inspired by the remarkable performance of birds and insects, increased lift associated with the controlled flows will lead to dramatic improvements in maneuverability, gust resistance, and a wider flight envelope. The main objective is that, energy can be effectively extracted from wind gradients, in order to minimize power requirements and thereby reduce the weight of MAV. Approach utilizes model-based, real-time control of unsteady mass injection along the wing's leading edge in order to dynamically alter the aerodynamic forces and moments, potentially eliminating traditional control surfaces whose inertia and structural limitations preclude real-time disturbance rejection algorithms. The methodology, so far demonstrated on model wings in laboratory and simulation environments, also delivers high-lift flow states that would be otherwise unstable without sensing and actuation. Specific laboratory demonstrations include the ability to dynamically cancel lift fluctuations associated with gusting flows on a time scale approaching the fast, intrinsic fluid-dynamic time scales associated with small-scale wings. A significant aspect of the work is the development of general model reduction theory and algorithms suitable for robust flow control that can be applied to a wide variety of flow control problem

“Never stop fighting until you arrive at your destined place - that is, the unique you. Have an aim in life, continuously acquire knowledge, work hard and have perseverance to receive the great life”

- Dr A P J Abdul Kalam

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