



**Department of Mechanical Engineering**

**Government College of Engineering, Bargur  
(An Autonomous Institution Affiliated to Anna  
University, Chennai)  
Krishnagiri -635 104, Tamil Nadu, India**

**Faculty Development Programme**

**on**

**METHODOLOGIES AND BEST  
PRACTICES OF VIBRATION ANALYSIS  
IN AUTOMOTIVE INDUSTRY**

**Date: 13<sup>th</sup> to 19<sup>th</sup> June 2019**

**Venue: Seminar Hall, Department of  
Mechanical Engineering**

**Sponsored by  
All India Council for Technical Education**

**Resource Persons:**

**Dr. C.Jebaraj,**  
Professor of Eminence,  
AU-FRG Institute for CAD/CAM,  
Anna University.

**Dr. T.Ramesh,**  
Associate Professor,  
National Institute of Technology, Trichy.

**Dr. R.Manoharan,**  
Associate Professor,  
VIT University.

**Dr. M.C.Lenin Babu,**  
Associate Professor,  
VIT University.

Sessions will be handled by the experts from Central/State funded institutions/eminent persons from established institutions or people from industries.

**Organizing Committee:**

Patron: **Dr.P.K.Palani**, Principal(i.c)  
Chairman: **Dr.P.K.Palani**, Head, Dept. of  
Mechanical Engineering,  
Programme Coordinator: **Dr. P.Thirumal**,  
Associate Professor

**Organising Secretary:**

**Prof. S.Sankar Ganesh** Asst. Professor  
**Prof. M.Anbarasu**, Asst. Professor  
**Prof. S.Tamil Prabakaran**, Asst. Professor  
**Prof. M.Anantha Babu**, Asst. Professor

**Joint Secretary:**

**Dr. I.Ashok Kumar**, Asst. Professor  
**Dr.D.Thirumalaikumarasamy**,  
Asst. Professor

**Dr. J.Saravanan**,  
Asst. Professor/ Civil Engg.

**Core committee:**

**Shri R.Barathiraja**, TRA  
**Shri K.Arunkumar**, TRA  
**Shri K.Mathivanan**, TRA  
Dept. of Mechanical Engineering,  
GCE Bargur.

**Advisory Committee:**

**Dr. K.Venkateshwaralu**, Scientist G, NAL,  
Bangalore

**Dr. R.Elansezhian**, Professor, PEC, Pondicherry

**Dr.T.Alwarsamy**,  
Professor, GCT Coimbatore.

**Dr. R.Vijayan**,  
Professor, GCE, Salem

**Dr. R.Malayalamurty**, Professor, ACCGCET,  
Karaikudi

**Dr. K.Manonmani**,  
Professor, GCE, Thanjavur.

**Dr. K.Ramesh**,  
Associate Professor, GCT Coimbatore

**Dr. S.Jayabal**,  
Associate.Prof, GCE, Thanjavur.

**Dr. S.Jerome**,  
Assistant Professor,  
National Institute of Technology, Trichy

**Topics to be covered:**

- Review of Mechanical Vibrations.
- Transient Vibration of single Degree-of freedom systems.
- Vibration Control, Measurement and applications.
- Damping Technology and Materials.
- Modal analysis & Condition Monitoring.
- Non Linear & Random Vibrations.
- Micro Vibration analysis & MEMS Modeling Vibration.
- Vibratory measurement in composite structures.

## About the Institution

Government College of Engineering, Bargur (GCEB) is one of the educational institutions developed by Government of Tamil Nadu, which was started in the year 1994 to cater to the needs of the nation in the development of technocrats and to provide facilities for educating and training men and women to meet the entrepreneurial and management needs. The Tamil Nadu Government has created adequate infrastructural facilities and sufficient funds and is keen on developing the institute for higher education. GCEB is permanently affiliated to Anna University, Chennai, received accreditation from National Board of Accreditation (NBA), New Delhi for all of its eligible UG programmes and also declared fit by University Grant Commission (UGC), New Delhi to receive central assistance (UGC grant), by awarding 2(f) and 12 (b) status.

GCEB is spread over a sprawling campus with calm surroundings, creating a fitting atmosphere for study. The institute has all required facilities like Modern/smart class rooms, students' hostels, faculty quarters, guest house, library, computer centre, medical centre, sports facilities. Bargur is well connected to all major cities like Chennai, Salem, Bangalore and other metro cities through air, road, and rail. The weather is generally cold in December-February reaching 15-25°C during night time

## About The Department

The Mechanical Engineering department was started in the year 2008. Though this department is youngest departments in this college, it is continuously striving to achieve excellence in education, academic and industry oriented research as well as consultancy work aiming service to the society. This department has excellent experimental and computational facilities. The major research areas include IC engine testing and design, alternative fuels, processing and characterization of materials.

## About The Programme

This program is intended to provide essential insights into the latest developments in the field of vibration analysis in automotive industries. to the faculty members. The content of this program is to deliver the important topics of Vibration analysis through theory, Hands-on sessions and live demo. More recently however, substantial hardware platform performance advances have facilitated a corresponding increase in sophistication of FEA software. Such a synergy has enabled the development of more advanced FEA applications such as vibration analysis, which unlike static analysis includes inertial and time-dependent loading effects. The vehicle driving comfort has become one of the important factors of vehicle quality and receives increasing attention. This results in a greater need of understanding of component response, thus reducing product development time and cost. As a result, many industries including automotive industry are now using vibration analysis in their preventive-maintenance programs to provide the basic guidance as to when the maintenance and overhauls should be performed, rather than relying on fixed calendar dates at which machines are periodically shut down and opened for inspection, thereby extending machinery life and reducing unscheduled down time. This program is designed to provide clarity of concept, best practices in the industry and the scope of research on vibration analysis in industries. The faculty members are expected to develop awareness about the vibration analysis in industries.

## Programme Content

The program provides theoretical, experimental and numerical approaches and hands-on sessions on vibration analysis to the engineering faculty and the contemporary practices in automotive industry. It will be ensured in this program that the participants receive a sufficiently detailed understanding to the principles so that they can apply the expertise gained for solving contemporary issues in vibration analysis and disseminate the knowledge to the students. Understanding the basics and fundamentals of vibration analysis are very important in forming a solid background to analyses problems on rotating machinery. The program also aims at providing a platform to carry research activity in this frontal area.

## Target Group

This program will be of interest to faculty and students of automobile, mechanical and aerospace engineering and also to people who are already working

in vibration analysis. It builds on participants' experience with automobile vibration concept and application and on knowledge of mechanical vibrations common to designers, mechanical engineers and automobile engineers.

## Registration

The Registration fee is Rs.500 (Refundable for faculty from AICTE approved institutions.)

The number of participants are limited and the selection will be done by first come first serve basis.

Hostel accommodation is available for a limited number of participants and could be arranged only on prior request

**The Applicant filled registration form should be submitted through E-mail / Post to the address.**

## Important Dates

Submission of application : 10<sup>th</sup> June 2019.

Intimation of Selection : 11<sup>th</sup> June 2019.

Confirmation by participants : 12<sup>th</sup> June 2019.

The selected participants will be intimated through mail. Delegates are requested to send their Demand Drafts drawn in favour of **“The Principal, Government College of Engineering”** payable at Bargur.

## Kindly fill in the attached registration or visit



<https://qrco.de/qcebmech>

## Programme Coordinator

Dr. P. Thirumal

Associate Professor

Department of Mechanical Engineering

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