

Brief Profile of the Department:

The department of Mechanical Engineering offers an UG program, seven PG programs and a Ph.D program as well. There are 39 qualified and experienced faculty in the department. The department has liaison with reputed industries and R&D organizations like NFTDC, BHEL, DMRL, DRDL, CMTI, etc. Presently the department is handling several R&D projects and consultancy works. The department has also been recognized as a QIP centre for M. Tech and Ph.D programs.

Teaching-Learning Centre of NIT Warangal:

The Teaching-Learning Centre (TLC) is established at NIT Warangal with grants from the MHRD, GoI under the scheme, 'Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching' (PMMMNTT). Many senior and young faculty members across various departments of the Institute are associated with this center as members of the Core-Team. One of the important objectives of the center is to conduct training programs for Aspiring, Newly Inducted and In-Service faculty in Science and Engineering disciplines. Other activities of the TLC include preparation of e-learning materials, offering courses on-line, curriculum development, carrying out research in pedagogy and integrating ICT into teaching-learning process.

About NIT Warangal:

National Institute of Technology Warangal, was established in 1959. Over the years it has developed into a premier institute of higher learning and is ranked among the top technical education institutions in India. There are 14 Departments offering eight undergraduate and 32 post-graduate programmes besides doctoral programmes. About 5000 students across the country and about 500 international students study in the campus. It is a fully residential campus sprawling over 250 acres with excellent infrastructure in the form of state of the art library, seminar halls, guest houses and laboratories.

Confirmation of Participation:

On receipt of the registration form along with proof of payment of registration fee, eligible participants will be sent confirmation of their participation through Email immediately. As the programme is conducted in an interactive mode with hands-on sessions, the number of participants in the workshop is limited to **50**. *Early registration of the candidates is encouraged.*

Address for Correspondence:

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About Warangal:

Warangal is the second largest city of the new state of Telangana. It is situated at a distance of 140 km from the state capital Hyderabad (Nearest Airport). It is well connected by Rail (Kazipet Junction is two km away and Warangal Station is 12 km away) and by Road (NH 202). Warangal is renowned for its rich historical and cultural heritage. It was the seat of erstwhile Kakatiya dynasty. It is a place of tourist attraction with a number of historical monuments like Thousand Pillars Temple, Warangal Fort, Bhadrakali Temple, Ramappa Temple and Lankavaram Lake.



**PMMMNTT
Scheme**



*A One Week Faculty Development Programme
on*

**Effective methods of teaching the
course on 'Internal Combustion
Engines and Alternate Power
Sources for Automobiles'**

June 19-24, 2017

Call for Registration and Participation

Coordinators

**Prof. G. Amba Prasad Rao
Prof. K. Madhu Murthy
Dr. G. Naga Srinivasulu**

Organized by

**Department of Mechanical Engineering
In Association with
Teaching-Learning Centre
National Institute of Technology
WARANGAL – 506 004 (T.S.), INDIA**



Preamble:

Energy consumption has become a yardstick to rate a nation whether it is developed or a developing one. Life style has drastically improved and is simplified with the invention of IC Engine. IC engine as a prime mover for the automobile has undergone multitude of developments. Though the fossil fuel driven automobile is serving mankind successfully over the past 2 centuries, many issues have cropped up due to heavy clogging of traffic and associated pollution problems. Efforts are being made in order to make eco-friendly IC Engines by adopting various in-cylinder techniques, using after-treatment devices and alternate fuels. In recent times, hybrid power sources and fuel cells are emerging as potential energy sources for automobiles. In this background, a Faculty Development Program (FDP) is planned to enable the faculty to understand in depth, the subject of IC engines and Alternate Power Sources for automobiles, with an emphasis on fuel cells. This program is further focused to enable the participant to offer courses on Combustion, Alternate Fuels for IC Engines and Alternate Power Sources for Automobiles at their respective institutions.

Objectives of the Course: To enable the participants

- To apply principles of thermodynamics to the engine cycle analysis and combustion phenomenon of SI and CI engines
- To develop experimental skills in testing i) engine performance (ii) emission parameters (iii) bio-fuel properties and (iv) performance characteristics of fuel cells in order to integrate them in their teaching
- To teach the concepts of (i) engine emission control techniques and (ii) viable alternate fuel technologies in automobiles
- To learn advances in fuel cells and their application as alternate power source for automobiles.
- To use CONVERGE/STAR-CD software packages for simulation of engine flow processes and apply them in their research pursuits
- To teach effectively courses on (i) Combustion (ii) Alternate fuels for IC engines and (iii) Alternate power sources for automobiles

Topics in the Course:

- Overview of I.C. Engines and the Combustion Phenomenon
- Understanding thermo chemistry and fluid mechanics of IC Engines
- Determination of Performance Characteristics of I.C.Engines and solving the related problems
- Analyzing engine emissions and applying suitable emission control techniques
- Applying emission norms and judging appropriate diesel Particulate Filters
- Modeling of Diesel Engine Combustion
- Using Diesel Engine Modeling **Software**: STAR- CD/ CONVERGE
- Alternate fuels for IC Engines
- Understanding the new combustion concept: Homogeneous Charge Compression Ignition(HCCI)
- Biodiesel production process and strategies to use Biodiesel in CI engines
- Proton Exchange Membrane Fuel Cell and Direct Methanol Fuel Cell: Fundamentals and applications

Resource Persons:

Faculty from NIT Warangal and reputed institutions/organizations/industries, who are experts in the field of IC Engines and Fuel Cells, will deliver lectures and handle practical sessions. Partial list of external resource persons is as follows:

Prof.J.M.Mallikarjuna	Dept. of Mech. Engg, IITM, Chennai.
Prof.Sreedhara Sheshadri	Dept. of Mech. Engg IITB, Mumbai
Dr. Nilesh Gajarlawar	Senior Manager(Technical) Mahindra Research Valley, Chennai

Registration is Open to:

Faculty of Mechanical engineering and allied disciplines/ Professionals involved in training of mechanical engineering and Research scholars aspiring for an academic career.

Accommodation:

Accommodation for outstation participants will be provided on request in the Institute Hostels.

How to Apply:

Eligible candidates may apply by submitting the scanned copy of the filled in registration form (attached with this mail/ brochure) by Email to ambaprasadrao@gmail.com/gnsnitw@gmail.com on or before **05-06-2017** along with the registration fee.

Registration Fee:

Category of Participant	Local and NIT Warangal Participants	Residential participants requiring accommodation
Faculty	Rs. 800/-	Rs. 1500/-
Research Scholars	Rs. 400/-	Rs. 750/-
Participants from Training Organizations / Consultancy firms/ Coaching Institutes		Rs. 3000/-

Note:Registration fee for Faculty and Students of SC/ST category is half of the amounts mentioned above as applicable.

Registration fee may be sent in the form of a DD only taken on the Bank address given below. Local participants may also pay the registration fee in cash to the Coordinator, Mechanical Engineering Department. Scanned copy of the DD with requisite registration fee shall be sent as attachment to the Email: ambaprasadrao@gmail.com gnsnitw@gmail.com, gns@nitw.ac.in

Account Name	DIRECTOR,NIT WARANGAL
Bank	State Bank of India
Branch	REC Warangal (NIT Campus)
Branch Code	20149
IFSC code	SBHY0020149