



AICTE QIP SHORT TERM TRAINING PROGRAMME

On

SMART MANUFACTURING & METROLOGY

22nd to 27th February 2021 @ IIT Madras- Chennai

ABOUT IIT MADRAS

The Indian Institute of Technology Madras, established by the Government of India in 1959, is among the foremost of Institutes in India and abroad in higher technical education with fundamental and applied research. It has been ranked the top engineering institute in India for last five years (2016-2020) in a row with **NIRF rank 1** by Ministry of Human Resources Development, India. The Institute is located in a lush green forest covered the land of about 250 hectares in South Chennai. The presence of eminent automobile manufacturing units and allied industries proves to be conducive to its research atmosphere. It has about 565 faculties, 8300 students, and 700 administrative and supporting staffs working in various departments and centers.



ABOUT THE DEPARTMENT

The Manufacturing Engineering Section (MES) has started its journey in 1965 under the Department of Mechanical Engineering. This section is now equipped with state-of-the-art facilities for teaching, training, research and development, and industrial consultancy in various aspects of manufacturing. The facilities available in the section encompass conventional, unconventional and advanced manufacturing technologies. These are grouped under Machine Tool Laboratory, Computer Aided Design (CAD) Laboratory, Computer Aided Manufacturing (CAM) Laboratory, Robotics, CIM Laboratory, Micro Machining and Metrology Laboratory. Since its inception, emphasis has been on practical and industrially relevant developmental activities. The facilities in the section have been augmented with support from Ministry of HRD Government of India, Indo-German Projects, and Sponsored Projects from various Governmental Agencies.



REGISTRATION DETAILS

No Registration Fee

Eligibility: Participants only from "AICTE" approved engineering Colleges.

- Preference during selection of participants may be given to young faculty members, particularly to those who have not registered for a Ph. D but are potential candidates.
- Participants will be selected based on eligibility.

[Register Here](#)

Last date for Registration: 31/01/2021

Please visit the [site](#) for more details

CONTACT DETAILS

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THEME

Smart machine tools are the key elements envisioned for the concept of smart manufacturing. 'Smart Machine Tools' is the most fascinating area where a huge investment is being done. The realization of the conceptual smart machine tool models and smart inspections can be achieved by the incorporation of well-equipped highly intelligent devices and a strong IT backbone. The current era has already witnessed numerous drastic alterations creating flexibility in the production line leading to a paradigm shift from the traditional manufacturing ensuring the exponential growth in national revenue. This can be realized with the integration of various sub systems including sophisticated software for machine learning, big data analytics, artificial intelligence and neural networking. Providing professional suggestions with various case studies, interactive sessions and panel discussions with industry experts to evaluate the applicability of conceptual models.

OBJECTIVES

- To foster advanced research and education programs focusing on next generation machine tools and inspection.
- To provide an overview of smart automation which explores the idea of implementing low cost automation mechanisms by selecting smart sensing elements involving PLC, VFD and servo controls.
- To encourage the young potential researchers to bring out novel concepts that can create revolutionary changes in the manufacturing industries.
- To establish an open forum for examining and evaluating the ongoing technical advancements in smart manufacturing by overviewing certain predominant industrial case studies.
- To build up a unique platform to provide valuable feedbacks/suggestions in upgrading the existing technology in order to nurture higher productivity

- Live projects and case studies (Participants will be asked to develop a machine learning algorithm for given machining data).
- Industrial visit for live experience.

COURSE CONTENTS

- Smart machine tools for sustainable manufacturing
- Machine Learning Techniques
- Intelligent Sensors
- Industrial Internet of Things (IIOT).
- Intelligent data analysis
- Intelligent In-process measurement systems
- Intelligence in Error Compensation
- Digital Metrology

Benefits

- 20 hours of tech talks by industrial experts and eminent IIT professors.
- Facility exploration at IIT Madras.
- Virtual visit to Research Park, IIT Madras.
- Interaction with the researchers and faculty working on Smart Manufacturing.
- This program helps participants to explore the research possibilities in Smart Manufacturing.
- Participation certificate from CCE, IIT Madras.

QIP STTP details, application and updates:

Center for Continuing Education, IITM:

<http://www.cce.iitm.ac.in/>

Department of Mechanical Engineering, IITM:

[https:// mech.iitm.ac.in/](https://mech.iitm.ac.in/)

Course coordinators Profile:

Dr. G. L. Samuel

[https:// home.iitm.ac.in/samuelgl](https://home.iitm.ac.in/samuelgl)

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Application Form

- **Name (block letter):**
- **Designation & pay scale: Organization:**
- **Address for communication:**
- Pin code: Ph. No.:**
- Fax No. E-mail:**
- **Highest Academic Qualification:**
- Specialization:**
- **Experience (in years):**

(a) Teaching: (b) Industrial:

All data provided are true to the best of my knowledge and belief. Kindly register me for the short-term course on "----- related to -----" to be held at IIT Madras.

Place:

Date: Signature of the Applicant

SPONSORSHIP

Prof./Dr./Mr./Ms./Mrs./_____ is an employee of our institute and his/her application is hereby sponsored. The applicant will be permitted to attend the short-term course "-----" at IIT Madras during -----, if selected.

Date: Signature of Sponsoring Authority

Designation:

Official Seal:

Signature of the Applicant