

BACKGROUND AND SCOPE

There is tremendous growth in the manufacturing industry from the standalone machine tool to Flexible Manufacturing System (FMS) and now the recent trend is of internet of things (IoT) in manufacturing also known as Industry 4.0 (IR 4.0) or Smart Manufacturing. In FMS machine tools are interconnected through an automated material handling system and altogether are controlled through a centralized system. In IR 4.0, monitoring, control, and data exchange between machines, employees and external world, customer- all through IoT (Cloud Computing) and it is through the smartphone in your hand. Industry 4.0 moves from potential to reality, it's clear that no single company or organization can do it alone. Hence, Industry 4.0 solutions are highly dependent on connectivity – technically as well as organizationally within the entire value creation process connecting suppliers and manufacturers. Open standards are crucial. Industry 4.0 marks the “beginning of the end” for proprietary interfaces. Only with open cooperation and the exchange of ideas and solution approaches will Industry 4.0 concepts find their way to/into practical solutions. That is why many manufacturing organizations are collaborating with research organizations, OEMs, manufacturers, and others. So it is the highly integrated human-machine-manufacturing system to establish an ecosystem of the various manufacturing elements involved in the manufacturing system so that organizational, managerial, and technical levels can be seamlessly combined

COURSE OBJECTIVES

The proposed short-term course is aimed to make the participants aware of the role of smart manufacturing and how it brings improvements in efficiency and sustainability in the manufacturing industry at large. Hence the formulated FDP course structure provides the participant with the latest know-how on industry 4.0, challenges, and research avenues.

COURSE CONTENTS

The course will deal with the fundamentals and diversified industrial applications. The course would also

cover a demonstration of the existing know-how and facilities in the lab. The major contents are as follows –

- Digital Age or Digital Era? and its Impact on Globalization
- Industrial Revolutions – helps to understand the development from history, vision to implementation, major challenges, international efforts, Future Research Perspectives
- Role of Robotics and sensor technology
- Artificial Neural Networks
- Role of Additive manufacturing and Communication protocols

The course structure is so designed that it motivates the faculty to undertake the new initiatives to solve and adopt new technology to move the current industrial setup to newer connected industries to address the global market.

DELIVERY MODE

Online through Google Meet. The link will be shared upon acceptance.

RESOURCE PERSONS

The experts from the R&D Labs, Industry and Faculty from Department of Mechanical Engineering IIT Madras.

ABOUT THE DEPARTMENT OF MECHANICAL ENGINEERING, IIT Madras

Mechanical Engineering is one of the major activities in the engineering profession and its principles are involved in the design, study, development, and construction of nearly all physical devices and systems. Continued research and development have led to better machines and processes helping mankind.

The Department of Mechanical Engineering at IIT Madras is as old as the Institute itself. Its impact on the institute and society is easily demonstrated by noting the alignment of the department's evolution with key events and technological advances in India and elsewhere. Today, the department of Mechanical engineering of IIT Madras attracts and features an extraordinary rich diversity and quantity of talented individuals, with nearly 700 undergraduates, 500 graduate students, and over 60 faculty members. The impressive array of students makes the department the largest in the country and one of the largest in Asia.

AICTE Sponsored

Short Term Course (STC) on

“Open Core Smart Manufacturing - Building the Bridge between Automation and Information Technology”

April 26-May 1, 2021

Registration Form

1. Name
2. Designation
3. Educational Qualification
4. Department
5. Organization
6. Teaching Experience
7. Favorite Subjects
8. No. of STCs attended so far
At IIT Madras ____ At other places ____ Total ____
9. Mailing Address
10. Telephone
11. E-mail

Date:

Signature of the Applicant

SPONSORSHIP CERTIFICATE

Certified that Dr/Mr/Mrs _____
_____ is being sponsored hereby
for attending the AICTE Sponsored Short Term Course
(STC) on **“Open Core Smart Manufacturing -
Building the Bridge between Automation and
Information Technology”** to be conducted at Indian
Institute of Technology Madras, Chennai from April 26-
May 1, 2021, if selected. Also this is to certify that this
institute is recognized by AICTE.

Signature and seal of Sponsoring Authority
(Head of the Institution)

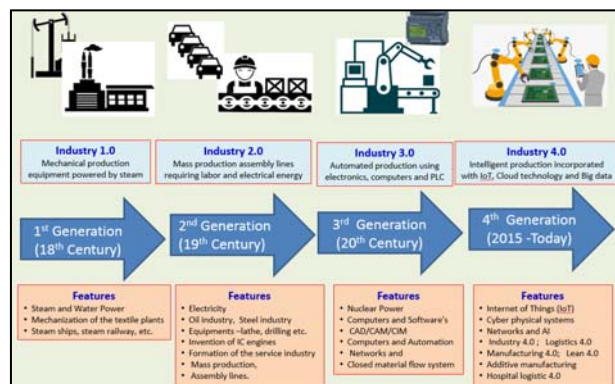
Place:
Date:

PLEASE SEND THE SCANNED SOFT COPIES TO

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WhatsApp Contact: 9947976422



ABOUT THE MANUFACTURING ENGINEERING SECTION

The Manufacturing Engineering Section is spread over three laboratories, one housed in Ranganathan Building, one in the Machine Tool Laboratory, and the third one Precision Engineering and Instrumentation laboratory in Mechanical Sciences Block. Faculty members, technical staffs, and research scholars are focused on the development of next-generation advanced manufacturing processes and cutting tools, machining of difficult-to-machine materials, machining and forming at micro and nano scales, friction and laser-based surface engineering, microstructural alterations to improve the material properties, infusing smartness into the processes and machines, automation of processes at different levels, high precision measurement and characterization at all length-scales

ELIGIBILITY & ENTITLEMENT

Faculty of Mechanical, Industrial Production, Mechatronics, Automobile, Ocean Engineering, Aerospace and ECE departments from AICTE recognized Engineering Colleges only are eligible to apply.

A participation certificate will be issued on successful completion of the course.

DATES TO REMEMBER

- **Registration Form** duly signed by the Head of the Institution should reach the organizers before **23rd April 2021**.
- **Notification of Acceptance:** 24th April 2021 (through email only).



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Course Coordinator
Dr Somashekhar S Hiremath

Organized by



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