



Registration Form

Advancement in Manufacturing Processes and Techniques
12.07.2021 to 16.07.2021



1. Name:
2. Gender:
3. Designation:
4. Department:
5. Address:

a. Tel (off): Mob:

b. E-mail:

6. Educational Qualification:
7. Area of Research:
8. Accommodation required: Yes No
9. Do you want to join as
1) QIP participant 2) Sponsored

10. Payment details:
Transaction ID/ DD No.:

Date..... Amount

(Please refer the Table over leaf)

11. Signature of the Applicant with date:.....

Endorsement of the Head of the Institution/Department

Sri/Smt/Dr _____ of
_____ Department of

Organization/ Institute is permitted to attend the STC in **Advancement in Manufacturing Processes and Techniques** at IIT Bhubaneswar.

Date: _____ Signature of Head of the Institute/Dept. with seal

Course Registration Fee information:

The participation in the course is free for the first thirty registrations for the faculty of AICTE approved institutes. However, the applicants from AICTE approved institutions need to deposit a refundable security amount of Rs. 1000/-, and fill in the details of deposit in registration form to secure their seat.

For all other participants the registration charges are given below in table

Participant category	Registration charges
AICTE approved Institutes (QIP participant)	Free up to 30 participants (on First Come First Serve basis) Beyond 30 seats: Rs. 4000/- +18% GST (Total Rs. 4720/-)
Sponsored: Non AICTE approved Institutes / Univ./ Research Organisation / Industry	Rs. 5000/- + 18% GST per person (Total Rs. 5900/-)

Bank details for payment:

A/c Name : CEP, IIT Bhubaneswar
Bank A/c No. : 24282010001960
IFSC Code : CNRB0017282
Bank Name : Canara Bank, IIT Bhubaneswar

Mode of instruction: *Online*, the link will be sent to the participants registered for the course

Contact persons

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One-week Short Term Course on

Advancement in Manufacturing Processes and Techniques

July 12-16, 2021

Under QIP scheme of AICTE



Coordinators

Dr. Gaurav Bartarya

Dr. Suvradip Mullick



Organised by

**School of Mechanical Sciences
Indian Institute of Technology Bhubaneswar
Jatni, Khordha, Odisha-752050**

About IIT Bhubaneswar

IIT Bhubaneswar was established in the year 2008 and started functioning in a temporary campus situated at Bhubaneswar city with a vision to be a highly respected Institute in the world for our distinctive knowledge. It shifted to its serene permanent campus in Jatni, Khordha in the year 2016. IIT Bhubaneswar is taking long strides to be among the institutions which offer the world class education. With an objective to create technologists and scientists of highest calibre, the institute targets to provide its students with holistic education and opportunities to get empowered with right academic preparations with analytical and creative skills. It boasts of a large number of faculty members working on niche technologies and producing high quality research in the field of engineering and technology. As a result, IIT Bhubaneswar has been ranked 9th overall within the country by Times Engineering Institute Rankings 2019.

About School of Mechanical Sciences

School of Mechanical Sciences currently run one B. Tech and three dual degree programs apart from three M.Tech. Programs in Manufacturing Engineering, Mechanical System Design and Thermal Science & Engineering and offers opportunity for research in all current and futuristic mechanical engineering fields leading to Ph.D. The Manufacturing engineering faculty majorly work in the fields of Machining, Material processing through lasers and other nonconventional techniques, Advance welding and casting technologies, Additive manufacturing, lubrication, cryogenics, Robotics and Automation.

Course Objectives

The proposed course under QIP programme of AICTE is aimed at educating faculties, researchers and scientists working in the field of Mechanical/ Production/ Manufacturing Engineering with special emphasis on

Concurrent Manufacturing Techniques, various issues and applications. Participant would be exposed to experimental analysis along with modelling and simulations for various advanced manufacturing process and use of laser based sensing techniques that would be useful in furthering their research goals.

Course Overview

The present course has been designed to introduce the advancement in different manufacturing processes, including conventional machining of advanced materials, laser material processing techniques, like cutting, drilling, grooving etc., hybrid machining, additive manufacturing, severe plastic deformation techniques etc. Along with the basic phenomena and advances in these processes, this course also focuses towards some of the specific industrial applications specifically in aerospace, medical and nuclear industry, their challenges and corresponding technological innovations. As various applications require the integration of automated or unmanned movement and control of manufacturing instruments and processes, therefore, this course also focuses towards the advancement in robotics and automation and AR/VR along with laser based sensing technologies and their applications in various manufacturing processes. The research and development sector of modern day's industries highly relies on modelling of physical processes, which are strongly dependent on the process conditions, model geometry, material characteristics and others. Therefore, apart from the theoretical knowledge of processes and techniques, this course will also provide a flavour of modelling of typical mechanical and thermal based processes. Also, this course would provide learning opportunity through the laboratory demonstration of various processes and in-house lab scale developments. The course would provide the participants a hands-on practice on these processes

and techniques, along with the development of the theoretical background.

Broad areas/topics to be covered

- Laser additive manufacturing
- Laser cutting, grooving and drilling,
- Water assisted laser processing
- Super finish processes
- Machining of hard materials
- Hybrid machining processes (VAM, LAM),
- Modelling and simulation in machining
- Minimum quantity lubrication, Cryogenics in machining
- Severe plastic deformation processes
- Modelling of solidification in manufacturing
- Robotics and automation in manufacturing, AR/VR in manufacturing
- Laser based sensing techniques

Course and Faculty

The course would cover the broad spectrum of contemporary and futuristic manufacturing. The course would have the lab component too. The lectures would be taken by the faculty members of IIT Bhubaneswar and the invited speakers from other IITs.

