



**AICTE Training and Learning (ATAL) Academy
Sponsored
5-Days Online Faculty Development Programme
on
"3D printing and Design"
9th -13th November, 2020**



REGISTRATION DETAILS

- There is no Registration fee
- For participant registration please visit <https://www.aicte-india.org/atal> and log in as participant and locate 3D printing and design on 9th -13th November, 2020.
- Workshop id: 460
- Thrust area : 3D printing and Design

Coordinator

Dr. Somashekara M A

Assistant Professor, IIT Dharwad

RESOURCE EXPERTS

Prof. Suryakumar S, IIT Hyderabad

Dr. Ravi L Hadimani, VCU, Richmond, VA, USA

Dr. Srikanth Bontha, NIT Karnataka

Dr. Ravi Kumar Y, NIT Warangal

Dr. Somashekara M A, IIT Dharwad

Dr. Samarth Raut, IIT Dharwad

Dr. Tejas Gotkhindi, IIT Dharwad

Dr. Amar Gaonkar, IIT Dharwad

Dr. Shrikanth V, IIT Dharwad

Mr. Sunil Magadum, CMTI Bengaluru

ADDRESS FOR CORRESPONDENCE

Dr. Somashekara M A

Assistant Professor
Department of Mechanical Engineering,
Indian Institute of Technology, Dharwad
Karnataka, India- 580011.

Email: somashekara@iitdh.ac.in

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Organized by
Department of Mechanical Engineering
Indian Institute of Technology
Dharwad – 580011
Dharwad, Karnataka, INDIA.



ABOUT THE INSTITUTE

Indian Institute of Technology Dharwad (IIT Dharwad) is an autonomous premier Science and Technology Institute established by the Ministry of Human Resource Development, Government of India in 2016 under the mentorship of IIT Bombay. Academic activities at IIT Dharwad commenced in July 2016 with B.Tech course being offered in three core branches, namely, Computer Science, Electrical Engineering and Mechanical Engineering. The current intake at the institute stands at 40 students in each of the specializations. PhD and M.S program commenced from January 2018 and August 2019 sessions respectively.

ABOUT DHARWAD

Dharwad situated on a relatively stable geological terrain and spread across seven hills is a gateway between the plains in east and Western Ghats. Bearing a rich heritage of history dating back to 12th century, Dharwad along with its twin city Hubballi is the second largest urban agglomeration in Karnataka. Serene and salubrious climate has fostered a very conducive environment for creative endeavors in music and literature. A cradle of Hindustani music, Dharwad has nurtured great artists like Gangubhai Hangal, Pt. Bheemsen Joshi, Sawai Gandharav, Basavaraj Rajaguru, Kumar Gandharva, and Mallikarjun Mansur. On the literary front, it was the home to Jnanapitha awardee D. R. Bendre and nurtured Jnanpitha awardees like Vinayaka Krishna Gokak and Girish Karnad. Owing to its association with music and literature, city and its inhabitants imbibe great reverence for education in their ethos resulting in it being the education hub of North Karnataka



OVERVIEW OF THE COURSE

3D printing known as Additive Manufacturing (AM), freeform fabrication, Digital Fabrication in which any complex shape/part can be fabricated by depositing layer by layer accordingly from the 3D CAD data. 3D printing technologies are progressively incorporated into industrial applications due to their exceptional processing flexibility. This includes fabrications of complex geometries, gradient compositions and part repairs.

ELIGIBILITY

The programme is open to the faculty of Engineering/Polytechnic/Research Scholars colleges of AICTE recognized Institutions and Industry members working in Mechanical/Production/ Industrial Engineering and allied Departments.

ABOUT ATAL

All India Council for Technical Education (AICTE) through its newly established AICTE Training And Learning (ATAL) Academy have started unique faculty development programs in various thrust areas of modern technology. 200 such programs have already been conducted in various government institutions benefitting around 10,000 faculties, research scholars & PG students during the FY 19-20.

OBJECTIVES OF THE COURSE

1. Provide an overview of the state-of-the-art 3D printing Technologies.
2. CAD modelling and product realization techniques.
3. To enable the development of 3D printing technologies at the participant's institution after completing the workshop.
4. Importance of 3D printing in various applications.

TOPICS TO BE COVERED

- ❖ Introduction to CAD
- ❖ Data Format; interconversion of various formats
- ❖ Data Validity Checks and Repair Procedures
- ❖ Process parameters and selection
- ❖ Slicing & Area filling Algorithms
- ❖ 3D printing of Polymer
- ❖ Modelling in 3D printing
- ❖ Photopolymerization (SLA, Refractory)
- ❖ 3D printing of metals
- ❖ 4D printing
- ❖ Direct Energy Deposition (LENS)
- ❖ 3D printing for Bio medical application of 3D printing, Post processing Requirements & Techniques