AICTE Training & Learning (ATAL) Academy

Sponsored

Faculty Development Program

On

3D PRINTING & DESIGN: TECHNOLOGY, OPPORTUNITIES, CHALLENGES & APPLICATIONS

February 01-05, 2021

Organized by

Department of Mechanical Engineering
JSS Academy of Technical Education
(Affiliated to VTU, Belagavi, Karnataka)
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ABOUT THE INSTITUTE

JSS Academy of Technical Education, Bengaluru is a premier Engineering and Management Education Institution run by JSS Mahavidyapeetha, Mysuru. The Mahavidyapeetha shelters over 350 Institutions, both at home and abroad. The JSSATE campus is spread over 21 acres of land surrounded by lush green plantation on the south western edge of Bengaluru city. The Institution was established in the year 1997. There are seven Under Graduate programs, three Post Graduate programs in Thermal Engineering, VLSI and MBA. All the seven UG programs are accredited by NBA, New Delhi and all the Departments are recognized as research centers by Visvesvaraya Technological University (VTU), Belagavi. The Institution also houses JSS Advanced Jewellery Design Technology Centre in the campus.

ABOUT THE DEPARTMENT

The Department of Mechanical Engineering, established in 2004, offers B.E program with an intake of 180 students and M.Tech (Thermal Engg.) program with an intake of 18 students and PhD programs. The UG program in Mechanical Engineering is accredited by NBA for three years for the academic years 2020-23. The Department has MoUs with industries such as Toyota Kirloskar Motor Pvt. Ltd. and ACE

Micromatics Ltd. for student related activities.

ABOUT THE PROGRAM

Creation of a three dimensional physical object by adding successive thin layers of materials may be termed as 3D Printing/Additive Manufacturing (AM).This process helps to fabricate complex shape/part by depositing layer by layer using the 3D CAD data through a specially designed equipment called 3D Printing machine. 3D Printing technologies are progressively incorporated into industrial applications due to their exceptional processing flexibility and ability to produce complex part using variety of compatible materials. The parts produced possess high accuracy with regard to the geometry as well as material properties.
However, there are challenges to be addressed in the domain such as technology adaptation and knowledge & skills required (with regard to topological optimization, materials compatibility study, process parameters, etc.) for achieving better performance.
The program is aimed at addressing the above challenges and experts from industry and renowned academia are going to share their knowledge with the participants. The main objectives of the program are:

- To exchange the state-of-the-art scientific knowledge in the field of 3D Printing and its applications.
- To address the challenges in adopting the technology and producing cost effective products.
- To explore the opportunities for the graduating engineers in the field of 3D Printing as well as research avenues.

The entire program will be conducted through online mode using an appropriate platform. The link for joining will be sent after confirming the participants by the coordinator.

REGISTRATION

Access the link for registration:
https://atalacademy.aicte-india.org/signup

Please follow the instructions mentioned in the website.
There is no registration fee.

TEST AND CERTIFICATE

A test will be conducted by the coordinator(s) at the end of the program. The digital certificate shall be issued to those participants who have attended the program with a minimum of 80% attendance and score minimum 60% of the marks. The participants are also required to submit feedback in the ATAL portal only.

IMPORTANT DATES

Confirmation to participants: **28/01/2021.**

PROPOSED COURSE CONTENTS

1. 3D Printing & Additive Manufacturing-An Overview, Process and Physics
2. Additive Engineering and its Elements, Materials
3. Material Characterization
4. Stereo lithography File format and its salient features
5. STL file processing technique
6. Stereolithography & Laminated Object Manufacturing
7. Materials used in Additive Manufacturing-Polymers, Metals and Ceramics.
8. Real-Time Applications of 3D Printing Technologies
9. Inspection and Testing techniques adopted in Additive Manufacturing Process.
10. Dynamic Challenges and Opportunities in 3D Printing
11. Wire arc AM or DED technology for part repair
12. Virtual demonstration of 3D Printing process.
13. Human values, Stress management

TARGET PARTICIPANTS

Faculty members of the AICTE approved institutions, Research Scholars, PG Scholars, participants from Government & Industry.

RESOURCE PERSONS

Resource persons are drawn from reputed industries such as M/s. WIPRO 3D, DRDO, etc. and academia such as IITs and NITs.