AICTE Training and Learning (ATAL) Academy

Faculty Development Program on

Emerging Trends in 3D Printing & Design Thinking

18th - 23rd December 2023

through **AICTE IDEA LAB**

(LAB ID: IDEA202000084)

Coordinators

Dr. K. Srinivasa Naik, Professor - ECE

Dr. Ch. Bharat Kumar, Assoc. Professor - ME

Organised by

VIGNAN'S
INSTITUTE OF INFORMATION TECHNOLOGY
(AUTONOMOUS)
Accredited by NAAC with 'A' Grade (CGPA of 3.41/4.00)
DUVVADA, VISAKHAPATNAM

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About ATAL Academy:

AICTE Training and Learning (ATAL) Academy is established with the vision "To empower faculty to achieve goals of Higher Education such as access, equity and quality". ATAL Academy will conduct a series of workshops in thrust areas identified by AICTE.

About the Institute:

Vignan's Institute of Information Technology (VIIT) was established in 2002 in the City of Destiny, Visakhapatnam, to cater to the educational needs of the general public. The experience gained by Vignan through its earlier institutions at Guntur has only helped in establishing very high-quality standards right from the inception and also is one of the reasons for the success.

About the AICTE Idea Lab:

AICTE IDEA (Idea Development, Evaluation and Application) Lab. has been sanctioned by AICTE, New Delhi to establish in 49 engineering institutions across the country to encourage students and faculty members for application of Science, Technology, Engineering, and Mathematics (STEM) fundamentals towards enhanced hands-on experience, learning by doing and product visualization. The lab is being developed with equal funding from the AICTE and the Institution. The IDEA Lab. will be a common facility in the Institution, making the students more imaginative and creative. The purpose of IDEA Lab. is to provide all facilities under one roof, for conversion of an idea into a prototype. Students will be exposed to critical thinking, problem-solving, design thinking, collaboration, communication, lifelong learning, etc.

About the Programme:

The 3D printing is a process of making product directly from 3D CAD model data, usually layer upon layer, as opposed to subtractive manufacturing, such as traditional manufacturing. Manufacturing of highly complex geometry can be produced directly via 3D printing. The participants will learn through lectures and interaction session with experts on 3D modelling and printing of product. The goal of this course is to provide the participants with an opportunity to conceive design and implement products quickly and effectively using the 3D Printing technology. This course is also focused to explore interdisciplinary applications of 3D printing, challenges and research issues in the current scenario.

Objectives:

This programme endeavours to provide conceptual clarity to popular techniques in optimization, machine learning, deep learning, etc. The course objectives are:

- Equip participants with a comprehensive understanding of 3D printing technologies and their applications.
- Familiarize participants with design thinking principles and how they can be integrated into curriculum development.
- Provide hands-on experience in 3D printing and designing through practical sessions.
- Foster collaboration and networking among participants and industry experts.

Course Content :

The programme is focused to discuss the process of manufacturing a component using 3D printing and its characterization. Few important aspects that will be covered in this programme are

- 3D printing technology and recent advancements.
- Design and Slicing softwares Hands-on.
- Mechanical properties of 3D printed components.
- Defects in 3D printing
- Hand-on Training on 3D printer: various practical sessions.
- Post processing of 3D printed component.
- Inspection and Testing of product quality after 3D printing.

Registration Fee:

There is **no registration fee** for any participant. The registrations are open through AICTE ATAL online portal https://www.aicte-india.org/atal

Certificate:

The certificates shall be issued to the participants who have attended the program with minimum 80% attendance and scored minimum 60% marks in the test. The participants also have to provide compulsory online Feed-back on the last day of FDP.

Invited Speakers:

Dr. N. V. Swami Naidu, Assoc. Professor, NIT Raipur

Dr. Degala Venkata Kiran, Asst. Professor, IIT Tirupati

Dr. G. Srinivasu, Asst. Professor, NIT Raipur

Dr. Krishna Kishore Mugada Asst. Professor, SVNIT Surat

Dr. Jagadish, Asst. Professor, Indian Statistical Institute Bangaluru

Dr. S Aruna, Assoc. Professor, Andhra University

Dr. K Ravi Kumar, Asst. Professor, MVGR College of Engineering

IDEA Lab Tech Gurus, VIIT(A)

Engineer, Think 3D

Experts from **IITs, NITs, IIITs** and Industrial persons

Expected Outcomes:

At the end of the program the participants shall be able to understand the following key factors in the field of 3D printing.

- Fundamental design aspects and parameters involved in 3D printing.
- Mechanical properties of 3D printed components.
- Metallurgical properties like porosity and defects in 3D printed components
- Post processing of 3D printed components
- Hands - on experience on 3D Modeling FUSION 360, and CURA slicing software
- Exposure to industrial 3D Printers in real time applications

CHIEF PATRON

Dr. L. Rathaiah, Chairman, Vignan Group

PATRONS

Mr. L. Krishna Devarayulu, Vice-Chairman, Vignan Group

Dr. V. Madhusudan Rao, Rector -VIIT

Mr. N. Srikant, CEO - Vignan Vizag

CONVENOR

Dr. J. Sudhakar, Principal

Address for Communication:

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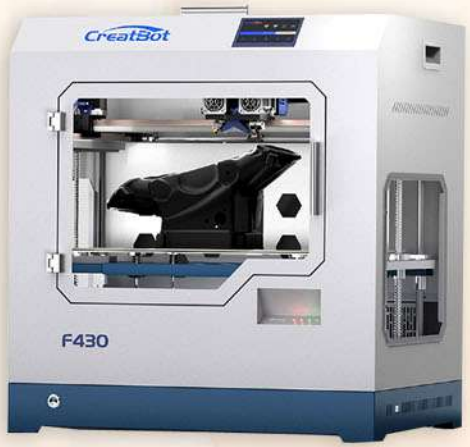
Additive Manufacturing and Characterization Facilities and Softwares in AICTE IDEA LAB



3D PRINTER

CURA

3D SCANNER

AUTODESK®
FUSION 360™

ATAL FDP on "Emerging Trends in 3D Printing & Design Thinking" through IDEA Lab (18-12-2023 to 23-12-2023)

Tentative Schedule

Day 1 18-12-2023	Day 2 19-12-2023	Day 3 20-12-2023	Day 4 21-12-2023	Day 5 22-12-2023	Day 6 23-12-2023
9:00 AM – 9:30 AM Inauguration					
9:30 AM – 12:00 PM Session 1 Dr. Degala Venkata Kiran IIT Tirupathi	9:30 AM – 12:00 PM Session 4 Mr. A Nikhil Chaitanya IDEA Lab Tech Guru	9:30 AM – 12:00 PM Session 6 Dr. K Ravi Kumar MVGR College	9:30 AM – 1:00 AM Industrial Visit - I	9:30 AM – 12:00 PM Session 8 Dr. Krishna Kishore Mugada SVNIT Surat	9:30 AM – 12:00 PM Session 10 Dr. S Aruna Andhra university
12:00 PM – 12.30 PM lunch	12:00 PM – 1:00 PM Article Discussion Mr. A Nikhil Chaitanya	12:00 PM – 1:00 PM Article Discussion Dr. K Ravi Kumar / Dr. Ch Bharat Kumar		12:00 PM – 1:00 PM Article Discussion Dr. Krishna Kishore Mugada	12:00 PM – 12:30 PM Lunch
12.30 PM – 3:00 PM Session 2 Dr. B.N. Dhanunjayarao IDEA Lab Tech Guru	1:00 PM – 2:00 PM Lunch	1:00 PM – 2:00 PM Lunch	1:00 PM – 2:00 PM Lunch	1:00 PM – 2:00 PM Lunch	12:30 PM – 3:00 PM Practical Session Dr. Susanth Kumar Sahoo/ Dr. Ch. V.V. Ramana
3:00 PM – 5:30 PM Session 3 Dr. G. Srinivasu NIT Raipur	2:00 PM – 4:30 PM Session 5 Dr. N.V. Swami Naidu, NIT Raipur	2:00 PM – 4:30 PM Session 7 Dr. Girish Bhiogade IDEA Lab Tech Guru	2:00 – 5:30 Industrial Visit - II	2:00 PM – 4:30 PM Session 9 Dr. Jagadish, Indian Statistical Institute	3:00 PM – 4:00 PM Feedback & Interactions
	4:30 PM – 5:30 PM Practical Session Dr. B.N. Dhanunjayarao/ Dr. K. Ismail	4:30 PM – 5:30 PM Practical Session Dr. G Girish Bhiogade / Dr. K Srinivasa Naik		4:30 PM – 5:30 PM Practical Session Mrs. M Aruna / Dr. T Archana Acharya	4:00 PM – 5:00 PM Valedictory