

KEY NOTE SPEAKERS



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Organized by

Department of Mechatronics Engineering



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Faculty Development Programme on

**Shaping the Future of
Production with 3D Printing
and Additive Techniques**

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About the Institution :

Akshaya College of Engineering and Technology (ACET) was established in the year 2009. The main focus is to offer quality education to the younger generation to strengthen our nation in the field of Engineering and Technology. Our institution is approved by AICTE and affiliated to Anna University, Chennai. The institution offers 8 UG courses in B.E. Mechanical Engineering, Mechatronics Engineering, Civil Engineering, Electrical & Electronics Engineering, Electronics & Communication Engineering, Computer science and Engineering, B.Tech.-Artificial Intelligence and Data science, Computer science & Business Systems and 3 PG courses in M.E.- VLSI Design, Computer Science and Engineering and Structural Engineering and Ph.D. courses in Faculty of Information and Communication Engineering. The vision is to become a premier Engineering and Technological Institute of Academic excellence through its commitment in offering value based education to its students and to improve their Technical, Intellectual and Professional skills in order to enable them to meet the diverse needs challenges of the society, the Nation and the World at large. The Institution has been accredited by NAAC. The Institution has been accredited by NBA for Civil, CSE and ECE departments.

About the Department

Established in 2013 at Akshaya College of Engineering and Technology, the Department of Mechatronics offers a four-year B.E degree programme with an intake of 30 students. The department provides an integrated curriculum that encompasses the fundamentals of electrical engineering, electronics, computer science, mechanics, robotics, and modern courses. The department aims to produce highly skilled professionals in Mechatronics Engineering who are prepared to tackle real-world challenges and contribute to technological advancements. The strength of the Mechatronics Engineering programme lies in three principles: providing students with an innovative and excellent curriculum meeting international quality standards, continuous improvement of the curriculum to meet stakeholders' needs, and having outstanding faculty members from various professional and academic backgrounds.

AICTE Training and Learning (ATAL) Academy

AICTE Training and Learning (ATAL) Academy, established by MOE, Government of India, holds the vision to empower faculty to achieve goals of higher education such as access, equity and quality. Council understands that there is a need of the day to train the young generation in skill sector and having faculty & technicians to be trained in their respective disciplines with latest tools and technologies. The main objective of ATAL Academy is to plan and help in imparting quality technical education in the country and to support technical institutions in fostering research, innovation and entrepreneurship through training in various emerging areas. It also provides a variety of opportunities for training and exchange of experiences such as workshops, orientations, learning communities, peer mentoring and other FDPs.

About the Programme

Additive manufacturing, often referred to as 3D printing, has revolutionized the way we design, create, and innovate across various industries. From aerospace and automotive to healthcare and education, the impact of additive manufacturing is far-reaching. As we move towards Industry 4.0, understanding and harnessing this technology is vital to stay at the forefront of academic excellence and technological advancements.

Guidelines

- ✦ The FDP will be conducted in Offline mode.
- ✦ There will be **20 sessions** (both theoretical and practical) in six days
- ✦ As per AICTE Training and Learning (ATAL) Academy guidelines **No registration fee** will be charged from the participants.
- ✦ Attendance is mandatory.
- ✦ On completion of the course an objective/quiz-based assessment of all participants will be done.
- ✦ Participants who have attendance of minimum 80% and more than 60% score in the test will be issued a certificate by AICTE Training and Learning (ATAL) Academy.

Target Group

- ✦ Assistant Professors / Associate Professor / Ph.D. scholar's / PG students from the Higher Education Institutions / Industry persons.

Resource Persons:

Experts from Industry / reputed Institutions.

Objectives of the FDP

- ✦ To provide participants with a comprehensive understanding of Additive Manufacturing Technologies and their applications in various industries.
- ✦ To explore the integration of design principles with Additive Manufacturing processes for enhanced product development and innovation.
- ✦ To equip faculty members with practical skills and knowledge to incorporate 3D Printing Techniques into their teaching and research.
- ✦ To facilitate discussions and collaborations among participants to foster interdisciplinary approaches to Additive Manufacturing and Design.

Outcomes of the FDP

- ✦ Participants will gain proficiency in utilizing 3D printing software and hardware for prototyping and manufacturing purposes.
- ✦ Faculty members will develop curriculum materials and instructional strategies that integrate Additive Manufacturing concepts into existing courses.
- ✦ Participants will engage in hands-on activities and case studies to deepen their understanding of Additive Manufacturing principles and applications.
- ✦ Upon completion of the program, participants will be able to mentor students and colleagues in the use of Additive Manufacturing technologies and design methodologies.
- ✦ The FDP will establish a network of educators and industry professionals to exchange ideas and best practices in Additive Manufacturing education and research.

Course Contents

- ✦ Introduction to Additive Manufacturing: Principles and Applications
- ✦ Basics of 3D Design Software for Additive Manufacturing
- ✦ Advanced 3D Design Techniques for Additive Manufacturing
- ✦ Materials and Technologies in 3D Printing
- ✦ Design Optimization and 3D Printing Considerations
- ✦ Additive Manufacturing in [Specific Discipline]
- ✦ 3D Printing Workflow: From Design to Physical Object
- ✦ Post-processing and Finishing Techniques for 3D Printed Objects
- ✦ Advancements in Additive Manufacturing: Emerging Trends and Future Applications
- ✦ Innovations in Materials for Additive Manufacturing: Advancements, Challenges, and Future Directions
- ✦ Practical sessions/Labs Individual and Collaborative Design Projects
- ✦ Industrial Visit