ORGANIZING COMMITTEE

CHIEF PATRON	**Thiru. G. Kamalamurugan,** Correspondent, ESEC
	Thiru. S. N. Thangaraju Secretary, ESET
PATRON	**Dr. V. Venkatachalam,** Principal, ESEC
CHAIRMAN	**Dr. N. Saravanan** Professor & HoD, Department of Mechanical Engineering

Convenor

Dr. S. Suresh, Associate Professor
Department of Mechanical Engineering

Coordinators

Mr. K. S. Mohanraj, Assistant Professor
Department of Mechanical Engineering

Mrs. S. Sivassankari,
Assistant Professor - Information Technology

IMPORTANT DATE

Last Date for Registration : 28.03.2026

REGISTRATION LINK

https://forms.gle/okphVWeu9sJZppW59

REGISTRATION FEE

Students : Rs.150/-
Faculty / Research Scholar : Rs.200/-

ADDRESS FOR CORRESPONDANCE

Mr. Mohanraj K S,
Department of Mechanical Engineering
Erode Sengunthar Engineering College,
Perundurai, Erode - 638 057.
Mobile : +91 9944883301,
Email : ksmohanraj@esec.ac.in

NRF National Research Foundation
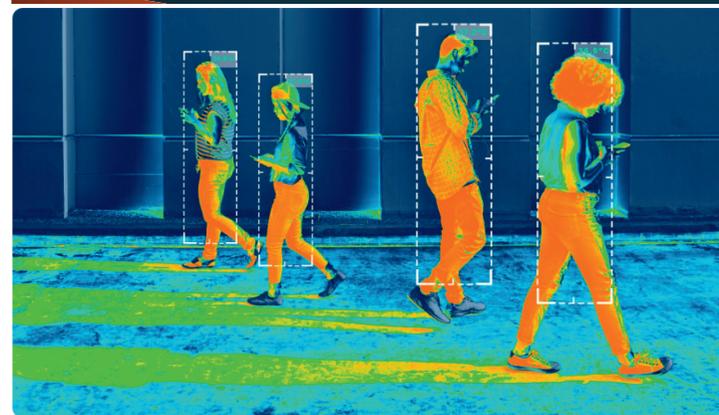
Sponsored

A Three-Day National Level
Seminar on

"XAI-DRIVEN SMART ORTHOPAEDIC IMPLANTS WITH GRAD-CAM-BASED IMAGING INSIGHTS, SHAP-GUIDED SENSOR INTELLIGENCE AND CYBER-PHYSICAL ADAPTIVE BIO-SYSTEMS"

06th to 08th April 2026

Organized by

DEPARTMENT OF MECHANICAL ENGINEERING

ABOUT THE DEPARTMENT

The Department of Mechanical Engineering, established in 1996, offers B.E. Mechanical Engineering in both English and Tamil, along with M.E. Manufacturing Engineering and M.E. Industrial Safety Engineering. It is a recognized Research Centre approved by Anna University, Chennai, promoting collaborative research. The B.E. Mechanical Engineering program has been accredited by the National Board of Accreditation (NBA), New Delhi since 2009 and was reaccredited in 2023. The department actively collaborates with reputed industries and national training institutes to enhance the technical skills of students and faculty.

OBJECTIVE OF SEMINAR

The objective of this seminar is to equip participants with a clear and practical understanding of how Explainable Artificial Intelligence (XAI) is transforming smart orthopaedic implants, medical imaging, and sensor-based healthcare systems. Globally, transparent and trustworthy AI is becoming essential for safe clinical decision-making and patient-centric care. In the Indian context, this seminar addresses the growing need for affordable, reliable, and intelligent healthcare technologies aligned with national initiatives such as Digital Health and Make-in-India medical devices. The program emphasizes interpretable AI, imaging analytics, and cyber-physical bio-systems to support research, innovation, and industry-ready skill development in next-generation orthopaedic healthcare.

LOCATION

The college is situated at Perundurai on the National highway (NH-47) about 20 km from Erode and 50 km from Coimbatore. It is well connected by road and rail.

NOTE

College Buses will be available at Perundurai Bus stand to reach college on the date of seminar. Timing of Transportation will be mailed to all the participants.

ABOUT THE INSTITUTION

Erode Sengunthar Engineering College, Approved by AICTE, New Delhi and permanently affiliated to Anna University, Chennai and an Autonomous Institution was established in the year 1996 for the upliftment of urban and rural youth by the philanthropic visionaries of Erode Sengunthar Educational Trust. UGC has concered the Autonomous status to the Institution for 10 years from 2019 to 2029 based on the successful and effective functioning. National Assessment and Accreditation Council (NAAC – UGC) has awarded A grade accreditation status.

The college offers Eighteen UG programmes in Engineering & Technology, One Integrated in M.Tech, Computer Science and Engineering and Ten PG programmes in M.E. Environmental Engineering, M.E. Computer Science and Engineering, M.E. Manufacturing Engineering, M.E. Power Electronics and Drives, M.E. Applied Electronics, M.C.A and M.B.A. It has full-fledged infrastructure furnished in all aspects. The institution is known for strict academic discipline and standards and is one of the best run institutions in this part of Tamilnadu. It is also well-connected by the bus routes from Erode (25km), Coimbatore (80 km) and Salem (80 km). The nearest airports are located at Coimbatore and Salem.

CONTENTS

- Smart Orthopaedic Implant Technologies
- Explainable AI for Transparent Medical Decisions
- Grad-CAM-Based Imaging Interpretation
- SHAP-Guided Sensor Intelligence in Implants
- Cyber-Physical Systems for Real-Time Healthcare
- Digital Twins and Adaptive Bio-Systems
- Future Trends In AI-Driven Orthopaedic Healthcare

ELIGIBILITY & REGISTRATION

The Participants can be Students, faculty and PhD scholars from AICTE approved Technical Institutions. On completion of the program, participants will be awarded a certificate of participation.

FOR YOUR HEALTH