# Organising Committee from E&ICT Academy

Principal Investigator Prof. Gaurav Trivedi Professor Department of Electronics and Electrical Engineering Indian Institute of Technology Guwahati Mail id: trivedi@iitg.ac.in Ph no: +91-361-2582536 (O)

Coordinator from E& ICT Academy Mrs. Aditi Biswas Das Project Engineer, E&ICT Academy IIT Guwahati Mail: <u>aditibiswasdas@iisi.iitg.ac.in</u> Ph. no: +91-84140 07080

# Committee Members from Thiagarajar College of Engineering

*Chief Patron* Mr. K. Hari Thiagarajan, Chairman & Correspondent

> *Patron* Dr. L. Ashok Kumar, Principal

# Conveners

Dr. S. Rajaram, Registrar & Professor, Dr. B. Manimegalai, Professor & Head, Department of ECE.

Coordinator

Dr. D. Gracia Nirmala Rani, Professor Department of ECE.

Co-Coordinators

Dr. N. B. Balamurugan, Professor Dr.V.Vinoth Thyagarajan, Associate Professor Dr.V.R.Venkatasubramani, Associate Professor Dr. J. Shanthi, Assistant Professor, Department of ECE.



# About E&ICT Academy

Electronics and ICT Academy is an initiative of the Ministry of Electronics and Information Technology (MeitY), Government of India for conducting various faculty/Research Scholar Development Programme. Academy has planned short term training programmes on fundamental and advanced topics in IT, Electronics & Communication, Product Design, Manufacturing with hands-on training and project work using the latest software tools and systems. In addition, the Academy will conduct specialized/ customized training programmes an research promotion workshops for corporate sector & educational institutions. Training of 1,35,000 Faculty Members/Trainers in Engineering and non-engineering colleges, Polytechnic, ITI and PGT educators Besides training of faculty members, at least 350 new/ unique FDPs would be developed in niche/ state-of-the art technological areas, considering future-ofwork and integration of industry specific requirement.

# Scan to Register



+91-361-2583182 (O) +91-7086502139 (M)

eictacad@iitg.ac.in eictacad@gmail.com







One Week Online Faculty Development Programme on "Chip to Care: Unlocking AI Driven VLSI for Smart Healthcare Devices"

# 02nd to 06th June, 2025



Organized by E&ICT Academy IIT Guwahati in association with Thiagarajar College of Engineering, Madurai &

Support from Uniconverge Technologies Pvt. Ltd.

Digital India





#### About The Institute

Thiaganajar College of Engineering (TCE) is as a Government Aided Autonomous Institution, established in 1957 by the philanthropist Late Karumutu Thiagarajan Chettiar. TCE is affiliated to Anna University, Chennai, and approved by All India Council for Technical Education (AICTE). TCE offers a wide array of Undergraduate, Postgraduate and Ph.D. Programs across various disciplines of Engineering, Architecture and Science. The campus is set within a serene and ecofriendly environment surrounded by dense vegetation and best infrastructure facilities.Each academic Department at TCE is dedicated to a specific theme, fostering synergy between faculty and students in academic and research endeavours. These themes encompass diverse areas such as Eco-finedly Structures, Power and Energy, Automation, Automotive, Wireless Technologies, Distributed Computing, Database Management, Modelling and Simulation, Material Science, Green Chemistry, and Heritage.

TCE has consistently embraced reforms and upgrades in its Teaching-Learning processes. Noteworthy initiatives include the implementation of a Competency-Based Curriculum and Outcome-Based Education. Since 2018, TCE has adopted the Conceive Design Implement Operate (CDIO) framework, shaping curriculum design, pedagogical methods, and assessment techniques, with adequate hands-on training to students. The institution has also launched Massive Open Online Courses (MOOCs) in 2021 and introduced the Thiagarajar Research Fellowship (TRF) scheme for Ph.D. research scholars, furthering its commitment to academic excellence and research innovation. The college maintains active industry collaborations with leading global organizations. These collaborations have resulted in the establishment of state-of-the-art laboratories, industry-oriented curriculum design, collaborative projects, professional training programs, student internships, and placements. For instance, Subject Matter Experts from TVS Motors have collaborated with TCE faculty to co-create the curriculum for Mechanical Engineering and Electrical Engineering programs, in addition to the establishment of T S srinivasan Centre for Automotive Research. TCE's active participation in the Technical Education Quality Improvement Programme (TEQIP) under the National Project Implementation Unit (NPIU) of the Ministry of Human Resource Development (MHRD) has led to innovative teaching and learning processes, faculty development programs, industry-supported research activities, and good governance initiatives.

TCE is involved in national and international ranking frameworks, showcasing its commitment to excellence and quality in education. The institution's programs have been accredited by NBA since 1998, indicating compliance with quality standards in technical education. The programmes offered at institution has gamered numerous accolades, including accreditation by NAAC with a CGPA of 3.56 (out of 4.0) with A++ Grade in Cycle 2. Engineering departments have been recognized with the "Best Industry Linked Technical Institutions award" by AICTE and the Confederation of Indian Industries (CII). Faculty members have earned International Certification and Wipro Mission 10x. Dr. R. Vasudevan, Professor in the Chemistry Department, received the "Padma Shri" for his pioneering work on plastic roads. TCE students have actively participated and succeeded in events like the Smart India Hackathon (SIH), showcasing their talent and problem-solving withing.

### **Course Objectives:**

This Faculty Development Programme aims to equip participants with the knowledge and hands-on experience in integrating VLSI design with Artificial Intelligence for smart healthcare applications. Participants will explore AI/ML techniques, low-power chip design, biomedical signal processing, and edge computing. The course bridges the gap between traditional electronics and emerging AIdriven biomedical technologies for wearable and implantable healthcare devices.

## **Course Outcome:**

By the end of the programme, participants will be able to:

- Understand the fundamentals of AI, Machine Learning, and VLSI in the context of biomedical applications.
- 2. Design and simulate VLSI circuits for low-power smart healthcare systems.
- 3. Apply machine learning algorithms to biomedical data such as ECG, EEG, etc.
- 4. Implement AI models on edge devices and integrate them into health monitoring solutions.
- 5. Gain hands-on experience with Python, HDL tools, Edge Impulse, and hardware simulation environments.
- 6. Develop a project demonstrating the application of AIdriven VLSI design for a healthcare use case.

#### Activities & Assignments:

Assignments will be of the following type:

MCQ based questionnaire (Quiz) and Written Assignments.
At the end of the course "Project" will be assigned to the participants.

#### **Guidelines of the FDP:**

The participants will get two types of certificates: There will be 3 MCQ tests (online) of 10 marks each The final "Project" will be of 40 Marks Attendance will be of 30 Marks Total marks will be 100 out of which grading will be done.

### Please Note:

- These FDP's can be considered at par with other QIP (Quality Improvement Programme) and other provisions for recognition/credits.
- Registration fees is refundable if the registration cancellation request is submitted before the last date of registration.

### Who Can Attend?

Programme is open to Faculty Members and PhD Research Scholars from Universities and Colleges. The Faculty/Staff are requested to submit the NOC from respective department before attending the session. For details of the programme and course contents etc., please log on to Electronics and ICT Academy website: <u>https://eict.iitg.ac.in</u>

#### **Please Note:**

Registration fees includes evaluation, participation certificate and grade certificate. Participants have to submit UTR No. as the proof of payment while registering for the Faculty Development Programme.

## For Online Transfer

Bank Name: State Bank of India Account Name: IIT Guwahati R and D, E and ICT Academy Account No.: 36071160089 IFSC Code: SBIN0014262

# **Registration Link**

https://forms.gle/PJyWzzfkcjZ59oaV6

# **Registration Fees:**

**Rs. 500**/- (Inclusive of GST) Mode of Payment: Online Only (NEFT/RTGS/IMPS

> Course Date: 02 June to 06 June. 2025

#### Last Date of Registration

27/05/2025 (Online Registration Link will be open from: \_\_\_\_\_\_06/05/2025)\_\_\_\_\_\_

Per Day Timing: 10:00 am to 05:00 pm

**Contact Hours for the Course:** 40Hrs (Theory, Activities, Case Studies & Evaluation)