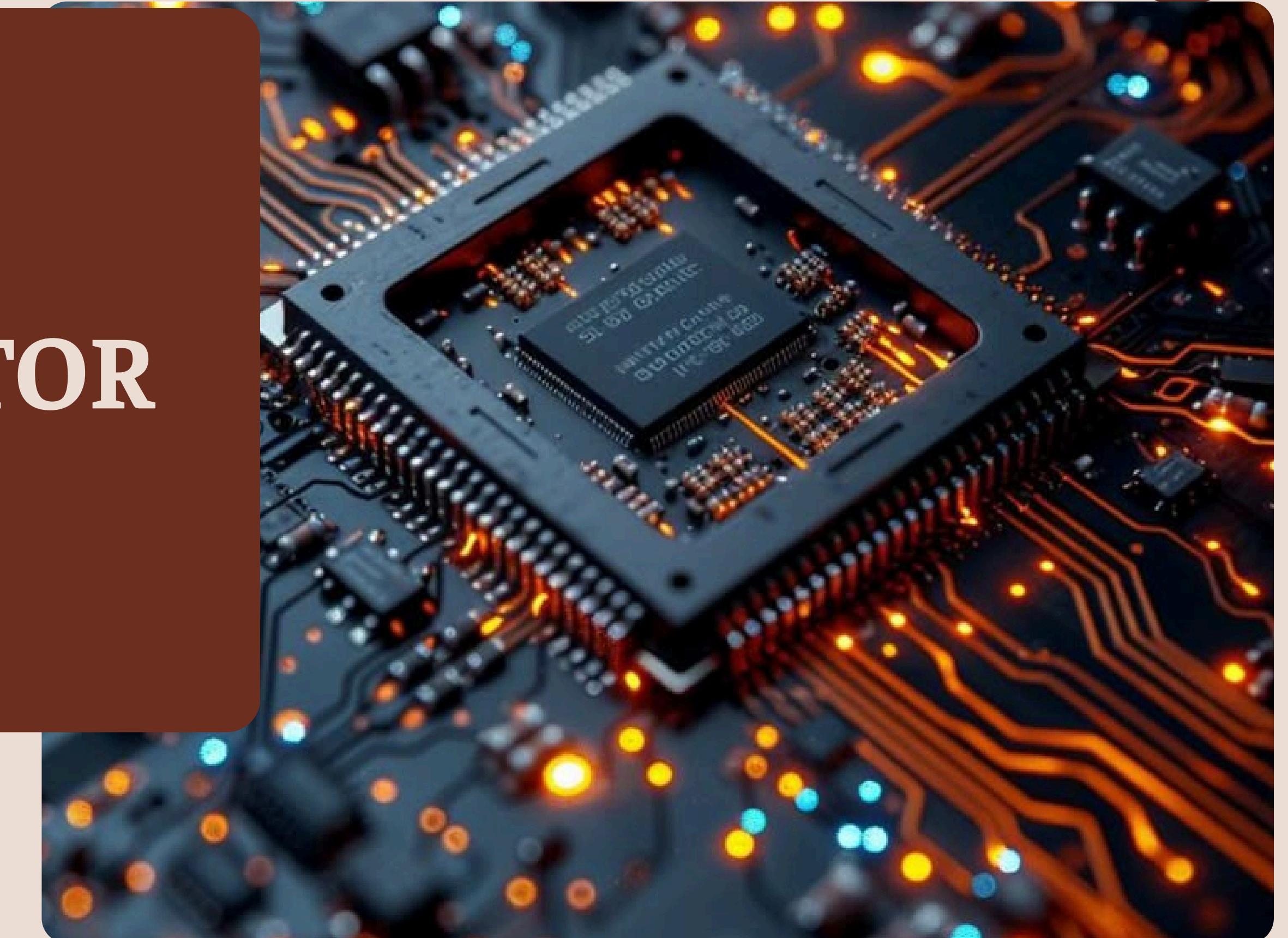


A 12 months Professional Certificate Programme on

VLSI AND SEMICONDUCTOR INDUSTRY ESSENTIALS

Powered by
E&ICT Academy IIT Guwahati



About E&ICT Academy IITG

Inaugurated by : Shri Narendra Modi
Principal Investigator : Prof. Gaurav Trivedi
Founded : Project started on 26/03/2025

1 → **400+ Programmes Conducted**

2 → **20000+ Participants Trained**

3 → **2000+ Graduates and Working Professionals Trained**

4 → **MoU with Institutes/Universities**

5 → **MoU with Industries for Hands-on Sessions**





About the Course

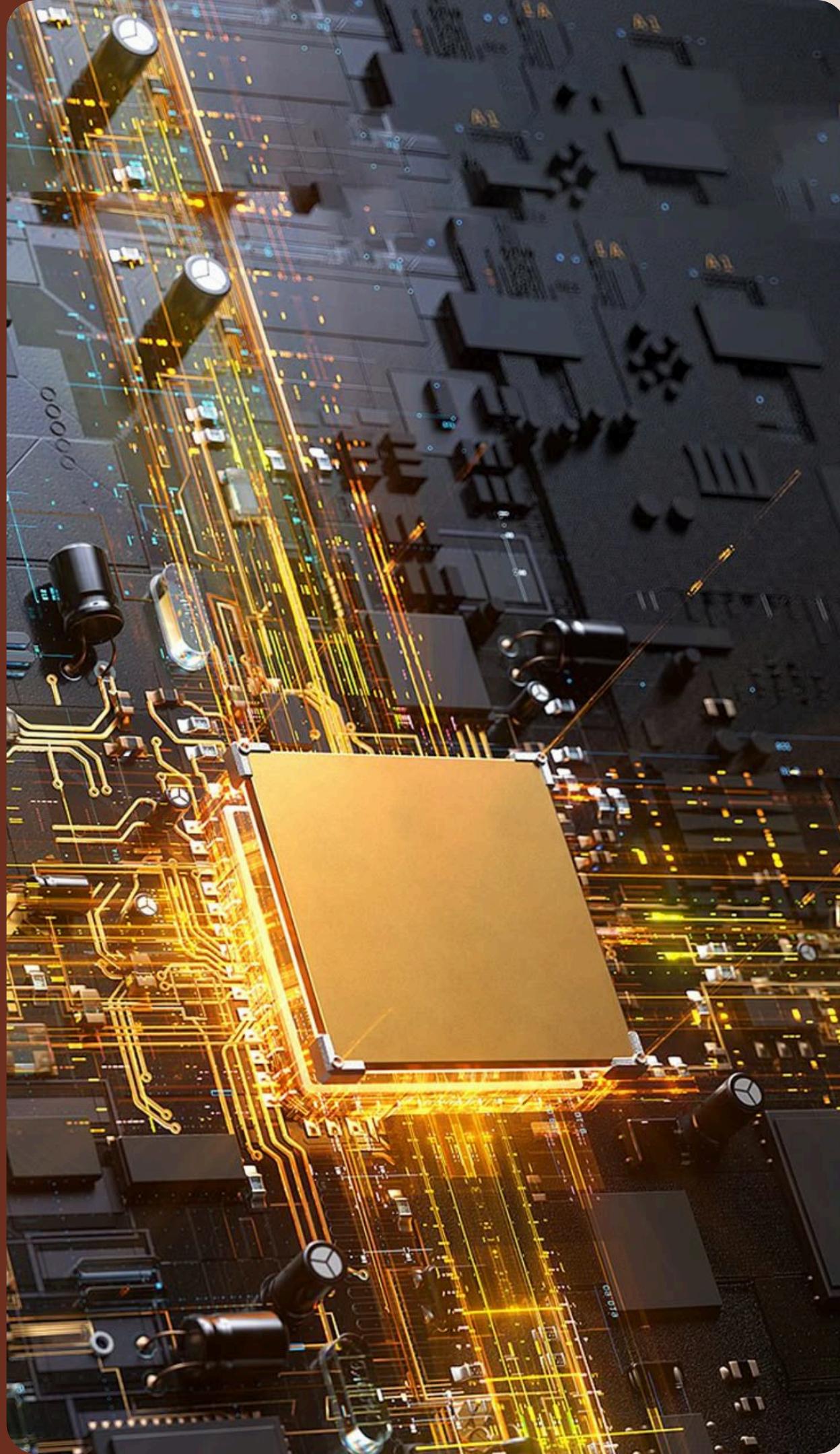
The Professional Certificate Program in VLSI and Semiconductor Industry Essentials is designed to prepare the students career for the future.

The curriculum of this program is designed by Electronics & ICT Academy IIT Guwahati under the guidance of IIT Guwahati Professors.

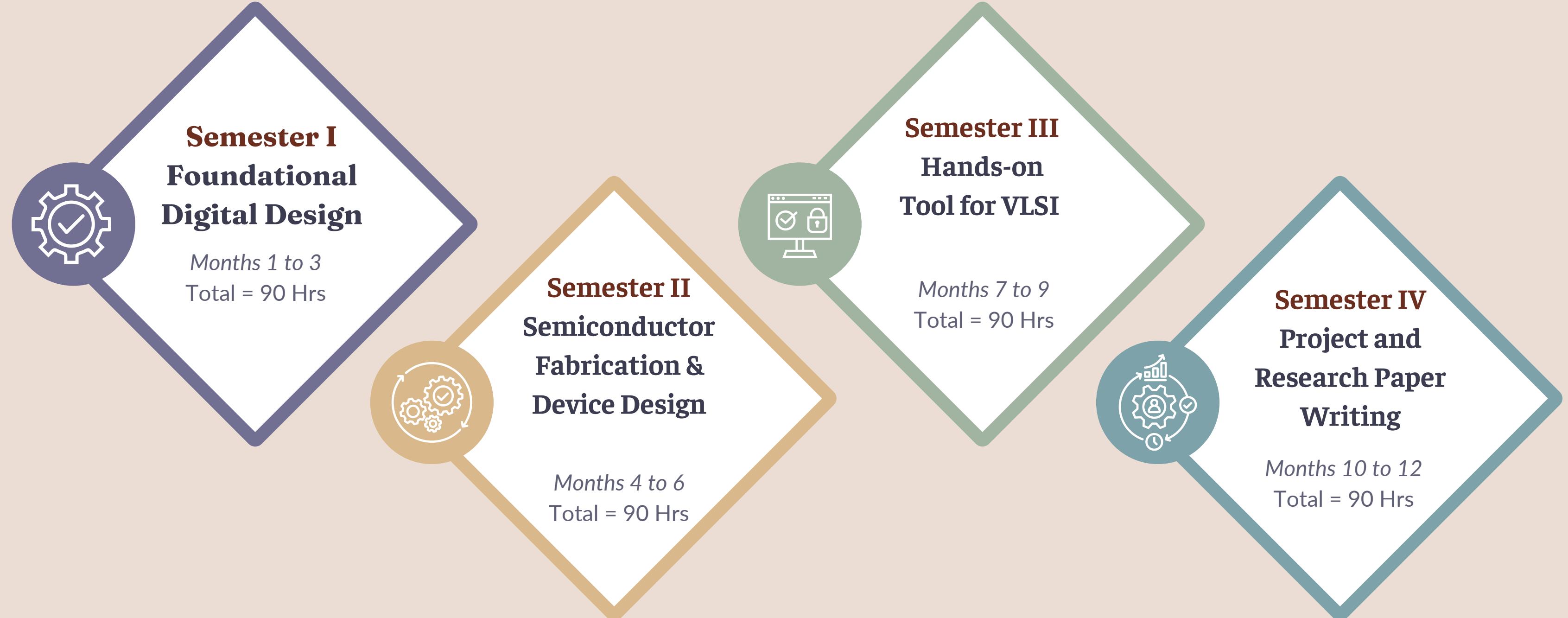
This program is created through a collaboration between industry veterans, a large pool of Research Experts and online learners.

This program is delivered by the graduates/research scholars of IIT Guwahati and staff of E&ICT Academy.

This program is divided into four Semesters in continuation with specialized learning experience per semester and thus advancing the thorough knowledge in this area.



Syllabus Overview



Target Audience

- Graduate Students** - Students who have passed degrees in Electronics, Electrical Engineering, Computer Engineering, or related fields who want to specialize in VLSI.
- Working Professionals** - Engineers in the semiconductor, hardware, or embedded systems industry who want to upskill or transition into VLSI design and verification roles.
- Researchers and Academics** - Those engaged in advanced studies, research, or teaching in microelectronics, digital design, or integrated circuits.
- Aspiring Semiconductor Entrepreneurs** - Individuals aiming to work in or start ventures in chip design, fabrication, or EDA (Electronic Design Automation) tools.
- Tech Enthusiasts** - Learners with a strong interest in understanding how chips and circuits work, particularly those interested in digital logic, processor design, or SoC (System-on-Chip) architectures.

PROGRAM HIGHLIGHTS

Syllabus and Lab designed and delivered by IIT Professors/Research Scholars/Staff

The E&ICT Academy
IIT Guwahati
Advantage



Program
Overview and
Semester wise
details

Each Semester learning tools and lab sessions will be delivered through online platform using live sessions

Access to discussion forums with live discussions and doubt clearing, mentorship and guidance open with all technical experts



Faculty and
Expert Access



Placement Assistance
and Interview
Preparation

Career Counselling and Interview Facing Tips and Tricks will be provided



Industry
Recognized
Certificate

Complete all deliverables and conduct project evaluation with Research Paper writing for candidates interested for further studies.

E&ICT Academy, IIT Guwahati Advantage



Curriculum designed and vetted by
IIT Guwahati Professors

Lab sessions and tools required for
the lab sessions is prepared under
the guidance of IIT Guwahati
Professors



100% live sessions delivered by
staff/research scholars of IIT
Guwahati

Master Classes will be conducted by
the IIT Guwahati Professors



Capstone Project at the end of the
program under the guidance of IIT
Guwahati Experts.

Research assistance under IIT
Guwahati Experts



Program Overview

Engaged, effective learning with a focus on practical knowledge



Learning over 11 months
and 300+ Hours



Live Instructor-led Sessions
with Synchronous learning



4 Semesters with
15 Modules



Regular Online Assessments
and MCQs



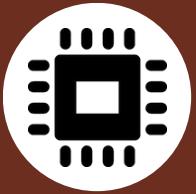
Question Banks and
Assignments



Online Lab sessions using
various tools



Real-world Case
Studies



Capstone
Project



Research Writing
Assistance

Semester wise Details

Semester I

Module 101: Digital Logic Design
Module 102: VLSI Design Flow and Digital Integrated Circuits
Module 103: HDLs

Foundational Concepts

Module completion certificate on "Foundational Digital Design"

Semester II

Module 201: Functional Verification
Module 202: UVM
Module 203: Scripting Languages
Module 204: Advanced Digital Design

Design and Verification

Module completion certificate on "Semiconductor Fabrication & Device Design"

Semester III

Module 301: RTL Synthesis and DFT Insertion
Module 302: Physical Design
Module 303: STA

Physical Design

Module Completion certificate on "Hands-on Tool for VLSI"

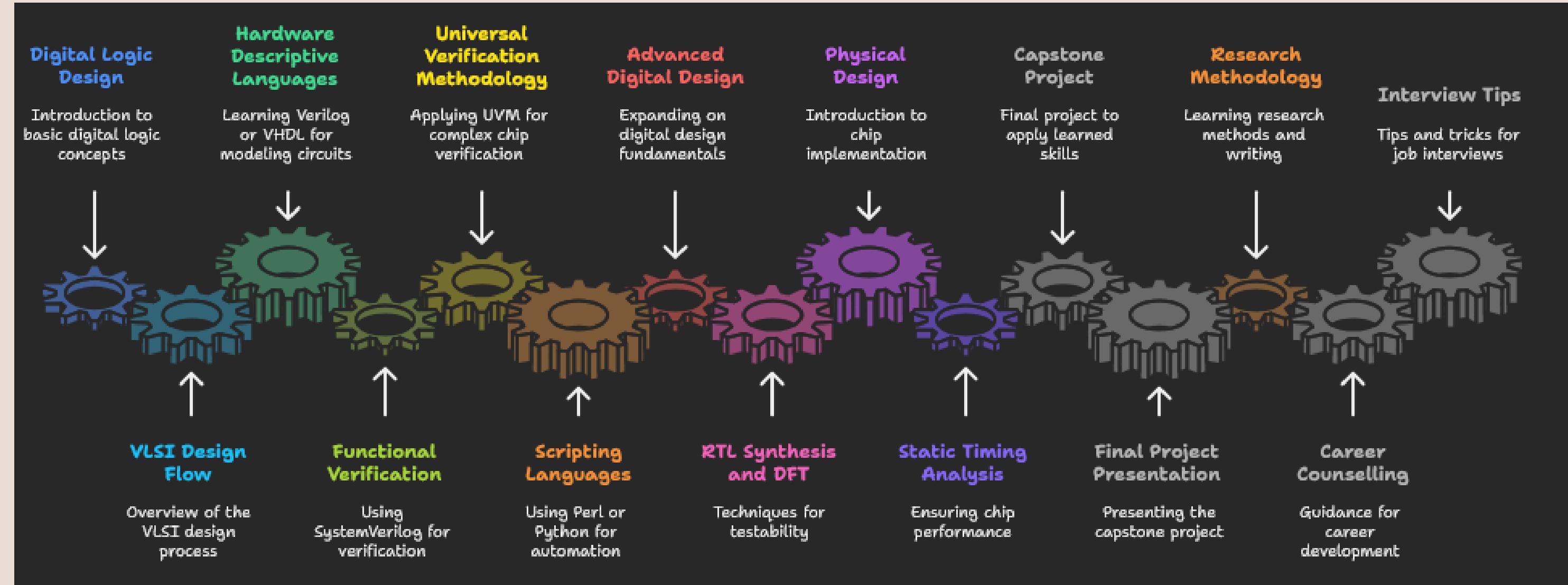
Semester IV

Module 401: Capstone Project
Module 402: Project Presentation
Module 403: Research Writing
Module 404: Career Counselling
Module 405: Interview Facing tips and tricks

Project and Research

Course Completion certificate on "VLSI & Semiconductor Industry Essentials"

LEARNING JOURNEY



Complete Semester wise syllabus

Course Brochure

Faculty and Expert Access

- 1 **Access to open discussion forums**
- 2 **Doubt Clearing Sessions**
- 3 **Mentorship and Guidance for Projects**
- 4 **Access to technical staff/experts**
- 5 **Guidance for Research Paper writing**
- 6 **Access to all course/lab materials from LMS**
- 7 **Assistance will be just an Email away.**



Placement Assistance

**Resume
Building**



**Mock
Interviews**



**Career
Guidance and
Counselling**



**Public
Communication**



Industry Recognized Certificate

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Career Options

Graduates of this program will be equipped for a wide array of roles in the burgeoning VLSI Design landscape, including:



- Physical Design Engineer
- Analog Layout Engineer
- Digital Layout Engineer
- VLSI Application Engineer
- Front-End Design Roles
- Back-End Design Roles
- Mixed Signal Roles
- Validation and Testing Roles
- EDA and CAD Roles
- Architecture and R&D roles





THANK YOU

Contact Details

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[https://www.linkedin.com/in/e-and-ict-academy-iit-guwa...7ab681123](https://www.linkedin.com/in/e-and-ict-academy-iit-guwa...)

QUESTIONS