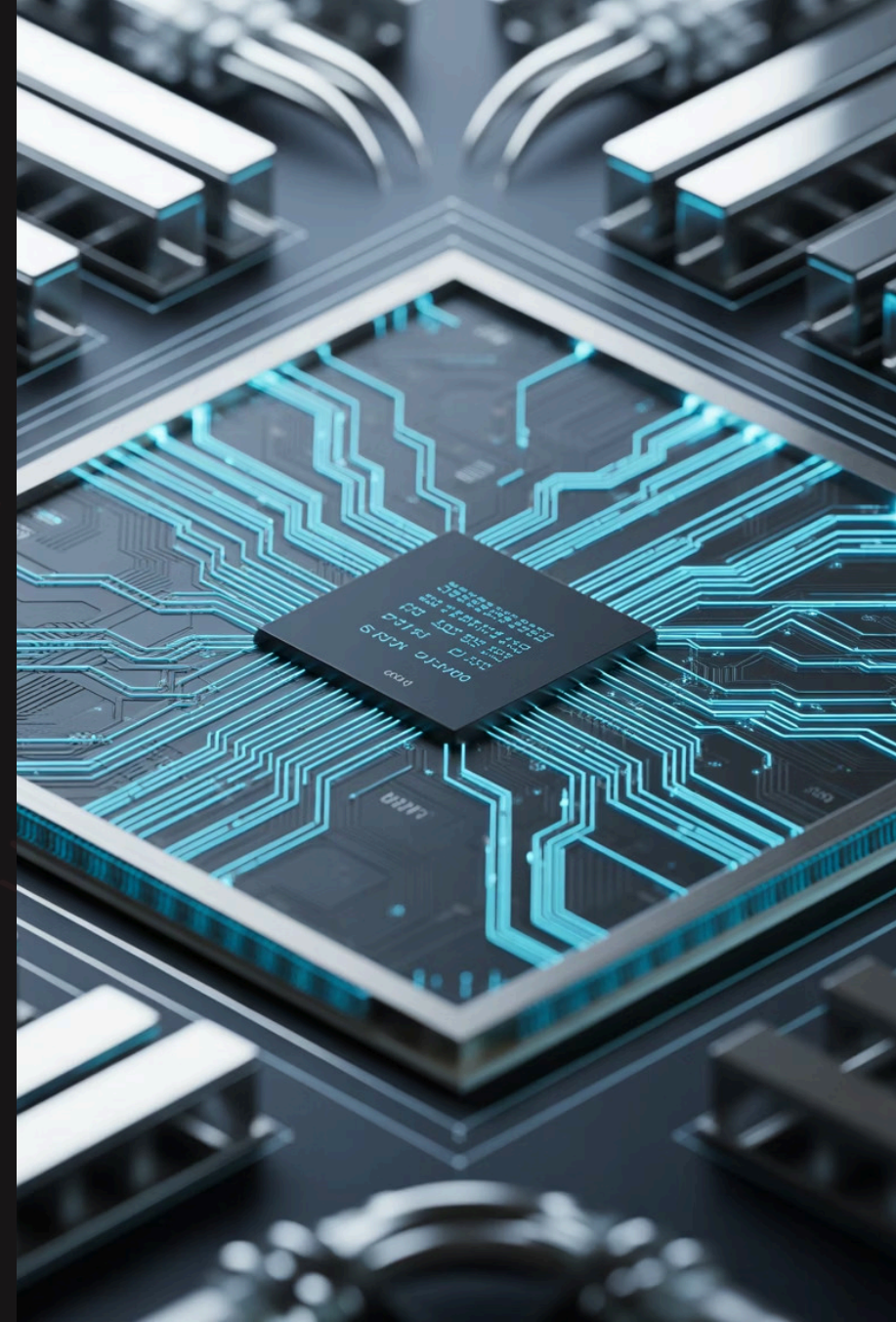


# Low Power VLSI Design

Welcome to our comprehensive program on Low Power VLSI Design. This 225-hour curriculum is designed to transform you into a specialized engineer capable of designing and optimizing power-efficient circuits for modern electronic devices.

Throughout this presentation, we'll explore the five core modules that comprise our program, the skills you'll develop, and how these align with industry demands in sectors ranging from semiconductors to IoT and wearable technology.



# Program Overview

## AutoCAD Electrical

Master electrical schematic design, panel layouts, and automation integration



## Digital Design

Learn combinational and sequential logic design fundamentals



## HDL and Verilog

Develop skills in hardware description languages for circuit modeling



## CMOS VLSI Design

Study transistor fundamentals and circuit optimization techniques



## Low Power VLSI & FPGA

Master power-efficient design techniques and implementation



# AutoCAD Electrical



## Curriculum Highlights

Comprehensive training in electrical schematic design, panel layout drawings, custom symbol creation, PLC integration, and project documentation



## Career Opportunities

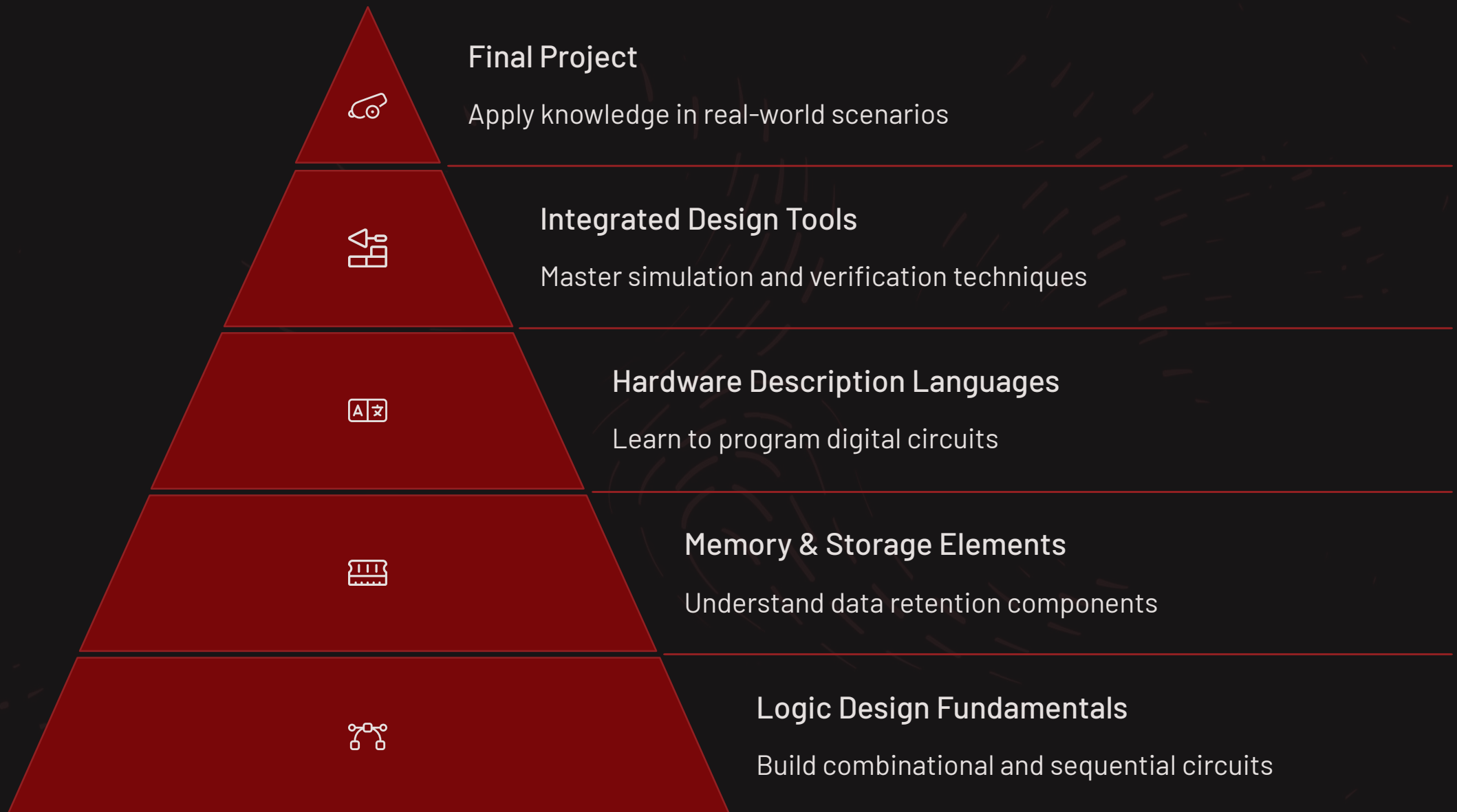
Prepare for roles as Electrical CAD Designer, Electrical Engineer, AutoCAD Specialist, or Design Drafter



## Industry Relevance

Highly valued in Electrical Engineering, Automation, Construction, and Manufacturing sectors

# Digital Design Fundamentals



This module provides the essential foundation for VLSI design, covering both theoretical concepts and practical applications. Certified by VLSI AMD Xilinx, this training prepares you for roles in semiconductor design, FPGA development, and embedded systems.





# HDL and Verilog Programming

## Language Fundamentals

Master Verilog syntax, data types, and modeling concepts to build a solid foundation for hardware description

## Circuit Modeling

Develop skills in modeling both combinational and sequential logic circuits using Verilog HDL

## Simulation & Verification

Learn techniques for testing and verifying hardware designs through simulation and testbenches

## FPGA Implementation

Apply knowledge to synthesize designs and implement them on FPGA platforms

# HDL Career Pathways

## VLSI Design Engineer

Design and develop integrated circuits using HDL for various applications. Focus on optimizing performance, power, and area constraints while ensuring functionality.

## FPGA Engineer

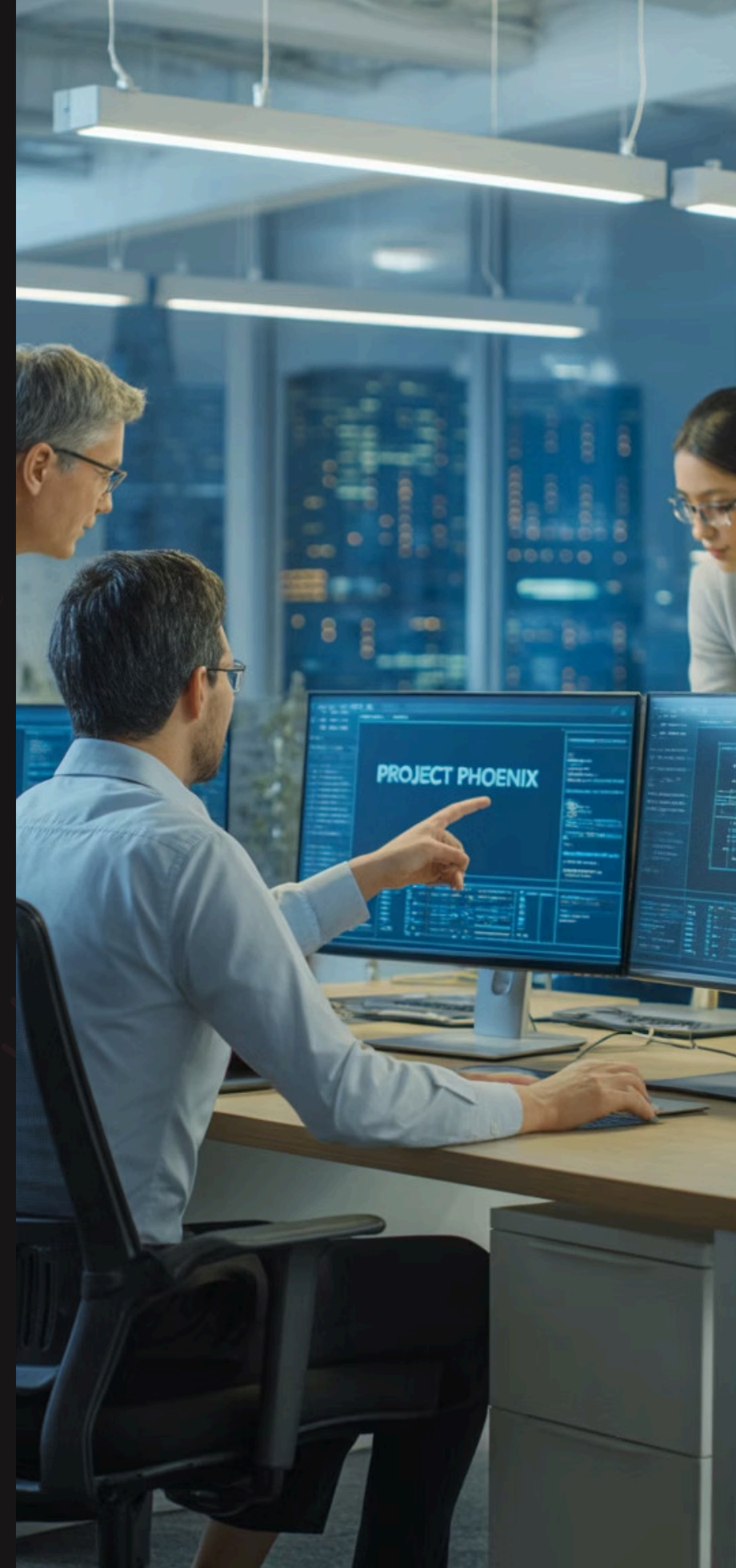
Implement digital designs on Field-Programmable Gate Arrays. Create efficient, reconfigurable hardware solutions for specific applications and industries.

## Hardware Design Engineer

Develop electronic hardware systems from concept to production. Combine HDL programming with broader system design and integration skills.

## Verilog Developer

Specialize in Verilog HDL to create digital circuit designs. Work on verification, simulation, and implementation of complex digital systems.



# CMOS VLSI Design

## MOS Transistor Fundamentals

Understanding the physics and operation of MOS transistors

## Optimization Techniques

Balancing power, delay, and area for optimal performance



## CMOS Logic Design

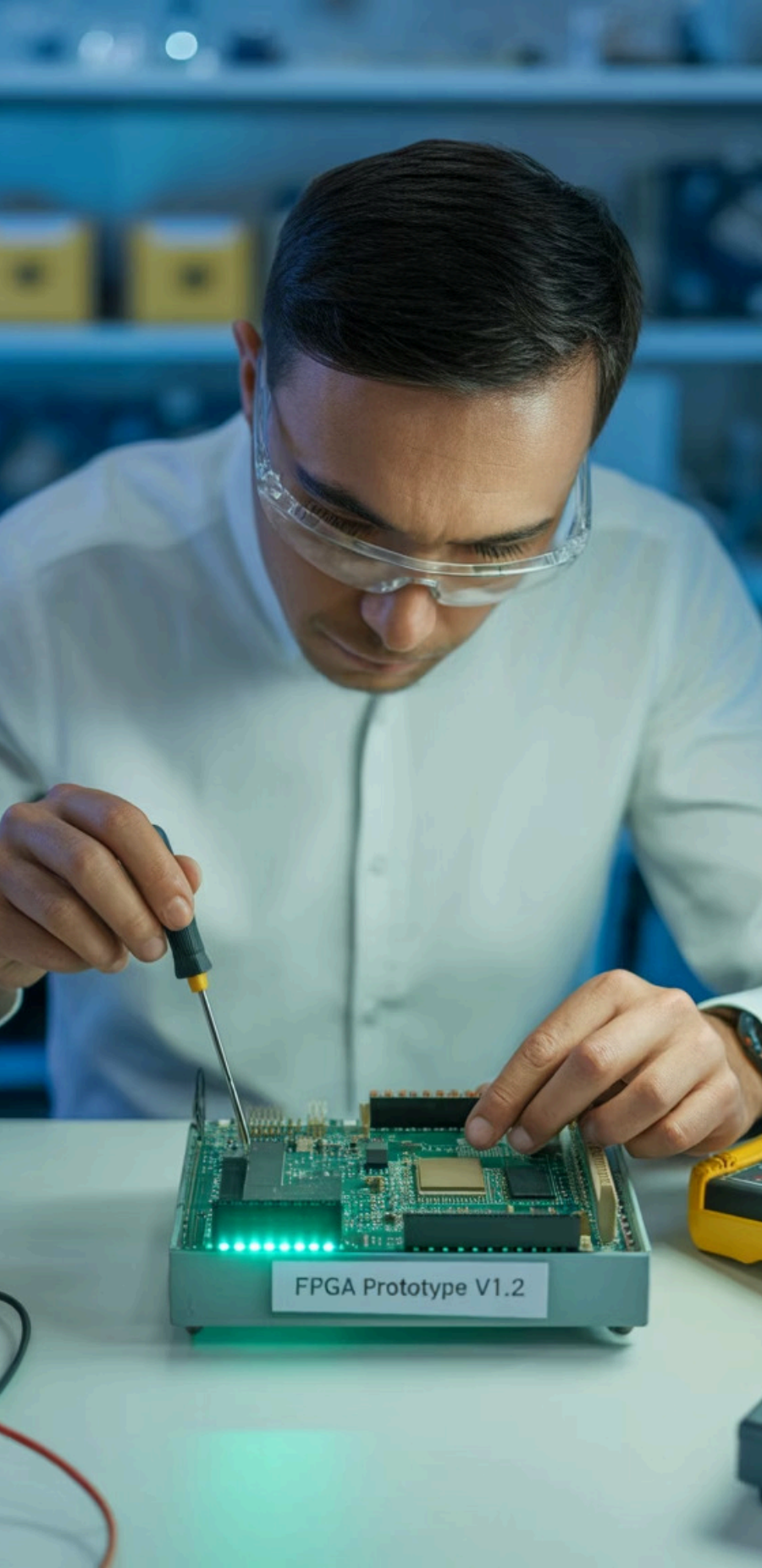
Designing combinational and sequential circuits using CMOS technology

## Layout and Design Rules

Mastering physical layout techniques and design rule constraints

This module provides comprehensive training in CMOS technology for VLSI design, certified by VLSI AMD Xilinx. Graduates are prepared for roles as VLSI Design Engineers, CMOS Engineers, and Hardware Engineers in semiconductor and integrated circuit development sectors.





# Low Power VLSI & FPGA Design



## Power Fundamentals

Understanding CMOS power dissipation mechanisms



## Low Power Techniques

Mastering methods to reduce power consumption



## FPGA Implementation

Applying power-aware design to FPGA platforms



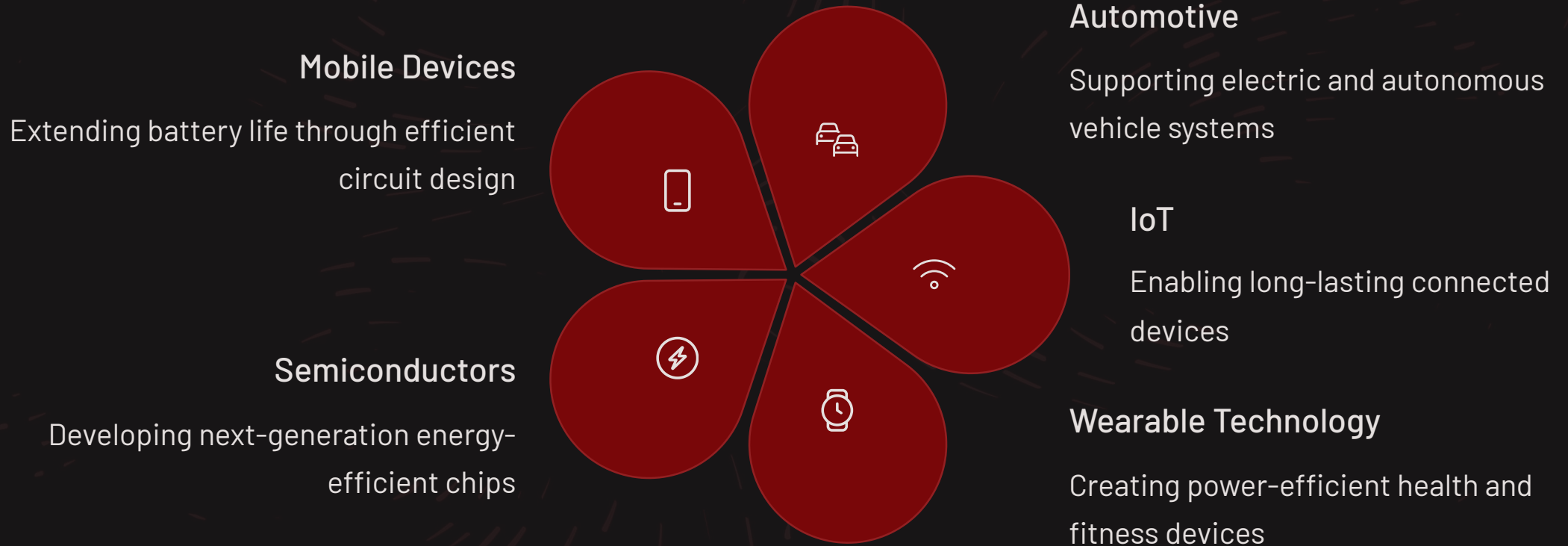
## System Integration

Optimizing power at the system level

This advanced module combines low power design techniques with FPGA implementation, preparing you for specialized roles in power-efficient circuit design. The certification is provided by VLSI AMD Xilinx and is highly relevant to semiconductor, embedded systems, and telecommunications industries.



# Industry Applications



# Exit Profile: Low Power VLSI Design Engineer



## Design Expertise

Graduates develop and optimize low-power circuits and systems for VLSI chips, focusing on minimizing power consumption while maintaining functionality and performance.



## Technical Skills

Proficiency in specialized tools and techniques for power-efficient VLSI design, including simulation and verification of power characteristics in chips and circuits.



## Industry Ready

Prepared for roles in semiconductors, mobile devices, consumer electronics, automotive, IoT, telecommunications, embedded systems, and wearable technology sectors.

# Program Duration and Structure



**225 Total Hours**

Comprehensive curriculum spanning five modules

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**Flexible Learning**

Balanced theoretical and practical components

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**Capstone Projects**

Real-world applications in each module

Our program is structured to provide a thorough education in low power VLSI design through a carefully sequenced curriculum. Each module builds upon previous knowledge, culminating in advanced power-efficient design techniques. The program balances theoretical foundations with hands-on practical experience through laboratory work and capstone projects.



# Certification Value

## 100%

### Industry Recognition

Certifications from Autodesk and VLSI AMD Xilinx are widely recognized across relevant industries

## 5+

### Key Sectors

Graduates are qualified for positions in semiconductors, mobile devices, automotive, IoT, and telecommunications

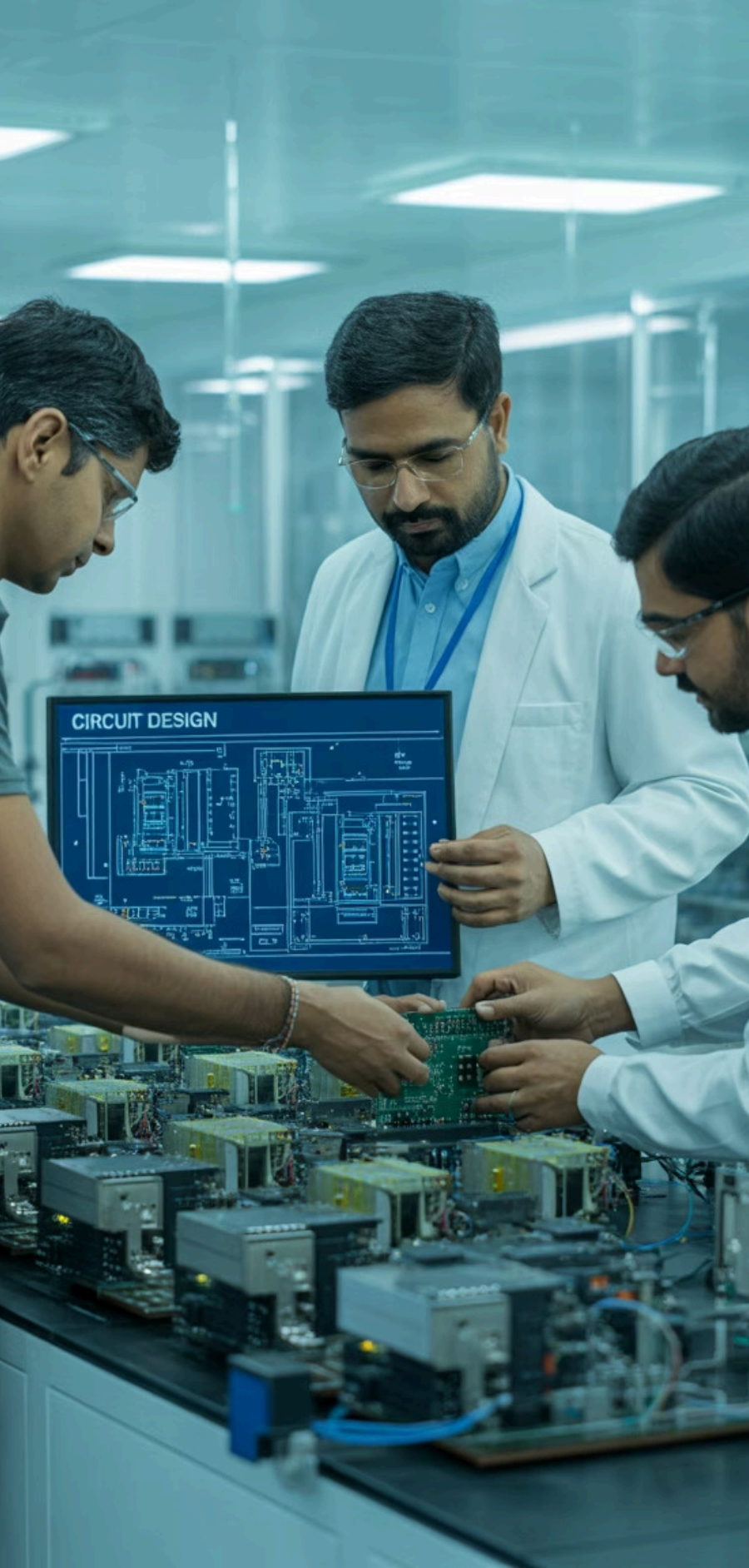
## ∞

### Validity Period

No fixed expiration, though ongoing learning is recommended as technologies evolve

While these certifications have no formal expiration date, the rapidly evolving nature of VLSI technology makes continuous learning essential for maintaining relevance in the field. Our program provides a solid foundation that graduates can build upon throughout their careers.

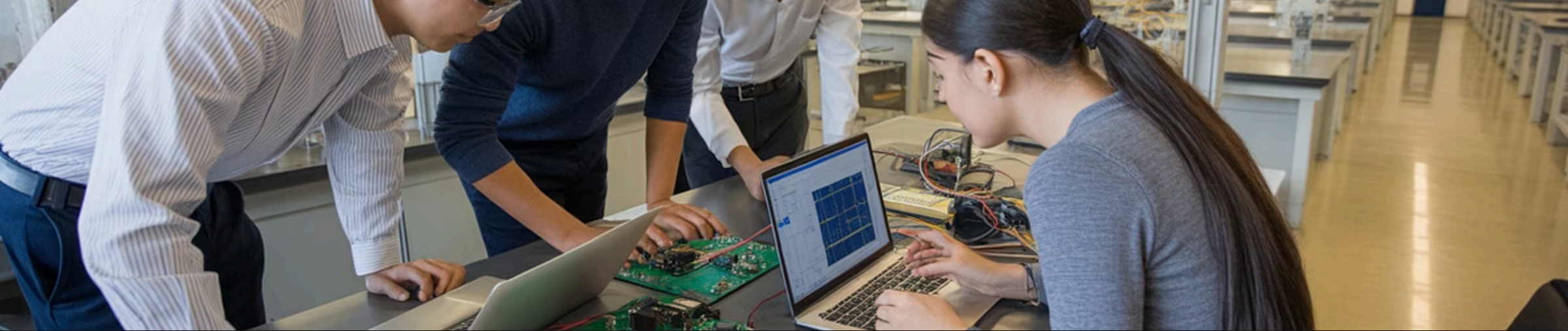




# Career Opportunities

Module	Primary Job Roles	Key Industries
AutoCAD Electrical	Electrical CAD Designer, Design Drafter	Construction, Manufacturing, Automation
Digital Design	Digital Design Engineer, Hardware Engineer	Semiconductors, Telecommunications
HDL & Verilog	FPGA Engineer, Verilog Developer	VLSI Design, Embedded Systems
CMOS VLSI	VLSI Design Engineer, CMOS Engineer	Semiconductor, Integrated Circuit Development
Low Power VLSI & FPGA	Low Power Design Specialist, FPGA Engineer	Mobile Devices, IoT, Wearable Technology





# Why Choose This Program?



## Industry-Recognized Certifications

Credentials from leading technology providers Autodesk and VLSI AMD Xilinx that validate your expertise to potential employers



## Hands-On Experience

Practical projects in each module that simulate real-world design challenges and build your portfolio of work



## Specialized Knowledge

Focus on power-efficient design techniques that are increasingly critical in today's energy-conscious technology landscape

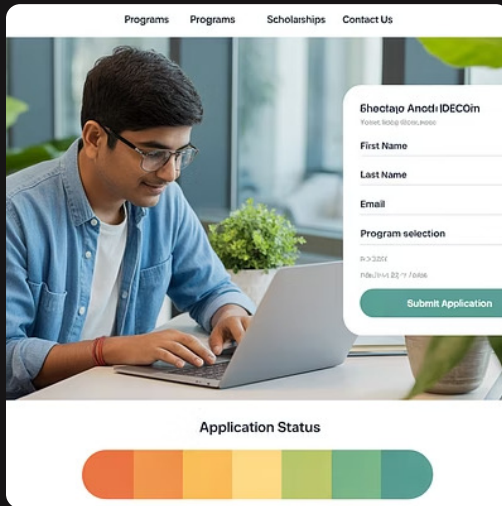


## Growing Demand

Training aligned with expanding sectors including IoT, mobile devices, and automotive electronics that need power-efficient solutions



# Next Steps



Ready to become a Low Power VLSI Design specialist? Our comprehensive 225-hour program will equip you with the skills needed to excel in this growing field. Begin your journey by registering for the program, attending our orientation session, and embarking on a transformative educational experience.

Upon completion, you'll receive industry-recognized certifications and be prepared for exciting career opportunities in semiconductors, mobile devices, IoT, and more. Join us in shaping the future of power-efficient technology!