

SOC Design Certification Program

Welcome to our comprehensive SOC Design certification program, designed to equip you with the skills and knowledge needed to excel in the semiconductor industry. This 180-hour program covers essential areas from AutoCAD Electrical to CMOS VLSI Design, preparing you for a career as a Verification Engineer/Specialist.

Our curriculum is aligned with industry standards and developed in partnership with leading technology providers including Autodesk and AMD Xilinx. Upon completion, you'll be ready to take on roles in semiconductors, embedded systems, automotive, aerospace, and consumer electronics sectors.



AutoCAD Electrical Certification



Electrical Schematic Design

Master the creation of professional electrical schematics using industry-standard tools and techniques.



Panel Layout Drawings

Learn to design detailed panel layouts with proper component placement and wiring.



PLC and Automation Integration

Develop skills to integrate programmable logic controllers and automation systems into your designs.

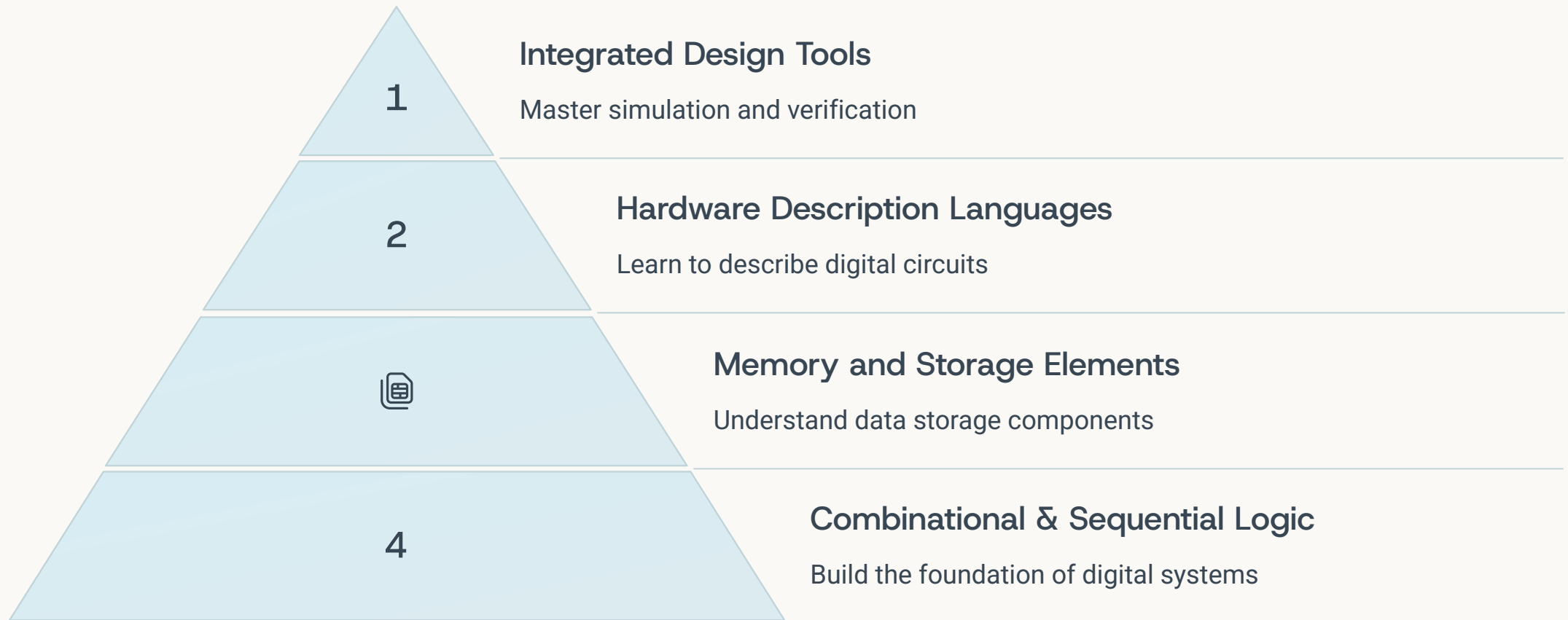


Project Management and Documentation

Create comprehensive documentation and manage complex electrical design projects efficiently.

This Autodesk certification remains valid for 3 years and requires recertification before expiration. Graduates can pursue careers as Electrical Design Engineers, Control Panel Designers, and Automation Engineers across manufacturing, construction, energy, and infrastructure sectors.

Digital Design Fundamentals



The Digital Design certification has no formal expiration, though staying updated with evolving tools is recommended. This program prepares you for positions such as Digital Design Engineer, RTL Design Engineer, and FPGA Design Engineer in the semiconductor industry.

Provided by VLSI AMD Xilinx, this globally recognized certification is widely accepted throughout the semiconductor industry, particularly in IC design, SoC solutions, and FPGA-based designs.



HDL and Verilog Programming

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Verilog Language Fundamentals

Master the syntax and structure of Verilog HDL for hardware description.



Modeling Logic Circuits

Learn to model both combinational and sequential logic systems.



Finite State Machine Design

Develop complex state machines using Verilog constructs.



FPGA Implementation

Apply knowledge to real hardware through synthesis and implementation.

This certification has no formal expiration date, though professionals are encouraged to stay current with industry tools and standards. Graduates qualify for positions as RTL Design Engineers, FPGA Design Engineers, and Design Verification Engineers.

The VLSI AMD Xilinx certification is globally recognized and widely accepted in the semiconductor industry, particularly in IC design and SoC solutions.

CMOS VLSI Design

MOS Transistor Fundamentals

Understand the physics and electrical characteristics of MOS transistors as the building blocks of VLSI design. Master device parameters, operation regions, and modeling techniques.

CMOS Logic Design

Learn to design both combinational and sequential CMOS circuits with optimal performance characteristics. Develop skills in circuit analysis, timing considerations, and logic optimization.

Layout and Design Rules

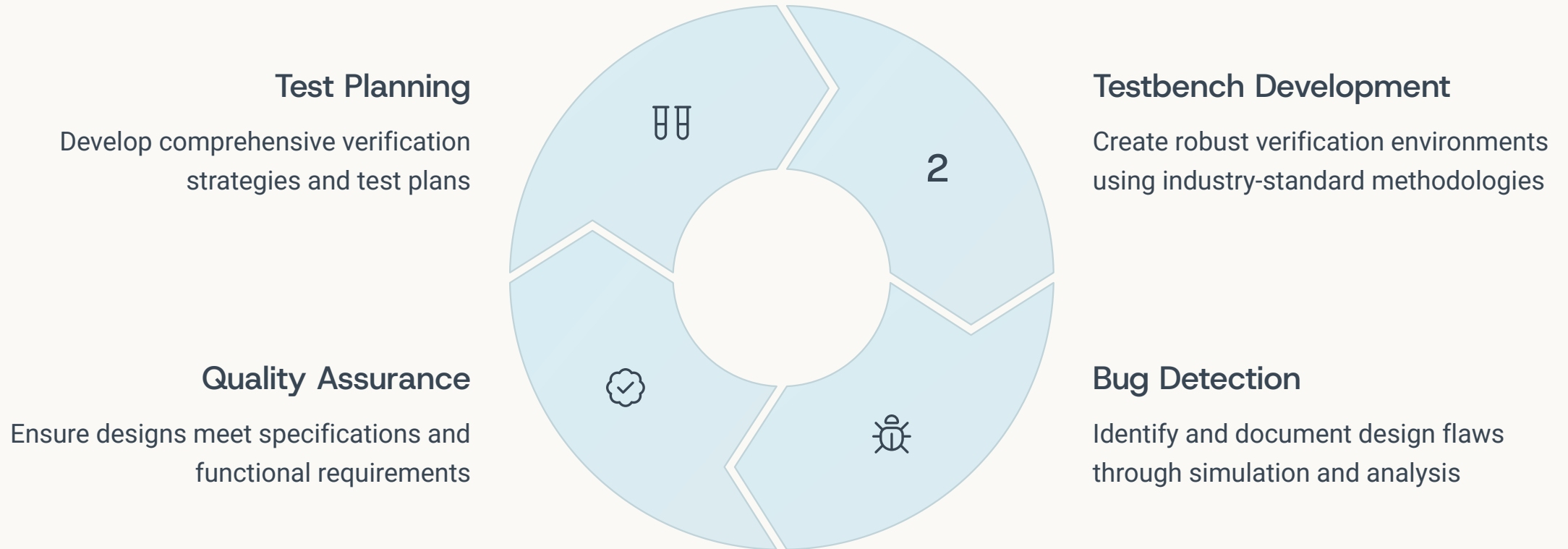
Master the physical implementation of CMOS circuits following industry-standard design rules. Develop expertise in layout techniques, DRC, and parasitic extraction.

Power and Area Optimization

Apply techniques to optimize VLSI designs for power consumption, performance, and silicon area. Learn trade-offs and methodologies for efficient design.

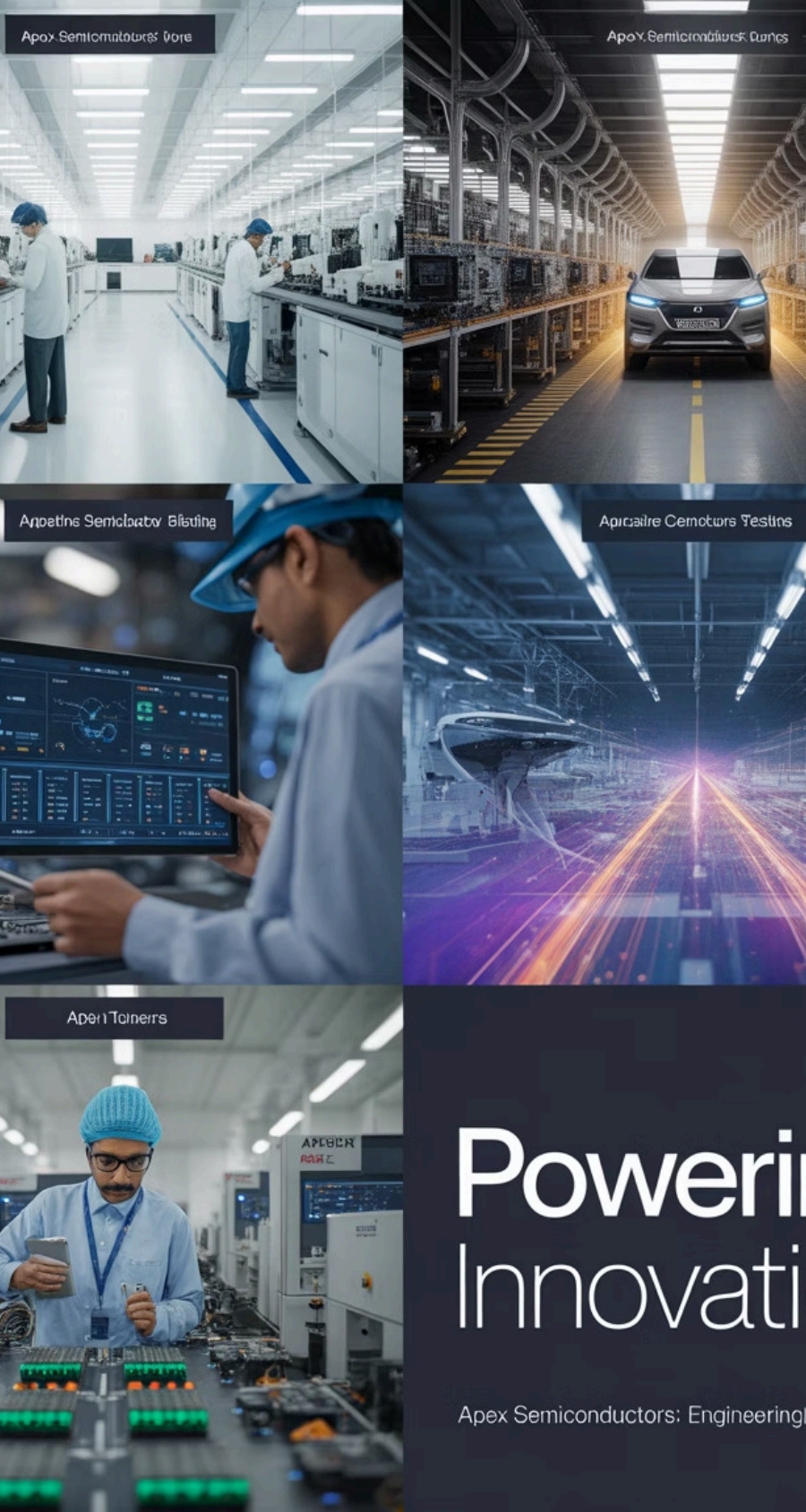
This certification prepares you for roles as VLSI Design Engineers, ASIC Design Engineers, and Physical Design Engineers. The program culminates in a capstone project applying all concepts to real-world design challenges.

Verification Engineer Career Path



As a Verification Engineer/Specialist, you'll ensure hardware and software designs meet specified requirements through rigorous testing and validation. This critical role involves creating test plans, developing verification environments, and using simulation tools to detect bugs or design flaws.

Verification Engineers are essential across multiple industries including semiconductors, embedded systems, automotive (functional safety verification), aerospace and defense, and consumer electronics.



Industry Applications



Semiconductors
VLSI/ASIC design verification



Automotive
Functional safety verification



Aerospace
Mission-critical systems testing



Consumer Electronics
Product quality assurance

The skills you'll develop in this program are highly transferable across multiple high-tech industries. Verification Engineers play a critical role in ensuring product quality and reliability in sectors where system failures can have significant consequences.

With the increasing complexity of electronic systems in all these industries, the demand for skilled verification specialists continues to grow, making this a future-proof career path with excellent growth potential.

Power Innovati

Apex Semiconductors: Engineering

Program Structure and Duration



180 Total Hours

Comprehensive curriculum covering all aspects of SOC design

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Industry Certifications

Recognized credentials from Autodesk and AMD Xilinx

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Capstone Projects

Hands-on application of concepts to real-world challenges

Our program is structured to provide a balanced mix of theoretical knowledge and practical skills. Each module includes hands-on exercises and culminates in a capstone project that demonstrates your ability to apply concepts to real-world design challenges.

The 180-hour curriculum is designed to be completed while accommodating professional commitments, with flexible scheduling options available. Classes combine lectures, lab sessions, and project work to ensure comprehensive skill development.

Certification Benefits

AutoCAD Electrical

This Autodesk certification is valid for 3 years and requires recertification to maintain current status. It's globally recognized and developed with industry experts, making it valuable across manufacturing, construction, energy, and infrastructure sectors.

Certified professionals can pursue roles as Electrical Design Engineers, Control Panel Designers, and Automation Engineers.

Digital Design & HDL

These VLSI AMD Xilinx certifications have no formal expiration but staying updated with evolving tools is recommended. They're widely accepted in the semiconductor industry for IC design, SoC solutions, and FPGA-based designs.

Graduates qualify for positions as RTL Design Engineers, FPGA Design Engineers, and SoC Design Engineers.

CMOS VLSI Design

This certification prepares you for specialized roles in physical chip design and implementation. It's recognized throughout the semiconductor industry and provides the foundation for advanced specialization in ASIC design.

Career paths include VLSI Design Engineer, Physical Design Engineer, and Design Verification Engineer.

Our certifications are designed to provide immediate value in the job market while establishing a foundation for long-term career growth. Each certification represents mastery of specific skills that employers actively seek in technical candidates.

Next Steps and Enrollment



Application Process

Complete our simple online application form and submit your educational background for review. Our admissions team will evaluate your qualifications and guide you through the enrollment process.



Program Schedule

Choose from flexible scheduling options including evening classes, weekend sessions, and accelerated formats. Our program is designed to accommodate working professionals while ensuring thorough coverage of all material.



Career Support

Access our comprehensive career services including resume review, interview preparation, and industry connections. We're committed to supporting your transition into a verification engineering role.

Ready to advance your career in SOC design? Contact our admissions office today to schedule an information session and learn more about how our program can help you achieve your professional goals. Classes begin quarterly, with the next session starting soon.