MOSart Labs

Art of VLSI

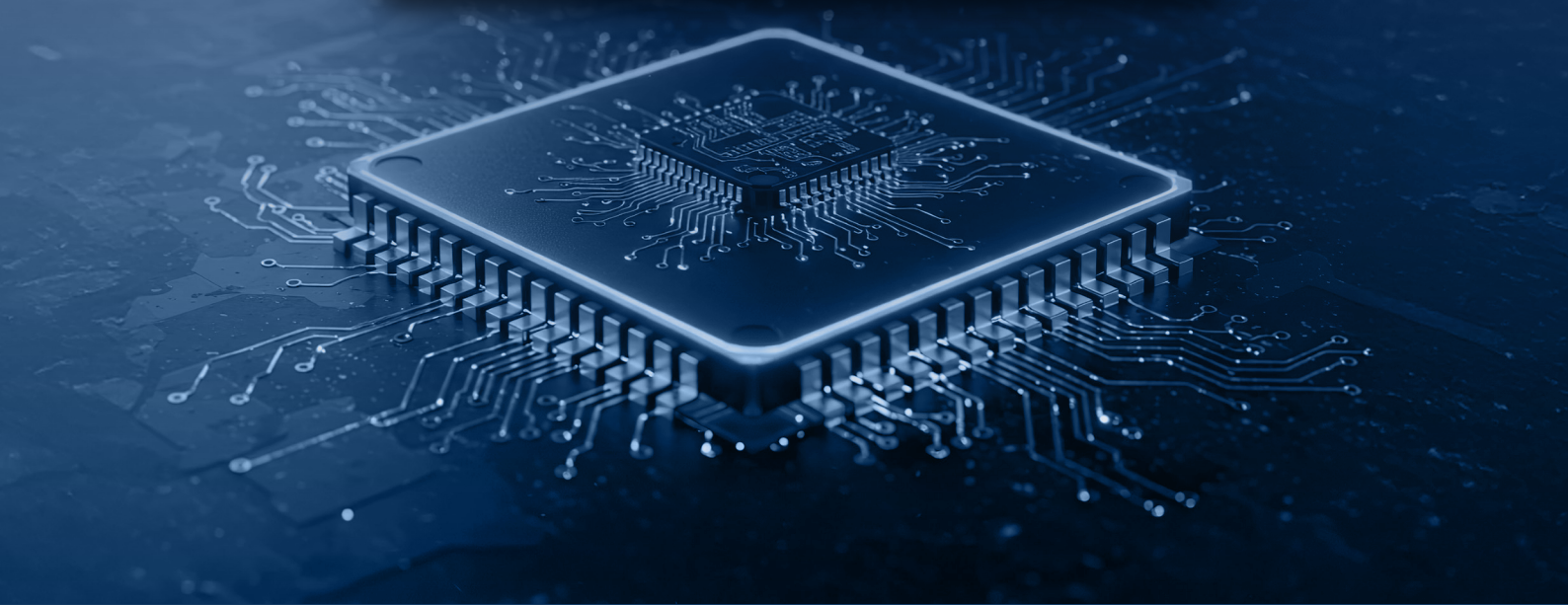
PG Diploma In Advanced VLSI From JNTU

Your Gateway to Semiconductor World

- 12 Months Industry Ready Program
- 100% Placement-Oriented Program
- PG Diploma Degree from JNTU
- Real chip design projects
- 4 Months Internship included (IP/industry project)
- Hands-on training with industry-standard tools

Get trained by **India's leading chip design experts**

ams OSRAM · Micron · SAMSUNG ELECTRONICS



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About Advanced VLSI Chip Design Program

The semiconductor industry in India is expanding rapidly, creating sustained demand for skilled VLSI engineers across analog and digital domains. MOSart Labs, led by professionals with 75+ years of combined industry experience, offers a PG Diploma Program from JNTU designed to equip ECE/EEE students and early professionals with industry-relevant IC design skills.

MOSart Labs is an active chip design company, currently working on Battery Management System (BMS) chip design for electric cars and two-wheelers, bringing real product-level exposure into the learning environment.

This 12-month PG Diploma Program, integrated with a 4-month industry internship, focuses on practical project work, real-world industry exposure, and expert mentorship to help learn-

1.2M jobs by 2027
Massive demand for skilled IC designers worldwide.

₹6L – 18L Annually
High salary potential right from the start of your career.

₹4.2T Market by 2025
Huge opportunity in market with a 45% CAGR growth rate.

Industry-Endorsed Certification
Recognized by an active chip design company, not just a training institute.

Integrated Internship
4-month internship with real project experience and certification.

Hands-on Project Work
End-to-end chip design projects that mirror real industry challenges.

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Inside MOSart Labs

Our University Tie-ups

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भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर
INDIAN INSTITUTE OF TECHNOLOGY BHUBANESWAR

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA · VIZIANAGARAM

KL (DEEMED TO BE UNIVERSITY)

ANURAG UNIVERSITY

MUFFAKHAM JAH
COLLEGE OF ENGINEERING & TECHNOLOGY
Autonomous & Accredited by NAAC with A+ and NBA
Affiliated to Osmania University & Approved by AICTE

100+ Potential Hiring Companies

Texas Instruments
ams OSRAM
Micron
NVIDIA
cadence
SYNOPSYS®
QUALCOMM®

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4 Month Industry Project Internship

In today's semiconductor industry, freshers are expected to have real industry experience to enter VLSI roles.

To meet this requirement, MOSart Labs offers a 4-month industry-aligned internship project designed around current semiconductor design and layout expectations.

Learners work on realistic IC design or layout projects, following industry-standard workflows and tools, helping them build practical experience, stronger portfolios, and job readiness for VLSI careers.

Internship Project

Execute a complete full-cycle chip design project in a real industry environment

1. **Project Kickoff**
   Specification Defination
2. **Architecture**
   System & Block Design
3. **Implementation**
   Schematic & Simulation
4. **Integration**
   Top-Level Testing
5. **Verification**
   Reliability & Yield
6. **Defense**
   Documentation & Review

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A 12 Months Journey - PG Diploma from JNTU

Phase 1 (Self-Paced Learning)
2 Months (Analog & Digital Circuit Design)

- Self-paced learning of core analog and digital circuit concepts
- Develop the technical base required for advanced specialization modules

Phase 2 (Online Live Classes)
2.5 Months (Foundation)

- Learn the core concepts of Analog, Digital circuit design, and Layout technology
- Introduction to layout-aware design practices and methodologies

Phase 3 (Online Live Classes)
1 Month (Mini Project)

- Choose your specialization: Analog IC Design, Digital IC Design, or Layout Design
- Apply concepts through practical hands-on tasks.

Phase 4 (Online Live Classes)
2.5 Months (Specialization Module)

- Advanced specialization in analog IC design, digital IC design, or layout design
- Gain deeper domain-specific technical expertise

Phase 5
4 Months (Industry Internship Project)

- Work on an advanced industry-level internship project.
- Gain real semiconductor industry experience.

Phase 6
Career Readiness & Placement Support

- 100% placement-oriented phase across design and layout roles
- Build strong portfolios and start attending IC design and layout interviews

OUR FACULTY

Rajesh Gupta
27 Years Experience
Ex- Country Head
Micron & ams OSRAM

Dr. Krishna Kanth
23 Years Experience
Ex-Director
ams OSRAM

Madhusudan Sampath
24 Years Experience
Ex-Director
Samsung India

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What You Will Learn

Foundation Module

Analog Chip Design

- Analog IC industry & CMOS basics
- Circuit Laws (KCL, KVL), Resistive Networks
- Capacitors, inductors & transients analysis
- Diode Models, Biasing & Small-Signal Behavior
- MOSFET Physics & Regions of Operation
- AC Analysis of MOSFET Amplifiers
- Design & Simulation of Current Mirrors
- Differential Pairs & CMRR
- Single-Stage Amplifiers & Gain-Bandwidth Trade-offs
- Noise in Analog Circuits & Monte Carlo Analysis

Digital Chip Design

- Fundamentals of Digital Electronics
- Combinational & Sequential Circuits
- Verilog-Based RTL Design
- FSM Design using Verilog
- ASIC/SoC Design Flow & Verification
- Development Flow: Spec to GDS II
- Serial Communication Protocols (SPI, UART, I2C)
- Processor Architecture using RISC-V
- Fundamentals of Synthesis, STA & DFT

Specialization Module

Advanced Analog Design

- Multi-Stage Op-Amps: Stability & Compensation
- Advanced Op-Amp Topologies
- Bandgap Reference Circuits
- Switched-Capacitor Circuits
- ADC Architectures (SAR, Delta-Sigma, Flash)
- DAC Architectures (Current-Steering, R-2R)
- LDO Design Principles
- Layout Considerations & Parasitics
- ESD Protection & Latch-Up Prevention
- Design for Manufacturability & Yield

Advanced Digital Design

- IP Design Techniques (FIFO, Arbitration, CRC, ECC)
- SoC Design Flow & System Partitioning
- Processing Subsystems (CPU, GPU, NPU, FPGA)
- Memory Subsystems (MMIO, Caches, Main Memory)
- System IP: AXI Bus, Clocking & Reset Mechanisms
- SoC Development with AMD/Xilinx MPSoC
- Power, Performance & Area (PPA) Analysis
- End-to-End SoC Flow: Concept → Production

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Program Outcomes

By the end of this program, you won't just know the theory you'll have industry-grade project experience that proves your skills.

Become a Job-Ready VLSI Engineer

Step into industry roles like Analog/digital design engineers to create and invent novel semiconductor products.

Master the Complete IC Design Flow

Gain end-to-end understanding of specification, architecture, schematic, simulation, layout, and verification.

Build a Strong Industry Portfolio

Graduate with internship experience, mini & major projects, and a complete capstone defense to showcase your skills.

Industry Internship Experience

Gain real-world exposure by working on a live IP/design project that strengthens your technical skills and industry readiness.

Master Industry-Standard Tools

Get hands-on experience with real EDA tools used in top semiconductor companies.

SYNOPSYS® cadence®

Fee Structure

₹1,30,000 /- + GST

Click Here to Enroll