N·S·D·C
ACADEMY

Executive Education Programs

Certification in Advanced IC Packaging Powered by Siemens - IIT Guwahati

Overview of the Program

The "Advanced IC Packaging and Manufacturing" course is an innovative, industry-driven program that combines an advanced curriculum, hands-on experience, and the latest trends in semiconductor manufacturing and IC packaging. Offered by Daksh Gurukul, it is a joint initiative between the Indian Institute of Technology Guwahati (IITG) and the National Skill Development Corporation (NSDC), powered by Maven Silicon.

This program is designed to provide a comprehensive foundation in modern IC packaging and manufacturing practices. Focusing on the fundamentals of electronics, digital electronics, VLSI fabrication, and advanced IC packaging techniques, this program aims to equip students with the technical expertise needed to excel in the semiconductor industry. By the end of the program, students will be well-prepared to tackle the challenges of modern semiconductor manufacturing environments and advance their careers in IC packaging and manufacturing.

Program Highlights

Duration: 6 months

720+ hours of comprehensive learning

Delivered in offline and online formats

Curriculum adaptable to market demands and industry requirements

How IC Packaging & Manufacturing Enhances Skilling and Employability

How IC Packaging & Manufacturing Enhances Skilling and Employability
This course introduces the foundational concepts of IC packaging and manufacturing, covering essential topics such as electronics, digital electronics, VLSI fabrication, and advanced IC packaging techniques. This course provides the necessary groundwork for understanding and working with semiconductor manufacturing strategies and tools.
This includes the core services and functionalities of leading semiconductor manufacturing technologies. Students will learn about semiconductor devices, digital circuit design, VLSI fabrication steps, and IC packaging planning. This course provides practical experience in designing and manufacturing IC packages, preparing students for advanced roles in the semiconductor industry.
The course also covers performance optimization strategies and explores advanced manufacturing techniques, including automation and robotics in fabrication. By integrating these advanced practices, students will be equipped to optimize and manage effective IC packaging and manufacturing processes.

Course Curriculum

Basics of Electronics

- Introduction to Electronics
- Semiconductor Devices
- Rectifiers
- Electronic Devices
- Timer Circuits
- Introduction to Analog Circuits
- Circuit Analysis
- Feedback in Analog Circuits
- Frequency Response of Analog Circuits
- Filters and Signal Processing Circuits
- Power Supply Design

Digital Electronics

- Introduction to Digital Electronics
- Logic Circuits and FSM Concepts
- Digital Circuit Design Methodologies
- Digital Signal Processing (DSP)
- Digital Communication and Networking

VLSI Fabrication and Technology

- Introduction to VLSI Fabrication
- VLSI Fabrication Steps
- CMOS Process Flow
- Advanced Process Technologies
- Emerging Trends in VLSI Fabrication
- Cleanroom Operations and Contamination Control
- Automation and Robotics in Fabrication

Electromagnetics and Thermal Analysis

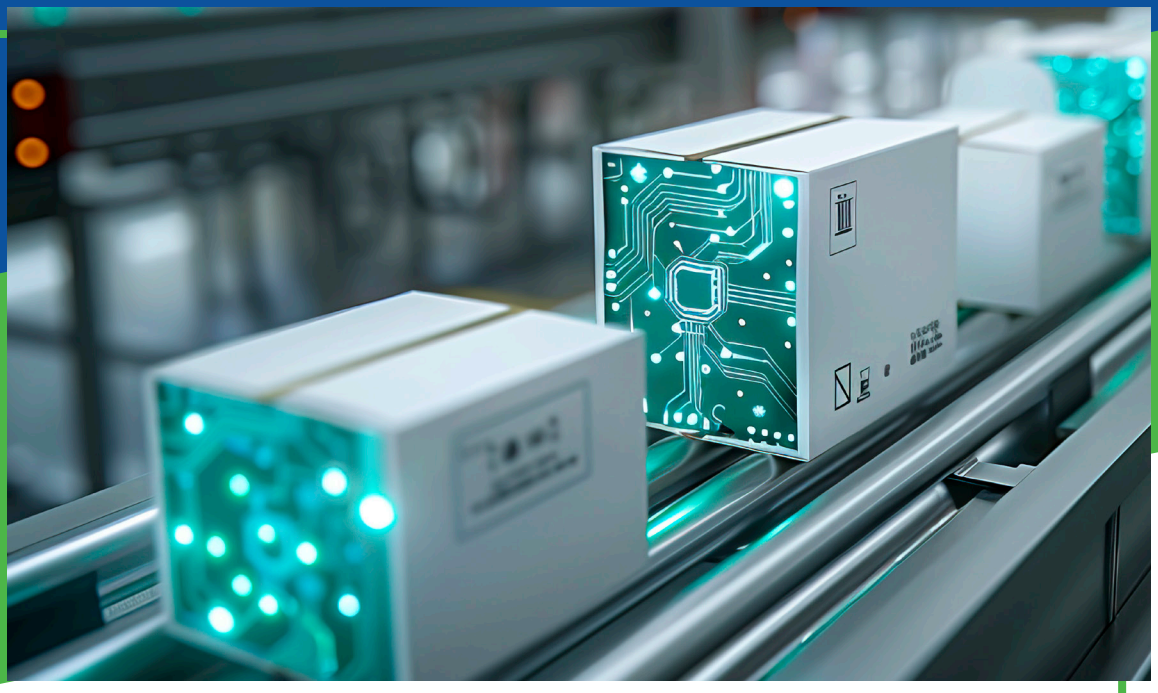
- Fundamentals of Electromagnetics
- Signal Integrity
- Power Integrity
- EM Modelling and Simulation
- EMI Mitigation Techniques
- Mechanical Design
- Thermal Design
- Reliability

IC Packaging and Designing

- IC Packaging Introduction
- IC Packaging Planning
- Prototyping/Co-design
- IC Packaging FlipChip Layout Design
- IC Packaging WireBond Layout Design
- Analysis of IC Packages
- 3D Packaging
- Heterogeneous Integration
- Siemens IC Packaging Solutions

Employability Skills

- Capstone Project



Supply Chain and Logistics Management Program-IIM Mumbai

Overview of the Program

This program provides a comprehensive understanding of supply chain strategies, logistics operations, and technology integration to optimize efficiency, reduce costs, and enhance customer satisfaction.

How Supply Chain and Logistics enhances employability

Supply Chain and Logistics enhance employability by developing skills in operations management, process optimization, and data analysis. As businesses strive for efficiency and global reach, professionals with expertise in logistics are essential to streamline the movement of goods and services. Roles like Supply Chain Analysts, Logistics Managers, and Operations Coordinators are in demand across industries such as retail, manufacturing, and e-commerce. Mastery of these skills enables individuals to contribute to cost reduction, timely deliveries, and strategic planning, boosting career prospects.

Course Curriculum

Introduction to Supply Chain Management

• **Module 1**
Overview of supply chains, Importance of logistics in global trade, Supply chain complexities: Bullwhip effect and uncertainty management

• **Module 2:** Logistics Basics
Key logistics principles, Components of logistics: Transportation, warehousing, and inventory

Core Logistics Module:

• **Module 3:** Logistics and Global Supply Chain Management
Freight transportation selection and its impact (Domestic & International),Domestic- FTL & LTL & International- LCL & FCL & Air freight, Warehousing design and operations, Material handling and heuristics

• **Module 4:** Technology in Logistics and Warehousing 4.0
Integration of IoT, big data, and AR in logistics, Warehouse automation systems Sensors, intelligent wearables, and cobots

• **Module 5:** Managing Global Logistics and Supply Chains Incoterms 2024,Freight forwarder & Terminologies in Global logistics, Strategies for global logistics management, Transportation management and inventory control, Risk mitigation and best practices ,Documentation like Invoices, BL/AWB, COO & DG etc

• **Module 6:** Supply Chain Optimization
Optimization techniques in logistics, Assignment, Transportation & Transshipment Models

• **Module 7:** Digital Transformation in Logistics
Digital technologies in logistics: Blockchain and IoT, Implementation challenges and opportunities, Case studies on digital logistics

Advanced Topics:

1. Module 8: Inventory Management
• EOQ and inventory policies, Performance and cost metrics, Inventory challenges in logistics

2. Module 9: Supply Chain Analytics and Simulation
Capacity planning and demand forecasting, Network design and predictive analytics, Logistics simulation techniques

3. Module 10: Supply Chain Risk Management
Identifying and mitigating logistics risks, Risk strategies in global contexts

Digital OSCM for Working Professionals-IIM Sirmaur

Overview of the Program

The Advanced Management Programme in Digital Supply Chain & Operations Management (AMPDSCOM) by IIM Sirmaur is designed to equip tech-business managers with essential skills for the manufacturing and services sectors. Focusing on supply chain and operations, the program covers key areas like logistics, procurement, inventory, and vendor management. It helps professionals manage technology-driven operational processes, boost revenue, and enhance customer experience. With a cutting-edge curriculum, the program prepares participants for leadership roles in the evolving supply chain industry, positioning them for opportunities with top market players.

Program Highlights

- Study alongside IIM Sirmaur
- New-Age Digital Supply Chain Management concepts.
- Learners will get the opportunity to work on 15+ case studies
- 1 complete end- to-end simulation project
- 2+ industry-recognized tools.
- 3 Days at IIM Sirmaur as a part of campus immersion

How Digital OSCM Certification Enhances Skilling and Employability

The Digital OSCM certification enhances skilling by equipping professionals with expertise in digital tools like AI, IoT, and data analytics, crucial for optimizing modern supply chain processes. It sharpens decision-making through data-driven insights and addresses real-world operational challenges in areas like logistics and procurement. This certification aligns with industry demands, making learners more attractive to employers seeking digitally skilled professionals. By fostering expertise in emerging technologies, it significantly boosts employability, preparing participants for leadership roles and expanding career opportunities in the evolving supply chain sector.

Course Curriculum

Fundamentals of Digital Supply Chain

TOPICS

Introduction To Digital Supply Chain Management:-Supply Chain Design, Strategy, Planning and Operation ,Trade-off Cost Factor v/s Service Factor ,Distribution Network, Design of Manufacturing Systems & Facility Layout Implications, Process Flow Analysis Demand Forecasting & Capacity Planning, Sales and Operations Planning, Service Strategy and Design of Service Systems

Core Topics

TOPICS

Technology In Inventory Management (Industry 4.0):

Inventory And Types of Goods, Raw Material Inventory ,Packaging Material Inventory ,MRO / Spares Inventory ,Top 8 Inventory Control Techniques ,Top 5 Inventory Management Techniques ,Safety Stock for RM / PM ,Inventory Management Software

Supply Chain Analytics:

Supply Chain Analytics Trends and Demand Forecasting, Time Series Forecasting, Regression Analysis, New Products Forecasting, End of Life Products Forecasting Concept of Cross-validation And Best Model Selection, Distribution Network Modelling Designing Global Supply Chain Network

Quality Management & Lean Six Sigma:

Measures and Dimensions of Quality, Total Quality Management, Statistical Process Control in Practice, Lean Management Principles & Lean Six Sigma

Supply Chain Digital Transformation: Applications of Industry 4.0 in Operations & Supply Chain Management, Role of AI, ML, and IoT in Digital Transformation, SC Digital Transformation and Use Cases of SC Digital Twins

Technology In Logistics Management (Industry 4.0):
Logistics Management, Customer Service Model, Trade Of Function, Key Logistics Planning Frameworks, Warehousing And Storage Management Processes, Trends In Logistics Technology, Logistics Planning Software
Technology In Procurement (Industry 4.0): Purchasing Process, Objective and Responsibilities Integration, Strategic Sourcing, Supply Management, Supplier Performance Measurement Worldwide Sourcing , Future Trends In Global Sourcing

Core Topics

TOPICS
Project Management: Concept & Tools: Project Planning, Organization & WBS, Project Scheduling - CPM & PERT, Project Resources Management & Monitoring, Project Risk Management
Retail & E-Commerce Operations: Retail & E-Commerce Operations - Brick and Mortar Retail,Retail & E-Commerce Operations - Online Retail,Platform Business Models
Implementation Of Digital Supply Chain Strategy in A Supply Chain: Need For Digital Supply Chain Strategy, All About Sensors, IoT, Robotics, Drones, 3D Printing, Formulate SC Strategy Digital Supply Chain Metrics, DSCM Key Components, DSCM Performance Metrics Research Framework ,Change Management and Governance

Project

Capstone Projects on Digital OSCM
Product Design

Certification Export-Import Management - IIFT

Overview of the Program

- Objective: To upgrade knowledge in Export & Import Management and enhance operational competence.
- Focus Areas: International business environment, export marketing techniques, import of goods & services, analytical skills for export opportunities, managerial competence in export & import operations.
- Outcome: Equip participants with skills to manage export-import operations effectively.

Program Highlights

Credits: Total 15 credits (150 hours), including 140 hours of interactive sessions and 10 hours of port visit.

Facilities: Access to IIFT Kolkata campus resources.

How CPEIM Enhances Skilling and Employability

The Certification Program in Export-Import Management (CPEIM) offered by IIFT significantly enhances skilling and employability by providing participants with a comprehensive understanding of the international business environment and economic relations. The program imparts systematic knowledge in modern techniques of export marketing and import of goods and services, while developing analytical skills to identify export opportunities and undertake export marketing in countries with potential for Indian products. Additionally, the program enhances managerial competence and operational efficiency in export-import operations, marketing, and finance. By integrating practical experiences such as port visits and interactive sessions, participants are well-equipped to tackle real-world challenges in the field of export-import management, thereby boosting their employability in the global market.

Course Curriculum

International Trade Logistics (ITL)

- **Topics:** Logistics management, transportation modes, supply chain optimization.

Introduction to Finance & Foreign Exchange Risk Management (IF&FERM)

- **Topics:** Financial principles, foreign exchange risk, hedging strategies.

India's Foreign Trade and Policy (IFT&P)

- **Topics:** Trade policies, regulatory framework, export-import regulations.

Soft Skill Development (SSD)

- **Topics:** Communication skills, negotiation techniques, leadership development.

International Trade Procedures and Documentation (ITP&D)

- **Topics:** Export-import documentation, trade procedures, compliance requirements.

UCP 600 and Other Payments/Receipts Procedures & EXIM Insurance (UOPRP&EI)

- **Topics:** Payment methods, insurance policies, risk management.

Market/Product Identification and Business Plan Development (MPI&BPD)

- **Topics:** Market analysis, product identification, business plan creation.

Port Visit

- **Topics:** Practical exposure to port operations, logistics management

Product Design and Development – IIM Sirmaur

Overview of the Program

The Executive Post Graduate Program in Product Design and Management (Manufacturing Industry) is designed to provide a comprehensive foundation in modern product design and management practices. Focusing on the fundamentals of product design, market research, prototyping, and advanced manufacturing processes, this program aims to equip students with the technical expertise needed to design, develop, and manage innovative products in the manufacturing industry. By the end of the program, students will be well-prepared to tackle the challenges of modern manufacturing environments and advance their careers in product design and management.

Delving into a comprehensive array of modules, including:

- Introduction to Product Design and Development
- Market Research and Customer Requirements
- Concept Design and Prototyping
- Materials Selection and Manufacturing Processes
- Product Development Methodologies
- Costing, Pricing, and Techno-Commercial Management
- Supplier Selection and Management
- Product Management and Lifecycle Strategies
- Product Quality Assessment and Risk Management
- Compliance, Safety, and Regulatory Standards
- Emerging Technologies in Manufacturing
- Capstone Project

Program Highlights

126 hours of comprehensive learning

Delivered in online and campus immersion format

Curriculum adaptable to market demands and industry requirements

How Product Design and Management Enhances Skilling and Employability

This course introduces the foundational concepts of product design and management, covering essential topics such as product lifecycle management, market research, and prototyping. This course provides the necessary groundwork for understanding and working with product design and development strategies.

This includes the core services and functionalities of leading PLM software tools such as Siemens Teamcenter and PTC Windchill. Students will learn about market research techniques, customer requirements, CAD tools, and rapid prototyping. This course provides practical experience in designing and managing products, preparing students for advanced roles in product design and management.

The course also covers performance optimization strategies and explores advanced manufacturing techniques, including automation and additive manufacturing. By integrating these advanced practices, students will be equipped to optimize and manage innovative product designs effectively.

Course Curriculum

Introduction to Product Design and Development

- Overview of Product Design & Development
- Definitions and key concepts
- Importance of design and development in manufacturing
- Current trends in the manufacturing industry
- Product Lifecycle Management (PLM)
- Key Roles and Responsibilities

Market Research and Customer Requirements

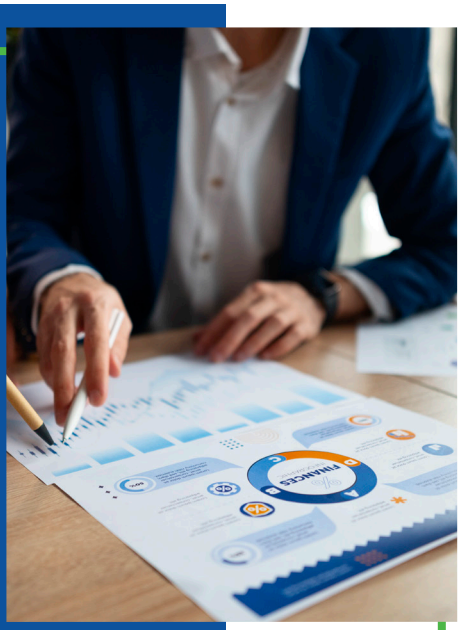
- Market Research Techniques
- Translating Customer Needs into Design Requirements

Concept Design and Prototyping

- Ideation and Conceptual Design
- CAD Tools for Manufacturing
- Prototyping and Testing

Materials Selection and Manufacturing Processes

- Materials in Product Design
- Manufacturing Processes
- Design for Manufacturability (DFM)



Product Development Methodologies

- Stage-Gate Process for Manufacturing
- Agile Product Development in Manufacturing
- Six Sigma and Lean Product Development

Costing, Pricing, and Techno-Commercial Management

- Cost Estimation in Manufacturing
- Pricing Strategies for Industrial Products
- Techno-Commercial Management

Supplier Selection and Management

- Supplier Selection Criteria
- Supplier Relationship Management (SRM)
- Techno-Commercial Supplier Evaluation

Product Management and Lifecycle Strategies

- Product Launch Strategies
- Sustaining and Managing Product Lifecycle
- Post-Launch Review and Continuous Improvement
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Product Quality Assessment and Risk Management

- Design Failure Mode and Effects Analysis (DFMEA)
- Process Failure Mode and Effects Analysis (PFMEA)
- Production Part Approval Process (PPAP)
- Risk Management in Product Development

Compliance, Safety, and Regulatory Standards

- Regulatory Compliance in Manufacturing
- Risk Management in Product Development

Emerging Technologies in Manufacturing

- Industry 4.0 and Smart Manufacturing
- Sustainability and Green Product Design

Capstone Project

- End-to-End Product Development

PG Diploma in Healthcare Management – IIM Sirmaur

Overview of the Program

The 1-Year PG Diploma in Healthcare Management is an accelerated program designed to empower you with the expertise and versatility needed to excel in the ever-evolving healthcare landscape. Unlike traditional multi-year programs, this diploma is tailored for professionals and graduates eager to fast-track their careers, unlocking opportunities not only in healthcare management but also in adjacent fields such as HealthTech, healthcare marketing, consulting, and more.

This dynamic program combines essential management principles with cutting-edge training in healthcare innovation, analytics, and technology-driven solutions. By emphasizing practical skills, strategic thinking, and leadership development, the course equips you to take on diverse roles—from optimizing hospital operations to driving growth in tech-enabled healthcare startups. Whether you're aspiring to lead in traditional healthcare settings or explore emerging fields like digital health and marketing strategy, this program provides the tools, connections, and knowledge to position yourself as a versatile and impactful professional in the broader healthcare ecosystem.

Program Highlights

1-year duration (3 trimesters)

Delivered in online and campus immersion format

Curriculum adaptable to market demands and industry requirements

How Healthcare Management Enhances Skilling and Employability

This course introduces the foundational concepts of healthcare management, covering essential topics such as finance, operations, human resources, and strategic planning. This course provides the necessary groundwork for understanding and working with healthcare management strategies and tools.

This includes the core services and functionalities of leading healthcare systems and technologies. Students will learn about healthcare economics, quality management, digital health, and strategic management. This course provides practical experience in managing healthcare operations, preparing students for advanced roles in healthcare management.

The course also covers performance optimization strategies and explores advanced healthcare technologies, including AI and telemedicine. By integrating these advanced practices, students will be equipped to optimize and manage effective healthcare operations.

Course Curriculum

Principles of Management

- Fundamentals of management, covering planning, organizing, leading, and controlling in various settings.
- Organizational Behavior: Exploration of human behavior in organizations, focusing on motivation, teamwork, and communication.
- Financial Accounting and Analysis: Introduction to financial accounting, emphasizing financial statements, analysis, and basic accounting principles.
- Healthcare Systems & Policy: Introduction to global and Indian healthcare systems and policy frameworks.
- Healthcare Economics & Finance: Economic principles and funding models for healthcare delivery, resource management, and cost optimization.

Hospital Planning and Operations

- Infrastructure planning and operational workflow management in hospitals.
- Healthcare Quality & Patient Safety Management: Patient safety, risk assessment, quality assurance, and accreditation processes.
- Healthcare Marketing and Patient Care Management: Strategies for patient-centric marketing and enhancing patient experience.
- Health Laws and Ethics: Legal frameworks, patient rights, and ethical challenges in healthcare.
- Introduction to Digital Health: Emerging technologies such as EHR, telemedicine, and AI in healthcare.

Strategic Healthcare Management

- Long-term planning, competitive strategies, and leadership in healthcare.
- Public Health and Emergency Management: Healthcare disaster preparedness, public health initiatives, and global challenges.
- Digital Transformation and Product Management in Healthcare: AI, IoT, big data, and their transformative role in healthcare operations.
- Capstone Project/Internship: An applied project or industry placement for hands-on learning and real-world application.