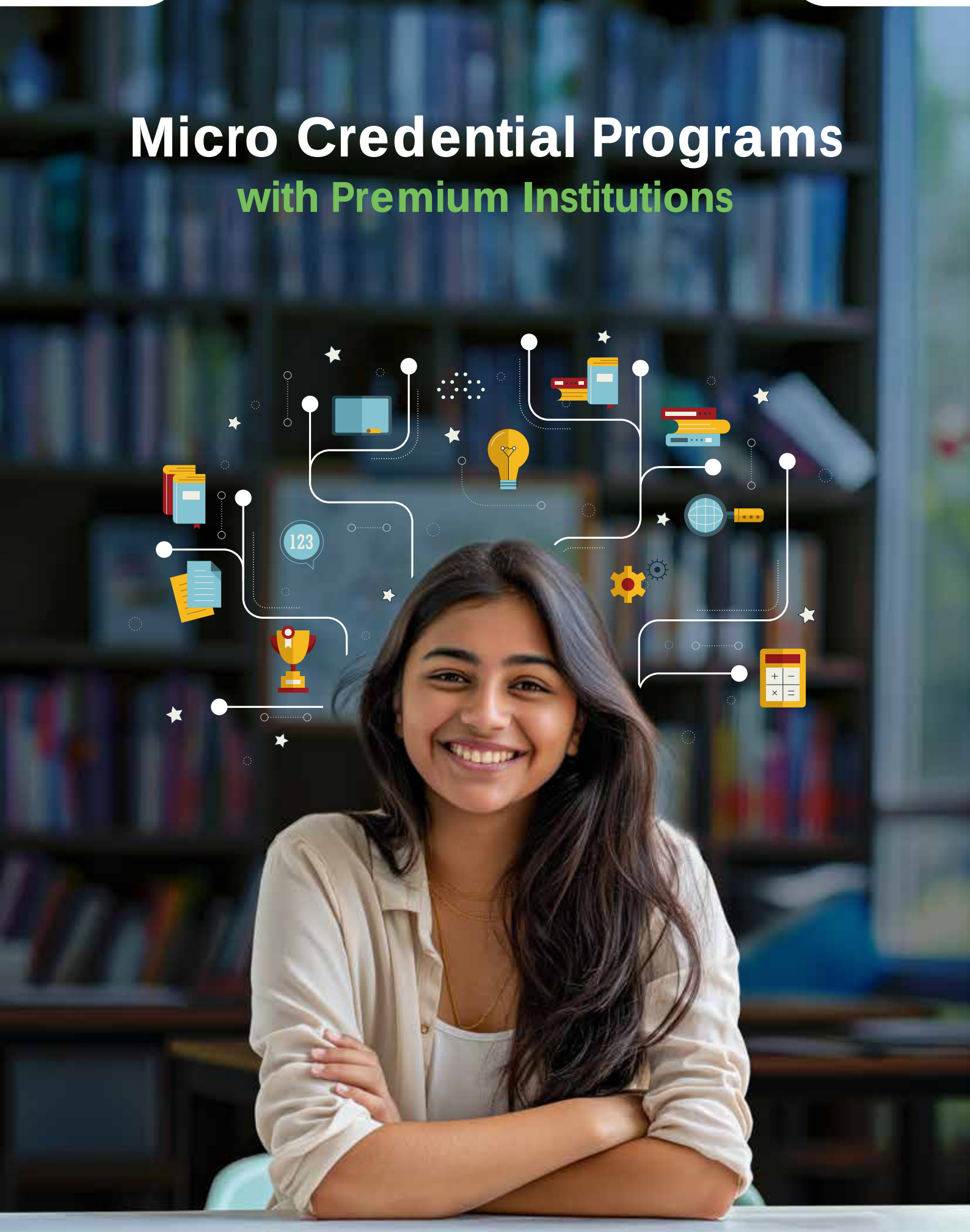
N·S·D·C
RE IMAGINE FUTURE

N·S·D·C
ACADEMY
PATHWAY TO POSSIBILITIES

Micro Credential Programs

with Premium Institutions



What is NSDC Academy?

- NSDC Academy operates as a "skill economy multiplier," bringing together learners, higher education institutions (HEIs), corporates and governments to unlock the best of the skill ecosystem for all its stakeholders.
- Delivers a diverse range of "credit linked" programs and courses embedded in curriculums of HEIs.
- By providing industry-aligned in-demand quality programs, courses, and partnerships, NSDC Academy acts as a "pathway to possibilities" for the Learner.
- By leveraging strategic partnerships and collaborations, NSDC Academy ensures the delivery of high-quality, industry-relevant education and training, enabling learners to acquire in-demand skills and seize abundant growth opportunities.

Future of Jobs World Economic Forum Report

As technology continues to change rapidly, the disruption will create opportunities in employment markets, and employers believe that most technological advancements will have a positive impact on job creation.

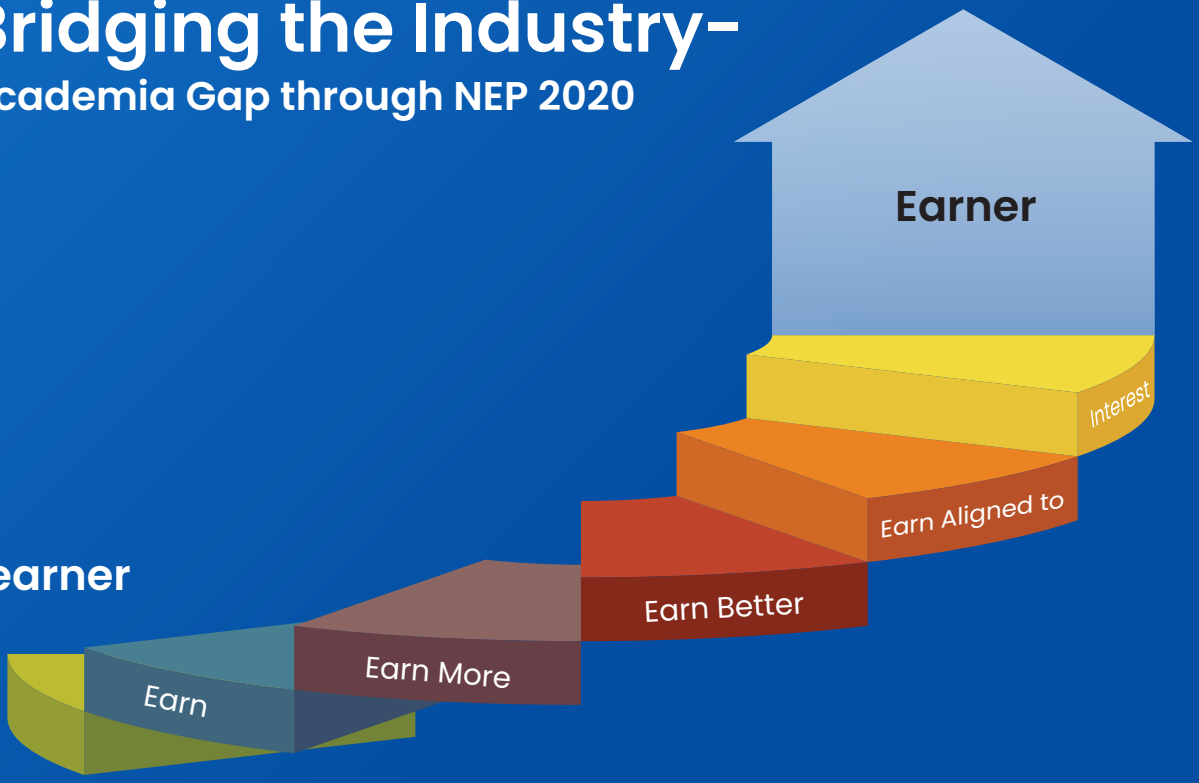
However, WEF report also estimates that by 2027, six out of ten jobs will require some form of Industry Led- training.

The fastest-growing jobs shall be driven by technology and digitalization. Big data is expected to be the leading technology in creating new jobs.

By 2027, roles such as data analysts, big data specialists, AI and machine learning specialists, and cybersecurity professionals are expected to see a 30% increase in demand.

Macrotrends like the green transition, ESG standards, and supply chain localization shall drive job creation. Technological advancements and increased digitalization will result in considerable churn in the employment market but the net impact on job creation is expected to be positive.

Bridging the Industry-
Academia Gap through NEP 2020



Higher Education Institutes → Industries & Corporates

NSDC Academy Value Proposition

SKILLING/ RESKILLING/UPSKILLING
Providing skill trainings across various domains.

INDUSTRY-ACADEMIA COUNCIL
Defining the learning outcomes

SKILL INDIA CENTERS
Establishing Future Skill Centres across the country

POLICY ADVOCACY
Policy Making decisions along with Regulatory bodies

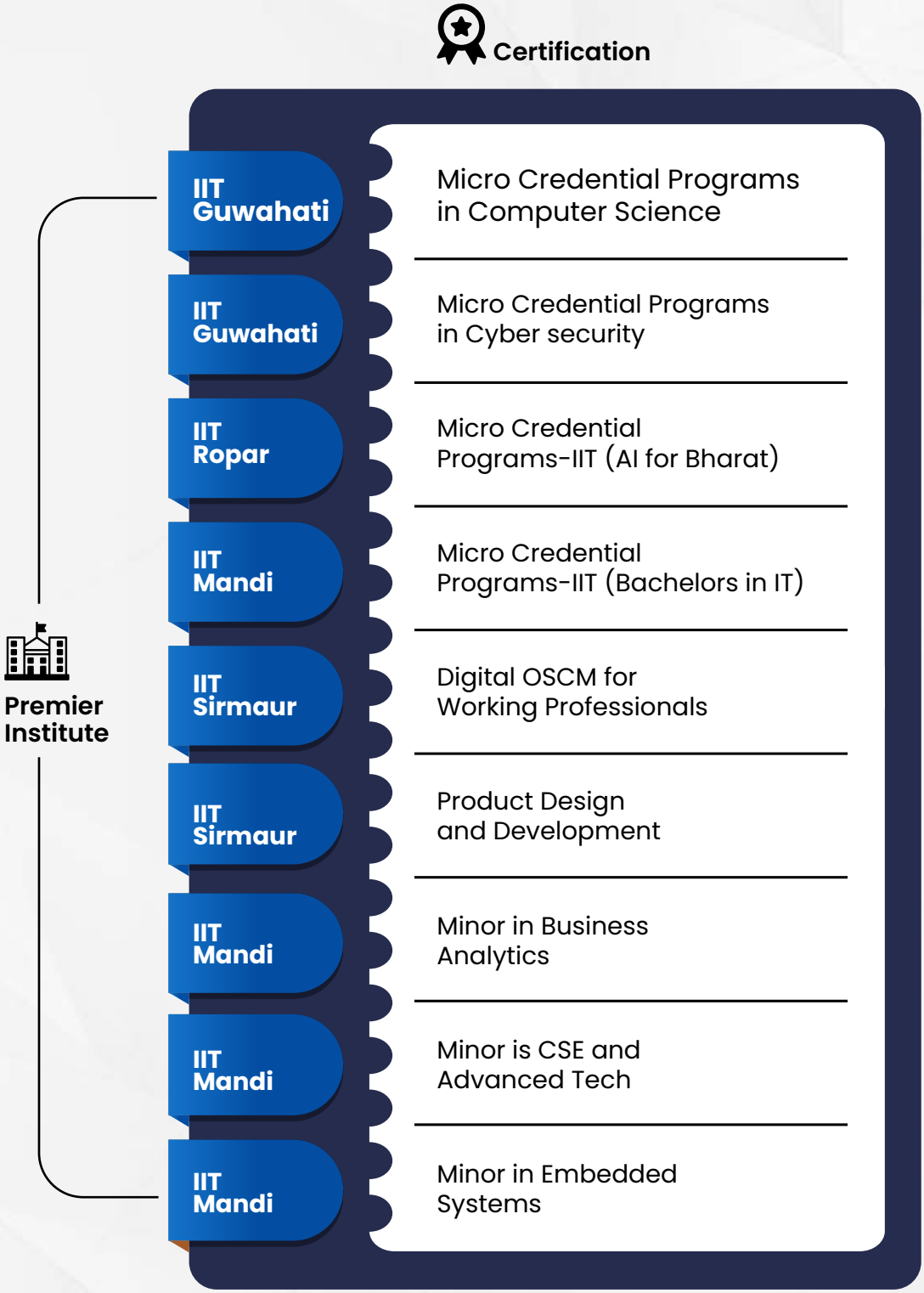
CREDIT BASED SKILLING ECOSYSTEM
Alignment of Credits to courses

ASSESSMENT
Assessment of learners

INTERNSHIP & APPRENTICESHIP
Opportunities for Internship & Apprenticeship

SKILL LOAN
Facilitating skill Loans for Learners

Course Listing



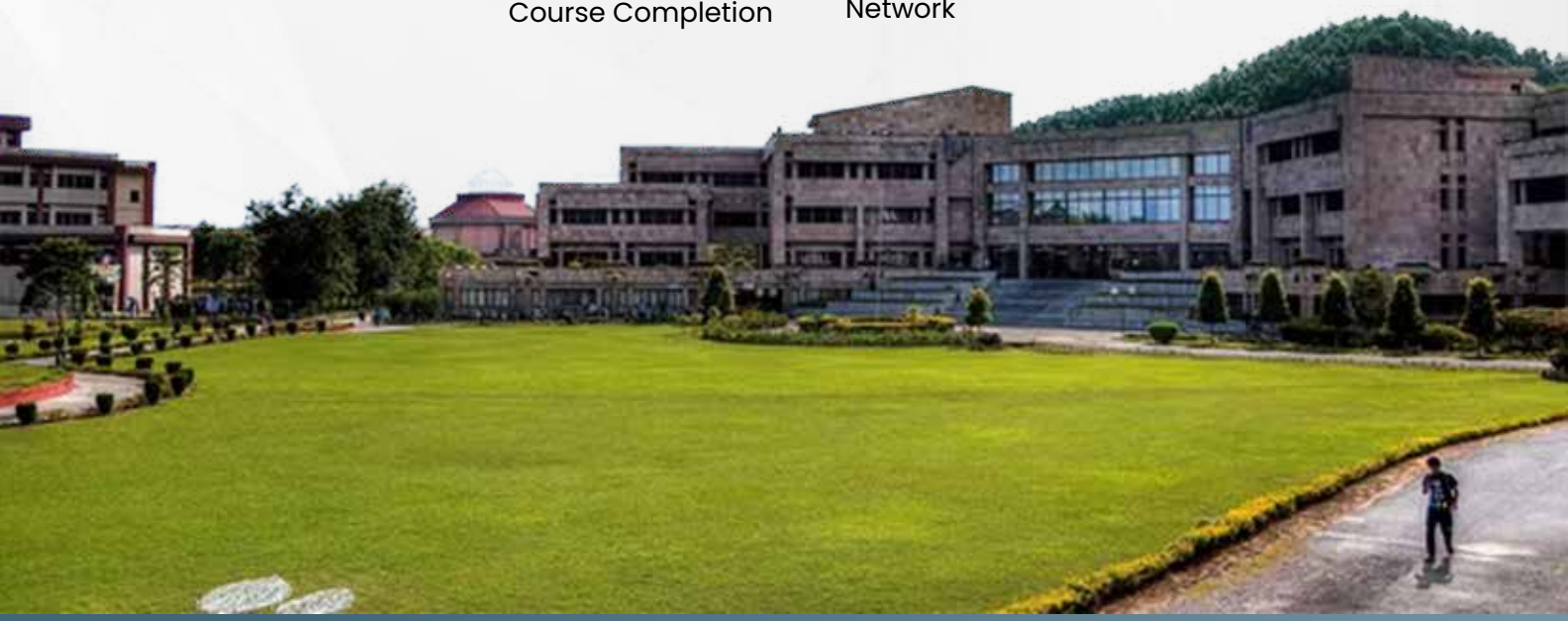
Micro Credential Programs in Computer Science-IIT Guwahati

Overview of the Program

The Credit Linked Program in Data Science is designed to provide students with a solid foundation in data science techniques, tools, and methodologies. It equips students with essential skills for data analysis, machine learning, and data visualization, preparing them for careers or advanced studies in the data-driven world. The program focuses on real-world applications, enabling students to work on practical data science problems, and gain hands-on experience in analysing, processing, and interpreting data. By the end of the program, students will be well-versed in the fundamental concepts of data science and their applications across various domains.

Program Highlights

- Learn directly from IIT Professors
- Access to IIT Guwahati Campus and Events
- Graduation ceremony at IIT Guwahati Campus
- Access to IIT Guwahati Daksh Gurukul Email Id and ID card
- Get 15 program credits
- Assured Placement Opportunities after Course Completion
- Access IIT Guwahati Daksh Gurukul Alumni Network

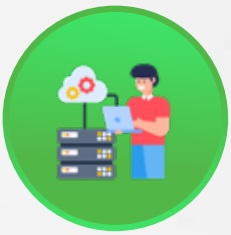


How Data Science Certification Enhances Skilling and Employability?

Data science certifications enhance skilling and employability by equipping professionals with essential tools and techniques like Python, machine learning, and data visualization. They offer structured learning, practical experience, and validation of expertise, making candidates more attractive to employers. Certifications also demonstrate a commitment to continuous learning, essential in the ever-evolving field of data science. With access to industry-relevant skills and career support, certified professionals gain a competitive edge, opening doors to higher-paying roles and career advancement opportunities in data-driven industries.

Learners can pursue various roles such as:

Data Analyst

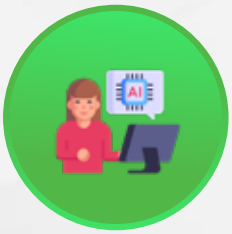


Machine Learning Engineer

Business Intelligence (BI) Analyst

Data Scientist

Data Engineer



AI Engineer

Course Curriculum

Foundations

TOPICS

Introduction to Data Science: Overview of Data Science and Its Applications, Python Programming Fundamentals, Data Types and Data Structures in Python

Introduction to NumPy for Numerical Computing: Data Collection Techniques, Working with Pandas for Data Manipulation, Data Cleaning and Preprocessing, Exploratory Data Analysis (EDA), Data Visualization with Matplotlib and Seaborn, Introduction to Statistical Concepts Probability Fundamentals, Correlation and Regression Analysis, Introduction to Data Mining Working with Time Series Data

Project: Applying Data Science Techniques

Core Topics

TOPICS

Introduction to Machine Learning: Data Preparation for Machine Learning Linear Regression Models Logistic Regression for Classification Decision Trees and Random Forests K-Nearest Neighbours, Algorithm Support Vector Machines (SVM), Clustering Techniques

Introduction to Neural Networks: Training Neural Networks, Model Evaluation, Metrics Overfitting and Underfitting, Cross-Validation Techniques, Feature Engineering and Selection.

Project

Capstone Project: Building Machine Learning Models, End-to-end project involving model selection, training, evaluation, and optimization.

Micro Credential Program
AI for Bharat – IIT Ropar

Overview of the Program

For the first time in India, NSDC in collaboration with IIT Ropar proudly opens its doors to everyone for its in-house Minor in AI program. This ground-breaking initiative offers an innovative educational experience tailored for ambitious professionals poised to excel in the tech industry. The Minor in Artificial Intelligence is meticulously curated to equip learners with the essential skills, knowledge, and industry exposure needed to thrive in the ever-evolving tech landscape

Mode of Delivery:- % Live | % Self paced | % Project/Practical

Program Highlights

- Course Fee: Rs 40,000/-
- Industry-Relevant Projects
- Learn in Multiple Languages
- Placement Assistance
- Lectures & Evaluations by IIT Ropar Professors
- Study alongside IIT Ropar Students
- Minor Program with 15 Program Credits
- Campus Immersion for a Hands-On IIT experience
- Duration of the Program: 9 Months with 1 Month Curriculum Break

How AI Certification Enhances Skilling and Employability?

AI certification equips individuals with essential skills in machine learning, data analysis, and AI technologies, boosting employability in a competitive job market. This formal training enhances credibility and makes candidates more appealing to employers seeking skilled professionals.

Learners can pursue various roles such as: -

These positions leverage AI to drive innovation across industries, significantly improving career advancement opportunities. With the demand for AI expertise on the rise, certification provides a valuable pathway to a successful career in technology.

AI WILL CREATE 97 MILLION JOBS BY 2025

Course Curriculum

Foundations

TOPICS
Aptitude & Mathematics Fundamentals: Covering the essential mathematical concepts and reasoning skills needed for advanced AI studies.

Programming Refresher: A quick course to brush up on programming skills, focusing on Python and its applications in data science and AI.

Introduction to Prompt Programming: An introduction to the emerging field of prompt programming, focusing on effective communication with AI models.

Data Handling: Learning how to manage, process, and analyse data effectively using various tools and libraries.

Fundamentals of Data Science (DS)

TOPICS
Five important prerequisites for DS: An exploration of the essential skills and knowledge areas critical for success in data science.

Ten Classical Ideas that changed the world: A historical overview of key theories and discoveries that have shaped the field of data science.

Core Topics

TOPICS
Neural Networks + Advances (LLMs): In-depth study of neural networks, including recent advancements in large language models.

Computer Vision (CV): Techniques and applications of computer vision, training models to interpret and understand visual information.

Natural Language Processing (NLP): Methods for enabling computers to understand and process human language, creating applications like translators and chatbots.

Core Topics

OPTIONS
Mechanics: Covering the essential mathematical concepts and reasoning skills needed for advanced AI studies.

Tiny ML: Learning about deploying machine learning models on low-power microcontrollers.

Robotics: Application of AI techniques in designing and controlling robots.

Internet of Things (IoT): Integrating AI with IoT to develop smart devices and systems.

General applications of AI: Broad overview of AI applications across various industries.

Projects

TYPE
Open Project, allowing students to apply what they've learned in a practical, real-world setting

Micro Credential Programs in Cybersecurity - IIT Guwahati

Overview of the Program

Designed in collaboration with IIT Guwahati, this pioneering program offers a blend of theoretical and hands-on learning to equip learners with the latest cybersecurity techniques and tools. Cybersecurity certification provides essential skills in protecting systems and networks from threats.

Program Highlights

- Industry-Relevant Projects
- Course Fee: Rs 40,000/-
- Placement Assistance
- Duration of the Program: 8 Months
- Study alongside IIT Guwahati Students
- Minor Program with 15 Program Credits
- Campus Immersion for a Hands-On IIT experience
- Lectures & Evaluations by IIT Guwahati Professors

How AI Certification Enhances Skilling and Employability?

Cybersecurity certification from IIT Guwahati equips learners with critical skills in threat detection, risk management, and data protection. The program emphasizes hands-on training with real-world scenarios, ensuring that participants gain practical experience.

By obtaining this certification, candidates enhance their credibility and demonstrate expertise to potential employers, making them more competitive in the job market.

With the increasing demand for cybersecurity professionals across various industries, this certification opens doors to roles such as: -

- Cybersecurity Analyst
- Security Consultant
- Incident Responder
- Ethical Hacker

Course Curriculum

Foundations Of Cyber Security

TOPICS

Introduction to Cybersecurity: Concepts, Importance and Verticals, Python Basics and Environment Setup, Linux Fundamentals and File Management

Working with Kali Linux: Introduction and service to Kali Linux, Shell Utilities - Wget, curl, grep, awk, tail, head, watch, find, locate, Piping and Redirection, Python and Bash Scripting

Network Security: Security Controls, Networking Concepts, Traffic Analysis, Packet Analyzers, Sniffers, Firewalls, Security Information and Event Management (SIEM), VLAN and VPN.

Core Topics

TOPICS

Incident detection with SIEM: Basic Concepts of SIEM, SIEM Solutions and Deployment, Insider Incident Detection, Network Level Incident Detection, Host Level Incident Detection, Compliance, Handling Alert Triaging and Analysis

Security Operations and Management: SOC Fundamentals, Components of SOC: People, Processes and Technology

Identity and Access Management (IAM): Assets Management, Authentication and Identification Management, Integrating Identity as a Third-Party Service, Mechanism of Authorization, Provisioning Life Cycle's Identity and Access.

Web Application Penetration Testing: OWASP Tools and Methodologies, Insecure Deserialization, Clickjacking, Black Box Testing, White Box Testing, Fuzzing, Cryptography, Hashing, Digital Signatures, API Security , Patch Management.

Core Topics

TOPICS

Malware Analysis: Different types of malwares, Ransomware, Malware Detection, Malware Analysis

Ethical Hacking: Introduction, Foot printing and reconnaissance, Scanning Networks, Enumeration, Vulnerability Analysis, System Hacking, Sniffing, Social Engineering, Denial of Service (DoS), Session Hijacking, Evading IDS, Firewalls and Honeypots, Hacking Web Servers, SQL Injection, Hacking Wireless Networks, Mobile Platforms, Internet of Things (IoT)

Cloud Security: Infrastructure Security, Data security and Storage, Access Control, Trust, Reputation and Risk, Authentication in Cloud Computing

Software Development Security: Security Controls for The Development Environment, Life Cycle Security, Impact of Acquired Software Security, Effectiveness of Software Security

Data Security: Data Protection, Data Classification, Data Privacy

Compliance & Govt risk: ISO 27001 implementation, SOC2 compliance, DPDP Act implementation

AI security: Theoretical understanding of LLM security

Project

TYPE

Capstone Project: Secure Web Application Development, Cybersecurity Incident Response Simulation, Digital Forensics Investigation, Cloud Security Assessment

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
- 2+ industry-recognized tools.
- Learners will get the opportunity to work on 15+ case studies
- 1 complete end- to-end simulation project
- New-Age Digital Supply Chain Management concepts.
- 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

Minor is CSE and Advanced Tech-IIT Mandi

Overview of the Program

This program offers an innovative educational experience tailored for ambitious professionals poised to excel in the tech industry. Minor in CSE & Advanced Technologies is meticulously curated to equip learners with the essential skills, knowledge, and industry exposure required to thrive in the ever-evolving tech landscape.

Delving into a comprehensive array of modules, including:

- Programming Fundamentals
- Advanced coding skills
- Problem-solving and algorithmic thinking
- Data Structures
- System Design Principles
- Generative AI and its application

This experiential learning approach ensures that learners not only grasp theoretical concepts but also develop practical, hands-on experience, making them well-equipped to tackle the challenges and opportunities in the realm of Computer Science Engineering.

Program Highlights

- Welcome Kit (ID card, T-shirt, Email)
- Lectures by IIT Mandi Professors
- 5 days Campus Immersion
- Industry-tailored Curriculum & Projects
- 15 credits score from IIT Mandi
- Graduation Ceremony in IIT Mandi

How Minor is CSE and Advanced Tech Enhances Skilling and Employability

A Certification in CSE and Advanced Tech provides individuals with essential skills in areas like AI, data science, cloud computing, and cybersecurity, equipping them with the technical proficiency required in today's digital landscape. This certification enhances skilling by offering hands-on experience with cutting-edge technologies that are transforming industries.

As businesses increasingly adopt digital and tech-driven solutions, professionals with these skills are in high demand. This certification boosts employability, making candidates more attractive to employers in diverse sectors such as finance, healthcare, and tech, ensuring they are ready for emerging roles in the evolving job market.

Course Curriculum

Fundamentals of Minor is CSE and Advanced Tech

TOPICS

Programming Fundamentals: Introduction to Python and Basic Syntax/ Variables, Data Types, and Operators/ Control Structures: Conditional Statements and Loops/ Functions, Lambda Expressions, and Exception Handling/ Object-Oriented Programming: Classes, Objects, and Inheritance/ Data Structures in Python: Lists, Strings, and Dictionaries/ File Handling, Concurrency, and Multithreading

Core Topics

TOPICS

Advanced Coding Skills: Complexity Analysis and Sorting Algorithms/ Data Structures: Stacks, Queues, and Linked Lists/ Binary Search and Recursive Algorithms/ Recursion, Backtracking, and Greedy Algorithms/ Dynamic Programming Techniques/ Graphs and Trees: Traversal and Applications/ Advanced Data Structures: Heaps, Priority Queues, and Triest

Core Topics

TOPICS

Core Computer Science Subjects: Database Management Systems (DBMS)/ System Design Principles/ Cloud Computing Models and Deployment/ Cybersecurity Fundamentals/ Operating System Concepts/ Internet of Things (IoT)/ Generative AI and its Applications

Project

Capstone Project

Minor in Embedded Systems

Overview of the Program

This program offers an innovative educational experience tailored for ambitious professionals poised to excel in the tech industry. Minor in Embedded Systems is meticulously curated to equip learners with the essential skills, knowledge, and industry exposure required to thrive in the ever-evolving tech landscape.

Delving into a comprehensive array of modules, including:

- Programming Fundamentals
- Advanced coding skills
- Problem-solving and algorithmic thinking
- Data Structures
- Welcome Kit (ID card, T-shirt, Email)
- Graduation Ceremony in IIT Mandi

This experiential learning approach ensures that learners not only grasp theoretical concepts but also develop practical, hands-on experience, making them well-equipped to tackle the challenges and opportunities in the realm of Computer Science Engineering.

Program Highlights

- Minor with 15 program credits
- IIT Mandi lab access during campus immersion
- Hands-on 2 weeks campus training
- Embedded System toolkit worth INR 20,000
- Welcome Kit (ID Card, T-Shirt, Email ID)
- Hands-on 2 weeks campus training
- Became part of IIT Mandi – Smart Technologies Network

How Minor in Embedded Systems Enhances Skilling and Employability

A Certification in Embedded Systems equips individuals with practical skills in designing and programming embedded hardware-software solutions, focusing on microcontrollers, real-time operating systems, and IoT applications. This hands-on experience enhances skilling by preparing candidates for real-world embedded systems development.

With industries relying more on smart devices, IoT, and automation, the demand for embedded systems expertise is rapidly growing. This certification boosts employability, making graduates competitive for roles in sectors like electronics, automotive, and telecommunications, where embedded systems are critical.

Course Curriculum

Foundations of Minor in Embedded Systems

TOPICS

Introduction to Embedded Systems: Overview of Embedded Systems/ Basic Electronics/ Introduction to Microcontrollers/ Embedded C Programming/ Development Environments and Tools

Digital Logic and Computer Architecture: Digital Logic Design/ Basic Computer Architecture/ Assembly Language Basics/ Microprocessor vs. Microcontroller

Core Intermediate Topics

TOPICS

Advanced Programming for Embedded Systems: Advanced Embedded C/ Object-Oriented Programming in Embedded Systems/ Real-Time Operating Systems (RTOS) Basics/ Scripting for Automation/ Version Control Systems

Communication Protocols and Networking: Serial Communication/ Networking Protocols/ Wireless Communication/ Interface Devices/ Designing for Interconnectivity

Advanced Topics

TOPICS

Embedded Systems Design and Integration: Introduction to PCB Design/ System Architecture Design/ Power Management/ Embedded Systems Security/ Debugging and Testing/ Case Studies

Advanced Topics in Embedded Systems: Advanced Microcontroller Features/ Embedded Linux:/ Internet of Things (IoT)/ Safety-Critical Systems/ Emerging Technologies.