

Nanotechnology Curriculum

From nanomaterials and synthesis to CRISPR-Cas9, nano medicine, energy, and computational simulation — a complete program covering the full breadth of nano science and its real-world applications.



35+

Industry Certifications

5+

Live Projects

11.7k+

Students Trained

WHO WE ARE

Our Mission & Vision

Skillumni is a leading edtech platform focused on transforming careers through high-quality upskilling and training across diverse industries. We connect learners with cutting-edge courses, expert mentors, and practical projects to bridge the gap between education and real-world careers.



Our Vision

To empower every learner through accessible, inclusive, and impactful education — creating equal opportunities for all, regardless of background or geography.



Our Mission

To deliver quality education through career-driven courses that empower success — equipping learners with the skills, tools, and confidence to thrive in today's job market.

WHY CHOOSE US

Why Choose Skillumni for Smarter Learning?

Participate in Skillumni's comprehensive training program designed to elevate your skill set and equip you with practical tools to effectively solve real-world problems.



Industry-Driven Learning Paths

Curriculum built around what employers actually need — not textbooks.



Lifetime LMS Portal Access

Revisit lessons, access new content, and keep growing at your own pace.



Hands-On Domain Based Projects

Build real projects that showcase your skills to future employers.



Earn 2+ Industry Certifications

Globally recognized certificates to validate your expertise.

HOW IT WORKS

Your Learning Journey with Skillumni

1

Enrol

Pick your domain — no
prior experience
needed.

2

Learn

Access recorded
sessions & lifetime
LMS portal.

3

Build Projects

Complete 1 minor & 1
major industry project.

4

Get Certified

Earn course &
internship completion
certificates.

5

Launch Career

Resume help, mock
interviews &
placement support.

Training Spotlight

- Content developed by experienced industry mentors for real-world application.
- 35+ Hours of Learning, Comprehensive video lessons, exercises, and guided modules.
- Lifetime LMS Access to Revisit all learning materials, updates, and resources—forever.
- Access the program anytime, anywhere through our online platform.
- Build practical skills with real-world project work.
- Certification Showcase your achievement and boost your career profile.
- Regular Assessments to Evaluate your progress and strengthen your understanding.

Curriculum:

Module 1: Intro to Nanotechnology

- Definition & scope of nanotechnology
- History & milestones of the field
- Nanoscale fundamentals & quantum effects

Module 2: Types of Nanomaterials

- Carbon Nanotubes (CNT)
- Graphene & its properties
- Metal nanoparticles
- Quantum dots & nanocomposites

Curriculum:

Module 3: Synthesis Techniques

- Top-down vs bottom-up approaches
- Chemical Vapor Deposition (CVD)
- Sol-gel method
- Ball milling & other techniques

Module 4: Characterization Techniques

- SEM — surface imaging
- TEM — atomic-level imaging
- AFM — surface force mapping
- XRD & UV-Visible Spectroscopy

Curriculum:

Module 5: Nanotechnology in Electronics

- Nano-transistors & logic devices
- Nano sensors for detection
- Flexible electronics
- Semiconductor nanotechnology

Module 6: Nanotechnology in Medicine

- Nano drug delivery systems
- Cancer therapy using nanoparticles
- Tissue engineering scaffolds
- Biosensors for diagnostics

Curriculum:

Module 7: Nanotechnology in Energy

- Nano solar cells — enhanced efficiency
- Lithium-ion battery improvements
- Hydrogen storage materials
- Supercapacitors & energy storage

Module 8: Nanotechnology in Environment

- Water purification using nanofilters
- Air pollution control
- Waste treatment methods
- Environmental remediation

Curriculum:

Module 9: Nano Fabrication & Clean Room

- Lithography techniques
- Thin film deposition
- Etching processes
- Clean room standards & protocols

Module 10: Nano Robotics & Smart Materials

- Nano robots — design & applications
- Self-healing materials
- Shape memory alloys
- Intelligent & stimuli-responsive materials

Curriculum:

Module 11: Computational Nanotechnology

- Nano simulation tools overview
- Molecular modeling basics
- Density Functional Theory (DFT) intro
- MATLAB/Python in nanotech research

Module 12: Capstone & Industry Exposure

- Capstone project development
- Case study discussion
- Research paper review & analysis
- Presentation, viva & career paths

Skills You Get:

- Nanomaterials & Fundamentals
- Synthesis Techniques
- Characterization Tools
- Electronics, Medicine & Energy
- Nano Fabrication & Smart Materials
- Computational Nanotechnology

Training Program Outline



Before Training

- No prior experience required
- Beginner friendly — any domain
- Start fresh, choose your specialization



Training

- Recorded sessions + study materials
- Lifetime LMS access
- Flexible, self-paced learning



Industrial Projects

- Complete 1 Minor Project
- Complete 1 Major Project
- Real-world business problems



Certification

- Course Completion Certificate
- Internship Completion Certificate
- Letter of Recommendation (optional)



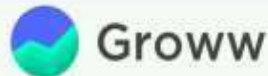
Placement Support

- Resume Building Assistance
- Mock Interview Preparation
- Dedicated Placement Assistance

OUR EXPERTS

Our Mentors Are From:

Learn directly from working professionals at India's top companies — real experience, real insights.



Earn 2+ Industry-Led Certifications

Upon successful completion, receive industry-recognized certificates that validate your skills and boost your career prospects — whether you're aiming for a new job or a promotion.



Course Completion Certificate

Awarded upon finishing all course modules and assessments successfully.



Internship Completion Certificate

Issued after completing both the minor and major industry projects.



Letter of Recommendation

Optional — for outstanding performers, signed by Skillumni co-founder.



Outstanding Performance Certificate

Optional — recognises exceptional dedication and achievement.

Accreditations & Recognitions

Skillumni is proudly recognized under key Government of India initiatives — reflecting our compliance, credibility, and commitment to student success.



Startup India (DPIIT)

Dept. for Promotion of Industry &
Internal Trade, Govt. of India



MSME Certified

Ministry of Micro, Small & Medium
Enterprises, Govt. of India



Ministry of Corporate Affairs

Registered Private Limited Company,
Govt. of India

THANK YOU

We'd love to be part of your learning journey.

Need more insights? Our counsellors are here to guide you through every step.



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