

Genetic Engineering Curriculum

From molecular biology and PCR to CRISPR-Cas9, gene therapy, and bioinformatics — a comprehensive program for healthcare, agriculture, and biotech careers.



35+

Industry Certifications

9

Modules

13.6k+

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 Genetic Engineering

- History & evolution of the field
- Scope — healthcare, agriculture, industry
- Genes, DNA, RNA, proteins explained
- Central dogma of molecular biology

Module 2: Molecular Biology Techniques

- DNA isolation & purification
- PCR — types & variations
- Gel electrophoresis & blotting
- Spectrophotometric analysis

Curriculum:

Module 3: Genetic Material Manipulation

- Restriction enzymes — types & role
- DNA ligases & joining techniques
- Gene amplification & cloning
- Selection markers & screening

Module 4: Vectors & Delivery Systems

- Plasmids, cosmids & viral vectors
- Gene transfer — prokaryotes & eukaryotes
- Expression systems for gene delivery
- Cloning vectors & reporter genes

Curriculum:

Module 5: Gene Editing Technologies

- CRISPR-Cas9 — working, design & guide RNA
- RNA interference & gene silencing
- Site-directed mutagenesis
- Gene knock-in & knock-out strategies

Module 6: Protein Expression & Purification

- Recombinant protein production
- Purification using tags & chromatography
- Protein folding & solubility
- Structure-function relationships

Curriculum:

Module 7: Real-World Applications

- GMO development in agriculture
- Therapeutic proteins — insulin, vaccines
- Gene therapy & personalized medicine
- Biosensors & molecular diagnostics

Module 8: Bioinformatics & Computational Tools

- NCBI, GenBank & EMBL databases
- Sequence alignment & phylogenetics
- Primer design & codon optimization
- CRISPR off-target analysis & annotation

Curriculum:

Module 9: Ethics, Law & Regulation

- Biosafety regulations & risk assessment
- Ethical considerations in gene modification
- Regulatory frameworks for GMO release
- IP & patent issues in biotechnology

Skills You Get:

- Molecular Biology Fundamentals
- Lab Techniques & DNA Tools
- Cloning & Vectors
- CRISPR-Cas9 & Gene Editing
- Applications: GMOs, Therapy & Biotech
- Bioinformatics & Ethics

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)



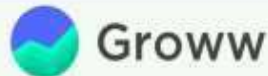
Placement Support

- 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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