EduDAP
(Discover & Apply Practical Education)

HANDS-ON TRAINING PROGRAMS

Discover & Apply Practical Education

HANDS-ONTRAININGPROGRAMS

01 Plant Tissue Culture & Micropropagation

02 Molecular Biology & Genetic Engineering

03 Cordyceps Cultivation

04 Microbial Biotechnology

05 Biochemical Analysis

About EduDAP Training Academy

EduDAP (Discover & Apply Practical Education) implements comprehensive practical industrial training and internship programs for students and researchers in Agricultural Sciences, Biotechnology, Biochemistry, Molecular Biology, Microbiology, Botany, Pharmacology, Para-medical Sciences, and Zoology at B.Sc./B.Tech./M.Sc./M.Tech./M.Phil./Ph.D. levels. Our objective is to provide industry-specific, hands-on training for skill development and enhancing job opportunities in applied biological sciences.

EXPERT FACULTY

MODERN LABS

HANDS-ON LEARNING

PROJECT REPORTS

Who Should Enroll?

- B.Sc./B.Tech. Life Sciences
- M.Sc./M.Tech. Students
- Ph.D. Scholars
- B.Pharma/M.Pharma

MODULE 01

Plant Tissue Culture & Micropropagation

From Media Preparation to Commercial Tissue Culture Techniques

15–30
Days Hands-On Lab

A comprehensive hands-on module covering the complete spectrum of plant tissue culture — from basic media preparation to advanced commercial micropropagation. Students gain practical experience in aseptic culture, callus induction, organogenesis, somatic embryogenesis, and hardening of tissue-cultured plantlets.

Detailed Curriculum

01. Introduction to commercial plant tissue culture laboratory
02. Introduction to tools and techniques of plant tissue culture
03. Preparation of stock solutions of nutrient medium
04. Basic tissue culture media preparation
05. Selection, collection and surface sterilization of explants
06. Callus culture and maintenance
07. Micropropagation techniques
08. Meristem culture
09. Somatic embryogenesis
10. Organ culture
11. Protoplast culture
12. Suspension culture
13. Organogenesis
14. In vitro shoot regeneration and rooting
15. In vitro plantlet regeneration
16. Hardening and acclimatization of tissue cultured plantlets
17. Introduction to automated polyhouse / hardening unit
18. Techniques of commercial plant tissue culture
19. Project report preparation

MODULE 02

Molecular Biology & Genetic Engineering

DNA Extraction to Gene Expression Profiling & DNA Fingerprinting

15–30
Days Hands-On Lab

Master the fundamental and advanced techniques of molecular biology and genetic engineering. This intensive module covers genomic DNA extraction, purification, quantification, PCR amplification, restriction digestion, gel electrophoresis, DNA fingerprinting, RNA extraction, and transcriptional profiling.

Detailed Curriculum

01. Introduction to tools and techniques of plant molecular biology
02. Genomic DNA extraction from leaves, bacteria and animal tissue
03. DNA purification techniques
04. Quantification of DNA using NanoDrop spectrophotometer
05. DNA quality analysis
06. Restriction digestion of DNA by endonucleases
07. Restriction mapping
08. DNA fingerprinting using Agarose Gel Electrophoresis
09. PCR amplification using molecular markers
10. DNA fingerprinting by RAPD
11. DNA fingerprinting by ISSR
12. AFLP and RFLP based DNA fingerprinting
13. PCR based advanced techniques
14. Amplified DNA analysis by Gel-Doc
15. Total RNA extraction
16. Targeted gene amplification
17. Transcriptional profiling and expression of genes by RT-PCR
18. Southern blotting
19. Project report preparation

MODULE 03

Cordyceps Militaris Cultivation Technique

Learn How to Grow the High-Value Medicinal Mushroom

15–20
Days Hands-On Lab

Cordyceps militaris (Keeda-Jadi or Yarshagumba) is a medicinal mushroom with anti-cancer, anti-inflammatory, antimicrobial, and immunomodulatory properties. This module teaches the complete cultivation technique from pure culture to harvesting and metabolite estimation.

Detailed Curriculum

01. Introduction to Cordyceps militaris — biology, medicinal properties & market potential
02. Potato Dextrose Agar (PDA) media preparation for pure culture
03. Liquid media preparation for spawn culture
04. Rice substrate media preparation for fruiting body regeneration
05. Sterilization, inoculation & incubation processes
06. Monitoring of photoperiodic management & laboratory environment control
07. Harvesting techniques & disease control
08. Spectrophotometric estimation of secondary metabolites
09. Project report preparation

Key Learning Outcomes

- Understand the complete life cycle and commercial value of Cordyceps militaris
- Master aseptic techniques for pure culture and spawn preparation
- Independently set up and manage a Cordyceps cultivation lab
- Perform spectrophotometric analysis of bioactive secondary metabolites

Career Applications: Cordyceps militaris is a rapidly growing industry with high commercial value (₹1–5 lakh/kg dried product). Trained professionals can set up their own cultivation units or work in nutraceutical companies.

MODULE 04

Microbial Biotechnology

Bacterial Genetics, Transformation & Agrobacterium-Mediated Techniques

15–20
Days Hands-On Lab

Explore microbial genetics and biotechnology through hands-on experiments covering bacterial growth dynamics, antibiotic sensitivity, plasmid and genomic DNA isolation, transformation techniques, and Agrobacterium-mediated gene transfer.

Detailed Curriculum

01. Bacterial growth curve analysis
02. Phage titration techniques
03. Bacterial antibiotic sensitivity analysis
04. Bacterial DNA isolation
05. Plasmid DNA isolation and purification
06. Bacterial transformation techniques
07. Agrobacterium culture techniques
08. Agrobacterium-mediated transformation
09. Genetic analysis of microbes by RFLP techniques
10. Project report preparation

Key Learning Outcomes

- Analyse bacterial growth kinetics and understand microbial physiology
- Perform plasmid and genomic DNA isolation from bacterial cultures
- Master bacterial transformation and Agrobacterium-mediated gene transfer
- Apply microbial techniques in agriculture, industry, and environmental biotechnology

MODULE 05

Biochemical Analysis

Metabolite Estimation, Enzyme Kinetics & Chromatographic Techniques

15–20
Days Hands-On Lab

A comprehensive biochemistry module covering quantitative analysis of biomolecules, enzyme kinetics, antioxidant assays, spectrophotometric techniques, and chromatographic separation methods essential for any modern biology and pharmaceutical laboratory.

Detailed Curriculum

01. Secondary metabolites analysis
02. Antioxidant assay by DPPH method
03. Spectrophotometric analysis techniques
04. Enzyme activity assay
05. Isozyme separation techniques
06. Enzyme kinetics
07. Quantitative estimation of proteins, lipids, carbohydrates & amino acids
08. Chromatographic techniques
09. Project report preparation

Key Learning Outcomes

- Perform quantitative estimation of proteins, lipids, carbohydrates, and amino acids
- Conduct antioxidant assays (DPPH) and secondary metabolite analysis
- Understand enzyme kinetics, activity assays, and isozyme separation
- Apply chromatographic techniques for compound separation and identification

Duration & Fee Structure

Program Type	Duration	Fee Range (INR)
Single Module Training	15 – 30 days	₹ 5,000 – ₹ 10,000
Multi-Module Training	30 – 60 days	Custom (based on modules)
Intensive Advanced Program	45 – 60 days	Custom (all modules)
Research Project / Dissertation	1 – 4 weeks	Based on duration

🎓 **Merit Scholarship:** EduDAP offers free training to first merit holders from any recognized educational institution.

Research & Additional Services

Projects, Dissertations & Thesis
Supervised research for Ph.D., M.Phil., M.Sc., B.Pharma students.

Contractual R&D
Collaborative research services for NGOs and institutions.

Facility Sharing
Ph.D./M.Phil. scholars can conduct research using our lab.

Project Assistance
Professional help in preparing thesis and research projects.

Infrastructure & Facilities

- Fully equipped laboratories with high-class instruments
- Centrally air-conditioned classrooms and laboratories
- Audio-visual teaching aids for enhanced learning
- Digital library with high-speed data access
- Automated polyhouse and hardening unit
- Advanced molecular biology lab with PCR, Gel-Doc, NanoDrop

ENROLL TODAY • TRANSFORM YOUR CAREER

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