

Biotechnology: From Basics To Advanced Applications

Duration: 10 Days

Language: en

Course Code: IND05 - 140

Objective

Upon completion of this course, participants will be able to:

- Understand the basic concepts and principles of biotechnology.
- Learn about the applications of biotechnology in agriculture, medicine, and industry.
- Gain knowledge of genetic engineering, bioprocessing, and molecular biology techniques.
- Explore biosafety, ethical considerations, and regulatory frameworks in biotechnology.

- Develop skills for practical laboratory techniques and biotechnological research.
- Understand the commercial and entrepreneurial aspects of biotechnology.

Audience

This course is intended for:

- Students in biology, biotechnology, and related fields.
- Professionals seeking to update or enhance their knowledge.
- Researchers looking for a comprehensive understanding of modern biotechnological techniques.
- Entrepreneurs interested in biotech ventures.
- Healthcare professionals exploring biotech applications in medicine.

Training Methodology

This course uses a variety of adult learning styles:

- Interactive Video Lectures: Engaging video content to explain complex concepts.
- Hands-On Labs: Virtual lab simulations and real-life case studies.
- Reading Materials: Access a wealth of resources, including research papers and textbooks.
- Discussion Forums: Peer interaction and networking opportunities.
- Assessments and Quizzes: Regular tests to track progress and understanding.
- Capstone Project: A comprehensive project to apply learned skills in a practical scenario.

Summary

This course comprehensively explores biotechnology, seamlessly integrating fundamental principles with advanced techniques and practical applications across various domains. Designed for beginners and seasoned professionals alike, the course delves into the essential

concepts of cell biology, genetics, and molecular biology while covering cutting-edge technologies like CRISPR and recombinant DNA.

Participants will gain hands-on experience through virtual labs and case studies, enhancing their practical skills and theoretical understanding. By the end of the course, attendees will be equipped with the knowledge and skills necessary to excel in agricultural, medical, and industrial biotechnology.

Course Content & Outline

Sectioon1: Introduction to Biotechnology

- Definition and Scope
- Historical Development
- Major Branches of Biotechnology

Section 2: Fundamental Concepts

- Cell Biology and Genetics
- DNA, RNA, and Protein Synthesis
- Mendelian and Non-Mendelian Genetics

Section 3: Techniques in Biotechnology

- Recombinant DNA Technology
- PCR and Gel Electrophoresis
- CRISPR and Gene Editing

Section 4: Applications in Agriculture

- Genetic Modification of Crops
- Biopesticides and Biofertilizers
- Plant Tissue Culture

Section 5: Medical Biotechnology

- Monoclonal Antibodies
- Gene Therapy
- Stem Cell Research

Section 6: Industrial Biotechnology

- Bioprocess Engineering

- Fermentation Technology
- Bioreactors and Scale-Up Processes

Section 7: Biosafety and Ethics

- Biosafety Levels and Protocols
- Ethical Issues in Genetic Engineering
- Regulatory Frameworks and Compliance

Section 7: Entrepreneurship in Biotechnology

- Biotech Startups and Innovation
- Intellectual Property Rights
- Market Analysis and Commercialization Strategies

Certificate Description

Upon successful completion of this training course, delegates will be awarded a Holistique Training Certificate of Completion. For those who attend and complete the online training course, a Holistique Training e-Certificate will be provided.

Holistique Training Certificates are accredited by the British Assessment Council (BAC) and The CPD Certification Service (CPD), and are certified under ISO 9001, ISO 21001, and ISO 29993 standards.

CPD credits for this course are granted by our Certificates and will be reflected on the Holistique Training Certificate of Completion. In accordance with the standards of The CPD Certification Service, one CPD credit is awarded per hour of course attendance. A maximum of 50 CPD credits can be claimed for any single course we currently offer.

Categories

Health, Safety & Environment HSE, Healthcare & Pharmaceutical

Tags

Biology, Biotechnology, DNA, Protein Synthesis, RNA, Crops, Genetic Modification, Bioprocess Engineering

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