

Industrial Microbiology Certificate Course

Jointly organized by



Serampore College

&



Alona Life Sciences Pvt Ltd

[Incorporated and registered under Ministry of Corporate Affairs, startupindia and MSME, Govt of India]

Admission Open for **July 2024** Session

Contact:

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Duration : 3 months

Consolidated Course Fee : Rs. 10,000/-

Minimum Qualification to Apply: Passed Higher Secondary or Equivalent

Theoretical Classes

2 months [at Serampore College; 2 days a week ; 2 classes per day ----- **32 classes in two months**]

Syllabus:

1. **Introduction**
2. **History & Development** : Introduction; Discovery of Microbes; Pasteur & Fermentation; Growth of Industrial Fermentation
3. **Microbial Transformation** : Introduction; Types of Bioconversion
4. **Industrial Sterilization** : Introduction; Principles of Sterilization; Equipment of Sterilization; Sterilization of Production Media; Sterilization of Air
5. **Types of Fermentation** : Introduction; Factors involved in Fermenter Design; Differences between Biochemical and Chemical Processes
6. **Microbiological Assay** : Introduction; History; Microbiological assay of Vitamins and Amino Acids; Microbiological Assay of Antibiotics; Microbiological Assay of Trace Elements; Advantages and Disadvantages; Automation
7. **Antibiotics** : Introduction; Classification of Antibiotics
8. **Organic Acids**: Introduction; Citric acid; lactic acid; Acetic Acid [Vinegar]; Gluconic acid
9. **Enzymes** : Introduction; General aspect of Enzyme Production; Amylase; Protease; Other Enzymes
10. **Fermented Food Products**: Introduction; Some Important Fermented Foods; Food Spoilage; Preservation of Foods
11. **IPR** : Broad Outline & General Concept

Practical Classes

1 month [at ALONA, Kolkata Biotech Park, Sector V; 3 days a week; 4 hr /day ----- **12 classes in one month**].

Training Modules:

- Industrial Fermentation
 - i. Production of Apple Cedar Vinegar
 - ii. Production of Commercial Grade Acetic Acid
 - iii. Fermented Dairy & Bakery Products
- Production of Pre-and Pro-Biotic Gummies
- Development of Bioplastic using Bacterial enzyme : Initial Concept
- Biohydrometallurgy : Broad Overview

- ✓ Make yourself industry ready
- ✓ Bridge the gap between your academic knowledge & industrial requirement
- ✓ Work on your critical thinking, problem-solving, and industrial adaptability
- ✓ Develop industrial and occupational skills, learn instrument operation, bio-process maintenance
- ✓ Become more resilient and adaptive to the change and challenges in the job market
- ✓ Be more adaptable, dependable, productive, and efficient job aspirant with expandable career opportunities.
- ✓ Learn the skill ~ Start your own business



Success doesn't come. You have to achieve it.