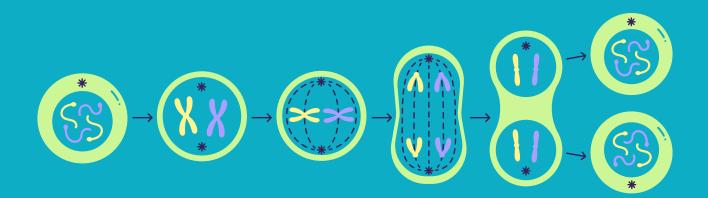




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# FOUNDATIONS IN MICROBIOLOGY, MOLECULAR BIOLOGY, CELL CULTURE & SOFT SKILLS

8 MAY – 4 JUNE 2025 , AGRI BIOTECH FOUNDATION, RAJENDRA NAGAR, HYDERABAD



#### **BUILD YOUR CAREER IN LIFE SCIENCES**

Develop essential laboratory skills, technical expertise, and professional competencies

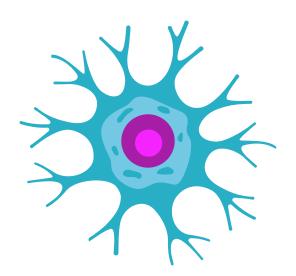
For: Bachelor's, Master's, Industry Professionals and Ph.D. students in Life Sciences

This intensive one-month course provides a comprehensive introduction to the fundamentals of microbiology, molecular biology, and cell culture techniques along with soft skills needed to job market.

Through a combination of lectures, hands-on laboratory sessions, and interactive discussions, participants will gain a solid theoretical understanding and practical skills in these essential areas of life sciences.

### WHY CHOOSE THIS PROGRAM?

- Comprehensive curriculum covering microbiology, molecular biology, and cell culture
- Hands-on laboratory experience with cutting-edge techniques and equipment
- Career development through professional soft skills training
- Expert instruction from experienced faculty members
- Industry-relevant skills that enhance employability
- Networking opportunities with professionals in the field



### WHAT YOU'LL LEARN:

**Technical Skills:** 

- Microbial culture techniques and analysis
- DNA isolation, PCR, and gel electrophoresis
- Cell culture maintenance and advanced applications
- Laboratory safety and aseptic techniques
- Experimental design and data analysis

**Professional Skills:** 

- Scientific literature searching and evaluation
- Laboratory notebook
   maintenance
- Career development strategies
- Personal branding and CV building
- Using AI tools for scientific research

A detailed syllabus with expanded technical skills coverage will be shared soon

# DETAILED COURSE STRUCTURE

	Theory	Hands-on
Week 1: Introduction to Microbiology & Soft Skills	<ul> <li>Literature Search</li> <li>Generative AI for sciences</li> <li>Laboratory book maintenance</li> <li>Instrumentation</li> <li>Fundamentals of Lab experimentation (basic principles)</li> <li>CV Making</li> <li>Linkedin Profile</li> <li>Personal Branding</li> <li>Job-searching strategies and career building</li> <li>History and scope of microbiology</li> <li>Data Analysis and Statistics</li> <li>Microbial diversity (bacteria, archaea, fungi, viruses)</li> <li>Microbial structure and function</li> <li>Microbial growth and nutrition</li> <li>Microbial control and sterilization</li> </ul>	<ul> <li>Showing basic instruments and understanding the principles</li> <li>Buffers</li> <li>Microscopy and staining techniques</li> <li>Aseptic techniques</li> <li>Bacterial culture and growth analysis</li> <li>Antibiotic susceptibility testing</li> </ul>
Week 2: Molecular Biology Fundamentals	<ul> <li>DNA structure and replication</li> <li>Gene expression and regulation</li> <li>Recombinant DNA technology</li> <li>Polymerase chain reaction (PCR) - Real-Time PCR</li> <li>Gel electrophoresis</li> </ul>	<ul> <li>DNA isolation and purification</li> <li>PCR amplification</li> <li>Gel electrophoresis and DNA visualization</li> <li>Plasmid DNA isolation and analysis</li> </ul>

# DETAILED COURSE STRUCTURE

	Theory	Hands-on
Week 3: Introduction to Cell Culture	<ul> <li>Principles of cell culture</li> <li>Aseptic techniques and safety considerations</li> <li>Cell culture media and reagents</li> <li>Cell growth and maintenance</li> <li>Cell passaging and cryopreservation</li> </ul>	<ul> <li>Aseptic techniques and cell culture setup</li> <li>Cell counting and viability assessment</li> <li>Cell passaging and subculturing</li> <li>Cryopreservation and thawing of cells</li> </ul>
Week 4: Advanced Cell Culture Techniques and Applications	<ul> <li>Cell differentiation and transformation</li> <li>Cell-based assays and applications</li> <li>Transfection and gene expression analysis</li> <li>Cell imaging techniques</li> </ul>	<ul> <li>Cell transfection and gene expression analysis</li> <li>Cell staining and microscopy</li> <li>Cell-based assays (e.g., proliferation, cytotoxicity)</li> </ul>



# EXPERT FACULTY

**Project Head:** Dr. M V Jagannadham is a distinguished scientist with a Ph.D. in Life Sciences from Jawaharlal Nehru University, New Delhi. He served as Chief Scientist at CCMB, Hyderabad, visiting professor, University of Hyderabad and currently scientific committee member of FSSAI, New Delhi, specializing in mass spectrometry, protein chemistry and proteomics.

Industry experts will share practical insights and cutting-edge applications in biotechnology, providing participants with valuable industry perspectives and networking opportunities.

Experienced faculty members with expertise in microbiology, molecular biology, and cell culture. This one-month course will provide students with a strong foundation in microbiology, molecular biology, and cell culture techniques, enabling them to pursue further studies or research in these exciting fields.

#### **REGISTRATION INFORMATION**

#### **Program Fee**

- Students (Undergraduates/Graduates/Postgraduates) Rs. 10,000
- Faculties/Ph.Ds and Postdocs -Rs. 15,000
- Industry Professionals Rs. 20,000

#### Application Deadline: 1st May 2025

#### HOW TO APPLY

Complete the online application form and pay the registration fee at <u>https://biofaba.org.in/FABA\_Finishing\_School\_Reg.php</u>

#### **CONTACT INFORMATION**

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Limited upto 20 seats only. Apply early to secure your spot in this careerenhancing program.



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# ABOUT ORGANISERS

## Federation of Asian Biotech Associations (FABA):

The <u>Federation of Asian Biotech Associations</u> (FABA) is a non-profit organization established in 2004 for providing a platform for academy, industry, and government bodies. FABA has launched the FABA academy to bridge the gap between academy and industry in human resources development by providing professional development programs to science graduates (<u>https://biofaba.org.in/</u>).

### Indian Immunologicals Limited (IIL):

Indian Immunologicals Ltd (IIL) is the market leader in veterinary and human biologicals in India. It manufactures over 150+ products. IIL operates one of the largest plants in the world for veterinary vaccines. IIL has adequate infrastructure and cold chain distribution capability to reach out to various parts of India and world market. This flexibility in logistics has ensured many products of IIL occupy top slots in the market. IIL is a major player in the human vaccine market in India, focusing on the pediatric and rabies vaccine segments. IIL is also a major supplier of pediatric vaccines to India's large Universal Immunization Program. <u>www.indimmune.com</u>