

Molecular Biotechnology

The Molecular Biotechnology major focuses on the application of molecular biology techniques to develop technologies and products that address health, environmental, and industrial challenges. Students learn about genetic engineering, bioprocessing, molecular diagnostics, and the development of pharmaceutical products. Graduates are well-equipped for careers in biotechnology research, product development, and diagnostics. Typical industry sectors include biotechnology, pharmaceuticals, healthcare, agriculture, and environmental science, where they contribute to advancements in medicine, sustainability, and agriculture.

Job Title Examples:

- Research Assistant
- Laboratory Technician
- Biotech Production Assistant
- Molecular Biologist
- Quality Control Analyst
- Clinical Research Coordinator
- Genetic Technologist
- Bioprocessing Technician
- Regulatory Affairs Assistant
- Research Associate

Hard and Soft Skills Needed:

Hard Skills:

1. Molecular Cloning
2. PCR (Polymerase Chain Reaction)
3. Cell Culture Techniques
4. Protein Analysis
5. Biochemical Assays

Soft Skills:

1. Attention to Detail
2. Problem-Solving
3. Communication
4. Teamwork
5. Time Management

Further Education/Training Required and/or Suggested:

A BS in Molecular Biotechnology qualifies students for entry-level roles, but additional training or certifications can enhance career prospects:

To Enter the Field:

1. Good Laboratory Practice (GLP) Certification:
 - For roles in research and laboratory settings.
2. First Aid/CPR Certification:
 - Often required for laboratory or clinical work.

To Advance:

1. Graduate Degree (e.g., MS or PhD):
 - For advanced research, academic, or specialized industry roles.
2. Certified Clinical Research Coordinator (CCRC):
 - For those interested in clinical research.
3. Certified Biotech Professional (CBP):
 - For advanced positions in the biotech industry.

Summary:

Certifications like GLP, CCRC, or graduate study can enhance career advancement in molecular biotechnology.

Professional or Student Associations:

- American Society for Biochemistry and Molecular Biology (ASBMB)
- International Society for Stem Cell Research (ISSCR)