



Master Program Molecular Biology  
University of Applied Science Gelsenkirchen  
Campus Recklinghausen

**1st Semester**

- Biochemistry and Signal Transduction
- Genetic Engineering Methods
- Molecular Targeting Molecular Biophysics
- Bio Nanotechnology
- Molecular Design and Drug Discovery
- Biomathematics

**2nd Semester**

mandatory for Main Focus *Medical Biology and Biochemistry*

- Drug Development
- Protein Chemistry
- Clinical Virology
- Bio Analytics and Molecular Diagnostics
- Lab Project

mandatory for Main Focus *Bioinformatics*

- Bio Modeling and Bio Simulation
- Systemsbiology
- Computational Analysis of Biological Sequences
- Scientific Computing
- Lab Project

mandatory for Main Focus *Bio Nanotechnology and Bioengineering*

- Bio Nano Materials
- Metabolic engineering
- Methods and advanced Areas of Bio Nanotechnology
- Industrial Biotechnology
- Lab Project

optional

- Biological Security and GMP
- Evolution and Philosophy of Science
- Clinical Studies and Patent Management

**3rd Semester**

- Research Project (intern or external)
- Research Seminar



**Westfälische  
Hochschule**

Gelsenkirchen Bocholt Recklinghausen

## Last Semester

- Master Thesis
- Final Oral E