

# Biotechnology

International Master's Programme (M. Sc.) – Regular Duration: 3 Semesters

|                       | Cell Biology   | Microbiology                                       | Bioanalytics  | Laboratory Diagnostics  |
|-----------------------|--|--|---|---|
| 1. Semester<br>Summer | Cells and Tissues – Culture and Evaluation<br>12771 8 CP | Methods in Synthetic Microbiology<br>12777 8 CP    | Methods in Nanobiotechnology<br>12792 8 CP                  | Methods in Laboratory Diagnostics<br>12797 8 CP                       |
|                       | Bioengineering of Animal/Human Cells<br>12772 8 CP       | Eukaryotic Microorganisms/Microalgae<br>12776 8 CP | Purification and Characterisation of Proteins<br>12793 8 CP | Methods in Bioanalytics<br>12798 8 CP                                 |
|                       | Molecular Dynamics of the Cell<br>12175 5 CP             | Synthetic Microbiology<br>12764 5 CP               | Proteostasis<br>11858 5 CP                                  | Introduction to Laboratory Diagnostics<br>12768 5 CP                  |
|                       | Tissue Engineering<br>11825 5 CP                         | Compulsory Elective Module<br>5 CP                 | Compulsory Elective Module<br>5 CP                          | Compulsory Elective Module<br>5 CP                                    |
|                       | Compulsory Elective Module<br>5 CP                       | Compulsory Elective Module<br>5 CP                 | Compulsory Elective Module<br>5 CP                          | Compulsory Elective Module<br>5 CP                                    |
| 2. Semester<br>Winter | Genetic Engineering of Eukaryotic Cells<br>12773 8 CP    | Metabolic Analysis and Engineering<br>12791 8 CP   | Methods in Enzyme Technology<br>12794 8 CP                  | Molecular Biology: Principles, Methods and Applications<br>12799 8 CP |
|                       | Molecular Biotechnology and Society<br>14156 5 CP        | Microbial Metabolism<br>12800 5 CP                 | Nanobiotechnology<br>12765 5 CP                             | Point of Care Diagnostic<br>12767 5 CP                                |
|                       | Compulsory Elective Module<br>5 CP                       | Enzyme Technology<br>12763 5 CP                    | Compulsory Elective Module<br>5 CP                          | Immunology<br>11795 5 CP  |
|                       | Compulsory Elective Module<br>5 CP                       | Compulsory Elective Module<br>5 CP                 | Compulsory Elective Module<br>5 CP                          | Compulsory Elective Module<br>5 CP                                    |
|                       | General Studies<br>6 CP                                  | General Studies<br>6 CP                            | General Studies<br>6 CP                                     | General Studies<br>6 CP   |
| 3. Semester<br>Summer | Master Thesis<br>12770 30 CP                             | Master Thesis<br>12770 30 CP                       | Master Thesis<br>12770 30 CP                                | Master Thesis<br>12770 30 CP  |
| M                     | 90 ECTS Credit Points                                    | 90 ECTS Credit Points                              | 90 ECTS Credit Points                                       | 90 ECTS Credit Points   |

Five-digit Codes: Module Numbers

 Lab Courses

 Mandatory Prerequisites

# Biotechnology

International Master's Programme (M. Sc.) – Regular Duration: 4 Semesters

|                       | Cell Biology   | Microbiology  | Bioanalytics  | Laboratory Diagnostics  |
|-----------------------|--|---|---|---|
| 1. Semester<br>Winter | Introduction to Scientific Work<br>12740 6 CP            |   |   |   |
|                       | Research Internship<br>12739 24 CP                       |   |   |   |
| 2. Semester<br>Summer | Cells and Tissues – Culture and Evaluation<br>12771 8 CP | Methods in Synthetic Microbiology<br>12777 8 CP     | Methods in Nanobiotechnology<br>12792 8 CP                  | Methods in Laboratory Diagnostics<br>12797 8 CP                       |
|                       | Bioengineering of Animal/Human Cells<br>12772 8 CP       | Eukaryotic Micro-organisms/Microalgae<br>12776 8 CP | Purification and Characterisation of Proteins<br>12793 8 CP | Methods in Bioanalytics<br>12798 8 CP                                 |
|                       | Molecular Dynamics of the Cell<br>12175 5 CP             | Synthetic Microbiology<br>12764 5 CP                | Proteostasis<br>11858 5 CP                                  | Introduction to Laboratory Diagnostics<br>12768 5 CP                  |
|                       | Tissue Engineering<br>11825 5 CP                         | Compulsory Elective Module<br>5 CP                  | Compulsory Elective Module<br>5 CP                          | Compulsory Elective Module<br>5 CP                                    |
|                       | Compulsory Elective Module<br>5 CP                       | Compulsory Elective Module<br>5 CP                  | Compulsory Elective Module<br>5 CP                          | Compulsory Elective Module<br>5 CP                                    |
| 3. Semester<br>Winter | Genetic Engineering of Eukaryotic Cells<br>12773 8 CP    | Metabolic Analysis and Engineering<br>12791 8 CP    | Methods in Enzyme Technology<br>12794 8 CP                  | Molecular Biology: Principles, Methods and Applications<br>12799 8 CP |
|                       | Molecular Biotechnology and Society<br>14156 5 CP        | Microbial Metabolism<br>12800 5 CP                  | Nanobiotechnology<br>12765 5 CP                             | Point of Care Diagnostic<br>12767 5 CP                                |
|                       | Compulsory Elective Module<br>5 CP                       | Enzyme Technology<br>12763 5 CP                     | Compulsory Elective Module<br>5 CP                          | Immunology<br>11795 5 CP  |
|                       | Compulsory Elective Module<br>5 CP                       | Compulsory Elective Module<br>5 CP                  | Compulsory Elective Module<br>5 CP                          | Compulsory Elective Module<br>5 CP                                    |
|                       | General Studies<br>6 CP                                  | General Studies<br>6 CP                             | General Studies<br>6 CP                                     | General Studies<br>6 CP   |
| 4. Semester<br>Summer | Master Thesis<br>12770 30 CP                             | Master Thesis<br>12770 30 CP                        | Master Thesis<br>12770 30 CP                                | Master Thesis<br>12770 30 CP  |
| <b>M</b>              | <b>120 ECTS Credit Points</b>                            | <b>120 ECTS Credit Points</b>                       | <b>120 ECTS Credit Points</b>                               | <b>120 ECTS Credit Points</b>   |

Five-digit Codes: Module Numbers

Lab Courses

→ Mandatory Prerequisites