

## CURRICULUM B.ENG. ROBOTICS

### DISTANCE LEARNING

| Semester    |              |              | Module   | Course Code                            | Course   | ECTS                                   | Type of Exam                                |                     |
|-------------|--------------|--------------|--|--|--|--|---|---------------------|
| FT          | PT I         | PT II        |  |  |  |  |   |                     |
| 1. Semester | 1. Semester  | 1. Semester  | Introduction to Robotics                         | DLBROI01_E                             | Introduction to Robotics                         | 5                                      | Exam or Written Assignment                  |                     |
|             |              |              | Introduction to Academic Work                    | DLBCSIW01                              | Introduction to Academic Work                    | 5                                      | Basic Workbook                              |                     |
|             |              |              | Scientific and technical fundamentals            | DLBINGAG01_E                           | Scientific and technical fundamentals            | 5                                      | Exam  |                     |
|             | 2. Semester  | 2. Semester  | 1. Semester                                      | Technical Drawing                      | DLBROTD01_E                                      | Technical Drawing                      | 5   | Exam                |
|             |              |              |  | Mathematics: Linear Algebra            | DLBDSMFLA01                                      | Mathematics: Linear Algebra            | 5   | Exam                |
|             |              |              |  | Mathematics II                         | DLBCSM201  | Mathematics II                         | 5   | Exam                |
| 2. Semester | 2. Semester  | 3. Semester  | Production Engineering                           | DLBDEAR01                              | Production Engineering                           | 5                                      | Exam  |                     |
|             |              |              | Introduction to Programming with Python          | DLBDSIPWP01                            | Introduction to Programming with Python          | 5                                      | Exam  |                     |
|             |              |              | Mathematics: Analysis                            | DLBDSMFC01                             | Mathematics: Analysis                            | 5                                      | Exam  |                     |
|             | 3. Semester  | 4. Semester  | 4. Semester                                      | Mechanics - Statics                    | DLBROMS01_E                                      | Mechanics - Statics                    | 5   | Exam                |
|             |              |              |  | Electrical Engineering                 | DLBINGET01-01_E                                  | Electrical Engineering                 | 5   | Exam                |
|             |              |              |  | Project: Design with CAD               | DLBROPDCAD01_E                                   | Project: Design with CAD               | 5   | Oral Project Report |
| 3. Semester | 4. Semester  | 5. Semester  | Sensor Technology                                | DLBROST01_E                            | Sensor Technology                                | 5                                      | Exam  |                     |
|             |              |              | Signals and Systems                              | DLBROSS01_E                            | Signals and Systems                              | 5                                      | Exam  |                     |
|             |              |              | Mechanics - Kinematics                           | DLBROMK01_E                            | Mechanics - Kinematics                           | 5                                      | Exam  |                     |
|             | 4. Semester  | 6. Semester  | 6. Semester                                      | Mechanics - Dynamics                   | DLBROMD01_E                                      | Mechanics - Dynamics                   | 5   | Exam                |
|             |              |              |  | Collaborative Work                     | DLBCSCW01  | Collaborative Work                     | 5   | Oral Assignment     |
|             |              |              |  | Programming with C/C++                 | DLBROEPRS01_E                                    | Programming with C/C++                 | 5   | Portfolio           |
| 4. Semester | 5. Semester  | 7. Semester  | Mechatronic Systems                              | DLBROMSY01_E                           | Mechatronic Systems                              | 5                                      | Exam  |                     |
|             |              |              | Control Systems Engineering                      | DLBROCSE01_E                           | Control Systems Engineering                      | 5                                      | Exam  |                     |
|             |              |              | Project: Modeling and Simulation of Robots       | DLBROPMSR01_E                          | Project: Modeling and Simulation of Robots       | 5                                      | Project Report                              |                     |
|             | 5. Semester  | 8. Semester  | 8. Semester                                      | Project: Introduction to Robot Control | DLBROPIRC01_E                                    | Project: Introduction to Robot Control | 5   | Project Report      |
|             |              |              |  | Embedded Systems                       | DLBROES01_E                                      | Embedded Systems                       | 5   | Exam                |
|             |              |              |  | Project: Robotics                      | DLBROPR01_E                                      | Project: Robotics                      | 5   | Oral Project Report |
| 5. Semester | 9. Semester  | 9. Semester  | Seminar: Human-Robot Interaction                 | DLBROSHRI01_E                          | Seminar: Human-Robot Interaction                 | 5                                      | Research Essay                              |                     |
|             |              |              | Project: Applied Robotics with Robotic Platforms | DLBROPARRP01_E                         | Project: Applied Robotics with Robotic Platforms | 5                                      | Oral Project Report                         |                     |
|             |              |              | Seminar: Robots and Society                      | DLBROSRS01_E                           | Seminar: Robots and Society                      | 5                                      | Research Essay                              |                     |
| 6. Semester | 10. Semester | 10. Semester | Safety of Industrial Plants and Machines         | DLBROSIPM01_E                          | Safety of Industrial Plants and Machines         | 5                                      | Exam  |                     |
|             |              |              | ELECTIVE A*                                      |  | e.g. Industrial Robotics and Automation          | 10                                     |   |                     |
|             |              |              | ELECTIVE B*                                      |  | e.g. Service Robotics                            | 10                                     |   |                     |
|             |              |              | ELECTIVE C*                                      |  | e.g. Introduction to Cognitive Robotics          | 10                                     |   |                     |
| 6. Semester | 11. Semester | 11. Semester | Bachelor Thesis                                  |  | Bachelor Thesis<br>Thesis Defense                | 9<br>1                                 | Bachelor Thesis<br>Presentation: Colloquium |                     |
|             |              |              | <b>Total</b>                                     |  |  | <b>180 ECTS</b>                        |   |                     |



You've already planned out exactly how your course schedule should look? Wonderful! The IU International University of Applied Sciences offers you the flexibility to choose any module you like from any semester. You can work on a number of modules at the same time or one by one.



At the beginning, choose modules that particularly interest you or that you can use directly in your job. This motivates you and gives you success right from the start.



A module with two courses consists of an introduction and a consolidation. In order to successfully complete a module, you must successfully pass both the introduction and the consolidation of the module within the framework of a module examination.



\* Electives: Choose three modules, every elective module can only be chosen once.

FT: Full-Time, 36 months  
PT I: Part-Time I, 48 months  
PT II: Part-Time II, 72 months



You can find more information about your degree program in the module handbook on our website.

| Elective A:  | Elective B:  | Elective C:  |
|--|--|--|
| Introduction to Cognitive Robotics<br>Industrial Robotics and Automation<br>Service Robotics | Industrial Robotics and Automation<br>Service Robotics<br>Introduction to Cognitive Robotics<br>AI Specialist<br>Autonomous Driving<br>Data Science and Deep Learning<br>Python for Software Engineering<br>IT Security<br>Mobile Software Engineering<br>Foreign Language Italian<br>Foreign Language French<br>German Language<br>Foreign Language Spanish | Introduction to Cognitive Robotics<br>Industrial Robotics and Automation<br>Service Robotics<br>Industrial Robotics and Automation<br>Service Robotics<br>Introduction to Cognitive Robotics<br>AI Specialist<br>Autonomous Driving<br>Data Science and Deep Learning<br>Python for Software Engineering<br>IT Security<br>Mobile Software Engineering<br>Foreign Language Italian<br>Foreign Language French<br>German Language<br>Foreign Language Spanish<br>Studium Generale |