



Państwowa Akademia  
Nauk Stosowanych  
w Krośnie

# **Course catalogue for Erasmus students**

## *Automatics and Robotics*

Academic year 2026/2027

## Winter semester 2026/2027

| Name of course                                  | Year of study                 | ECTS | Number of hours, form of classes                              | Language of the course | Form of credit |
|-------------------------------------------------|-------------------------------|------|---------------------------------------------------------------|------------------------|----------------|
| Polytechnic classes                             | Winter (1 <sup>st</sup> Year) | 2    | Laboratory (15h)                                              | PL/ENG                 | credit         |
| Physics 1                                       | Winter (1 <sup>st</sup> Year) | 4    | Lecture (15h),<br>Exercise classes (15h),<br>Laboratory (15h) | PL/ENG                 | credit         |
| Chemistry                                       | Winter (1 <sup>st</sup> Year) | 3    | Lecture (15h),<br>Exercise classes (15h),<br>Laboratory (15h) | PL/ENG                 | credit         |
| Engineering graphics and drawing                | Winter (1 <sup>st</sup> Year) | 4    | Lecture (15h),<br>Project classes (30h)                       | PL/ENG                 | credit         |
| Enterprise quality systems                      | Winter (1 <sup>st</sup> Year) | 2    | Lecture (15h),<br>Project classes (15h)                       | PL/ENG                 | credit         |
| Basics of automation                            | Winter (2 <sup>nd</sup> Year) | 5    | Lecture (30h),<br>Exercise classes (15h),<br>Laboratory (15h) | PL/ENG                 | exam           |
| Numerical methods                               | Winter (2 <sup>nd</sup> Year) | 4    | Lecture (15h),<br>Laboratory (30h)                            | PL/ENG                 | credit         |
| Environmental management                        | Winter (2 <sup>nd</sup> Year) | 1    | Lecture (5h),<br>Project classes (10h)                        | PL/ENG                 | credit         |
| Manufacturing technology                        | Winter (2 <sup>nd</sup> Year) | 4    | Lecture (15h),<br>Laboratory (30h)                            | PL/ENG                 | credit         |
| Fundamentals of machine construction            | Winter (2 <sup>nd</sup> Year) | 4    | Lecture (15h),<br>Project classes (30h)                       | PL/ENG                 | credit         |
| Electrical Machines                             | Winter (2 <sup>nd</sup> Year) | 5    | Lecture (15h),<br>Exercise classes (15h),<br>Laboratory (15h) | PL/ENG                 | exam           |
| Thermodynamics and fluid mechanics              | Winter (2 <sup>nd</sup> Year) | 5    | Lecture (30h),<br>Exercise classes (15h),<br>Laboratory (15h) | PL/ENG                 | exam           |
| Microprocessor techniques                       | Winter (3 <sup>rd</sup> Year) | 4    | Lecture (15h),<br>Laboratory (15h)<br>Project classes (15h)   | PL/ENG                 | credit         |
| Control theory                                  | Winter (3 <sup>rd</sup> Year) | 4    | Lecture (15h),<br>Exercise classes (15h),<br>Laboratory (15h) | PL/ENG                 | exam           |
| Process Automation                              | Winter (3 <sup>rd</sup> Year) | 4    | Lecture (15h),<br>Project classes (30h)                       | ENG                    | credit         |
| Technical diagnostics                           | Winter (3 <sup>rd</sup> Year) | 3    | Lecture (15h),<br>Laboratory (30h)                            | PL/ENG                 | credit         |
| Project Management                              | Winter (3 <sup>rd</sup> Year) | 2    | Lecture (15h),<br>Project classes (15h)                       | PL/ENG                 | credit         |
| Analysis and design of electrical circuits      | Winter (3 <sup>rd</sup> Year) | 4    | Lecture (15h),<br>Project classes (30h)                       | PL/ENG                 | credit         |
| Design of electrical installations in buildings | Winter (3 <sup>rd</sup> Year) | 4    | Lecture (15h),<br>Project classes (30h)                       | PL/ENG                 | credit         |
| Energy networks and installations               | Winter (3 <sup>rd</sup> Year) | 4    | Lecture (15h),<br>Exercise classes (30h)                      | PL/ENG                 | credit         |

## Spring semester 2026/2027

| Name of course                                                                                 | Year of study                 | ECTS | Number of hours, form of classes                                                           | Language of the course | Form of credit |
|------------------------------------------------------------------------------------------------|-------------------------------|------|--------------------------------------------------------------------------------------------|------------------------|----------------|
| Differential Equations, Integral Transforms, and Operational Calculus for Automation Engineers | Spring (1 <sup>st</sup> Year) | 5    | Lecture (25h),<br>Exercise classes (35h)                                                   | PL/ENG                 | credit         |
| Physics 2                                                                                      | Spring (1 <sup>st</sup> Year) | 4    | Lecture (15h),<br>Exercise classes (15h),<br>Laboratory (15h)                              | PL/ENG                 | exam           |
| Mechanics and strength of materials                                                            | Spring (1 <sup>st</sup> Year) | 4    | Lecture (30h),<br>Exercise classes (15h),<br>Laboratory (15h)                              | PL/ENG                 | exam           |
| Electrotechnics                                                                                | Spring (1 <sup>st</sup> Year) | 4    | Lecture (30h),<br>Exercise classes (15h),<br>Laboratory (15h)                              | PL/ENG                 | exam           |
| Informatic                                                                                     | Spring (1 <sup>st</sup> Year) | 3    | Lecture (15h),<br>Laboratory (30h)                                                         | PL/ENG                 | credit         |
| Fundamentals of metrology                                                                      | Spring (1 <sup>st</sup> Year) | 3    | Lecture (15h),<br>Laboratory (30h)                                                         | PL/ENG                 | credit         |
| Entrepreneurship and protection of intellectual property                                       | Spring (2 <sup>nd</sup> Year) | 1    | Lecture (10h),<br>Project classes (10h)                                                    | PL/ENG                 | credit         |
| Measurement methods and techniques                                                             | Spring (2 <sup>nd</sup> Year) | 3    | Lecture (15h),<br>Laboratory (30h)                                                         | PL/ENG                 | credit         |
| Electronics                                                                                    | Spring (2 <sup>nd</sup> Year) | 4    | Lecture (15h),<br>Exercise classes (15h)<br>and laboratory (15h),<br>Project classes (15h) | PL/ENG                 | exam           |
| Signal processing and analysis                                                                 | Spring (2 <sup>nd</sup> Year) | 3    | Lecture (15h),<br>Exercise classes (15h),<br>Laboratory (15h)                              | PL/ENG                 | credit         |
| Structural and object-oriented programming                                                     | Spring (2 <sup>nd</sup> Year) | 3    | Lecture (15h),<br>Laboratory (30h)                                                         | PL/ENG                 | credit         |
| Circuit theory                                                                                 | Spring (2 <sup>nd</sup> Year) | 3    | Lecture (15h),<br>Laboratory (30h)                                                         | PL/ENG                 | exam           |
| Computer-aided design                                                                          | Spring (2 <sup>nd</sup> Year) | 3    | Lecture (15h),<br>Project classes (30h)                                                    | PL/ENG                 | credit         |
| Electric drives                                                                                | Spring (3 <sup>rd</sup> Year) | 3    | Lecture (15h),<br>Exercise classes (15h),<br>Laboratory (15h)                              | PL/ENG                 | credit         |
| PLC controllers and SCADA systems                                                              | Spring (3 <sup>rd</sup> Year) | 4    | Lecture (30h),<br>Laboratory (30h)                                                         | PL/ENG                 | exam           |
| Neuronal networks                                                                              | Spring (3 <sup>rd</sup> Year) | 2    | Lecture (15h),<br>Laboratory (15h)                                                         | PL/ENG                 | credit         |
| Exploitation of machines and energy installations                                              | Spring (3 <sup>rd</sup> Year) | 2    | Lecture (15h),<br>Exercise classes (15h)                                                   | PL/ENG                 | credit         |
| Generation and transmission of energy                                                          | Spring (3 <sup>rd</sup> Year) | 3    | Lecture (15h),<br>Exercise classes (15h),<br>Laboratory (15h)                              | PL/ENG                 | credit         |
| Control measurements in automation                                                             | Spring (3 <sup>rd</sup> Year) | 2    | Lecture (15h),<br>Laboratory (15h)                                                         |                        |                |
| Renewable Sources of Energy                                                                    | Spring (3 <sup>rd</sup> Year) | 3    | Lecture (15h),<br>Project classes (30h)                                                    |                        |                |
| Basics of power engineering                                                                    | Spring (3 <sup>rd</sup> Year) | 2    | Lecture (15h),<br>Project classes (15h)                                                    | ENG                    | credit         |

|                                           |                                  |   |                       |        |        |
|-------------------------------------------|----------------------------------|---|-----------------------|--------|--------|
| Engineering project in the power industry | Spring<br>(3 <sup>rd</sup> Year) | 2 | Project classes (30h) | PL/ENG | credit |
|-------------------------------------------|----------------------------------|---|-----------------------|--------|--------|

## Optional courses

Courses are implemented in the winter semester and summer semester, provided a minimum of 5 students participate.

| Course name in English<br>(in Polish)      | Year of study,<br>semester of study in the cycle | Number of hours,<br>form of classes | ECTS | Form of credit | Language of the subject |
|--------------------------------------------|--------------------------------------------------|-------------------------------------|------|----------------|-------------------------|
| <b>Polish for Foreigners</b>               | For Erasmus students only                        | 15 class                            | 2    | credit         | ENG                     |
| <b>Introduction to Poland</b>              | For Erasmus students only                        | 15 class                            | 2    | credit         | ENG                     |
| <b>Lean management</b>                     | For Erasmus students only                        | 15 class                            | 2    | credit         | ENG                     |
| <b>Work improvements with AI solutions</b> | For Erasmus students only                        | 15 class                            | 2    | credit         | ENG                     |