

# Mechatronic Constructions

Field of study: Mechatronics

## Course summary:



The course is intended for mechatronic engineers who want to broaden their education in the area of mechatronic design. In the course, the synergistic combination of mechanical engineering, electronics and control engineering is integrated in the design process.

The course study on mechatronic design involves a theoretical and practical approach. It assures the balance between theory/analysis with modelling and hardware implementation in mechanics, electronics and computer applications in control. With a focus on these kinds of skills, education in mechatronic design can be seen as a prime career path for engineers of the future. One of the features which distinguishes mechatronic designers from others, is their ability for the replacement of some mechanical functions with electronic and software ones.

The main learning objective for mechatronic design is to teach students how to be able to design and investigate mechanical, electrical, and microcontroller systems and integrate them together. The students will understand the dynamics of the systems and will be able to apply it in modelling and in design of controllers.

Faculty of Mechanical Engineering and Management offers unique study course on mechatronic design aimed at educating engineers for the needs of sustainable industry. The Faculty has almost twenty years of experience in teaching of mechatronics, it possesses advanced equipment and experienced staff. This assures high-quality education.

### Semester 1

- Strength of Mechanical Construction
- Computer Based Control
- Applications of Mathematics in Engineering
- Technical Mechanics II
- Advanced Manufacturing Methods
- Use of smart materials
- Advanced Electronics
- Computational analysis of mechanical systems
- 32-bit microcontrollers
- Industrial Management

### Semestr 2

- Modelling in Mechatronics
- Dynamics of Mechatronic Devices
- Flexible Manufacturing Systems
- Networks and Visualization in Automation
- Devices Controlled Numerically
- Fluid systems electronically controlled
- Programming of CNC
- Programming of automation systems
- Diploma seminar
- Elective course 2x

### Semestr 3

- Technical Computer Science
- Basics of Optronics
- Digital Analysis of Signals
- Diploma seminar
- Elective course 2x



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<b>University</b>	Poznan University of Technology Poznan, POLAND
<b>Degree to be obtained</b>	Master of Science
<b>Programme website</b>	<a href="https://www.put.poznan.pl/en">https://www.put.poznan.pl/en</a>
<b>Contact</b>	International Relations Office Pl. M. Skłodowskiej-Curie 5 60-965 Poznan, Poland
<b>Phone</b>	+48 61 665 3544
<b>Fax</b>	+48 61 665 3956
<b>E-mail</b>	<a href="mailto:study@put.poznan.pl">study@put.poznan.pl</a>
<b>Language of instruction</b>	English
<b>ECTS points</b>	90
<b>Duration</b>	1.5 years (3 semesters)
<b>Programme begins</b>	end of February
<b>Programme ends</b>	end of June
<b>Deadline for application</b>	3 months before the course starts – end of November
<b>Education requirements</b>	English language – level B2 (Common European Framework), Bachelor of Science degree (or equivalent). Full list of the required documents is available at: <a href="https://www.put.poznan.pl/en">https://www.put.poznan.pl/en</a>
<b>Mode of instruction</b>	Lectures, classes, laboratory classes, projects, practice

