



**POZNAN
UNIVERSITY
OF TECHNOLOGY**

M.Sc. Programmes

Mechatronic Constructions

Field of study: Mechatronics

Course summary:

Semester 1

- Applications of Mathematics in Engineering
- Strength of the Mechanical Construction
- Physical Phenomena in Mechatronics
- Modelling of Materials
- Dynamics of Mechatronics Devices
- Computer Based Control
- Advanced Technical Mechanics
- Advanced Manufacturing Methods
- FEM in Design Analysis
- Intelligent Materials and Devices
- Industrial Management

Semester 2

- Digital Signal Processors
- Advanced Electronics
- Technical Mechatronics
- Basics of Optronics
- Networks and Visualization in Automation
- Devices Controlled Numerically
- Programming of CNC
- Programming of Computer Based Controllers
- Diploma Seminar
- Elective courses 2x

Semester 3

- Technical Computer Science
- Design of Electrohydraulic Valves
- Digital Analysis of Signals
- Diploma Seminar
- Elective courses 2x



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, control engineering is integrated in the design process.

The course study on mechatronic design involves a theoretical and practical level. 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. They 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 an 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; poses advanced equipment and experienced staff. This assures high-level of education.




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|---------------------------------|---|---|--|
| University | Poznan University of Technology Poznan, POLAND |  | |
| Degree to be obtained | Master of Science | | |
| Department | Faculty of Mechanical Engineering and Management | | |
| Address | Piotrowo 3 60-965 Poznan Phone: +48 61 665 2360 Fax: +48 61 665 2363 | | |
| Programme web site | http://www.put.edu.pl/ | | |
| Contact | Lifelong Learning and International Education Office Pl. M. Skłodowskiej-Curie 5 60-965 Poznan | | |
| Phone | +48 61 665 3544 | | |
| Fax | +48 61 665 3956 | | |
| E-mail | study@put.poznan.pl | | |
| Language of instruction | English | | |
| Tuition fee | EU citizens: free of charge NON-EU citizens: 2000 EUR per year | | |
| Registration fee | EU citizens: 85 PLN NON-EU citizens: 200 EUR | | |
| ECTS points | 90 | | |
| Duration | 1,5 years (3 semesters) | | |
| Programme begins | end of February | | |
| Programme ends | end of June | | |
| Deadline for application | 3 months before the course starts – end of November | | |
| Education requirements | English language – level B2 (Common European Framework), Bachelor's degree or its equivalent in engineering or applied sciences, with a qualification in mechatronics. Full list of the required documents is available at http://www.put.edu.pl/ | | |
| Mode of instruction | Lectures, classes, laboratory classes, projects, practice | | |