



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Practice

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### Course

Field of study

Biomedical engineering,

Area of study (specialization)

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Level of study

First-cycle studies

Form of study

full-time

Year/Semester

3/6

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

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### Number of hours

Lecture

0

Laboratory classes

0

Other (e.g. online)

160

Tutorials

0

Projects/seminars

0

### Number of credit points

4

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### Lecturers

Responsible for the course/lecturer:

PhD Lukasz Bernat

Responsible for the course/lecturer:

email: lukasz.bernat@put.poznan.pl

phone: 61 665-2422

Faculty of Mechanical Engineering

Piotrowo 3 street, 60-965 Poznan

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### Prerequisites

Knowledge: structured theoretical knowledge in the field of study



**Skills:** The ability to search for necessary information in literature, databases, catalogs. The ability to learn independently. Using information and communication techniques appropriate to the implementation of engineering tasks.

**Social Competence:** Understanding the need for lifelong learning. Understanding the societal impact of engineering activities. Understanding the need for team collaboration.

### Course objective

Awareness of the possibility of using theoretical knowledge in the conditions of a market economy. Paying attention to the complexity of processes taking place in industrial plants. Acquainting with interdisciplinary issues occurring in industrial practice. Understanding the functioning of the enterprise as an organization.

### Course-related learning outcomes

#### Knowledge

1. Understanding practical references in the field of design, manufacturing and management techniques.
2. Understanding the life cycle of mechatronic devices and systems.
3. Awareness of non-technical determinants of engineering activity.
4. Getting to know the principles of creating and developing forms of individual entrepreneurship.

#### Skills

1. Obtaining information from literature, databases and other properly selected sources (also in English) in the field of mechanics and machine construction as well as other engineering and technical issues in a selected organization.
2. Individual and team work on the assigned issue. Assessment of the work intensity of the task due to the adopted schedule.
3. Development and presentation of documentation on the implementation of an engineering task.
4. Understanding and applying the rules of work in an industrial environment with particular emphasis on safety.

#### Social competences

1. Understanding the need for self-education related to the development of technology.
2. Understanding the social and systemic effects of engineering activities.
3. Understand the importance of teamwork.
4. Understanding the need for creative action.



### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Detailed report of completed internships, questionnaires

### Programme content

General characteristics of the economic entity: formal and legal status, organizational structure, employment, subject of activity. Analysis of the production process: production assortment, technologies used, forms of production organization. Analysis of the production process on the example of the selected end product: design (cooperation with the sales department, methods and tools supporting design), material development, technological processes (technological operations, working time standardization, production devices), auxiliary processes (supply, storage and internal transport operations) company), quality control processes. Organization of work at the workplace: tasks performed at the workplace (types, number), spatial development plan of the workstation, organization of the workstation service (supply of materials and tools, transport, maintenance, repairs, quality control, issuing works for the position and accounting for the tasks performed) Organization of maintenance services and analysis of operational problems of production machines (failure description, actions taken, repair). Project to improve work at a workplace. Analysis of production practice for the topic of engineering thesis or analysis of problems - related to mechatronics - submitted for solution by the plant work, in consultation with the thesis supervisor, the topic of the diploma thesis made for the company.

### Teaching methods

Practical exercises in a selected company

### Bibliography

Basic

Additional

### Breakdown of average student's workload

	Hours	ECTS
Total workload	165	4,0
Classes requiring direct contact with the teacher	5	0,0
Student's own work (practical classes) <sup>1</sup>	160	4,0

<sup>1</sup> delete or add other activities as appropriate