



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Design of injection molds

Course

Field of study

Year/Semester

Mechanical Engineering

1/2 or 2/3

Area of study (specialization)

Profile of study

Design of machines and devices

general academic

Level of study

Course offered in

Second-cycle studies

polish

Form of study

Requirements

full-time

elective

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

15

Tutorials

Projects/seminars

15

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

dr inż. Krzysztof Mrozek

Responsible for the course/lecturer:

Prerequisites

Knowledge: Basic knowledge of mechanics, automatics, theory of mechanisms and knowledge of engineering graphics, CAD systems.

Skills: Can develop solid body model in 3D CAD system. Has the ability to use literature (gaining knowledge from indicated sources) and the Internet.

Social competencies:

- Understanding the need to acquire new knowledge,
- understanding the collective effects of engineering activities,
- understanding the need for teamwork.

Course objective

Understanding theoretical and practical issues related to the construction of injection molds and the basics of injection molding technology



Course-related learning outcomes

Knowledge

He has detailed knowledge of the tool for plastics processing including design, technology and operation of injection molds. - [K_W09, K_W10, K_W11]

Skills

He can design and select engineering materials, can develop opinions on material selection and technology of product realization, after discussing with designers he can indicate how to correct the existing material solution and make decision, evaluate the properties and optimum use of materials, select material for concrete machine parts, determine the cause of damage to machine parts, evaluate the cost of used materials. [K_U12]

Social competences

1. Correctly identifies and resolves dilemmas related to the profession - [K_K05]
2. Can think and act in a creative and entrepreneurial way - [K_K06]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Evaluation of the project based on the analysis of the presented concepts and selection of the best solution, material selection, 3D and 2D documentation.

Examination

Programme content

- basics of injection molding technology,
- problems related to plastics processing,
- the importance of correctness of the injection mold construction on the course of the manufacturing process,
- design of individual components of injection molds,
- technology of manufacturing and selection of parts for the design of injection molds,
- latest trends in injection mold design.

Teaching methods

Lecture: lecture illustrated by a multimedia presentation containing the discussed program content

Project: independent student work, design consultations, discussion

Bibliography



Basic

1. Zawistowski H. Frenkler D.: Konstrukcja form wtryskowych do tworzyw termoplastycznych, WNT Warszawa, 2001.
2. Kazmer D. O.: Injection mold design engineering, CHV Munchen 2007.
3. Menges G., Michaeli W., Mohren P.: How to make injection molds, CHV Munchen, 2001

Additional

1. Unger P.: Gastrow injection molds. 130 proven designs. CHV Munchen, 2006.
2. Malloy R. A.: Plastic part design for injection molding, CHV Munchen 2010.

Breakdown of average student's workload

	Hours	ECTS
Total workload	45	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	25	1

¹ delete or add other activities as appropriate