



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Organization of production plant

Course

Field of study

Management and Production Engineering

Area of study (specialization)

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

4/8

Profile of study

general academic

Course offered in

Polish

Requirements

elective

Number of hours

Lecture

10

Laboratory classes

8

Other (e.g. online)

Tutorials

Projects/seminars

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

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Faculty of Mechanical Engineering

Piotrowo 3 st., 60-965 Poznań

Responsible for the course/lecturer:

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Faculty of Mechanical Engineering

Piotrowo 3 st., 60-965 Poznań

Prerequisites

The student should have a basic knowledge of manufacturing techniques and production management.

Course objective

Student should have wide introduction with production systems in material processing technologies. Acquiring the skills to choose the method and elements of the production system depending on the manufactured product.

Course-related learning outcomes

Knowledge



The student has knowledge about manufacturing technologies mainly used in the machinery industry. It applies to metallurgy and foundry processes and plastics processing.

The student has knowledge about the typical processes in machine construction.

Skills

The student is able to determine the area of application of individual manufacturing technologies. He can choose the technology suitable for the part and justify the choice.

Social competences

The student know how to set priorities related to production preparation activities. Understand technical and non-technical conditions of the technology used.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture

Written exam at the end of the semester, (credit in case of obtaining at least 50,1% correct answers).

Laboratory classes

Passing on the basis of written test performed at the end of the semester. All laboratory exercises must be passed with positive note.

Programme content

Lecture

Characteristics of selected machines and devices used in foundries. Box and boxless technological lines. Production cells of die-casting and high-pressure die-casting technology. Selection of technological casting technology. The choice of technology due to the size of the production series. Designing a production system for nest and stream production. Consequences of the adopted production technology on the functioning of the production plant (internal transport, efficiency, rhythmicity of production). Designing the production process on the technological line for selected products.

Preparation of documentation in plastic production systems. Preparation and circulation of raw material in processing by injection technology and extrusion of polymeric materials. Quick mould change procedure. Injection molding machines series, manufacturing cell equipment, manipulators. Calculations of the injection mold cavities and selection of the injection molding machine size in relation to the required production efficiency. Technological lines for extrusion of profiles with printing. Characteristics of devices in plastic profile production lines.

Laboratory classes



Understanding the functioning of selected production plants. Organizational structure of the enterprise. Analysis of production preparation (organizational preparation of production, operation of raw materials warehouses for production). Enterprise internal transport. Arrangement of production and auxiliary stations (storage fields, technological devices warehouses). Influence of the process of changing technological stands on efficiency. Finished goods packaging process, storage.

Teaching methods

Lecture: multimedia presentation illustrated with examples given on a board

Laboratory classes: Understanding the functioning of selected production plants (production cells and lines).

Bibliography

Basic

1. Fedoryszyn A., Mechanizacja i automatyzacja wywarzania odlewów w formach piaskowych. Linie odlewnicze, Wydawnictwo AGH, Kraków 2015.
2. Chudzikiewicz R., Mechanizacja i automatyzacja odlewni, Wydawnictwa Naukowo-Techniczne, Warszawa, 1980.
3. Frącz W., Krywult B., Projektowanie i wytwarzanie elementów z tworzyw sztucznych. Oficyna wydawnicza Politechniki Rzeszowskiej, Rzeszów 2018.
4. Zawistowski H., Przygotowanie i nadzór produkcji wyrobów wtryskiwanych, PLASTECH Wyd. Poradników i Książek Technicznych, Reguły 2005.
5. Wilczyński K. (red.), Przetwórstwo tworzyw sztucznych, Oficyna wydawnicza Politechniki Warszawskiej 2018.

Additional

1. Fedoryszyn A., Smyksy K., Ziółkowski E., Maszynoznawstwo odlewnicze. Laboratorium, Uczelniane Wyd. Naukowo-Dydaktyczne AGH, Kraków 2008.
2. Perzyk M. i inni, Odlewnictwo. WNT, Warszawa, 2000
3. Samsonowicz Z., Automatyzacja procesów odlewniczych, WNT, Warszawa, 1985
4. Wilczyński K. (red.), Wybrane zagadnienia przetwórstwa tworzyw sztucznych, Ofic. Wyd. Politechniki Warszawskiej, Warszawa, 2011.
5. Saechtling H., Poradnik Tworzyw Sztucznych, Wydawnictwa Naukowo-Techniczne, Warszawa 2007.



Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	35	1,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	40	1,5

¹ delete or add other activities as appropriate