COURSE DESCRIPTION CARD - SYLLABUS

Course name
Metallurgy [S1IBio1E>MET]

Course

Field of study
Biomedical Engineering

Year/Semester
2/3

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
English

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

Coordinators

dr inż. Dariusz Bartkowski
dariusz.bartkowski@put.poznan.pl

Lecturers

Prerequisites

Basic in the field of chemistry and physics of solid, liquid and gas state; logical thinking, use of information sources (library, internet); understanding the need to learn and acquire new knowledge.

Course objective

Knowledge of basic phenomena and processes related to obtaining metal materials.

Course-related learning outcomes

Knowledge:
1. Identify the basic physical and chemical phenomena occurring in metallurgy
2. Describe the relationship between basic metallurgical processes and their effects
3. Describe the specificity of metallurgical

Skills:
1. Student has the ability to self-study.

Social competences:

1. Understands the need for lifelong learning; is open to cooperation with specialists from other (related) fields
2. Willingness to exchange views on professional topics

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written test carried out on the end of the term (in case of a credit min. 50.1% correct). Up to 50.0% - Unsatisfactory (2.0) = F, from 50.1% to 60.0% - Satisfactory (3.0) = E, from 60.1% to 70.0% - Satisfactory plus (3,5) = D, from 70.1 to 80 - Good (4.0) = C, from 80.1% to 90.0% - Good plus (4,5) = B, from 90.1% - Very good (5,0) = A.

Programme content

Lecture:
Stages of producing metals and technical alloys. Raw materials used in metallurgical processes. Ores, their characteristics, purposes and methods of processing. Preliminary metallurgical processes and their effects. Raw (primary) metal and its characteristic properties. Classification of basic metal alloys. Contamination in liquid metals and alloys, their sources, form of occurrence and impact on the quality of the material. Refining treatments - their purpose, course and results. Examples of the production of technical alloys of ferrous and non-ferrous metals (e.g. titanium alloys).

Course topics

none

Teaching methods

Lecture with the use of multimedia presentations.

Bibliography

Basic:
1. Szweycer M., Nagolska D.: Metalurgia i odlewnictwo. Wyd. PP, Poznań 2002

Additional:
1. Górny Z. :Odlewnicze stopy metali nieżelaznych. WNT , Warszawa 1992

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	10	0,50