Information sheet for the course: Technology of Material Processing I

University: Alexander Dubček University of Trenčín

Faculty: Faculty of Industrial Technologies in Púchov

Course unit code: MI-PV-B-6	**Course unit title:** Technology of Material Processing I

Form, scope and method of educational activity:
Form of study: Lecture / Seminar / Laboratory tutorial
Recommended number of lessons (hours):
Weekly: 2 / 0 / 2 **During the semester:** 24 / 0 / 24 **Method of study:** attendance method

Number of credits: 5

Recommended semester: 2.

Degree of study: The 1st degree of study

Course prerequisites:

Assessment methods:
Assessment during the semester:
Summary assessment of work results during the semester = 40 points
During the semester, students prepare term papers related to the lectured subject. Students take a semester examination from individual thematic areas and a final exam.
A student who obtains at least 20 points in the interim evaluation can apply for the exam.

Final assessment:
Assessment of exam results = 60 points - to successfully pass the exam, it is necessary to obtain minimum 30 points.

Grading scale:
Grade A: 91 – 100 points
Grade B: 81 – 90 points
Grade C: 71 – 80 points
Grade D: 61 – 70 points
Grade E: 55 – 60 points
Grade FX: less than 55 points

Learning outcomes of the course unit:
The student will acquire basic theoretical and practical knowledge of technologies and technological procedures used in the industry for the production of semi-finished products and finished products. The student will gain an overview of the most used production processes in metal casting and welding technologies. He knows how to apply the acquired knowledge from the mentioned areas in their creative activity.

Course contents:
Foundry properties of metals. Foundry mold. Model devices. Molding compounds.
Melt solidification. Inflow systems. Anti-shrinkage processes. Melt preparation.
Casting.
Progressive methods of production of castings. Centrifugal casting, under pressure, under vacuum.
Production of precision castings. Defects of castings and their quality control.
Weldability.
Welding by flame, electric arc (manual coated electrode, in protective gas atmospheres, under flux), under molten slag, electric resistance, cold pressure, friction.
Diffusion welding, ultrasonic, forge, explosion.
Soldering technology.
Thermal separation of metals.

Recommended of required reading:
LETKO, I., MEŠKO, J., VRÁBEL, P.: Priemyselné technológie I. 1.vydanie. ZUSI Žilina. 2001. ISBN 80-968605-1-8.
LETKO, I., MEŠKO, J., PILC, J., STANČEKOVÁ, D.: Priemyselné technológie II. 1.

vydanie. ZUSI Žilina. 2002. ISBN 80-968605-3-4.
E-learning TnUAD.

Language:
English

Remarks:
Compulsory elective course

Evaluation history: 0
Total number of graded students:

A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0

Lecturers: Ing. Mariana Janeková, PhD., Ing. Andrej Dubec, PhD.

Last modification: 31.08.2022

Supervisor: doc. Ing. Jan Krmela, Ph.D.