



HEAT TREATMENT OF NONFERROUS ALLOYS

MSC IN MATERIALS ENGINEERING

(Full time training)

COURSE SHEET

**UNIVERSITY OF MISKOLC
FACULTY OF MATERIALS SCIENCE AND ENGINEERING
INSTITUTE OF PHYSICAL METALLURGY, METALFORMING AND
NANOTECHNOLOGY**

2017/18 2nd semester, Miskolc

Course sheet

HEAT TREATMENT OF NONFERROUS ALLOYS

for MSc students

Course Title: HEAT TREATMENT OF NONFERROUS ALLOYS (compensational subjects Heat Treatment specialization)	Credits: 2
Type and Number of Contact Hours per Week: 2 hours lectures & 0 hour seminar	
Type of Assessment: exam	
Evaluation of students' performance: <i>During the semester the following tasks should be completed:</i> <ul style="list-style-type: none">• One test during the semester (min. 40% performance is necessary for the signature)• Evaluation of the test:<ul style="list-style-type: none">➤ 80%: excellent, 70-79%: good, 60-69%: medium, 50-59%: passed, < 50%: failed	
<i>Signature for approval:</i> participation at least on 60% of lessons.	
Grading Limit of the exam: <ul style="list-style-type: none">➤ 80%: excellent, 70-79%: good, 60-69%: medium, 50-59%: passed, < 50%: failed	
Evaluation of students' performance: 50% written mid-term tests, 50% end-term written exam	
Position in Curriculum (which semester): 4 th semester	
Pre-requisites (if any): Physical Metallurgy	
Course Description:	
Acquired store of learning: <u>Study goals:</u> The purpose of the course to provide knowledge about non ferrous alloys and their heat treatments.	
<u>Course content:</u> General overview of non ferrous alloys. Characterization of aluminium and its alloys. Classification the alloying elements of aluminium. Heat treatment of aluminium alloys. Ageing of aluminium, copper, zink and tungsten alloys: homogenization, quenching, tempering.	
<u>Education method:</u> table, PC	

Tematic

1. Introduction (13/02/2018)
2. General overview of non ferrous alloys (20/02/2018)
3. Characterization of aluminium and its alloys (27/02/2018)
4. Classification the alloying elements of aluminium. (06/03/2018)
5. Heat treatment of aluminium alloys (13/03/2018)
6. Test (27/03/2018)
7. Ageing of aluminium, copper, zink and tungsten alloys: homogenization, quenching, tempering. (03/04/2018)
8. Ageing of aluminium, copper, zink and tungsten alloys: homogenization, quenching, tempering. 10/04/2018)
9. Supplement (17/04/2018)

The 3-5 most important compulsory, or recommended **literature** (textbook, book) **resources**:

- Charlie R. Brooks: Nonferrous Alloys, ASM, Metals Park, Ohio, 1982.
- Jon L. Doseett, Howard E. Boyer: Practical Heat treating, ASm International, Ohio, 2006
- J.R. Davis: Alloying: Understanding the Basics, ASM International, 2001

Responsible Instructor (*name, position, scientific degree*):

Dr. Gréta Gergely
associate professor

Other Faculty Member(s) Involved in Teaching, if any (*name, position, scientific degree*):

Miskolc, 12/02/2018

Dr. Mertinger Valéria
Head of the Institute, professor

Dr. Gréta Gergely
Lecturer, associate preofessor