Material Science, GEMTT 001M-a (2+1 e)

Faculty of Mechanical Engrineering and Informatics, MSc, Mechanical Engineering Specialization

Syllabus of Lectures and Practical Lessons, Semester: 2015/2016. spring

Place of lessons: C/2 Building, Room 204. and 103.

Edu. Week	Date	Type	Topic
1.	02.10.	Lect.	Classification and main characteristics of materials.
2.	02.17.	Lect.	Crystal structure of metals
3.	02.24.	Lect.	Crystal imperfections
4.	03.02.	Pract. Less.	Fe-C alloys
5.	03.09.	Lect.	Theoretical basis of mechanical properties of metals
6.	03.16.	Pract. Less.	The Fe-C equilibrium diagram/Description of crystallization of the characteristic Fe-C alloys
7.	03.23.	Lect.	Transport phenomena, Diffusion
8.	03.30.	Lect.	Strength of metallic materials Test I.
9.	04.06.	Lect.	Tensile test
10.	04.13.	Lect.	Impact test
11.0	04.20.	Pract. Less.	Microscopy – theoretical background
12.	04.27.	Pract. Lect.	Microscopy – meet the microscopes
13.	05.04.	Lect.	Non-equilibrium phase transformation of steels Test II.
14.	05.11.	Pract. Less.	Presentation of a project work Additional test

SUGGESTED LITERATURE:

1. *Tisza* M.: **Physical Metallurgy**, ASM International Publisher, Ohio Park, USA, 2001.
2. Tisza M.: **Introduction to Materials sciences**, Miskolc University Publisher, Miskolc, 2003. pp. 1-402.
3. Shackelford, J. F.: **Introduction to Materials Scienece for Engineers.** 5th ed. Prentice Hall Inc., 2000. ISBN 0-13-011287-9
4. Ashby, M.F, Jones, D.R.H.: E**ngineering Materials 1-An introduction to Microstructures, Processing and Design** 3rd ed., Elsevier Butterwoth-heinemann, Oxford, 2006. ISBN 0 7506 63804
5. Ashby, M.F, Jones, D.R.H.: **Engineering Materials 2-An introduction to properties, Applications and Design**, 3rd ed., Elsevier Butterwoth-heinemann, Oxford, 2006. ISBN-13: 978-0-7506-6381-6

Miskolc, Febr. 03. 2016.

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