

Metallic Materials 2017/2018

Themes of lectures and examination questions

Steels – taxonomy, designation (EU, USA)

Structural steels and Microalloyed steels (principles of microalloying)

Stainless steels (principles of corrosion resistance)

Tool steels (hardening of tool steels)

Heat resistant and creep resistant steels (principles of heat resistance and creep resistance)

Cast irons (taxonomy, structures and properties)

Al alloys

Cu alloys

Ti alloys

Ni and Co alloys

Mg and Zn alloys

For successful finishing of the subject, you must elaborate protocols to reach the assessment.

The exam will have written and oral part. At least 50 % of correct answers are needed for classification.

For each topic are required knowledge about main characteristics of metal and their alloys:

Principles of alloy classification and taxonomy, principles of strengthening and their application, typical heat treatment and properties, typical application of each group of alloys.

<http://users.fs.cvut.cz/libor.benes/vyuka/matscienceii.html>

<https://www.totalmateria.com/page.aspx?ID=Articles&LN=EN>

<https://www.google.cz/search?q=Steel+ppt&client=firefox-b&dcr=0&ei=XY7VWo7CO8eY6AT6jqXgCw&start=10&sa=N&biw=1332&bih=830>

https://www.google.cz/search?client=firefox-b&dcr=0&biw=1332&bih=830&ei=jo_VWv7AHvGEmwXgsYSwDw&q=non+ferrous+alloy+ppt&oq=non+ferrous+alloy+ppt&gs_l=psy-ab.3..0i22i30k1l4.828.2770.0.3168.4.4.0.0.0.0.116.394.2j2.4.0...0...1c.1.64.psy-ab..0.4.394...0i203k1j0i22i10i30k1.0.mDGLkhlhbH4