Course title: New generation of composite materials - selectable / regular course

Number of contact hours: 15 hours (15h seminar)

ETCS credits: 1

Course description: The lecture reviews basic definitions and classification of engineering materials, classification and characteristics of the main groups of composite materials, techniques for producing the main groups of composite materials, materials for the matrix and fillers, composite materials with a metal matrix and ceramic composite materials with a polymer matrix and carbonaceous rating quality composite materials, micro and nanocomposites, composite materials for medicine and dentistry, the use of composite materials in the construction industry. The use of composite materials in electronics and special purpose.

Education effects (P7S_UW, P6S_UW)**:**

- **knowledge**: student knows the most important types of engineering materials; knows the methods of synthesis and characterization

- **skills**: Student recognizes and classifies composite materials, the student can choose the right group of materials for a given application. The student is able to select appropriate research methods to a group of composite materials.

- **social**: student is able to work independently and in the group both at the preparation of presentations; understand the reason of fulfilling the materials standards

Literature:

[1] COMPOSITE MATERIALS HANDBOOK, MIL-HDBK-17-3F 2002

[2] Introduction to composites materials, Structural Composite Materials 2010, ASM International F.C. Campbell

Assessment method: Presentation of selected subject concerning composites

Prerequisites: Basic knowledge in chemistry and technology

Primary target group: All specialties students

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