



COURSE DATASHEET

Semester:	2016/17/1
Course:	Modern structural materials
Code:	VEMKSIB312K
Responsible department:	Institute of Materials Engineering
Department code:	MKSI
Responsible instructor:	dr. Tamás Korim

Course objectives:

Teaching advanced ceramics, -glasses, -binding materials, its technology, characteristic features, investigation methods and applications fields of products made.

Course content:

Definitions of advanced ceramics; Preparation techniques of starting materials (plasma-, laser-, sol-gel-, hydrothermal-techniques etc.); Forming and sintering techniques of advanced ceramics (hot pressing, hot isostatic pressing, explosion etc.); Properties, preparation, and application of advanced ceramics (ionic conductors, superconductors, magnetic ceramics, bioceramics, optical ceramics, high strength ceramics etc.); Economical aspects of applications of advanced ceramics; Classification and production of non crystallised materials and glasses; Thick film coating on glasses; Mirror-making; Safety and noise protective glasses; Fire protecting glasses; Liquid crystal glasses; Preparation of thin film coatings on glasses; Properties of sun- and heat protecting glasses; Properties and preparation of sol-gel glasses; Compounds and properties of photosensitive, photo chrome, and polychrome glasses; Glasses for telecommunications: fluoride and calcogenide glasses; Preparation and properties optical fibres; Properties and preparations glass-ceramics.

Requirements, evaluation and grading:

The whole content of lectures is included in the written examination.

Required and recommended readings: