

Information sheet for the course Technology Of Production Of Inorganic Materials

University: <i>Alexander Dubček University of Trenčín</i>	
Faculty: <i>VILA - Joint Glass Centre</i>	
Course unit code: <i>TVAM_I</i>	Course unit title: <i>Technology of production of inorganic materials</i>
Type of course unit: <i>compulsory</i>	
Planned types, learning activities and teaching methods: <i>Lecture: 3 hours weekly</i> <i>Seminar: -</i>	
Number of credits: <i>5</i>	
Recommended semester: <i>1. semester in the 1st year (full-time)</i>	
Degree of study: <i>II. (master)</i>	
Course prerequisites: <i>none</i>	
Assesment methods: <i>Participation at all lectures</i> <i>Passing the final exam consisting of written and oral part. Written exam verifies fundamental knowledge of student in the subject. Pass threshold is 60 %. Passing the written exam is prerequisite for participation at the oral exam.</i>	
Learning outcomes of the course unit: <i>Student acquires complex set of information and knowledge on technology of production of several groups of non-metallic inorganic materials, especially inorganic adhesives, refractories, glazes, which can be summarily called large-scale products. Student acquires knowledge on basic technological steps used in production, raw materials, their sources in Slovak republic and abroad, with emphasis put to domestic sources. Student acquires knowledge on commonly used technological devices used in the industry of inorganic materials, chemical and physical aspects of the production, impacts on environment, and applications of the materials. Student acquires knowledge required for technologists and specialist for production analysis laboratories in silicate industry.</i>	
Course contents: <ol style="list-style-type: none"><i>1. Inorganic materials – definition, basic terminology, taxonomy.</i><i>2. Raw materials for production of inorganic materials.</i><i>3. Processes in treatment of raw materials: separation, purification, milling, granulation, consolidation.</i><i>4. Sintering: mechanisms and stages of sintering.</i><i>5. Inorganic adhesives: types and taxonomy, hydraulic and non-hydraulic adhesives, geopolymers.</i><i>6. Cement: raw materials for its production, types, production technologies, mineralogical composition of clinker.</i><i>7. Cement: treatment, solidification and hardening.</i><i>8. Other adhesives: lime, phosphate adhesives, water glass. Production technology and utilization.</i><i>9. Raw materials' based refractories: types and properties.</i><i>10. Acid refractories: raw materials, production, properties, utilization.</i><i>11. Basic refractories: raw materials, production, properties, utilization.</i><i>12. Enamels: production, properties, utilization.</i><i>13. Glazes: production, properties, utilization.</i>	
Recommended of required reading: <i>J.Hlaváč: Základy technologie silikátů. SNTL, Praha 1988, 516 s.</i>	

V.Šatava: Úvod do fyzikální chemie silikátů. SNTL, Praha 1965, 408 s.
Z.Pánek, V.Figusch, M.Haviar, T.Ličko, P,Šajgalík, J.Dusza: Konštrukčná keramika. R&DPrint, Blava 1992, 205s.,

Majling J., Plesch G., a kol.: Technológia špeciálnych anorganických materiálov, Slovenská technická univerzita, Fakulta chemickej a potravinárskej technológie, 2002, ISBN 80-227-1734-7.

Materials Science and Technology. A Comprehensive Treatment., Vol. 5, Phase Transformation in Materials.

W.D. Kingery, H.K. Bowen, D.R. Uhlmann: Introduction to Ceramics, 2nd edition, John Wiley & Sons, 1976, ISBN 9812-53-141-6

Language: *Slovak*

Remarks:

Evaluation history:

A	B	C	D	E	FX

Lecturers: *prof. Dušan Galusek, DSc.*

Last modification: *31. 1. 2014*

Supervisor: *prof. Marek Liška, DSc.*