

Name of subject: Structures of materials II.	NEPTUN-code: RMXAT2BBNE	Number of hours: <i>lec+gs+lab</i> 2+0+2	Kredit: 5 Requirement: examination
Subject owner: Dr. Judit Borsa	Rank: professor	Pre-requisite: Structures of materials I.	
Subject content			
<p>The subject familiarizes the students with materials from microstructure to macrostructure, basic features, relationships, physical explanation, properties and intervention possibilities needed for the design of material parameters, and some examination procedures.</p> <ul style="list-style-type: none"> • Special, moisture-related features of polymer structures. Typical features of fibres. • Processes and their characteristics related to moisture, moisture absorption and drying. Examinations. • Structure and characteristics of metals as crystalline materials. Possibilities and characteristic-modifying effects of alloying and heat treatments of metals. Basic examinations of metallic structures. • Basic terms of mechanical characteristics and examinations. Explanation and principles of bundle and chain in the case of mechanically collaborating systems • Friction and its accompaniments. • Explanations of ‘membrane’. Membrane structures and their importance. • Combination of materials. Introduction of composite structures. • General permeability characteristics (moisture, gas, radiation). • Isotropy and anisotropy. Direction-related features of 2D products. • Magnetic and electric features of materials. • Micro and nano systems. Size-determined characteristics of micro and nano range. • Failures. Typical failure processes of metals, polymers and composite structures. 			
Bibliography:			
1. https://elearning.uni-obuda.hu/			