

Subject: DENTAL MATERIALS	Subject type:	compulsory
Study year: 2	Content:	1/1 WT
Study program: Dental Medicine		

Aim of course

The graduate acquires comprehensive information about the physic-chemical properties of materials used in dentistry in the field of conservative dentistry and prosthetics. He will get an overview of the materials used for the treatment of dental caries and the materials used in the prosthetic treatment of the teeth. Knows the composition and properties of materials (e.g., metallic, organic, ceramic) used in dentistry. He will understand the principles of their processing and understand the principles of their practical use. Familiarizes himself with basic technological procedures.

Education: lectures and practical exercises

Assessment: preliminary written tests and a final control test

Syllabus

Characteristics of dental materials used in conservative dentistry – chemical, physical, mechanical and biological properties. Preparations for determining and preserving the vitality of the dental pulp. Root filling materials. Metals and their alloys – properties, classification and distribution. Crystallization, phase diagrams. Importance of noble metals for use in dental alloys. Amalgams – composition, meaning, properties and corrosion. Materials used to treat and polish metals. Ceramic materials – composition, properties. Dental porcelain and metal-ceramic systems. Cements – composition, setting reactions. Model materials – production, setting, mixing ratio. Gypsum – composition, properties, indications for use. Macromolecular substances in dentistry – composition, properties and use. Polymerization - basic reactions. The structure of polymer compounds and the possibilities of their modification. Composition and properties of dental waxes. Impression materials – composition, classification, setting reactions. Auxiliary materials used in the production of dental prostheses. Biomaterials – properties and use in medicine.