

1.	Field of study	Materials Science and Engineering
2.	Academic year of entry	2017/2018 (winter term)
3.	Level of qualifications/degree	second-cycle studies (in engineering)
4.	Degree profile	general academic
5.	Mode of study	full-time

Module: Dental materials

Module code: IM2A_MS

1. Number of the ECTS credits: 2

2. Learning outcomes of the module			
code	description	learning outcomes of the programme	level of competence (scale 1-5)
IM2A_MS_1	Learning a tooth structure and material constants of its structures.	IM2A_W09	4
IM2A_MS_2	Learning physio-chemical properties and the way of handling materials used for prevention and reconstruction of teeth, manufacturing those dental crowns and removable dentures and dental implants; understanding the way of connecting dental materials with tooth tissues.	IM2A_W07 IM2A_W08	4 4
IM2A_MS_3	Students can critically analyse the dental materials biocompatibility.	IM2A_U14	3
IM2A_MS_4	The skill of choosing materials for production of dental crowns, removable dentures and dental implants	IM2A_K05 IM2A_U16	1 4
IM2A_MS_5	Students have a critical assessment of dental materials impact on human health.	IM2A_K02	2

3. Module description	
Description	The module Dental materials shall enable that students are knowledgeable about physio-chemical properties of dental materials and ways of their preparation to dental applications. Owing to that students shall achieve understanding of correlations between those materials properties and their biocompatibility and also shall acquire the skill of materials selection for individual dental applications. The acquisition of this knowledge and skills shall result in preparing the student to design new materials for dental applications.
Prerequisites	It is required to achieve effects of education of the modules: physics, chemistry, crystallography, materials testing methods and rudiments of the materials science.

4. Assessment of the learning outcomes of the module			
code	type	description	learning outcomes of the module
IM2A_MS_w_1	Written examination	Verification of acquired knowledge based on the lectures content, recommended literature and attended classes.	IM2A_MS_1, IM2A_MS_2, IM2A_MS_3, IM2A_MS_4, IM2A_MS_5
IM2A_MS_w_2	Test	Assessment of mastering the basic knowledge necessary for individual performance of a practical exercise.	IM2A_MS_3, IM2A_MS_4
IM2A_MS_w_3	Report	Assessment of the skill to examine and characterise dental materials through correct formulation of conclusions.	IM2A_MS_3, IM2A_MS_4

5. Forms of teaching						
code	form of teaching			required hours of student's own work		assessment of the learning outcomes of the module
	type	description (including teaching methods)	number of hours	description	number of hours	
IM2A_MS_fs_1	lecture	The lecture shall enable learning dental materials and their properties as well as the preparation and processing methods. It shall enable understanding the biocompatibility issues and materials selection for individual applications in stomatology. The lecture is delivered with the use of multimedia and demonstrations	30	The work with the recommended literature comprising independent acquisition of knowledge related to basic issues.	10	IM2A_MS_w_1
IM2A_MS_fs_3	laboratory classes	The application of acquired theoretical knowledge to experimental learning of dental materials properties and of mechanisms enabling shaping their properties. Exercises are performed by students individually with the use of equipment of teaching and scientific laboratories.	15	Preparation of theoretical basics and issues related to the topic of performed exercise. Independent preparation of a theoretical introduction. Individual preparation of exercise results and drawing conclusions.	5	IM2A_MS_w_2, IM2A_MS_w_3