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|---|---|---|
| **1.** | **Field of study** | **Materials Science and Engineering** |
| 2. | Academic year of entry | 2017/2018 (summer term) |
| 3. | Level of qualifications/degree | second-cycle studies |
| 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<br>IM2A_W08 | 4<br>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<br>IM2A_U16 | 1<br>4 |
| IM2A_MS_5 | Students have a critical assessment of dental materials impact on human health. | IM2A_K02 | 2 |

**3. Module description**

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|---|---|
| **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 |