Course description

University : *University of Prešov*

Faculty/university workplace : *Faculty of Health Care*

Code : 6KDH/DEMAD/24	**Course title : Dental materials**

Type, scope and method of educational activity:
Type of educational activity: *Lecture*
Scope of educational activity: *1 hour per week 13 per semester*
Method of educational activity: *Attendance*

Number of Credits : *1*

Recommended semester : *1st year ST*

Study grade: *Bachelor*

Prerequisites:

Conditions for passing the course:

Form of assessment:

Final evaluation:

The course is completed with a midterm evaluation. During the semester, the student will prepare, present and hand in a term paper with the topic Dental materials in the dental clinic. (20% of the course grade). As part of the assessment, the student will take a knowledge test which will constitute 80% of the course assessment. The student must obtain at least 90.00% for a grade of A, 89.99-80.00% for a grade of B, 79.99-70.00% for a grade of C, 69.99-60.00% for a grade of D, and 59.99-50.00% for a grade of E. The student must obtain at least 90.00% for a grade of A. A student scoring 49.99% or less will be graded with a grade of FX. The final grade will be calculated as the average of the grade and the knowledge test and the seminar paper

Student Load :

Class participation: 13 hours of student preparation - direct course load

Seminar paper - 5 hours of student preparation - indirect workload

Independent study and preparation for continuous assessment 12 hours - indirect burden

Learning outcomes :

Upon completion of the course, students will be able to:

Knowledge :

- Define and interpret in their own words the basic dental materials in dental-medical practice

- describe the main and auxiliary materials

- plan the equipment of a dental practice with the necessary materials

- plan the equipment and instruments for dental and DH practice materials

- describe proper handling, processing, application,

- describe proper packaging, storage, use, expiration, pricing policy

- differentiate between the impression and CAD/CAM model preparation process

- know the material and instrumentation of dental laboratories

- recommend the correct use of different types of materials

- recognise instrument defects and damage and correct them in time, possible consequences,

Skills :

The student is able to

- apply the knowledge in daily practice

- identify the most commonly used materials and be able to use them in practice

Competencies :

- Independently evaluate the need for and use of specific materials in a dental/DH practice

- knows the guidelines and procedures

Course content:

Brief outline of the course:

A complete overview of dental materials for dental and dental hygiene practice. Physicochemical

and biological requirements for restorative materials. Biocompatibility of dental materials. Temporary and permanent restorative materials. Liner materials. Materials indicated for maintaining the vitality of the dental pulp. Instruments in dentistry, characteristics of their use, technical handling, safe use. Amalgam - history, development, present, composition, properties, indications for use, preparation, principles of work. Metal alloys and their division. Electroplating. Aesthetic filling materials: development, history, composition, properties, advantages, disadvantages, principles of working procedures, polymerisation lamps. Precious metal alloys : (evolution, chemical composition, structure, fusion and brazing, physical properties, mechanical properties, corrosion, biocompatibiliata). Titanium in dental prosthetics (development, chemical composition, structure, fusion and brazing, physical properties, mechanical properties, corrosion, biocompatibiliata). Impression materials (development, distribution, composition, characteristics, physicochemical properties - hydrophilia, thixotropy, elasticity, solidification reactions, biocompatibility. Model materials-sulphur and its types (evolution, chemical composition and structure, physical properties, mechanical properties). Modelling materials, dental waxes, abrasives and polishing materials (development, chemical composition, properties, distribution). Sealants. Sklopolyalkylkenate cements. Dental plastics. Dental ceramics-metal ceramics. Endodontic materials, composition.

Literature :

1. *Tvrdoň, M. a kol.: Protetická stomatológia. Science, 2017*
2. *Vacek, M. a kol.: Stomatologické materiály. Praha: Avicenum, 1980*
3. *Hubálková, H., Krňoulová, J.: Materiály a technologie v protetickém zubním lékařství, 2009*
4. *Strub, J.R. a kol.: Protetika I. Grada, 2015*
5. *Slávik, J.: Stomatologická propedeutika, záchovná časť, 1992*
6. *Takač, L.: Stomatologická propedeutika, protetická časť, 1982*
7. *Manappallil, J.: Basic Dental Materials, 2003*
8. *Schmalz, G.: Biocompatibility of dental materials, 2004*
9. *Gladwin, M.: Clinical aspects of dental materials, 2012*
10. *Combe, E.: Dental Biomaterials, 1999*

Language which is necessary to complete the course: *english*

Notes :

The student is obliged to attend 80% of the specified lectures and 90% of the specified practicals.
The conditions for the semester thesis are published on the FZO PU website under the instructions for students in the section "Education and specialisations".
For students with specific needs, an individualized approach is provided based on the recommendation of the faculty coordinator forstudents with specific needs. Instructions on how to complete the assignment are posted on the faculty's website: https://www.unipo.sk/public/media/26637/Pravidla-hodnotenia-zataze-studenta.pdf

Course evaluation:

A	B	C	D	E	FX

Lecteuers :

MUDr. Eva Kovaľová, PhD., guarantor, PhDr. Alexander Kovaľ, PhD., co-guarantor, lecturer, examiner

Date of last change:

31.03.2024

Approved by : *doc. MUDr. Eva Kovaľová, PhD. – guarantor*