Course unit title	MANUFACTURING TECHNIQUE OF CERAMIC DENTURES AND DIGITAL TECHNOLOGY
Course unit code	DT(SK)/4-2
Type of course unit	Compulsory
Level of course unit	First cycle
Year of study (if applicable)	Second year
Semester/	Spring semester
Number of ECTS credits allocated	9 ECTS
Learning outcomes of the course unit	**Upon completion of the course unit, students will be able to:** LO1. Select appropriate materials for metal-ceramic dental prostheses according to individual needs and material quality. LO2. Describe manufacturing technologies of ceramic dental prostheses, material properties and instructions for use. LO3. Prepare an impression of the prosthetic field and fabricate removable models. LO4. Model wax structures for metal-ceramic dental prostheses. LO5. Scan models and design frameworks using a CAD/CAM system for all-ceramic structures. LO6. Describe the fabrication methodology of ceramic dental prostheses. LO7. Plan and construct a high-quality ceramic dental prosthesis according to the individual characteristics of the patient's teeth, using digital technologies and shade guides. LO8. Determine the colour and aesthetic properties of a dental prosthesis using a spectrometer and shade guides. LO9. Determine the relationship between jaws and teeth in a virtual and working articulator. LO10. Describe ceramic dental prosthesis manufacturing technologies while assessing the quality of a fabricated dental prosthesis. LO11. Identify inaccuracies or defects of a ceramic dental prosthesis and select the necessary materials, instruments and equipment to correct them.
Mode of delivery	Blended learning
Prerequisites and co-requisites	Students must have completed Dental Functional Anatomy, Aesthetics and Modelling; Dental Technological Materials; Fundamentals of Fixed Dental Prosthesis Manufacturing; and Technologies of Fixed Dental Prosthesis Manufacturing.
Course contents	Metal-ceramic restorations. Biomimetic work philosophy of the dentist and dental technician. Facial, dental and gingival aesthetics. Analysis of natural forms and colours related to dental aesthetics. Age-related changes in dental aesthetics. Main principles of layering ceramic masses on a metal framework. Quality assessment criteria and corrections of metal-ceramic restorations. All-ceramic restorations: types, physical and chemical properties and characteristics. Single-component and two-component systems and their rational use. Preparation features for all-ceramic restorations. Pressed ceramic restorations. Manufacturing of inlays and onlays from pressed ceramics. Functional occlusion: contacts formed at rest and during movement in anterior and posterior tooth groups. Restoration of occlusal contacts with intracoronal and extracoronal restorations using an articulator. Intraoral scanning, model scanning, software use and milling. Preparation for and taking the examination.
Planned learning activities and teaching methods	Experiential advice, case analysis, individual work, hypothesis formulation and justification, analysis of advanced practice, practical exercises, work with CAD system, virtual simulation with CAD system, independent work and consultations.
Assessment	Examination. The final assessment is cumulative: examination – 50%, feedback assessment – 10%, average of interim assessments – 40%. Interim assessments consist of case analysis – 40%, testing – 20%, and practical work – 40%.

Language of instruction.	English
Work placement(s)	Utenos kolegija Higher Education Institution Faculty of Medicine Dental Laboratory