



Pomorski Uniwersytet Medyczny w Szczecinie

SYLLABUS of the MODULE (SUBJECT)

General information

Module title: DENTAL MATERIALS AND EQUIPMENT	
Module type	Obligatory.
Faculty PMU	Medicine and Dentistry (WLS)
Major	Medicine and Dentistry (KLD)
Specialty	-
Level of study	long-cycle
Mode of study	full-time/part-time
Year of studies, semester e.g. Year 1, semester (I and II)	Year 2 , semester III
ECTS credits (incl. semester breakdown)	4
Type/s of training	Lectures (4h) Seminars (7h) Practical classes (45h)
Form of assessment	FINAL EXAMINATION: <ul style="list-style-type: none"> • practical • test
Head of the Department/ Clinic, Unit	Dr hab. n. med. Danuta Lietz - Kijak
Persons conducting classes with indication of a tutor or person responsible for the module	Dr hab. n. med. Danuta Lietz – Kijak Dr n. med. Helena Gronwald Dr n. med. Piotr Skomro Lek. dent. Elżbieta Kubala Lek. dent. Paulina Strzelecka
Department's/Clinic's/Unit's website	https://www.pum.edu.pl/wydzialy/wydzial-lekarsko-stomatologiczny/zaklad-propedeutyki-i-fizykodiagnostyki-stomatologicznej
Language	Polish/English

Detailed information

Module type		Teaching objectives of the subject is: <ol style="list-style-type: none"> 1. Gaining knowledge of basic dental instruments and equipment and the ability to recognise and use them in a specific area of dentistry. 2. Gaining knowledge about dental materials: <ul style="list-style-type: none"> • for temporary and permanent fillings in the treatment of caries, • for the reconstruction of pillars, • used in the prevention of caries as well as in endodontic and cosmetic treatment. 3. Gaining knowledge of drugs used in caries treatment, endodontic treatment and bonding systems. 4. Acquiring skills concerning the preparation (manual and automatic) of materials, application techniques and curing methods of dental materials. <p>The learning objective will be fulfilled if the student is able to recognise and apply dental tools and materials for appropriate treatment procedures.</p>
Prerequisite /essential requirements	Knowledge	Knowledge of anatomy of permanent and deciduous teeth. Knowledge of histological structure of hard and soft tissues of the oral cavity. Knowledge of the physiology of the masticatory organ.
	Skills	Basic manual skills Spatial imagination Visual-motor coordination
	Competences	Self-education habit Teamwork capability Communication skills Ability to be precise and persistent

Description of the learning outcomes for the subject /module

No. of learning outcome	Student, who has passed the module (subject) knows /is able to /can:	SYMBOL (Referring to) Assumed Learning Outcomes	Means of verification of learning outcomes*
W01	knows the basics of disinfection, sterilisation and aseptic management	K_C.W05	SP,ET
W02	knows dental surgery equipment and instruments used in dental procedures	K_C.W23	O, ET
W03	knows the definition and classification of basic and auxiliary dental materials	K_C.W24	O, EPR, ET
W04	knows the composition, structure, way of bonding, properties and purpose and use of dental materials	K_C.W25	K ,, ET
W05	knows and describes surface properties of dental hard tissues and biomaterials	K_C.W26	K, ET
W06	defines the phenomenon of adhesion and mechanisms of adhesion bond formation and procedures of adhesive surface	K_C.W27	K, ET

	preparation of enamel, dentine and dental biomaterials		
W07	knows the basic clinical procedures of dental hard tissue reconstruction and endodontic treatment as well as the methods and technical-laboratory procedures for fabricating prosthetic restorations	K_C.W28	K, ET
W08	knows mechanisms of degradation (corrosion) of dental biomaterials in oral cavity and their influence on biological properties of materials K_C.W29	K_C.W29	K, ET
K01	shows habit of self-education and lifelong education	K_K01	O

Table presenting LEARNING OUTCOMES in relation to the form of classes

item	SYMBOL (Referring to) Assumed Learning Outcomes	Form of didactic classes							
		Lecture	Seminar	Practical classes	Clinical classes	other ...
1.	K_C.W05	-	X	-	-	-	-	-	-
2.	K_C.W23	-	X	X	-	-	-	-	-
3.	K_C.W24	X	-	X	-	-	-	-	-
4.	K_C.W25	X	-	X	-	-	-	-	-
5.	K_C.W26	-	-	X	-	-	-	-	-
6.	K_C.W27	X	-	X	-	-	-	-	-
7.	K_C.W28	-	-	X	-	-	-	-	-
8.	K_C.W29	-	-	X	-	-	-	-	-
9.	K_K01	X	X	X	-	-	-	-	-

No. of learning content	Description of learning content	Number of hours	References to learning outcomes for the module
	Lectures		
TK.01	Introduction to dental materials science. Classification of dental materials.	1	W03
TK.02	Recent developments in dental materials science. Materials for fillings.	1	W03
TK.03	Division of dental materials used in various specialities. Primers, temporary materials.	1	W03
TK.04	Prophylaxis in dentistry. Lacquers and varnishes.	1	W04
	Seminars:		
TK.01	Organisation of a dental surgery, its basic and additional equipment.	3	W02, K01
TK.02	Principles of storing and archiving medical records in accordance with current regulations and principles of personal data protection.	2	W02, K01
TK.03	Equipment, methods of disinfection and sterilisation of instruments and surfaces in the dental surgery.	2	W01, K01
	Practical classes		
TK.01	<ul style="list-style-type: none"> • Caries diagnostics. • Principles of cavity preparation according to Black, modern methods of cavity preparation depending on materials and class of cavity. 	3	W03, W05, K01
TK.02	<ul style="list-style-type: none"> • Anaesthesia in dentistry. Methods of anaesthesia, agents and devices for anaesthesia. 	3	W01, K01
TK.03	<ul style="list-style-type: none"> • Dental drills, diagnostic kit. • Dental tools in dental specialities - conservative, periodontology, surgery, prosthetics, orthodontics 	3	W02, K01
TK.04	<ul style="list-style-type: none"> • Small dental equipment. • Drills, tools for correction and polishing of fillings. Prophylaxis in dentistry. 	3	W01, W02, K01
TK.05	<ul style="list-style-type: none"> • Auxiliary equipment for placing fillings. • Cofferdam, tensioners and formers, tapes, interdental wedges . • Polymerisation lamps. 	3	W02, W07, K01
TK.06	<ul style="list-style-type: none"> • Endodontic tools. • Methods of chemo-mechanical root canal preparation. • Rinses, drugs and endodontic 	3	W02, W07, K01

	<ul style="list-style-type: none"> dressings. Methods of measuring root canal length. 		
TK.07	<ul style="list-style-type: none"> Optical, thermal, electrical, mechanical properties of dental materials. Surface phenomena and surface characteristics of solids. Adhesion. Comparison of metals, ceramics and polymers. Biocompatibility of dental materials and effects on oral tissues. 	3	W04; W05; W06; W07; W08; K01;
TK.08	<ul style="list-style-type: none"> Underlay materials: phosphate cements, carboxyl cements, glazjonomers and hybrid glazjonomers (encapsulated and prepared, chemo and light-cured). Amalgams 	3	W03, W04, W08, K01
TK.09	<ul style="list-style-type: none"> Auxiliary materials - gypsum, waxes, impression and covering compounds Temporary materials - for chemo and light-cured fillings, for temporary crowns and bridges, temporary cements. 	3	W03, W04, K01
TK.10	<ul style="list-style-type: none"> Biological treatment materials, indirect and direct coverage, devitalization materials. Calcium hydroxide in biological pulp treatment and in endodontics, MTA. Filling materials in endodontics 	3	W04, W05, K01
TK.11	<ul style="list-style-type: none"> Materials used in aesthetic dentistry, materials and methods of teeth whitening. 	3	W03, W04, K01
TK.12	<ul style="list-style-type: none"> Composites for direct restorations and special applications (laboratory, for crown reconstruction). Ormoceres, compomers. 	3	W04, W08, K01
TK.13	<ul style="list-style-type: none"> Prophylactic materials: pastes, rinses, varnishes and lacquers. 	3	W03, K01
TK.14	<ul style="list-style-type: none"> Adhesion to dentin and enamel - mechanism, bond strength testing. 	3	W06, K01
TK.15	<ul style="list-style-type: none"> Bonding systems with composites and other substrates. Etchants and conditioners. 	3	W04, K01

Booklist:

Obligatory literature:

1. Craig R.: Materiały stomatologiczne red. John M. Powers, Ronald L. Sakaguchi. Wrocław : Elsevier Urban & Partner, cop. 2008.
2. Stomatologia zachowawcza z endodencją : zarys kliniczny : podręcznik dla studentów stomatologii: red. nauk. Zbigniew Jańczuk, Urszula Kaczmarek, Mariusz Lipski. Warszawa Wydawnictwo Lekarskie PZWL, 2014.

Supplementary literature:

1. Lipski M.: Praktyczny słownik stomatologiczny. Czelej 2016.

2. Pietrzyk, Maria: Materiałoznawstwo w propedeutyce stomatologii / Maria Pietrzyk ; współaut. Joanna Groszewska, Radosław Grygiel, Piotr Skomro ; Pomorska Akademia Medyczna w Szczecinie.Szczecin : PAM, 1998.			
3. Propedeutyka stomatologii : podręcznik dla studentów / pod red. Zbigniewa Jańczuka. Wyd. 3.Warszawa : Państw. Zakł. Wydaw. Lekarskich, 1980			
Student's workload (balance of ECTS scores)			
Form of student's activity (in-class participation; activeness, produce a report, etc.)	Student's workload [h]		
	Tutor	Student	Mean
Contact hours with the tutor	45		
Time spent on preparation to seminars/ practical classes	15		
Time spent on reading recommended literature	15		
Time spent on writing report/making project	2		
Time spent on preparing to colloquium/ entry test	2		
Time spent on preparing to exam	10		
Other			
Student's workload in total			
ECTS credits for the module/subject	4		
Notes			

* Selected examples of methods of assessment:

EP – written examination

EU - oral examination

ET – test examination

EPR – practical examination

K – colloquium

R – report

S – practical skills assessment

RZC – practical classes report, incl. discussion on results

O - student's active participation and attitude assessment

SL - lab report

SP – case study

PS - assessment of student's ability to work independently

W – entry test

PM – multimedial presentation

other...