Curriculum 2020/21 Course in English

Subject: Preclinical endodontics

II[nd] year semester 4

The person in charge of teaching curriculum: prof. Maciej Dobrzyński, PhD

University division in charge of teaching: Department of Pedodontics and Preclinical conservative dentistry; Head: prof. Maciej Dobrzyński, PhD

Teaching hours limit: 45 h

Semester: 4 (summer)

Seminars: 15 h,on-line

Practical: 60 h,

Assessment: credit

ECTS: 6

Teaching goals: gain of basic theoretical and practical knowledge in endodontic treatment

Seminaries

NR	DATA	HOUR	THEME	Lecturer
1.	05.03.21	11.00 - 13.15	(1) Introduction to endodontics: endodontium – dentinal-pulp complex, morphology of dental cavity (2) Clinical classification of pulp diseases (3) Methods of pulp diseases treatment (4) Biological methods (pulpitis reversible) - pulp capping - indirect and direct - pulpotomy (partial and total), indications and contraindications, step by step treatment (5) Endodontic instruments according treatment stages	M.Biały
2	12.03.21	11.00 - 13.15	Stages of endodontic treatment (1) Endodontic access (2) Chamber and canal orifices preparation (trepanation points, roof chamber removal, chamber horns removal, orifices location)	M.Biały
3	19.03.21	11.00 - 13.15	Stages of endodontic treatment - evaluation of root working length by apex locator and radiological methods - Chemo-mechanical preparation (preparation techniques – conventional, step-back, step(crown)-down) - root canal irrigation, irrigants.	M.Biały
4	26.03.21	11.00 - 13.15	Stages of endodontic treatment (1) root canal filling materials - division (2) root canal filling techniques. Systems used to fill root canals (thermoplastic gutta-percha)	M.Biały
5.	09.04.21	11.00 - 13.15	- Materials used in root canal therapy: root canal irrigation, root canal filling, medicines between visits, applications and indications. – Complication connected with endodontic treatment – Evaluation of the quality of root canal treatment	M.Biały

Recommendations:

Preclinical Endodontics

SIMULATION EXERCISE : Preclinical Endodontics held in the hall phantom Department of Conservative Dentistry and Children's Street. Krakow 26

GENERAL PRACTICE RECOMMENDATIONS in preclinical ENDODONTICS :

Student IS ESSENTIAL lead in a notebook documentation root canal treatment :

• Noting the working length and width of the last tool used for individual teeth

• noting the problems encountered (oblitereted canal , broken instrument , re- treatment)

NOTE: teeth removed should be considered as a potential source of infection while maintaining the generally accepted rules of procedure of the biological material. There shall be no work without gloves and eye protection !

1. UPPER MOLARS - stringer channels should be prepared using step-back and filled with the single point , palatal canal should be prepared using step-back or traditional technic and fill with lateral condensation

2. LOWER MOLARS - mesial canals should be prepared using step-back and filled with the single point, distal

canal should prepared using step-back or traditional technic and fill with lateral condensation method
3.LOWER INCISORS - canals should be prepared using step-back technic and filled with the single point
4.UPPER PREMOLARS canals should be prepared using step-back technic and filled with the lateral condensation
5.UPPER INCISORS - canals should be prepared using crown-down technic and filled with the warm gutta-percha condensation
6.Beetwen visits the canals should be filled with temporary materials
7.Endodontic blocks -2 should be prepared using step-back technic and filled with the lateral condensation and 1 - canals should be prepared using crown-down technic and filled with the warm gutta-percha condensation

Attention: Extracted teeth are infection source. Always work with gum-gloves and eye protection.

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Practical

1.Biological methods	**24.02.21**	8.00-11.00	M.Biały
	26.02.21	8.00-11.00	

Introduction	**Repetition**	**Demonstration**	**Practical**
1. Biological methods 2.Materials used in pulp diseases treatment, clinical technique 3. Direct pulp capping – indications, technique, restoration 4. Difference between direct pulp capping, pulpotomy and pulpectomy 5. Procedures, set of instruments and materials	1. Teeth and instruments - surface and anatomy - Numerical identification of teeth WHO 2. Dental instruments, tips, drills (types and shapes) 3. Reminder information of sterilization and disinfection, 4. Protection of the doctor and patients - chemicals and sharp instruments	1. Direct pulp capping, indication, procedure with tooth permanent filling (Ca(OH)2, GI, composite resin) 2. Steps in formocresol pulpotomy – extracted tooth and model presentation 3. Sequence of procedure	1. Direct pulp capping, indication, procedure with tooth permanent filling ($Ca(OH)_2$, GI, resin composite) 2. Formocresol pulpotomy method, treatment procedure

2.Morphology of root canals, Endodontic access	03.03.2021	8.00-11.00	M. Biały
	05.03.2021	8.00-11.00	

Introduction	**Demonstration**	**Practical**
1. Morphology of the tooth 2. Endodontic instruments (types, size according to ISO, application) 3. Endodontic access in particular anatomic groups of teeth 4. Complication connected with preparing of endodontic access, chamber and access to root canal.	1. Endodontic access, chamber and access to root canal preparation in incisor, premolar and molar teeth 2. Sequence of procedure	1. Preparation of endodontic access, chamber and orofices in 5 natural teeth (2 single rooted and 2 multirooted upper and lower teeth)

3. Rubber dam in endodontics, Diseases of the dental pulp.	10.03.2021	8.00-11.00	M. Biały
	12.03.2021	8.00-11.00	

Introduction	**Demonstration**	**Practical**
1. Rubber dam in endodontics 2. Diseases of the dental pulp and periapical tissue. 3. Endodontic therapy. 4.Pulpothomy and pulpectomy	1. Rubber dam in endodontics (different technics)	1. Rubber dam in endodontics - 3 technics on different teeth 2. Placing rubber dam on 6 anterior teeth with dental floss 3. Placing rubber dam on 3 posterior teeth.

4. Root working length determination.	**17.03.21**	8.00-11.00	M.Biały
	19.03.21	8.00-11.00	
Introduction	**Demonstration**		**Practical**
1. Root working lenght, measurement methods and its importance in endodontic treatment, reference point. 2. Apex locator performance, radiological methods. 3.Chemo-mechanical root canal preparation (irritant solutions, techniques) 4. Sequence of procedure and types of used instruments (procedures).	1. Recapitulation of the root canal and the determination of the working length (demonstration on the phantom) 2. Doing X-ray with file, determination of the working length. 3. Calculate the diameter of the file in different points on the basis of the size and conicity.		1 Practising of the measurement of the canal length on the phantom in the natural tooth. 2. Recapitulation of the root canal and the determination of the working length – plastic block 1 x 3. Recapitulation of the root canal in 2 anterior natural teeth, doing X-ray and the calculation of the working length 4. Calculation of the file diameter in different points.

5. Recapitulation of the root canal, instruments, irigants, step back	**24.03.21**	8.00-11.00	M.Biały
	26.03.21	8.00-11.00	
Introduction	**Demonstration**		**Practical**
1. Root canal preparation methods. 2. Chemo-mechanical root canal preparation a. irritant solutions, lubricants b. techniques of root canal instrumentation - conventional, step back 3. Sequence of procedure and types of used instruments (procedures) 4. Magnification in endodontics. Root canal preparation using a microscope.	1. Temporary root canal filling. 2. Irigants presentation 3. Chemo-mechanical instrumentation (step-back) – endodontic plastic block 4. Introduction to microscope.		1. Chemo-mechanical root canal preparation 2 natural teeth and 1 plastic block, X-ray with MAF 2.Placing root canal temporary filling. 3. Working with microscope.

6. Chemo-mechanical root canal preparation (crown down)	**31.03.21**	8.00-11.00	M. Biały
	09.04.21	8.00-	
Introduction	**Demonstration**	**Practical**	
1. Chemo-mechanical root canal preparation a. irritant solutions and lubricants b. techniques of root canal instrumentation - crown down (step down) c. complication connected with pulp chamber preparation and canals instrumentation.	Chemo-mechanical instrumentation (crown down) – endodontic plastic block	1. Temporary filling removal. 2. Chemo-mechanical root canal preparation of 3 or 4 natural teeth (as indicated by the assistant - indicated molars) and 1 plastic block using crown down method.	

7. Root canal obturation (materials and methods)	**14.04.21**	8.00-11.00	M.Biały
	16.04.21	8.00-11.00	
Introduction	**Demonstration**		**Practical**
1. Ideal material for root canal obturation 2. Root canal sealers and points (types, properties) 3. Techniques of root canal obturation and instruments (sealer, sealer with single point, lateral condensation) 4. MAF and X-ray control 5. Evaluation criteria of proper root canal obturation	1. Techniques of root canal obturation and instruments (sealer with single point, lateral condensation). 2. Instruments used in root canal obturation. 3. X ray control of MAF		1 Irrigation of root canals, drying using paper points. 2. Temporary filling removal. 3. Filling of root canals in natural teeth using sealer with a single point, lateral condensation and 2 blocks prepared on previous exercises (recommendation above) 4. X-ray with MAF

8. Lateral condensation	**21.04.21**	8.00-11.00	M. Biały
	23.04.21	8.00-	
Introduction	**Demonstration**		**Practical**
1. Complication connected with root canal preparation and obturation, prevention of complications, cases presentation	1. Complication connected with root canal obturation (X-ray, plastic block), overfillings, underfillings.		1. Temporary filling removal. 2 Filling of natural root canals and 2 plastic blocks prepared on previous exercises using lateral condensation (recommendation above).

9. Root canal preparation and obturation (warm gutta-percha)	**28.04.2021**	8.00-11.00	M.Biały
	30.04.2021	8.00-11.00	
Introduction	**Demonstration**		**Practical**
1. Root canal preparation using rotary NiTi files. 2. Techniques of root canal obturation and instruments (vertical condensation, Thermafil).	Root canal preparation using rotary NiTi files and obturation using warm gutta-percha condensation.		1. Root canal preparation and obturation using warm gutta-percha condensation.

10. One visit treatment06.05.20	05.05.2021	8.00-11.00	M. Biały
	07.05.2021	8.00-11.00	
Introduction	**Demonstration**		**Practical**
1. One visit and multiple visit treatment, indicate prognosis. 2. Complication connected with root canal obturation, prevention of complications 3. Temporary root canal fillings.	Root canal preparation using rotary NiTi files and obturation using warm gutta-percha condensation.		1. Root canal preparation and obturation using warm gutta-percha condensation.

11. Reendo, microscope	**12.05.2021**	8.00-11.00	M.Biały
	14.05.2021	8.00-11.00	
Introduction	**Demonstration**		**Practical**
1. Indications for root canal re-treatment 2. Negotiations 3. The technique of treatment (removal of root canal materials, posts, broken files). 4. Chemicals and tools to reendo 5. Magnification in endodontics. Preparation of the root canal using a microscope.	1. Root canal preparation in natural teeth using microscope. 2. Reendo.		1. Reendo - removing and renewed canal filling. 2. Root canal preparation in natural teeth using microscope.

12. Posts	**19.05.2021**	8.00-11.00	M. Biały
	21.05.2021	8.00-11.00	
Introduction	**Demonstration**		**Practical**
Restoration of teeth after root canal treatment	Restoration of teeth after root canal treatment - posts		Restoration of teeth after root canal treatment.

13. Cerec	**26.05.2021**	8.00-11.00	M.Biały
	28.05.2021	8.00-11.00	
Introduction	**Demonstration**	**Practical**	
Restoration of teeth after root canal treatment. Cerec	CAD/CAM presentation	The scan and design fillings	

14. **Credit course, cerec**	**02.06.2021**	8.00-11.00	M. Biały
	11.06.2021	8.00-11.00	
Introduction	**Demonstration**		**Practical**
Credit course - test and essay. Cases preparation, analysis of the treatment. Prognosis.			Restoration of teeth after root canal treatment.

15. **Credit course**	**09.06.2021**	8.00-11.00	M. Biały
	16.06.2021	8.00-11.00	
Introduction	**Demonstration**		**Practical**
1. Credit course – improvement			1.Credit of all procedures performed 2 Self-assessment of the effects of practical and theoretical

Obligatory literature:

1. Tronstadt L.: Clinical endodontics. 2nd edtition. Georg Thieme Verlag, Stuttgart 2009
2. Ingle J.I.: Endodontics. Text and CD-ROM for Macintosh and Windows. Decker B.C. 2008.

Prepeared Reviewed Accepted