

# Opasraportti

## FMed - Dentistry (2018 - 2019)

### 1. EDUCATION IN DENTISTRY

#### 1.1. General description of the Dentistry

The Degree Programme in Dentistry, the Faculty of Medicine at the University of Oulu, is one of the four Dental Schools in Finland giving both under and post-graduate dental education. Our specific mission is to educate scientifically thinking, clinically competent professional dentists, dental specialists and doctors of dental science. The website of the Faculty of Medicine can be found at <http://www.oulu.fi/medicine/>

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#### 1.2. Research areas

The Degree Programme in Dentistry is divided into eight subjects. All subjects are headed by full professors who are in charge of the research, theoretical studies and training in respective areas. Research is also carried out in co-ordination with several subjects both within and outside the University of Oulu. For details of research projects see links to Subjects: <http://www.oulu.fi/medicine/node/43052>

- [Healthcare](#)
- [Oral Medicine](#) (Professor Tuula Salo)
- [Oral Radiology](#) (Associate professor Annina Sipola)
- [Oral Development and Orthodontics](#) (Professor Pertti Pirttiniemi)
- [Oral and Maxillofacial Surgery](#) (Professor George Sandor)
- [Cariology, Endodontology and Pediatric Dentistry](#) (Professor Vuokko Anttonen)
- [Periodontology and Geriatric Dentistry](#) (Professor Pekka Ylöstalo)
- [Prosthetic Dentistry and Stomatognathic Physiology](#) (Professor Kirsi Sipilä)

### 2. Information on Degree Programme

#### 2.1. General description

The degree of Licentiate of Dentistry is 330 ECTS credits. An academic year consists of 60 credits. The studies are pre-scheduled and the average time required to complete the degree is five and a half years.

In Finland, [the National Supervisory Authority for Welfare and Health](http://www.valvira.fi/en/licensing/professional_practice_rights) is responsible for awarding legal status to dentists and for overseeing the profession. After having the dental degree, the graduate applicant can apply for restricted legal recognition from the National Supervisory Authority for Welfare and Health. Recognition is the prerequisite for working as a private practitioner and for applying for posts and duties in the field of dentistry in Finland. More information: [http://www.valvira.fi/en/licensing/professional\\_practice\\_rights](http://www.valvira.fi/en/licensing/professional_practice_rights)

Studies in dentistry consist of preclinical and clinical phases including theoretical studies, practical training in phantom laboratory and clinical work with patients. Students have their first contacts with patients already at the preclinical phase of the curriculum. In order to arrange teaching to cover more comprehensive themes certain subjects from different subjects in Dentistry have been integrated and taught together in so called strands.

The theoretical studies during the first two preclinical years are together with medical curriculum and consist of cell biology; anatomy, physiology, biochemistry and public health. The clinical part of the studies continue mainly at the facilities of the Dentistry for a three year period. Clinical phase comprises theoretical studies in Dentistry and Medicine, practice in phantom laboratory, clinical demonstrations, tutorials and actual clinical practice in the Teaching Clinic, City of Oulu and the Clinic of Dental and Oral Diseases, University Hospital of Oulu. The final half year is mentored practice in a contract Health Center in Finland. The work with the patients gives the students the necessary skills in oral healthcare, clinical diagnostics, treatment planning and treatment procedures.

## 2.2. Qualification awarded

Licentiate of Dentistry, (Equivalent to D.D.S. degree in Anglo-American countries)

## 2.3. Admission requirements

The admission requirements for studies in dentistry comprise the Matriculation Examination Certificate and an entrance examination. All applicants have to participate in the national entrance examination, which is usually arranged in May. The entrance examination is based on Finnish or Swedish textbooks used in the curriculum of the High Schools and their obligatory and specialization courses in biology, physics and chemistry and the material offered in the entrance examination. The language of the entrance examination is Finnish or Swedish.

## 2.4. Educational and professional goals

The education is based on competence areas that include thorough knowledge on general medicine, oral biology, materials, society and management; good diagnostic, practical and interaction skills; ability in acquiring and assessing information as well as humanity. The competences follow the five domains that are described by [Association for Dental Education in Europe](http://www.aadee.org) (ADEE). These have been identified to represent the broad categories of professional activity and concerns that occur in the general practice of dentistry.

- I Professionalism, Ethics and Social skills
- II Knowledge Base, Information and Information literacy
- III Clinical Information Gathering, Diagnosis and Treatment Planning
- IV Therapy: Establishing and Maintaining Oral Health
- V Prevention and Health Promotion

## 2.5. Access to further studies

### Specialization

The Programme in Dentistry in the Faculty of Medicine is also responsible for specialist training. Before entering post-graduate training, which takes three years in clinical dentistry, orthodontics, and healthcare and six years in oral and maxillofacial surgery, the trainee must have worked two years in general practice. The aim of specialist training is to provide the dentists with advanced, comprehensive theoretical and practical skills which are defined as clinical dentistry, orthodontics, healthcare and oral and maxillofacial surgery. A national examination is arranged and must be passed by each trainee and written thesis has to be accepted.

## Doctor in Odontology (Equivalent to Ph.D. degree in Anglo-American countries)

Dental graduates may continue their studies to Doctor in Odontology. This includes preparing a dissertation and completing other doctorate studies. In order to obtain the degree, a doctoral candidate must participate in theoretical research training, the extent of which is 20 ECTS credits. The training includes prescribed courses in general postgraduate training (5 credits) and special training (15 credits) according to the topic. The candidate must also conduct research, write and publish a doctoral dissertation and defend it in a public debate. Generally the time needed to obtain a doctorate corresponds to 4 years of full-time work. For details of doctoral studies see links to [UniOGS](#).

### 2.6. Course structure diagram (with ECTS credits)

#### Structure of the Degree Programme

The degree programme is divided into six sections:

General studies 19 ECTS  
Language studies 6 ECTS  
Basic studies 92 ECTS

Subject studies 67 ECTS

Advanced studies 76 ECTS  
Practical training 40 ECTS + 30 ECTS

The preclinical phase lasts for two years and mostly consists of basic medical and biomedical studies and subject studies. The completion of clinical phase takes three and half years.

#### University of Oulu

#### Dentistry, Degree Programme in Dentistry 2018-2019

#### Licentiate of Dentistry, 330 ECTS Credits

	Year/Term		1st autumn	1st spring	2nd autumn	2nd
Code	Title	ECTS				
	<b>LANGUAGE STUDIES</b>					
<a href="#">902155Y</a>	English medical communication	3		3		
<a href="#">901038Y</a> <a href="#">901039Y</a>	Second Official Language (Swedish), Written Skills Oral Skills	3				
	<b>MEDICINE</b>					
<a href="#">A540141</a>	Medical cell and developmental biology	21	21			
<a href="#">A540142</a>	Medical Biochemistry and Molecular Biology	13		13		
<a href="#">043026P</a>	Genomic medicine I	2		2		

<a href="#">043027P</a>	Psychology for Medical Students	4		4	
<a href="#">A540143</a>	Physiology	15			15
<a href="#">A540144</a>	Microbiology and immunology	10			10
<a href="#">043052P</a>	General Pathology	5			5
<a href="#">043037P</a>	Public health	6			6
<a href="#">043038P</a>	Radiation Safety in Medicine	2			2
<a href="#">A540145</a>	Pharmacology and toxicology	10			10
<a href="#">043053P</a>	Basic skills in doctor-patient relationship	3			3
	<b>DENTISTRY</b>				
	<b>1. Basic knowledge and skills in dentistry</b>				
<a href="#">043001Y</a>	Introduction to medical profession	4	4		
<a href="#">090171A</a>	Introduction to Oral Health I This study module contains: <a href="#">090171A-01</a> Introduction to Development of Occlusion and Orthodontics (0.5 Credit), <a href="#">090171A-02</a> Organization and Providers of Oral Health Care Services (0.5 Credit) and <a href="#">090171A-03</a> Tooth Morphology (2 op)	3		3	
<a href="#">090170P</a>	Introduction to Oral Health II	1			1
<a href="#">090181Y</a>	Growing identity as a dentist Part 1	1			
<a href="#">090182Y</a>	Growing identity as a dentist Part 2	0.5			
<a href="#">090183Y</a>	Growing identity as a dentist Part 3	0.5			
<a href="#">091731A</a>	Stomatognathic Physiology I (orthofunction)	3			3
<a href="#">091711A</a>	Cariology I	2			2

<a href="#">091712A</a>	Cariology II	8			
<a href="#">091751A</a>	Basics in Periodontology and Periodontal Treatment (part 1 and 2)	5			
<a href="#">091761A</a>	Principles of Dental Radiology	4			
<a href="#">090182A</a>	<p>Introduction to Clinical Care</p> <p>This study module contains: <a href="#">090182A-01</a> Introduction to Clinical Work (1.5 Credits), <a href="#">090182A-02</a> Ethics, Legislation and Patient Documents, Interpersonal and Communication Skills (1.5 Credit), <a href="#">090182A-03</a> Nutrition (0.5 Credits), and <a href="#">090182A-04</a> Propedeutic Course on Surgery (1.5 Credits)</p>	5			
<a href="#">091701A</a>	Clinical Training DC5	1			
<a href="#">091713A</a>	Endodontics I	2			
<a href="#">091771A</a>	Basic skills in orthodontics	7			
<a href="#">091721A</a>	Principles of Oral and Maxillofacial Surgery	4			
<a href="#">091751S</a>	Special Topics in Nonsurgical Periodontal Therapy	2			
<a href="#">091702A</a>	Clinical Training DC6	7			
<a href="#">091703A</a>	Clinical Training DC7	8			
<a href="#">091506S</a>	Radiation Safety in Dentistry	0.5			
<a href="#">091781S</a>	Oral Health Care Services and Costs	2			
<a href="#">091704A</a>	Clinical Training DC8	9			
<a href="#">091713S</a>	Endodontics II	2			
<a href="#">091705A</a>	Clinical Training DC9	8			
<a href="#">091772S</a>					

	Special features in occlusal development This study module contains: <a href="#">091772S-01</a> ORTHO-Seminars 1-5 (1.5 credit) and <a href="#">091772S-02</a> Pathology in occlusal development and adult orthodontics (0.5 credit)	2			
<a href="#">091782S</a>	Acting as a Dentist in the Oral Health Care System	3			
<a href="#">091706A</a>	Clinical Training DC10	7			
<a href="#">090603S</a>	Advanced Practical Training DC11	30			
	<b>2. Oral diseases and overall health</b>				
<a href="#">080206A</a>	Prescriptions	0.5			
<a href="#">091791A</a>	Diseases of Oral Mucosa	3			
<a href="#">090173S</a>	Medical Specialities I This study module contains: <a href="#">090173S-01</a> Dermatology and Venereology (0.5 Credits) and <a href="#">090173S-02</a> Otorhinolaryngology (0.5 Credit)	1			
<a href="#">091714S</a>	Kariology III	2			
<a href="#">091791S</a>	Oral pathology	6			
<a href="#">091754A</a>	Geriatric Dentistry	2			
<a href="#">091822S</a>	Oral Surgery, General Health and Facial Pain Conditions	4			
<a href="#">090174S</a>	Medical Specialities II This study module contains: <a href="#">090174S-01</a> Internal Medicine for Dental Students (0.8 Credits), <a href="#">090174S-02</a> Clinical microbiology (2.1 Credits), <a href="#">090174S-03</a> Neurology (0.4 Credits), <a href="#">090174S-04</a> Clinical Pharmacology (1.0 Credits), <a href="#">090174S-05</a> Psychiatry (0.4 Credits) and <a href="#">090174S-06</a> Forensic Dentistry (0.3 Credits)	5			
<a href="#">091755S</a>	Periodontal Diseases, General Health and Periodontal Infections	3			

	<b>3. Rehabilitation of the occlusion</b>				
<a href="#">091732A</a>	Stomatognathic Physiology II (pathofunction)	4			
<a href="#">091833A</a>	<p>Prosthetics I</p> <p>This study module contains: <a href="#">091833A-01</a> Fixed Prosthodontics I (3.5 Credits), <a href="#">091833A-02</a> Removable Prosthodontics I (3 Credits), <a href="#">091833A-03</a> Dental Materials (1.5 Credits) and <a href="#">091833A-04</a> Occlusal Rehabilitation in Periodontal Therapy (1 Credits)</p>	9			
<a href="#">091733S</a>	<p>Prosthetics II</p> <p>This study module contains: <a href="#">091733S-01</a> Fixed Prosthodontics II (1.4 Credits), <a href="#">091733S-02</a> Removable Prosthodontics II (2 Credits), <a href="#">091733S-03</a> Stomatognathic Physiology III (1 Credit) and <a href="#">091733S-04</a> Oral and Maxillofacial Rehabilitation (0.6 Credits)</p>	5			
<a href="#">091734S</a>	<p>Prosthetics III</p> <p>This study module contains: <a href="#">091734S-01</a> Prosthetic Management for Advanced Cases (1.0 Credits) and <a href="#">091734S-02</a> Implant Dentistry (1.0 Credit)</p>	2			
	<b>4. Basic knowledge and skills in surgery</b>				
<a href="#">090175S</a>	<p>Dentoalveolar Surgery</p> <p>This study module contains: <a href="#">090175S-01</a> Dentoalveolar Surgery (3.7 Credits), <a href="#">090175S-02</a> Periodontal Surgery I (2.0 Credits), <a href="#">090175S-03</a> Radiology of Dentoalveolar Surgery (1.3 Credits), and <a href="#">090175S-04</a> Abnormal eruption patterns of permanent teeth 2 h</p>	7			
<a href="#">090186S</a>	<p>Injuries and Odontogenic Infections</p> <p>This study module contains: <a href="#">090186S-01</a> Trauma and Infection Radiology (0.8 Credit), <a href="#">090186S-02</a> Dental and Maxillofacial Injuries - diagnostics and treatment (2.7 Credits), <a href="#">090186S-03</a> Odontogenic Infections (0.5 Credits), <a href="#">090186S-04</a> Anaesthesiology (1 Credits), <a href="#">090186S-05</a> Periodontic-Endodontic lesions 2 h</p>	5			

<a href="#">091753S</a>	Periodontal Surgery II	1			
	<b>5. Growth and development</b>				
<a href="#">090177A</a>	Paediatric Dentistry This study module contains: <a href="#">090177A-01</a> Paediatrics (0.5 Credits), <a href="#">090177A-02</a> Pedodontics (2.7 Credits), <a href="#">090177A-03</a> Periodontal diseases in children (0.3 Credits), <a href="#">090177A-04</a> Oral Health and Health Service System (1 Credit), and <a href="#">090177A-05</a> Pediatric oral and maxillofacial surgery (0.5 Credits)	5			
<a href="#">091773S</a>	Development of the occlusion	3			
	<b>6. Basic knowledge and skills in science</b>				
<a href="#">043002Y</a>	Knowledge and research I: Scientific writing	3	3		
<a href="#">043003Y</a>	Knowledge and research I : Literature retrieval	2	2		
<a href="#">043004Y</a>	Knowledge and research I: Scientific communication	5		5	
<a href="#">043005Y</a>	Knowledge and Research II: Data-analysis				3
<a href="#">091601S</a>	Study plan	4			
<a href="#">091602S</a>	Thesis	16			
<a href="#">040300A</a>	Maturity exam (native language)	0			
	Sum		30	30	33
					27

				Sum		60		60
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## 2.7. Final examination

To obtain the degree final examination has to be completed in following courses:

090302A Oral Pathology

090501A Pedodontics, Cariology and Endodontics

090502A Oral and Maxillofacial Surgery

090503A Prosthetic Dentistry

090504A Stomatognathic Physiology

090505A Parodontology and Geriatric Dentistry

090506A Oral Radiology

090510A Healthcare

090601A Oral Development and Orthodontics

In advanced studies the student concentrates on some specific topic, which has scientific relevance in Dentistry. Advanced studies include thesis work (20 ECTS credits) and oral presentation.

## 2.8. Examination and Assessment Regulations

Assessment is based on written and oral examinations, objective structured clinical examination (4<sup>th</sup> yr), exercises, essays, field work, supervised clinical work and self-assessment, reports or any other method determined pedagogically appropriate for the particular course. All the exams can be retaken. Additional information is given from the organizing subject. Clinical work is assessed biannually.

Grades used for assessment of the courses are: 5 (excellent; ECTS A), 4 (very good; ECTS B), 3 (good; ECTS C), 2 (satisfactory; ECTS D), 1 (sufficient; ECTS E); fail.

# Tutkintorakenteet

## Licentiate of Dentistry 2018-2019 (E)

Tutkintorakenteen tila: published

Lukuvuosi: 2018-19

Lukuvuoden alkamispäivämäärä: 01.08.2018

## Language studies (vähintään 6 op)

- 902155Y: Medical English, 3 op  
 901039Y: Second Official Language (Swedish), Oral Skills, 2 op  
 901038Y: Second Official Language (Swedish), Written Skills, 1 op

## Medicine

- A540141: Anatomy and Medical cell and developmental biology, 21 op  
*Compulsory*  
 043010P: Anatomy: Medical cell and developmental biology, 7 op  
 043011P: Anatomy: Musculoskeletal system, 3 op  
 043012P: Anatomy: Organ systems, 3 op  
 043013P: Anatomy: Neuroanatomy, 3 op  
 043014P: Anatomy: Histology exercise, 2 op  
 043015P: Anatomy: Macroscopic anatomy exercise, 3 op  
 043053P: Basic skills in doctor-patient relationship, 3 op  
 043052P: General Pathology, 5 op  
 043026P: Genomic Medicine I, 2 op  
 A540142: Medical Biochemistry and Molecular Biology, 13 op  
*Compulsory*  
 043020P: Medical Biochemistry and Molecular Biology: Basics of the molecular biology, 2 op  
 043021P: Medical Biochemistry and Molecular Biology: Basics of the metabolism, 3 op  
 043022P: Medical Biochemistry and Molecular Biology: Hormones and biochemistry of tissues, 2 op  
 043023P: Seminars and exercises of Medical Biochemistry and Molecular Biology, 2 op  
 043024P: Practical laboratory working in Medical Biochemistry and Molecular Biology, 2 op  
 043025P: Final exam of Medical Biochemistry and Molecular Medicine, 2 op  
 A540144: Microbiology and immunology, 10 op  
*Compulsory*  
 043040P: Immunology, 4 op  
 043041P: Microbiology, 6 op  
 A540145: Pharmacology and toxicology, 10 op  
*Compulsory*  
 043045P: Pharmacology and toxicology PART I, 4 op  
 043046P: Pharmacology and toxicology PART II, 5 op  
 043047P: Pharmacology and toxicology PART III, 1 op  
 A540143: Physiology, 15 op  
*Compulsory*  
 043030P: Physiology, term paper, 2 op  
 043031P: Physiology interim exam, 5 op  
 043032P: Physiology group works, 2 op  
 043033P: Physiology final examination, 6 op  
 043027P: Psychology for Medical Students, 4 op  
 043037P: Public Health, 6 op  
 043038P: Radiation Safety in Medicine, 2 op

## Basic knowledge and skills in dentistry

- 090603S: Advanced Practical Training DC11, 30 op  
 091781S: Basic Competence in Working on Public Oral Health Care Services, 2 op  
 091751A: Basics in Periodontology and Periodontal Treatment, 5 op  
 091711A: Cariology I, 2 op  
 A540231: Cariology II, 9 op  
 091706A: Clinical Training DC10, 6 - 7 op  
 091701A: Clinical Training DC5, 1 op  
 091702A: Clinical Training DC6, 7 op  
 091703A: Clinical Training DC7, 8 op  
 091704A: Clinical Training DC8, 8 - 9 op  
 091705A: Clinical Training DC9, 8 op  
 091782S: Current Topics in Community Dentistry, 3 op  
 091713A: Endodontics I, 2 op

- 091713S: Endodontics II, 2 op  
 090181Y: Growing identity as a dentist Part 1, 1 op  
 090182Y: Growing identity as a dentist Part 2, 0,5 op  
 090183Y: Growing identity as a dentist Part 3, 0,5 op  
 090182A: Introduction to Clinical Care, 5 op  
   *Compulsory*  
     090182A-01: Introduction to Clinical Work, 0 op  
     090182A-02: Ethics, Legislation and Patient Documents, Interpersonal and Communication Skills, 0 op  
     090182A-03: Nutrition, 0 op  
     090182A-04: Propedeutic Course on Surgery, 0 op  
 090171A: Introduction to Oral Health I, 3 op  
   *Compulsory*  
     090171A-01: Introduction to Development of Occlusion and Orthodontics, 0 op  
     090171A-02: Organization and Providers of Oral Health Care Services, 0 op  
     090171A-03: Tooth Morphology, 0 op  
 090170P: Introduction to Oral Health II, 1 op  
 043001Y: Introduction to medical profession, 4 op  
 A540232: Orthodontics I, 6 - 7 op  
 091751S: Periodontology II, 2 op  
 091761A: Principles of Dental Radiology, 4 op  
 091721A: Principles of Oral and Maxillofacial Surgery, 4 op  
 091506S: Radiation Safety in Dentistry, 0,5 - 0,6 op  
 091772S: Special features in occlusal development, 2 op  
   *Compulsory*  
     091772S-01: ORTHO-Seminars 1-5, 0 op  
     091772S-02: Pathology in occlusal development and adult orthodontics, 0 op  
 091731A: Stomatognathic Physiology I (orthofunction), 3 op

## **Oral diseases and overall health**

- 091714S: Cariology III, 2 op  
 091791A: Diseases of Oral Mucosa, 3 op  
 091754A: Geriatric Dentistry, 2 op  
 090173S: Medical Specialities I, 1 op  
   *Compulsory*  
     090173S-01: Dermatology and Venereology, 0 op  
     090173S-02: Otorhinolaryngology, 0 op  
 090174S: Medical Specialities II, 5 op  
   *Compulsory*  
     090174S-01: Internal Medicine for Dental Students, 0 op  
     090174S-02: Clinical microbiology, 0 op  
     090174S-03: Neurology, 0 op  
     090174S-04: Clinical Pharmacology, 0 op  
     090174S-05: Psychiatry, 0 op  
     090174S-06: Forensic Dentistry, 0 op  
 091822S: Oral Surgery and General Health, 4 op  
 091791S: Oral pathology, 5 - 6 op  
 091755S: Periodontology V, 2 - 3 op  
 080206A: Prescriptions, 0,5 op

## **Rehabilitation of the occlusion**

- 091734S: Implant Dentistry II, 2 op  
   *Compulsory*  
     091734S-01: Prosthetic Management for Advanced Cases, 0 op  
     091734S-02: Implant Dentistry, 0 op  
 091833A: Prosthetics I, 9 op  
   *Compulsory*  
     091833A-01: Fixed Prosthodontics I, 0 op  
     091833A-02: Removable Prosthodontics I, 0 op  
     091833A-03: Dental Materials, 0 op  
     091833A-04: Occlusal Rehabilitation in Periodontal Therapy, 0 op

091733S: Prosthetics II, 5 op

*Compulsory*

091733S-04: Oral and Maxillofacial Rehabilitation, 0 op

091733S-01: Removable prosthodontics II, 0 op

091733S-02: Fixed prosthodontics II, 0 op

091733S-03: Stomatognathic Physiology III, 0 op

091732A: Stomatognathic Physiology II (pathofunction), 4 op

## Basic knowledge and skills in surgery

090175S: Dentoalveolar Surgery, 7 op

*Compulsory*

090175S-01: Oral Surgery, 0 op

090175S-02: Periodontal Surgery I, 0 op

090175S-03: Roentgenographic Studies for Surgical Purposes, 0 op

090175S-04: , 0 op

090186S: Injuries and Odontogenic Infections, 5 op

*Compulsory*

090186S-01: Roentgenographic Picture of Osteomyelitis. Roentgenographic Features of the Benign and Malignant Tumors, 0 op

090186S-02: Dental and Maxillofacial Injuries - diagnostics and treatment, 0 op

090186S-03: Odontogenic Infections, 0 op

090186S-04: Anaesthesiology, 0 op

090186S-05: Endo-perio problems, 0 op

091753S: Periodontal Surgery II, 1 op

## Growth and development

091773S: Dental and orofacial development, 3 op

090177A: Paediatric Dentistry, 5 op

*Compulsory*

090177A-01: Paediatrics, 0 op

090177A-02: Pedodontics, 0 op

090177A-03: Periodontal diseases in children, 0 op

090177A-04: Controlling Oral Diseases among Populations; Evidence-based Dentistry, 0 op

090177A-05: Pediatric oral and maxillofacial surgery, 0 op

## Basic knowledge and skills in science

043003Y: Knowledge and Research I: Literature retrieval, 2 op

043002Y: Knowledge and Research I: Scientific writing, 3 op

043004Y: Knowledge and Research II: Scientific communication, 5 op

043005Y: Knowledge and Research III: Data analysis, 3 op

040300A: Maturity exam (native language), 0 op

091601S: Study plan, 4 op

091602S: Thesis, 16 op

## Tutkintorakenteisiin kuulumattomat opintokokonaisuudet ja -jaksot

091704A-01: Dental hygienist workshop, 0 op

# Opintojaksojen kuvaukset

## Tutkintorakenteisiin kuuluvien opintokohteiden kuvaukset

### 902155Y: Medical English, 3 op

**Voimassaolo:** 01.01.2017 -

**Opiskelumuoto:** Language and Communication Studies

**Laji:** Course

**Vastuuyksikkö:** Languages and Communication

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Eva Braidwood

**Opintokohteen kielet:** English

**Leikkaavuudet:**

ay902155Y Medical English (OPEN UNI) 3.0 op

**Proficiency level:**

B2-C1

**Status:**

This course is compulsory for students of medicine and dentistry. It is recommended for 1<sup>st</sup> year students.

**Required proficiency level:**

Students are expected to have had English as their A1 or A2 language at school or have acquired equivalent skills.

**ECTS Credits:**

3 op /ECTS = 80 hrs

**Language of instruction:**

English

**Timing:**

The course consists of 3 modules. Module 1 is held in the autumn semester, during period I & II. Groups in Module 2 are held in periods II and III, and Module 3 is held in period IV.

**Learning outcomes:**

Having completed the course successfully, students will be able to:

- understand and use basic medical terminology appropriately, and learn strategies for expanding your own medical vocabulary (MODULES 1 & 2);
- understand medical case reports related to specific body systems (MODULE 2);
- demonstrate your ability to communicate effectively with patients (patient-centred interviewing), and discuss cases with medical professionals using professional medical English (MODULE 2);
- discuss and present topics of interest in clinical psychology (MODULE 3);
- follow the conventions of scientific communication and general medical practice (MODULE 2);
- produce specific text types in English (scientific summary and scientific poster) (MODULES 1 & 3).

**Contents:**

The course consists of three modules.

Module 1 is integrated with the Cell Biology course. Students learn the structure, rules and conventions of appropriate language use in scientific reports in cell biology. This module is scheduled for Year 1 Period I (autumn semester in the first year).

Module 2 focuses on medical terminology and anatomy. Students learn the basics of medical terminology, and develop their own strategy for mastering English medical terms related to the body systems and their functions. Students will read case reports and learn about effective doctor-patient and doctor-doctor communication. This module is scheduled in Year 1 Period II-IV.

Module 3 is integrated with the course in clinical psychology. Students will report about the case studies they analyse and discuss in the Clinical Psychology course. To this end, they will work in teams and prepare a scientific abstract and an e-poster in English, which they will present in a mini-conference at the end of the term. This module is scheduled in Year 1 Period IV.

**Mode of delivery:**

Module 1: lectures supported by web-based practice and tutorials (writing clinic)

Module 2: contact teaching with online elements and web-based practice

Module 3: small group sessions with online support (the same groups as in the Clinical psychology course)

**Learning activities and teaching methods:**

**Module 1: 20 hrs = 0.75 ECTS**

10 hrs of guided teaching in the form of 3 lectures and 2 compulsory tutorials, 10 hrs independent work, team work

**Module 2: 40 hrs = 1.5 ECTS**

20 hrs guided teaching and 20 hrs independent work – Alternatively, students with C1 language skills can complete the course by participating in 10 hrs contact lessons and 30 hrs self-study and team work

**Module 3: 20 hrs = 0.75 ECTS credits**

14 hrs guided teaching, online learning and team work, 6 hrs participating in mini-conference

**Target group:**

Students studying medicine and dentistry; in the first year of their studies at the Faculty of Medicine.

**Prerequisites and co-requisites:**

Students taking the course should have studied English as their first foreign language and should have B1-B2-level language skills (CEFR scale).

**Recommended optional programme components:**

The course is integrated with Cell biology and Clinical psychology.

**Recommended or required reading:**

The course material is based on scientific texts and publications in leading medical journals. The selection of texts varies every year depending on the leading themes in the field (cell biology, clinical psychology). Module 2 is based on common medical terminology material and anatomy and physiology texts as well as case reports published in leading medical journals. The selection of material and sources are available for students in the university's electronic learning platform (Optima) and through the university library.

**Assessment methods and criteria:**

This course utilises continuous assessment. During the three modules students will be compiling a learning journal with glossary. The journal contains the texts students produce in Module 1 and Module 3, the glossary of medical terms they compile in Module 2 and additional learning material they use and produce for doctor-patient communication (sample dialogues, extracts from case report). Peer-feedback will also be utilised and counted in the final assessment. The assessment criteria and matrix will be available in Optima.

**Grading:**

The course uses a numerical grading scale 1-5.

**Person responsible:**

Eva Braidwood

**Working life cooperation:**

The course includes guest lectures as and when available.

**Other information:**

Students with advanced (C1) language skills can complete the alternative version of Module 2 (less contact hrs and more independent/team work).

**901039Y: Second Official Language (Swedish), Oral Skills, 2 op**

**Voimassaolo:** 01.08.2014 -

**Opiskelumuoto:** Language and Communication Studies

**Laji:** Course

**Vastuuyksikkö:** Languages and Communication

**Opintokohteen kielet:** Swedish

**Leikkaavuudet:**

ay901039Y Second Official Language (Swedish), Oral Skills (OPEN UNI) 2.0 op

**901038Y: Second Official Language (Swedish), Written Skills, 1 op**

**Voimassaolo:** 01.08.2014 -

**Opiskelumuoto:** Language and Communication Studies

**Laji:** Course

**Vastuuyksikkö:** Languages and Communication

**Opintokohteen kielet:** Swedish

**Leikkaavuudet:**

ay901038Y Second Official Language (Swedish), Written Skills (OPEN UNI) 1.0 op

## **A540141: Anatomy and Medical cell and developmental biology, 21 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Basic Studies

**Laji:** Study module

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Tuukkanen, Kaarlo Juha Kullervo, Lehenkari, Petri Pauli

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

21 ECTS credits / 567 hours of work

**Language of instruction:**

Finnish

**Timing:**

The course unit is held in the autumn semester. The course is recommended to complete mainly at the first autumn semester of medical or dental studies.

**Learning outcomes:**

Upon completion of the course the student should be able to:

- understand the structure, development and function of the human body in order to manage the rest of the preclinical and clinical studies
- identify and describe the structures essential for all medical doctors in diagnostics and treatment, especially for first aid.
- display common anatomical knowledge for understanding medical theory and research and for dealing with evidence based medicine.

Upon completion of the medical cell and developmental biology part of the course the student should be able to:

- describe the structure of various cell types (especially mammalian cells) and the structure and function of cell organelles
- describe cell growth and cell division
- present the principles of the regulation of cell function and genetic regulation
- list the common research techniques in cell biology
- display an understanding of gametogenesis, fertilization, embryonal development (0-40days) and its regulation as well as the development of embryonal malformations.
- display an understanding of human growth and development.
- identify and describe the basic tissues of the human body and the microscopic structure of the tissues for understanding their normal and pathological function

Upon completion of the anatomy part of the course the student should be able to describe the structure of the organs and their topography in the body as well as surface projections of the internal organs. The student should be able to understand the main principles of the embryonal development. By using light microscope and the student should be able to recognize the main structures that are important for the function of the organs as well as structures which are important for pathological processes. In addition the student should be able to demonstrate the organs in living body, in preparations of the cadavers, anatomical models, X-ray images, diagrammatic drawing and in manual examination.

**Contents:**

The course consists of the following study modules:

- 043010P Anatomy: Medical cell and developmental biology 7 ECTS

- 043011P Anatomy: Musculoskeletal system 3 ECTS
- 043012P Anatomy: Organ systems 3 ECTS
- 043013P Anatomy: Neuroanatomy 3 ECTS
- 043014P Anatomy: Histology exercise 2 ECTS
- 043015P Anatomy: Macroscopic anatomy exercise 3 ECTS

**Mode of delivery:**

Face-to-face teaching.

**Learning activities and teaching methods:**

Lectures 140h / small group exercise 75h / exams 10 h / self-study 342 h (includes essay). Small group teaching will be provided in 2-4 h exercises. Each student will have 1-2 exercise sessions per week. Writing an essay in cell and developmental biology. An optional course of the anatomical dissection (044102S, 2 ECTS credits) is provided at 2<sup>nd</sup> year spring semester.

**Target group:**

First year medical and dental students.

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

The course must be completed during the preclinical stage of studies.

**Recommended or required reading:**

Sobotta Anatomy Textbook: English Edition with Latin Nomenclature. Edited by Friedrich Paulsen, Tobias M. Böckers, Jens Waschke. Elsevier GmbH, Munich, Germany 1st edition, 2019 (ISBN 978-3-437-44080-9)

A.L. Kierszenbaum: Histology and Cell Biology: an introduction to pathology. Mosby, St Louis (last ed.).

or B. Young, J.S. Lowe, A. Stevens, J.W. Heath :

Wheater's Functional Histology, A Text and Colour Atlas. Elsevier, Churchill Livingstone (last ed.) In the addition Anatomy Atlas books are useful.

**Assessment methods and criteria:**

The assessment of the Anatomy and Medical Cell and Developmental Biology course is based on the grades of included courses and exercises

**Grading:**

Within the Anatomy and Medical Cell and Developmental Biology course the various course units are integrated. Especially the cell and developmental biology continues within the later anatomy section, where the development of the various organ systems are included as well as the special histology of the tissues forming the organs. Each course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail. The course units proportions of the final grading are as follows:

-Cell and developmental biol. 0.25

-Musculoskeletal system 0.17

-Organ anatomy 0.25

-Neuroanatomy 0.08

-Practicals 0.25

**Person responsible:**

Professor Juha Tuukkanen

**Working life cooperation:**

Some of the lecturers are clinicians and the clinical methods are demonstrated and used in teaching

**Other information:**

Study entities completed in other medical faculty with same content and, extent may be accepted as compensatory credits

*Compulsory***043010P: Anatomy: Medical cell and developmental biology, 7 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Lehenkari, Petri Pauli

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

7 ECTS credits / 189 hours of work

**Language of instruction:**

Finnish

**Timing:**

The course unit is held in the autumn semester. The course is recommended to complete mainly at the first autumn semester of medical or dental studies.

**Learning outcomes:**

Upon completion of the medical cell and developmental biology course the student is able to describe the structure of various cell types (especially mammalian cells) and the structure and function of cell organelles. The student can describe cell growth and cell division, present the principles of the regulation of cell function and genetic regulation and list the common research techniques in cell biology. In addition the student can understand gametogenesis, fertilization and embryonal development (0-40days) and its regulation as well as human growth and development including the development of embryonal malformations.

After completion of the course the student can also identify and describe the basic tissues of the human body and the microscopic structure of the tissues for understanding their normal and pathological function. During the essay writing the student learns to find original publications and evaluate them critically. The essay leads the student to use scientific information and the principles of scientific work. The essay is collaboration with the EBM curriculum.

**Contents:**

Cell evolution and cell biology, human embryonal development (embryology), basic tissues which make up the organs (histology).

**Mode of delivery:**

Face-to-face teaching.

**Learning activities and teaching methods:**

Lectures 56 h / self-study 189 h (includes essay). The essay is done in collaboration with EBM course.

**Target group:**

First year medical and dental students.

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

The course must be completed during the preclinical stage of studies.

**Recommended or required reading:**

Embryology:

T.W. Sadler: Langman's Medical Embryology. Williams&Wilkins co, Baltimore or

Cell Biology and Histology:

A.L. Kierszenbaum: Histology and Cell Biology: an introduction to pathology. Mosby, St Louis, (latest edition).

Additional material: H.Lodish, A.Berk, C.A.Kaiser, M.Krieger, M.P.Scott, A.Bretscher, H.Ploegh: Molecular Cell Biology. W.H.Freeman and Co, New York (latest edition).

**Assessment methods and criteria:**

This course unit utilizes continuous assessment. In addition to this, the students will be compiling an essay, which will be assessed. The assessment of the whole course consists also of final examination.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail. The final grading includes final examination and the assessment of the essay writing.

**Person responsible:**

Professor Petri Lehenkari

**Working life cooperation:**

-

**Other information:**

-

**043011P: Anatomy: Musculoskeletal system, 3 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Lehenkari, Petri Pauli

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

3 ECTS credits / 81 hours of work

**Language of instruction:**

Finnish

**Timing:**

The course unit is held in the autumn semester. The course is recommended to complete at the first autumn semester of medical or dental studies.

**Learning outcomes:**

Upon completion of the course the student should be able to understand the structure and function of the human musculoskeletal system in order to manage the rest of the preclinical and clinical studies. The student learns to identify and describe the structures essential for all medical doctors in diagnostics and treatment of common musculoskeletal disorders.

Upon completion of the musculoskeletal part of anatomy course the student should be able to describe the bones, joints, muscles and neurovascular structure of the extremities and spine. The structure of pelvis (and the differences of male and female pelvis) should be understood for locomotion and childbirth. The supporting structures of the skull and key points in the skull should be learned in this section. The student can show the structures in a living body, cadaver, anatomical models, x-ray images and medical drawings.

**Contents:**

The bony structures of the skull, extremities, spine and pelvis and their muscles and neurovascular structures and the basics of functional anatomy.

**Mode of delivery:**

Face-to-face teaching.

**Learning activities and teaching methods:**

Lectures 22 h / self-study 81 h.

**Target group:**

First year medical and dental students.

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

The course must be completed during the preclinical stage of studies.

**Recommended or required reading:**

*Textbooks*

R.L. **Drake**, A.W. Vogl, A.W.M. Mitchell: **Gray's Anatomy** for students. Elsevier Churchill Livingstone (uusin painos) tai **Moore**: K.L. Moore: Clinically oriented Anatomy, Williams & Wilkins co (uusin painos)

*Anatomy atlases:*

R.Putz, R.Pabst eds.: " **Sobotta** Atlas of Human Anatomy" 1-3, Elsevier Urban & Fischer, München (uusin painos) , F.H. **Netter**: Atlas of human anatomy, tai **Thieme** Atlas of Anatomy, Latin Nomenclature.

*Pocket Atlases:*

**H. Feneis**: "Pocket Atlas of Human Anatomy, G. Thieme Pub. Stuttgart, uusin painos (Thieme Flexibook) tai **Dorland's/Gray's** Pocket Atlas of Anatomy Richard L. Drake, A. Wayne Vogl

**Assessment methods and criteria:**

This course unit utilizes continuous assessment.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Juha Tuukkanen

**Working life cooperation:**

-

**Other information:**

-

**043012P: Anatomy: Organ systems, 3 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Tuukkanen, Kaarlo Juha Kullervo

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

3 ECTS credits / 81 hours of work

**Language of instruction:**

Finnish

**Timing:**

The course unit is held in the autumn semester. The course is recommended to complete at the first autumn semester of medical or dental studies.

**Learning outcomes:**

Upon completion of the organ anatomy part of the course the student should be able to describe the structure of the organs and their topography in the body as well as surface projections of the internal organs. The student should be able to understand the main principles of the embryonal development. The student should be able to demonstrate the organs in living body, in preparations of the cadavers, anatomical models, X-ray images, diagrammatic drawings and in manual examination and understands the principles of topographic anatomy and projection of structures in various imaging techniques. The student can recognize normal structures in manual examination and understands the principles of anatomical variation. The student should also understand the normal function of the organ systems.

**Contents:**

Systemic anatomy: cardiovascular system and lymphatic system, thorax and respiratory system, abdomen and alimentary system, integument, pelvis, urinary system, genital systems, and endocrine system. Regional anatomy and topographical anatomy, organ development and histology integrated with the previous titles. Examples of the applications of the anatomical knowledge in clinical cases and manual palpation of main organs and structures.

**Mode of delivery:**

Face-to-face teaching.

**Learning activities and teaching methods:**

Lectures 22 h / self-study 81 h

**Target group:**

First year medical and dental students.

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

The course must be completed during the preclinical stage of studies.

**Recommended or required reading:***Textbooks*

R.L. **Drake**, A.W. Vogl, A.W.M. Mitchell: **Gray's Anatomy** for students. Elsevier Churchill Livingstone (uusin painos) tai **Moore**: K.L. Moore: Clinically oriented Anatomy, Williams & Wilkins co (uusin painos)

*Anatomy atlases:*

R.Putz, R.Pabst eds.: " **Sobotta** Atlas of Human Anatomy" 1-3, Elsevier Urban & Fischer, München (uusin painos) , F.H. **Netter**: Atlas of human anatomy, tai **Thieme** Atlas of Anatomy, Latin Nomenclature.

*Pocket Atlases:*

**H. Feneis**: "Pocket Atlas of Human Anatomy, G. Thieme Pub. Stuttgart, uusin painos (Thieme Flexibook) tai **Dorland's/Gray's** Pocket Atlas of Anatomy Richard L. Drake, A. Wayne Vogl,

**Assessment methods and criteria:**

This course unit utilizes continuous assessments. The assessment of the whole course consists also of final examination.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Juha Tuukkanen

**Working life cooperation:**

-

**Other information:**

-

**043013P: Anatomy: Neuroanatomy, 3 op****Voimassaolo:** 01.08.2016 -**Opiskelumuoto:** Basic Studies**Laji:** Course**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Tuukkanen, Kaarlo Juha Kullervo**Opintokohteen kielet:** Finnish**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

3 ECTS credits / 81 hours of work

**Language of instruction:**

Finnish

**Timing:**

The course unit is held in the autumn semester. The course is recommended to complete at the first autumn semester of medical or dental studies.

**Learning outcomes:**

Upon completion of the neuroanatomy course the student is able to describe the structure and location of the central nervous system and the somatic and autonomous divisions of the peripheral nervous system and the principles of their embryologic development. The student will learn the structures that surround the central nervous system, the meninges and the formation and circulation of the cerebrospinal fluid. The student understands the blood supply of the central nervous system and the symptoms related to circulatory diseases. Cranial nerves, main motor and sensory pathways and the structure and function of visual, hearing and balance systems can be described. The student can describe the structures in a living body, cadaver, anatomical models, x-ray (CT/MRI) images and drawings.

-

**Contents:**

The principles of the embryology and developmental defects of the nervous system, cerebral structure and the functional cortical areas, spinal cord, medulla and pons, midbrain, diencephalon and cerebellum, blood circulation of the central nervous system, meninges and the circulation of the cerebrospinal fluid, cranial nerves, peripheral nervous system, spinal nerves and autonomic nervous system, motor and sensory pathways and sensory organs eye and ear.

**Mode of delivery:**

Face-to-face teaching.

**Learning activities and teaching methods:**

Lectures 22 h / self-study 81 h.

**Target group:**

First year medical and dental students.

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

The course must be completed during the preclinical stage of studies.

**Recommended or required reading:***Textbooks*

R.L. Drake, A.W. Vogl, A.W.M. Mitchell: Gray's Anatomy for students. Elsevier Churchill Livingstone (latest ed.) or K.L. Moore: Clinically oriented Anatomy, Williams & Wilkins co (latest ed.)

W. Kahle, M. Frotscher: Color Atlas of Human Anatomy, Vol. 3: Nervous System and Sensory Organs, 7th Ed

*Atlases:*

R.Putz, R.Pabst eds.: " Sobotta Atlas of Human Anatomy" 1-3, Elsevier Urban & Fischer, München (latest ed.) , F.H. Netter: Atlas of human anatomy, tai Thieme Atlas of Anatomy, Latin Nomenclature.

*Pocketatlases:*

H. Feneis: "Pocket Atlas of Human Anatomy, G. Thieme Pub. Stuttgart, uusin painos (Thieme Flexibook) tai Dorland's/Gray's Pocket Atlas of Anatomy Richard L. Drake, A. Wayne Vogl

**Assessment methods and criteria:**

This course unit utilizes continuous assessment.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Juha Tuukkanen

**Working life cooperation:**

-

**Other information:**

-

**043014P: Anatomy: Histology exercise, 2 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Sanna Palosaari, Lehenkari, Petri Pauli

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

2 ECTS credits / 53 hours of work

**Language of instruction:**

Finnish

**Timing:**

The course unit is held in the autumn semester. The course is recommended to complete at the first autumn semester of medical or dental studies.

**Learning outcomes:**

Upon completion of the small group exercises of histology the student can use light microscope and learns how the tissues looks with the common histological stains. The student learns the histology of basic tissues and how they are expressed in the organ structures. The student can identify the normal cells and structures in each organ systems in microscope preparates, virtual microscopy and pictures. The student learns the features of healthy tissues which is the requirement later to learn pathology.

-

**Contents:**

Microscopy and histological techniques, basic tissues and normal histology of various organs.

**Mode of delivery:**

Face-to-face teaching.

**Learning activities and teaching methods:**

Small group exercise 30 h / Self-study 53 h . Small group teaching will be provided in 2-4 h exercises, where the student practice microscopic anatomy with histological preparates. virtual microscopy and histological images. There is an examination after each exercise and attendance of 100% at the course is required.

**Target group:**

First year medical and dental students.

**Prerequisites and co-requisites:**

Studying the exercise document and answering the preliminary questions before the small group exercise.

**Recommended optional programme components:**

The course must be completed during the preclinical stage of studies.

**Recommended or required reading:***Textbooks*

A.L. Kierszenbaum: Histology and Cell Biology: an introduction to pathology. Mosby, St Louis (latest ed.) or B. Young, J.S. Lowe, A. Stevens, J.W. Heath: Wheater's Functional Histology, A Text and Colour Atlas. Elsevier, Churchill Livingstone (latest ed.)

**Assessment methods and criteria:**

This course unit utilizes continuous assessment. During the course unit, there are small exams during each of the 11 group practical (pass / fail). At least half of the exams should be passed.

**Grading:**

In small group assessment exercise the grading is pass / fail.

**Person responsible:**

Professor Juha Tuukkanen, MSc. Elina Kylmäoja

**Working life cooperation:**

-

**Other information:**

-

**043015P: Anatomy: Macroscopic anatomy exercise, 3 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Antti Koskela, Tuukkanen, Kaarlo Juha Kullervo

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

3 ECTS credits / 81 hours of work.

**Language of instruction:**

Finnish

**Timing:**

The course unit is held in the autumn semester. The course is recommended to complete at the first autumn semester of medical or dental studies.

**Learning outcomes:**

Upon completion of the small group exercises of macroscopic anatomy the student should be able to describe the structure of the organs and their topography in the body as well as surface projections of the internal organs. In addition the student should be able to demonstrate the organs in living body, in preparations of the cadavers, anatomical models, X-ray images, CT / MR imaging, ultrasound imaging, diagrammatic drawings and in manual examination.

**Contents:**

Systemic anatomy: cardiovascular system and lymphatic system, thorax and respiratory system, abdomen and alimentary system, integument, pelvis, urinary system, genital systems, and endocrine system. Regional anatomy and topographical anatomy, organ development and histology integrated with the previous titles. Examples of the applications of the anatomical knowledge in clinical cases and manual palpation of main organs and structures.

**Mode of delivery:**

Face-to-face teaching.

**Learning activities and teaching methods:**

Small group exercise 57 h / Self-study 81 h (includes self-study of the introductory exercise followed by examination). Small group teaching will be provided in 2-4 h exercises, where the student practice macroscopic anatomy with bones, anatomical models and palpation and x-ray images. There is an examination after each exercise and attendance of 100% at the course is required.

**Target group:**

First year medical and dental students.

**Prerequisites and co-requisites:**

Studying the exercise document and answering the preliminary questions before the small group exercise.

**Recommended optional programme components:**

The course must be completed during the preclinical stage of studies.

**Recommended or required reading:***Textbooks*

R.L. Drake, A.W. Vogl, A.W.M. Mitchell: Gray's Anatomy for students. Elsevier Churchill Livingstone (latest ed.) or K.L. Moore: Clinically oriented Anatomy, Williams & Wilkins co (latest ed.)

W. Kahle, M. Frotscher: Color Atlas of Human Anatomy, Vol. 3: Nervous System and Sensory Organs, 7th Ed

*Atlases:*

R.Putz, R.Pabst eds.: " Sobotta Atlas of Human Anatomy" 1-3, Elsevier Urban & Fischer, München (latest ed.) , F.H. Netter: Atlas of human anatomy, tai Thieme Atlas of Anatomy, Latin Nomenclature.

*Pocketatlases:*

H. Feneis: "Pocket Atlas of Human Anatomy, G. Thieme Pub. Stuttgart, uusin painos (Thieme Flexibook) tai Dorland's/Gray's Pocket Atlas of Anatomy Richard L. Drake, A. Wayne Vogl

**Assessment methods and criteria:**

This course unit utilizes continuous assessment. During the course unit, there are small exams during each of the 21 group practical (pass / fail). The first orienting exercise is a terminology examination of the introductory document. The course is organized in blocks and at least half of the exams in each block should be passed.

**Grading:**

In small group assessmen execice the grading is pass / fail.

**Person responsible:**

Professor Juha Tuukkanen, MD.PhD Antti Koskela

**Working life cooperation:**

-

**Other information:**

-

**043053P: Basic skills in doctor-patient relationship, 3 op****Voimassaolo:** 01.08.2016 -**Opiskelumuoto:** Basic Studies**Laji:** Course**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Juha Auvinen**Opintokohteen kielet:** Finnish**ECTS Credits:**

3 ECTS

**Language of instruction:**

Finnish

**Timing:**

The second year (C4), spring semester

**Learning outcomes:**

Upon completion of the course, the student is able to:

- distinguish the basic concepts of doctor-centered and patient-centered communication;
- describe the term "reflection" and know the different definitions of "reflection"
- describe the interprofessional team-work in the physician's as well as the dentist's work

**Contents:**

The course includes introduction to basic concepts of doctor-centered and patient-centered communication. In addition, students will write reflection diary about their feelings concerning practical training in health centers and small group training.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures, introductory seminar, small group teaching, exercise session for doctor-patient communication, practical period in health care center (3 days), and closing work-shop. Writing reflection diary.

**Target group:**

The students from medicine and dentistry

**Prerequisites and co-requisites:**

C1

**Recommended optional programme components:**

The course has to be completed during preclinical period (the first two years) of medical and dental studies.

**Recommended or required reading:**

Kumpusalo E, Ahto M, Eskola K, Keinänen-Kiukaanniemi S, Kosunen E, Kunnamo I, Lohi J (toim.): Yleislääketiede, Kustannus Oy Duodecim, Karisto Oy, Hämeenlinna 2005. Sivut 93-104, 105-115 ja 116-123.

Campbell, T.L. & Larivaara, P. 2004. Working with Families in primary care. Teoksessa: Jones R & ym. (toim.).

Oxford Textbook of Primary Medical Care. Oxford University Press, 2004 s. 299-303.

Larivaara, P, & Taanila, A. Towards interprofessional family-oriented teamwork in primary services: evaluation of an education programme. Journal of Interprofessional Care, 2004, 18/2:153-163.

Mustajoki, P., Saha, H. & Sane, T. (toim.): Potilaan tutkiminen. Kustannus Oy Duodecim, Saarijärvi 2009.

**Assessment methods and criteria:**

Participation in the introductory seminar, small group teaching, exercise session for doctor-patient communication, practical period in health care center, and in closing work-shop. Writing the reflection diary.

**Grading:**

Pass/fail

**Person responsible:**

Juha Auvinen

**Working life cooperation:**

The course does not contain working life cooperation.

## 043052P: General Pathology, 5 op

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Mäkinen, Markus Juhana

**Opintokohteen kielet:** Finnish

### **ECTS Credits:**

5 ECTS

### **Language of instruction:**

Finnsih

### **Timing:**

2<sup>nd</sup> year, autumn (C3/DC3)

### **Learning outcomes:**

The course is designed to provide medical and dental students with the principles underlying the etiology, mechanisms and development of disease. It aims to prepare the students to identify and evaluate the morphological changes caused by various diseases as well as to understand the functional and clinical significance of these changes.

Upon completion the student will be expected to have acquired the knowledge of the basic disease mechanisms (etiology and pathogenesis), their basic morphological, functional and clinical characteristics, and the terminology related with diseases. The student should have acquired the skills to recognize the most common macroscopic and microscopic features of diseases and be able to reason the relationship between these features and the clinical manifestations of diseases.

### **Contents:**

Cellular adaptation; cell and tissue injury; healing; infections and immunological mechanisms in disease; genetic and environmental causes of disease; inflammation; storage diseases; disorders of fluid balance and circulation; basic pathology of neoplastic diseases; diagnostic pathology.

### **Mode of delivery:**

Multifaceted teaching.

### **Learning activities and teaching methods:**

Lectures 34 hours, small group teaching 15 hours. Self-study 81 hours. Written examinations 3 hours.

### **Target group:**

Medical and dental students.

### **Prerequisites and co-requisites:**

Preliminary examination. Previous completion of the courses of anatomy and physiology is recommended.

### **Recommended optional programme components:**

The course has to be completed during the preclinical period of medical and dental studies.

### **Recommended or required reading:**

Textbooks: Cross SS: Underwood's Pathology, a clinical approach (6th ed. 2013; sections: Basic pathology and General disease mechanisms); or: Underwood JCE: General and systematic pathology (5th ed. 2009; sections: Basic pathology and General disease mechanisms); or Kumar V. et al.: Robbins Basic Pathology, (9th ed. 2013), or Kumar V. et al.: Robbins Basic Pathology, (8th ed. 2007). Alternatives: Kumar V. et al.: Robbins and Cotran, Pathologic basis of disease (8th ed. 2010). In Finnish: Mäkinen M. et al. Patologia, Duodecim, 2012.

Material provided during the course: lecture handouts; guidebook for virtual microscopy demonstrations; guidebook for autopsy demonstrations.

### **Assessment methods and criteria:**

Participation in the compulsory demonstrations and passing in the end-of-course examination.

### **Grading:**

1-5/fail.

### **Person responsible:**

Professor Markus Mäkinen

### **Working life cooperation:**

Clinical demonstrations and teaching related to medical autopsies is organised in collaboration with the Department of Pathology, Oulu University Hospital.

### **Other information:**

Only medical and dental students participate in autopsy and other clinical demonstrations. Other students accomplish the course with 3.5 credits.

## 043026P: Genomic Medicine I, 2 op

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Faculty of Biochemistry and Molecular Medicine, Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Karppinen, Peppi Leena Elina, Joni Mäki, Jukka Moilanen

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

2 ECTS credits / 54 hours of work

**Language of instruction:**

Finnish

**Timing:**

The course unit is held in the spring semester of the 1st year.

**Learning outcomes:**

Upon completion of the course, the student will be able to understand major principles of the inheritance of man and is capable to analyse the central characteristics and ethical issues of inherited diseases. Furthermore, student will explore the usage of biobanks and understands basics of the modern techniques in medical genetics.

**Contents:**

Basics of inheritance of man, selected basic methodology used in medical genetics, bioinformatics, biobanks, ethical aspects of genomics.

**Mode of delivery:**

Lectures, exercises and exam.

**Learning activities and teaching methods:**

22 hours of lectures including some exercises and exam.

**Target group:**

Major students.

**Prerequisites and co-requisites:**

Recommended course to be taken simultaneously:

- 043020P Basics of the Molecular Biology 2 ECTS

**Recommended optional programme components:**

-

**Recommended or required reading:**

Aittomäki, Moilanen ja Perola, 2016: Lääketieteellinen genetiikka. Duodecim.

**Assessment methods and criteria:**

Exam

**Grading:**

The course utilizes a numerical grading scale 1-5. Zero stands for a fail.

**Person responsible:**

Peppi Karppinen (implementation of teaching and practical matters), Jukka Moilanen (responsible person of Genomic medicine I and II)

**Working life cooperation:**

-

**Other information:**

-

## A540142: Medical Biochemistry and Molecular Biology, 13 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Basic Studies

**Laji:** Study module

**Vastuuyksikkö:** Faculty of Biochemistry and Molecular Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Karppinen, Peppi Leena Elina

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

13 ECTS / 350 hours of work.

**Language of instruction:**

Finnish

**Timing:**

The course unit is held in the spring semester.

**Learning outcomes:**

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

- explain genes structure, function and regulation both in normal physiology and diseases
- know what proteins are, how they are produced and what are their functions
- understand the nature of the mutations in genes, both in DNA and protein level
- recognize the central DNA-related techniques used currently in medicine, and understand their central applications
- recognize the sources of errors in diagnostic laboratory techniques
- know how to classify the enzymes and understand their functions in cellular systems, and understand principles of their use in diagnostics
- identify and name fundamental molecules in metabolism (carbohydrates, lipids, amino acids, nucleotides) and understand their relationships to the medicine
- name the most fundamental metabolic pathways and their metabolites, and understand the common regulation of the various metabolic pathways
- interpret the changes in metabolism of the diseases or other conditions
- classify and name the main hormones
- explain most common effects of the hormones on their target cells and tissues
- interpret the effects of abnormal hormonal regulation
- name the basic components of the extracellular matrix and connective tissue, and identify their specific functions in organs and medical relevance
- understand the general systemic roles of blood, its composition and clotting
- understand the role of hypoxia regulation in tissues, and its applications in medicine

**Contents:**

-043020P Basics of the Molecular Biology 2 op

-043021P Basics of the metabolism 3 op

-043022P Hormones and biochemistry of tissues 2 op

-043023P Seminars and exercises of Medical Biochemistry and Molecular Biology 2 op

- 043024P Practical laboratory working in Medical Biochemistry and Molecular Biology 2 op

-043025P Final exam of Medical Biochemistry and Molecular Biology 2 op

**Mode of delivery:**

Lectures. laboratory work including tutorial teaching and verbal evaluation, tutorial teaching, theme day containing preliminary preparations, exams.

**Learning activities and teaching methods:**

Lectures 92h, laboratory work including tutorial teaching and verbal evaluation 30 h, tutorial teaching 3t, theme day containing preliminary preparations 9 h, remote educational tasks, exams.

**Target group:**

Major students.

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

-

**Recommended or required reading:**

Rodwell, Bender, Botham, Kennelly, Weil (eds.): Harper's Illustrated Biochemistry, 30th edition, 2015.

**Assessment methods and criteria:**

Medical biochemistry and molecular biology course includes 3 different intermediate exams which will be graded 1-5 (4 questions). Final exam consist of 5 essays, and will be graded 1-5. All the intermediate exams (043020P, 043021P, 043022P) should be passed before participation in final exam.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Peppi Karppinen, substitute Joni Mäki.

**Working life cooperation:**

-

**Other information:**

-

*Compulsory***043020P: Medical Biochemistry and Molecular Biology: Basics of the molecular biology, 2 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Faculty of Biochemistry and Molecular Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Joni Mäki, Karppinen, Peppi Leena Elina

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

2 ECTS/54 hours of work

**Language of instruction:**

Finnish

**Timing:**

The course unit is held in the spring semester.

**Learning outcomes:**

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

- explain genes structure, function and regulation both in normal physiology and diseases
- know what proteins are, how they are produced and what are their functions
- understand the nature of the mutations in genes, both in DNA and protein level
- recognize the central DNA-related techniques used currently in medicine, and understand their central applications
- recognize the sources of errors in diagnostic laboratory techniques
- know how to classify the enzymes and understand their functions in cellular systems, and understand principles of their use in diagnostics

**Contents:**

The structure, function and regulation of the genes; genetic code, mutations in genes and their affects on gene functions; DNA repairing mechanisms; proto-oncogenes, oncogenes, tumour suppressors, growth factors and cytokines; basics of DNA technology; properties of proteins and protein synthesis; classification and function of the enzymes; hypoxia response of the cells.

**Mode of delivery:**

Lectures and exam.

**Learning activities and teaching methods:**

27 hours of lectures and exam.

**Target group:**

Major students.

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

These courses are recommended to be completed in same Spring semester:

-043021P Basics of the metabolism 3 ECTS

-043022P Hormones and biochemistry of tissues 2 ECTS

-043023P Seminars and exercises of Medical biochemistry and Molecular Biology 2 ECTS

-043024P Practical laboratory working in Medical Biochemistry and Molecular Biology 2 ECTS

-043025P Final exam of Medical Biochemistry and Molecular Biology 2 ECTS

**Recommended or required reading:**

Rodwell, Bender, Botham, Kennelly, Weil (eds.): Harper's Illustrated Biochemistry, 30th edition, 2015.

**Assessment methods and criteria:**

Exam

**Grading:**

The exam will be graded 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Peppi Karppinen, substitute Joni Mäki.

**Working life cooperation:**

-

**Other information:**

-

**043021P: Medical Biochemistry and Molecular Biology: Basics of the metabolism, 3 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Faculty of Biochemistry and Molecular Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Karppinen, Peppi Leena Elina, Joni Mäki

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

3 ECTS credits / 78 hours of work.

**Language of instruction:**

Finnish

**Timing:**

1st spring semester.

**Learning outcomes:**

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

- identify and name fundamental molecules in metabolism (carbohydrates, lipids, amino acids, nucleotides) and understand their relationships to the medicine
- name the most fundamental metabolic pathways and their metabolites, and understand the common regulation of the various metabolic pathways
- interpret the changes in metabolism of the diseases or other conditions

-

**Contents:**

Metabolism and catabolism of the carbohydrates, lipids, amino acids and nucleotides, and the integration of whole metabolism; biological oxidations and energy metabolism; cholesterol and lipoproteins.

**Mode of delivery:**

Lectures, exam.

**Learning activities and teaching methods:**

39 hours of lectures, exam.

**Target group:**

Major students.

**Prerequisites and co-requisites:**

The recommended prerequisite is the completion of the following course:

-043020P Basics of the Molecular Biology 2 ECTS

**Recommended optional programme components:**

These courses are recommended to be completed in same spring semester:

-043020P Basics of the Molecular Biology 2 ECTS

-043022P Hormones and biochemistry of tissues 2 ECTS

-043023P Seminars and exercises of Medical Biochemistry and Molecular Biology 2 ECTS

-043024P Practical laboratory working in Medical Biochemistry and Molecular Biology 2 ECTS

-043025P Final exam of Medical Biochemistry and Molecular Biology 2 ECTS

**Recommended or required reading:**

Rodwell, Bender, Botham, Kennelly, Weil (eds.): Harper's Illustrated Biochemistry, 30th edition, 2015.

**Assessment methods and criteria:**

Lectures, exam.

**Grading:**

The exam will be graded 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Peppi Karppinen, substitute Joni Mäki.

**Working life cooperation:**

-

**Other information:**

-

**043022P: Medical Biochemistry and Molecular Biology: Hormones and biochemistry of tissues, 2 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Faculty of Biochemistry and Molecular Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Karppinen, Peppi Leena Elina, Joni Mäki

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

2 ECTS credits / 52 hours of work.

**Language of instruction:**

Finnish

**Timing:**

1st Spring semester.

**Learning outcomes:**

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

- classify and name the main hormones
- explain most common effects of the hormones on their target cells and tissues
- interpret the effects of abnormal hormonal regulation
- name the basic components of the extracellular matrix and connective tissue, and identify their specific functions in organs and medical relevance
- understand the general systemic roles of blood, its composition and clotting
- understand the role of hypoxia regulation in tissues, and its applications in medicine

**Contents:**

Classification, function and regulation of the hormones; eicosanoids; biochemistry of connective tissue; composition and properties of the blood; porphyrins and bile pigments.

**Mode of delivery:**

Lectures, exam.

**Learning activities and teaching methods:**

Lectures 26 hours, exam.

**Target group:**

Major students.

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

The recommended prerequisite is the completion of the following course:

- 043020P Basics of the Molecular Biology 2 ECTS
- 043021P Basics of the metabolism 3 ECTS

**Recommended or required reading:**

Rodwell, Bender, Botham, Kennelly, Weil (eds.): Harper's Illustrated Biochemistry, 30th edition, 2015.

**Assessment methods and criteria:**

Lectures, exam.

**Grading:**

The exam will be graded 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Peppi Karppinen, substitute Joni Mäki.

**Working life cooperation:**

-

**Other information:**

-

**043023P: Seminars and excercises of Medical Biochemistry and Molecular Biology, 2 op****Voimassaolo:** 01.08.2016 -**Opiskelumuoto:** Basic Studies**Laji:** Course**Vastuuyksikkö:** Faculty of Biochemistry and Molecular Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Karppinen, Peppi Leena Elina, Joni Mäki**Opintokohteen kielet:** Finnish**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

2 ECTS credits / 47 hours of work.

**Language of instruction:**

Finnish

**Timing:**

1st Spring semester.

**Learning outcomes:**Upon completion of the course, the student will be able to:

- popularize scientific and medicine related data that is conncted to the medical biochemistry and molecular biology
- give oral presentations and act as an opponant
- ask relevant questions concerning the presentations and his/her own knowledge about the biochemistry
- explain and analyze biochemical relationships in pathological conditions and nutritional cases
- learn general knowledge about different topics in medicine besides of their association to the biochemistry
- know generally what causes the diabetes and how it is related to metabolism
- solve selected excercises based on anamnesis, status and laboratory tests

**Contents:**

Themes can vary annually.

**Mode of delivery:**

Lectures (themeday), seminars, remote excercises.

**Learning activities and teaching methods:**

Lectures 8 t, seminars with panelists 3 t, independent work by student 12 hours, remote excercises 16 hours.

**Target group:**

Major students.

**Prerequisites and co-requisites:**

Recommendedb courses during the same Spring:

-043020P Basics of the Molecular Biology 2 ECTS

-043021P Basics of the metabolism 3 ECTS

-043022P Hormones and biochemistry of tissues 2 ECTS

-043024P Practical laboratory working in Medical Biochemistry and Molecular Biology 2 ECTS

**Recommended optional programme components:**

Recommended courses during the same Spring:

-043020P Basics of the Molecular Biology 2 ECTS

-043021P Basics of the metabolism 3 ECTS

-043022P Hormones and biochemistry of tissues 2 ECTS

-043024P Practical laboratory working in Medical Biochemistry and Molecular Biology 2 ECTS

**Recommended or required reading:**

-

**Assessment methods and criteria:**

Obligator presence in lectures and in seminars, returned assignments.

**Grading:**

Passed/Fail.

**Person responsible:**

Peppi Karppinen, substitute Joni Mäki.

**Working life cooperation:**

-

**Other information:**

-

**043024P: Practical laboratory working in Medical Biochemistry and Molecular Biology, 2 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Faculty of Biochemistry and Molecular Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Karppinen, Peppi Leena Elina, Joni Mäki

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

2 ECTS credits / 60 hours of work

**Language of instruction:**

Finnish

**Timing:**

1st Spring semester.

**Learning outcomes:**

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

-recognize the central DNA- and protein related techniques used currently in medicine, and understand their central applications and has practical experience on their implementation

- work in laboratory

-recognize the sources of errors in diagnostic laboratory techniques

**Contents:**

Cloning of DNA-fragments; The expression of recombinant proteins in bacterial cells; Diagnostics of AGU-disease with PCR; Kinetics of enzymatic reactions.

**Mode of delivery:**

Laboratory course.

**Learning activities and teaching methods:**

Practical working in laboratory, preparing casebook and oral exam.

**Target group:**

Major students.

**Prerequisites and co-requisites:**

The recommended prerequisite is the completion of the following course:  
-043020P Basics of the Molecular Biology 2 ECTS

**Recommended optional programme components:**

These courses are recommended to be completed in same spring semester:  
-043020P Basics of the Molecular Biology 2 ECTS

**Recommended or required reading:**

Laboratory handout.

**Assessment methods and criteria:**

Attendance at laboratory is compulsory. Pass/Fail.

**Grading:**

Pass/Fail.

**Person responsible:**

Peppi Karppinen, substitute Joni Mäki.

**Working life cooperation:**

-

**Other information:**

Attendance at laboratory is compulsory.

**043025P: Final exam of Medical Biochemistry and Molecular Medicine, 2 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Faculty of Biochemistry and Molecular Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Karppinen, Peppi Leena Elina, Joni Mäki

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

2 ECTS credits / 53 hours of work.

**Language of instruction:**

Finnish

**Timing:**

1st Spring semester.

**Learning outcomes:**

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

- explain genes structure, function and regulation both in normal physiology and diseases
- know what proteins are, how they are produced and what are their functions
- understand the nature of the mutations in genes, both in DNA and protein level
- recognize the central DNA-related techniques used currently in medicine, and understand their central applications
- recognize the sources of errors in diagnostic laboratory techniques
- know how to classify the enzymes and understand their functions in cellular systems, and understand principles of their use in diagnostics
- identify and name fundamental molecules in metabolism (carbohydrates, lipids, amino acids, nucleotides) and understand their relationships to the medicine
- name the most fundamental metabolic pathways and their metabolites, and understand the common regulation of the various metabolic pathways
- interpret the changes in metabolism of the diseases or other conditions
- classify and name the main hormones
- explain most common effects of the hormones on their target cells and tissues
- interpret the effects of abnormal hormonal regulation
- name the basic components of the extracellular matrix and connective tissue, and identify their specific functions in organs and medical relevance
- understand the general systemic roles of blood, its composition and clotting
- understand the role of hypoxia regulation in tissues, and its applications in medicine

**Contents:**

The basic concepts of medical biochemistry and molecular biology:

The structure, function and regulation of the genes; genetic code, mutations in genes and their effects on gene functions; DNA repairing mechanisms; proto-oncogenes, oncogenes, tumour suppressors, growth factors and cytokines; basics of DNA technology; properties of proteins and protein synthesis; classification and function of the enzymes; hypoxia response of the cells; metabolism and catabolism of the carbohydrates, lipids, amino acids and nucleotides, and the integration of whole metabolism; biological oxidations and energy metabolism; cholesterol and lipoproteins; classification, function and regulation of the hormones; eicosanoids; biochemistry of connective tissue; composition and properties of the blood; porphyrins and bile pigments.

**Mode of delivery:**

Final exam.

**Learning activities and teaching methods:**

Reading and learning 53 hours.

**Target group:**

Major students.

**Prerequisites and co-requisites:**

Courses that has to be passed prior to participation final exam:

- 043020P Basics of the Molecular Biology 2 ECTS
- 043021P Basics of the metabolism 3 ECTS
- 043022P Hormones and biochemistry of tissues 2 ECTS

**Recommended optional programme components:**

Recommended courses prior participating the final exam:

- 043024P Practical laboratory working in Medical Biochemistry and Molecular Biology 2 ECTS
- 043023P Seminars and excercises of Medical Biochemistry and Molecular Biology 2 ECTS

**Recommended or required reading:**

Lectures and book:

Rodwell, Bender, Botham, Kennelly, Weil (eds.): Harper's Illustrated Biochemistry, 30th edition, 2015.

**Assessment methods and criteria:**

Medical biochemistry and molecular biology course includes 3 different intermediate exams which will be graded 1-5 (4 questions). Final exam consist of 5 essays, and will be graded 1-5. All the intermediate exams should be passed before participation in final exam.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Peppi Karppinen, substitute Joni Mäki.

**Working life cooperation:**

-

**Other information:**

-

## A540144: Microbiology and immunology, 10 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumoto:** Basic Studies

**Laji:** Study module

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Hörkkö, Sohvi Helena Tellervo

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

10 ECTS credits / 270 hours of work

**Language of instruction:**

Finnish, some lectures given in English

**Timing:**

The course starts autumn period continuing to spring. Second year, C3 and C4.

**Learning outcomes:**

Upon completion of the study module, the student masters the basic structure of immune defense mechanisms in humans. The student can use the professional terminology to discuss about the functional entities of immune system in the defense against different pathogens. The student masters the functions of immune system in hypersensitivity and in the pathogenesis of autoimmune diseases.

During the study module the student focuses on the pathogens that are important in the Finnish health care system. Student knows the properties, the diseases, the antimicrobial treatment and the prevention of the essential pathogens. The student also masters the suitable diagnostic methods and their limitations in the detection of the pathogens.

The student will gain skills of working as a member of expert group by group-work in this study module. The group work also guides the student in scientific communication and carrying the responsibility of building collaborative knowledge. The student will learn skills to give feedback to peers and appreciate the feedback obtained in the group work.

**Contents:**

Immunology:

Innate immunity, antigen capture and presentation to lymphocytes, antigen recognition in the adaptive immune system, T-cell mediated immunity, effector mechanisms of T-cell mediated immunity, humoral immune responses, effector functions of humoral immunity, immunological tolerance and autoimmunity, immune responses to tumors and transplants, hypersensitivity

Microbiology:

introduction to bacteriology and virology, microbiological samples and obtaining the samples, basic diagnostics in microbiology, the most important bacteria and viruses in respiratory infections, the infections of alimentary canal, urinary tract and sexually transmitted infections, skin infections, zoonotic infections, sepsis and difficult infections, infections in primary health care, resistance to antimicrobial agents, anaerobic bacteria, mechanisms of pathogenesis in infectious diseases.

**Mode of delivery:**

Mainly face-to-face teaching. Collaborative learning objectives are issued via e-learning platform.

**Learning activities and teaching methods:****Immunology:**

14h lectures  
 30h self-study for group work  
 15h group work  
 2h immunology examination  
 47h independent work

**Microbiology:**

14h lectures  
 30h self-study for group work  
 15h group work  
 2h laboratory practice  
 2h preparing the presentation  
 2h microbiology examination  
 97h independent work

**Target group:**

Medicine and dentistry students

**Prerequisites and co-requisites:**

No prerequisites.

**Recommended optional programme components:**

The course has to be completed during the first two years of medical and dental studies.

**Recommended or required reading:**

Abbas, Lichtman & Pillai: Basic Immunology: 5th ed.

Murray et al. Medical Microbiology, 8th ed.

**Assessment methods and criteria:**

The assessment of the course is based on the learning outcomes of the course. This course utilizes shared expertise and collaborative learning methods. Attendance, preparation and participation in the group work is mandatory for the completion of the study module. The student will get feedback from the peers about the expert role in discussions.

The immunology and microbiology parts are evaluated separately and both parts have to be passed. Passed examination is more than 60% of the total points.

The student has a possibility to complete the immunology examination in the mid-course after the immunology entity or in combination with the final examination.

**Grading:**

*The course utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.*

*The group-work is evaluated by pass/fail scale*

**Person responsible:**

Professor of medical microbiology and immunology.

**Working life cooperation:**

Clinical introductory lectures are given by the lecturers from the local primary health care units, hospitals and diagnostic companies.

*Compulsory*

**043040P: Immunology, 4 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Hörkkö, Sohvi Helena Tellervo, Antti Nissinen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

4 ECTS credits / 108 hours of work

**Language of instruction:**

Finnish, some lectures given in English

**Timing:**

The course is held in the autumn semester. Second year, C3.

**Learning outcomes:**

Upon completion of the study module, the student masters the basic structure of immune defense mechanisms in humans. The student can use the professional terminology to discuss about the functional entities of immune system in the defense against different pathogens. The student masters the functions of immune system in hypersensitivity and in the pathogenesis of autoimmune diseases.

The student will gain skills of working as a member of expert group by group-work in this study module. The group work also guides the student in scientific communication and carrying the responsibility of building collaborative knowledge. The student will learn skills to give feedback to peers and appreciate the feedback obtained in the group work.

**Contents:**

Immunology:

Innate immunity, antigen capture and presentation to lymphocytes, antigen recognition in the adaptive immune system, T-cell mediated immunity, effector mechanisms of T-cell mediated immunity, humoral immune responses, effector functions of humoral immunity, immunological tolerance and autoimmunity, immune responses to tumors and transplants, hypersensitivity

**Mode of delivery:**

Mainly face-to-face teaching. Collaborative learning objectives are issued via e-learning platform.

**Learning activities and teaching methods:**

Immunology:

14h lectures

30h self study for group work

15h group work

2h immunology examination

47h independent work

**Target group:**

Medicine and dentistry students

**Prerequisites and co-requisites:**

No prerequisites.

**Recommended optional programme components:**

The course has to be completed during the first two years of medical and dental studies.

**Recommended or required reading:**

Abbas, Lichtman & Pillai: Basic Immunology: 5th ed.

**Assessment methods and criteria:**

The assessment of the course is based on the learning outcomes of the course. This course utilizes shared expertise and collaborative learning methods. Attendance, preparation and participation in the group work is mandatory for the completion of the study module. The student will get feedback from the peers about the expert role in discussions.

Examination will held at the end of the immunology course or together with the microbiology examination.

Passed examination is more than 60% of the total points.

**Grading:**

The course utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

The group-work is evaluated by pass/fail scale

**Person responsible:**

Professor of medical microbiology and immunology.

**Working life cooperation:**

Clinical introductory lectures are given by the lecturers from the local primary health care units, hospitals and diagnostic companies.

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Antti Nissinen, Hörkkö, Sohvi Helena Tellervo

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

6 ECTS credits / 162 hours of work

**Language of instruction:**

Finnish, some lectures given in English

**Timing:**

The course will be held spring-semester. Second year, C4.

**Learning outcomes:**

During the study module the student gets familiar with the essential pathogens and knows their most important properties, can associate the common diseases with the pathogens, and knows the basics of antimicrobial treatment and the prevention of the diseases. The student also masters the suitable diagnostic methods and their limitations in the detection of the pathogens.

The student will gain skills of working as a member of expert group by group-work in this study module. The group work also guides the student in scientific communication and carrying the responsibility of building collaborative knowledge. The student will learn skills to give feedback to peers and appreciate the feedback obtained in the group work.

**Contents:**

Microbiology:

introduction to bacteriology and virology, microbiological samples and obtaining the samples, basic diagnostics in microbiology, the most important bacteria and viruses in respiratory infections, the infections of alimentary canal, urinary tract and sexually transmitted infections, skin infections, zoonotic infections, sepsis and difficult infections, infections in primary health care, resistance to antimicrobial agents, anaerobic bacteria, mechanisms of pathogenesis in infectious diseases.

**Mode of delivery:**

Mainly face-to-face teaching. Collaborative learning objectives are issued via e-learning platform.

**Learning activities and teaching methods:**

Microbiology:

14h lectures

30h self-study for group work

12h group work

3h laboratory practice

2h preparing the presentation

2h microbiology examination

99h independent work

**Target group:**

Medicine and dentistry students

**Prerequisites and co-requisites:**

No prerequisites.

**Recommended optional programme components:**

The course has to be completed during the first two years of medical and dental studies.

**Recommended or required reading:**

Murray et al. Medical Microbiology, 8th ed.

**Assessment methods and criteria:**

The assessment of the course is based on the learning outcomes of the course. This course utilizes shared expertise and collaborative learning methods. Attendance, preparation and participation in the group work is mandatory for the completion of the study module. The student will get feedback from the peers about the expert role in discussions.

The microbiology part is evaluated in final examination. Passed examination is more than 60% of the total points.

**Grading:**

The course utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail. The group-work is evaluated by pass/fail scale.

**Person responsible:**

Professor of medical microbiology and immunology

**Working life cooperation:**

Clinical introductory lectures are given by the lecturers from the local primary health care units, hospitals and diagnostic companies.

## **A540145: Pharmacology and toxicology, 10 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Basic Studies

**Laji:** Study module

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Risto Kerkelä

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

10 ECTS credits/ 270 hours of work.

**Language of instruction:**

Finnish

**Timing:**

The course is held during the spring semester in the second study year (C4 / DC4).

**Learning outcomes:**

After passing the courses, the student has ability to carry out safe and efficient drug therapy. Upon completion of the courses, the student:

- is able to explain pharmacokinetics of a specific drug after administration
- is able to explain physiologic effects of drugs and their mechanisms of action
- is familiar with major drug classes and their role in the treatment of diseases.
- understands the basis of individualized drug therapy.
- understands the basics of toxicology

In addition, the student will learn team working skills and presentation skills.

**Contents:**

043045P Pharmacology and toxicology PART I 4 ECTS: The basic terminology of pharmacology: pharmacodynamics and pharmacokinetics. Systematic review of major classes of drugs: drugs affecting cardiovascular system, anti-diabetic medications, drugs affecting the respiratory tract, antimicrobial agents.

043046P Pharmacology and toxicology PART II 5 ECTS:

Systematic review of major classes of drugs: drugs affecting gastrointestinal drugs, drug treatment of pain, psychiatric medications, neurological drugs. Toxicology: the basics of toxicology, the most common poisonings and fundamentals of toxicological risk assessment.

043047P Pharmacology and toxicology PART III 1 ECTS: Systematic review of major classes of drugs and basics of toxicology.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

043045P Pharmacology and toxicology PART I 4 ECTS:

Lectures 34h / tutorials 8h / Self-study 66h. The tutorials are completed as small group work.

043046P Pharmacology and toxicology PART II 5 ECTS:  
Lectures 40h / tutorials 12h / Self-study 83h. The tutorials are completed as small group work.

043047P Pharmacology and toxicology PART III 1 ECTS:  
Self-study 27 h

**Target group:**

Medical and dental students. Also other students can be admitted to the course.

**Recommended or required reading:**

Recommended or required reading: Pelkonen O, Ruskoaho H., Hakkola J., et al: Lääketieteellinen farmakologia ja toksikologia (Kustannus Oy Duodecim, latest edition). The electronic version of the book can be found in "oppiportti" and in "Duodecim lääketietokanta". Other textbooks that can be used are "Farmakologia ja Toksikologia" edited by Markku Koulu and Eero Mervaala or Rang, Ritter, Flower, Henderson: Rang & Dale's Pharmacology, Churchill Livingstone (latest edition). In addition, Duodecim and Suomen lääkirilehti publish articles of current advances in drug therapy.

**Assessment methods and criteria:**

043045P Pharmacology and toxicology PART I 4 ECTS:

Lectures. Active participation in tutorials that are mandatory. At the beginning of the course students study independently for an exam evaluating the required level of knowledge of basic pharmacokinetics and pharmacodynamics. In addition, an exam is given. The exam is graded on a pass/fail basis.

043046P Pharmacology and toxicology PART II 5 ECTS:

Lectures. Active participation in tutorials that are mandatory. At the beginning of the course students study independently for an exam evaluating the required level of knowledge of basic pharmacokinetics and pharmacodynamics. In addition, an exam is given. The exam is graded on a pass/fail basis.

043047P Pharmacology and toxicology PART III 1 ECTS:

The course includes an exam. Two failed answers in final exam result in failing of the exam.

**Grading:**

043045P: Pharmacology and toxicology:

Exam. The grading scale for the course is pass/fail.

043046P Pharmacology and toxicology PART II: Exam. The grading scale for the course is pass/fail.

043047P Pharmacology and toxicology PART III:

Exam. Two failed answers in final exam result in failing of the exam. The course utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Risto Kerkelä

**Working life cooperation:**

The course includes guest lectures from specialists from Oulu University Hospital.

*Compulsory*

**043045P: Pharmacology and toxicology PART I, 4 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Risto Kerkelä

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

4 ECTS credits/ 108 hours of work.

**Language of instruction:**

Finnish

**Timing:**

The course is held during the spring semester in the second study year (C4 / DC4).

**Learning outcomes:**

After passing the course, the student has ability to carry out safe and efficient drug therapy. Upon completion of the course, the student:

- is able to explain pharmacokinetics of a specific drug after administration
- is able to explain physiologic effects of drugs and their mechanisms of action
- is familiar with major drug classes and their role in the treatment of diseases.

In addition, the student will learn team working skills and presentation skills.

**Contents:**

The basic terminology of pharmacology: pharmacodynamics and pharmacokinetics. Systematic review of major classes of drugs: drugs affecting cardiovascular system, anti-diabetic medications, drugs affecting the respiratory tract, antimicrobial agents.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures 34h / tutorials 8h / Self-study 66h. The tutorials are completed as small group work.

**Target group:**

Medical and dental students. Also other students can be admitted to the course.

**Recommended or required reading:**

Recommended or required reading: Pelkonen O, Ruskoaho H., Hakkola J., et al: Lääketieteellinen farmakologia ja toksikologia (Kustannus Oy Duodecim, latest edition). The electronic version of the book can be found in "oppiportti" and in "Duodecim lääketietokanta". Other textbooks that can be used are "Farmakologia ja Toksikologia" edited by Markku Koulu and Eero Mervaala or Rang, Ritter, Flower, Henderson: Rang & Dale's Pharmacology, Churchill Livingstone (latest edition). In addition, Duodecim and Suomen lääkärilehti publish articles of current advances in drug therapy.

**Assessment methods and criteria:**

Lectures. Active participation in tutorials that are mandatory. At the beginning of the course students study independently for an exam evaluating the required level of knowledge of basic pharmacokinetics and pharmacodynamics. In addition, an exam is given. The exam is graded on a pass/fail basis.

**Grading:**

The grading scale for the course is pass/fail.

**Person responsible:**

Professor Risto Kerkelä

**Working life cooperation:**

No

**043046P: Pharmacology and toxicology PART II, 5 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Risto Kerkelä

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

5 ECTS credits / 135 hours of work

**Language of instruction:**

Finnish

**Timing:**

The course is held during the spring semester in the second study year (C4 / DC4).

**Learning outcomes:**

After passing the course, the student has ability to carry out safe and efficient drug therapy. Upon completion of the course, the student:

- is able to explain pharmacokinetics of a specific drug after administration
- is able to explain physiologic effects of drugs and their mechanisms of action
- is familiar with major drug classes and their role in the treatment of diseases.
- understands the basis of individualized drug therapy.
- understands the basics of toxicology

In addition, the student will learn team working skills and presentation skills.

**Contents:**

Systematic review of major classes of drugs: drugs affecting gastrointestinal drugs, drug treatment of pain, psychiatric medications, neurological drugs.

Toxicology: the basics of toxicology, the most common poisonings and fundamentals of toxicological risk assessment.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures 40h / tutorials 12h / Self-study 83h. The tutorials are completed as small group work.

**Target group:**

Medical and dental students. Also other students can be admitted to the course.

**Recommended or required reading:**

Recommended or required reading: Pelkonen O, Ruskoaho H., Hakkola J., et al: Lääketieteellinen farmakologia ja toksikologia (Kustannus Oy Duodecim) (latest edition). The electronic version of the book can be found in "oppiportti" and in "Duodecim lääketietokanta". Other textbooks that can be used are "Farmakologia ja Toksikologia" edited by Markku Koulu and Eero Mervaala or Rang, Ritter, Flower, Henderson: Rang & Dale's Pharmacology, Churchill Livingstone (latest edition). In addition, Duodecim and Suomen lääkärilehti publish articles of current advances in drug therapy.

**Assessment methods and criteria:**

Lectures. Active participation in tutorials that are mandatory. At the beginning of the course students study independently for an exam evaluating the required level of knowledge of basic pharmacokinetics and pharmacodynamics. In addition, an exam is given. The exam is graded on a pass/fail basis.

**Grading:**

The grading scale for the course is pass/fail.

**Person responsible:**

Professor Risto Kerkelä

**Working life cooperation:**

The course includes guest lectures from specialists from Oulu University Hospital.

**043047P: Pharmacology and toxicology PART III, 1 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Risto Kerkelä

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

1 ECTS credit / 27 hours of work

**Language of instruction:**

Finnish

**Timing:**

The course is held during the spring semester in the second study year (C4 / DC4).

**Learning outcomes:**

After passing the course, the student has ability to carry out safe and efficient drug therapy. Upon completion of the course, the student:

- is able to explain pharmacokinetics of a specific drug after administration
- is able to explain physiologic effects of drugs and their mechanisms of action
- is familiar with major drug classes and their role in the treatment of diseases.
- understands the basis of individualized drug therapy.
- understands the basics of toxicology

**Contents:**

Systematic review of major classes of drugs and basics of toxicology.

**Mode of delivery:**

Self-study

**Learning activities and teaching methods:**

Self-study 27h.

**Target group:**

Medical and dental students. Also other students can be admitted to the course.

**Prerequisites and co-requisites:**

The required prerequisite is the completion of the following courses prior to enrolling for the course: 043045P Pharmacology and toxicology, part 1 and 043046P Pharmacology and toxicology, part 2.

**Recommended or required reading:**

Recommended or required reading: Pelkonen O, Ruskoaho H., Hakkola J., et al: Lääketieteellinen farmakologia ja toksikologia (Kustannus Oy Duodecim) (latest edition). The electronic version of the book can be found in "oppiportti" and in "Duodecim lääketietokanta". Other textbooks that can be used are "Farmakologia ja Toksikologia" edited by Markku Koulu and Eero Mervaala or Rang, Ritter, Flower, Henderson: Rang & Dale's Pharmacology, Churchill Livingstone (latest edition). In addition, Duodecim and Suomen lääkärilehti publish articles of current advances in drug therapy.

**Assessment methods and criteria:**

The course includes an exam. Two failed answers in final exam result in failing of the exam.

**Grading:**

The course utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Risto Kerkelä

## **A540143: Physiology, 15 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Basic Studies

**Laji:** Study module

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

15 ECTS credits / 402 hours of work. Contains items 043030P (2 ECTS credits) ja 043031P (ECTS 5 credits) plus additional 8 ECTS credits / 215 hours of work.

**Language of instruction:**

Finnish. Some lectures, a practical and some of the term papers in English.

**Timing:**

The course unit is held in the autumn semester. The course must be completed during the first two years of the Medical School curriculum.

**Learning outcomes:**

After completion of the course the student:

- knows the principles of the function, regulation, and interrelations of the cells, tissues and organ systems of the healthy human being, as required for independent work as a physician or dentist
- can evaluate the knowledge and apply it for investigations of clinical physiological problems and mechanisms of diseases
- can follow and evaluate the development of medical physiology as a science, and maintain and improve knowledge in it
- can apply knowledge in physiology for acquiring, evaluating and reporting scientific medical and dental information

After reaching the learning aims the student has sufficient knowledge and skills in physiology for studies leading to the degrees of Licentiate of Medicine and Licentiate of Dentistry, and for continuous learning.

**Contents:**

1. Cell physiology
2. Fundamentals of biophysics
3. Physiological functions of the body
4. Physiological regulation and integrative physiology
5. Applied physiology

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Guidance and tutorial (3 h), lectures (106 h), practicals (38 h), term paper (2 h), interim and final examinations (8 h), independent study (245 h).

**Target group:**

Second year medical and dental students.

**Prerequisites and co-requisites:**

The student should have completed the courses of Anatomy, Cell Biology, and Medical Biochemistry & Molecular Biology.

**Recommended or required reading:**

- Ganong's Review of Medical Physiology (most recent edition).
- Practicals Textbook (in Finnish): Fysiologian harjoitustyöt (Oulun yliopiston oppimateriaalia-sarja, Lääketiede D, most recent edition).
- Lecture notes can be found in Optima Environment (<http://optima oulu.fi>).

**Assessment methods and criteria:**

At the beginning of the course there is an examination on the subject of the practicals, which has to be passed. In the middle of the course there is an interim examination on the course contents 1 to 3, and at the end the final examination. The student has to obtain one third of the maximum points to pass these examinations. In addition, in the final examination only one answer may be under the pass limit (one third of the maximum points) though not zero. Detailed requirements can be found during the course period in the Optima Environment (<http://optima oulu.fi>).

**Grading:**

Graded 1-5 or fail.

**Person responsible:**

Professor Olli Vuolteenaho

**Working life cooperation:**

No

*Compulsory*

**043030P: Physiology, term paper, 2 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

2 ECTS credits /52 hours of work

**Language of instruction:**

Finnish. Some term paper subjects, tutorial and feedback sessions in English.

**Timing:**

Autumn semester. The term paper must be written during the first two years of the Medical School curriculum.

**Learning outcomes:**

After completion of the course the student:

- can better find and combine fundamental scientific and clinical knowledge and skills
- can evaluate critically new knowledge according to the EBM principles, and apply it in clinical work
- can better apply medical research in diagnosing diseases
- can better follow and evaluate medical knowledge, and maintain and develop the knowledge both in Finnish and English
- can apply knowledge in physiology for acquiring, evaluating and reporting scientific medical information
- can better serve as an authority in the medical field
- can better communicate medical knowledge both to professionals and laymen

**Contents:**

1. Term paper subject (choice from 10 titles)
2. Tutorial session (obligatory)
3. Obtaining and perusing the literature
4. Writing and submitting (via Urkund) the term paper
5. Feedback briefing session (obligatory)

**Mode of delivery:**

Face-to-face teaching and independent study

**Learning activities and teaching methods:**

Guidance and tutoring (1 h), writing and submitting the term paper (50 h), feedback session (1 h).

**Target group:**

Second year medical and dental students.

**Prerequisites and co-requisites:**

The student should have completed the courses of Anatomy, Cell Biology, and Medical Biochemistry & Molecular Biology.

**Recommended or required reading:**

- Literature search according to the subject matter. International peer-reviewed medical/dental literature (original publications and reviews).

**Assessment methods and criteria:**

Familiarising with the subject matter and writing the term paper. Detailed instructions can be found during the course period in the Optima Environment (<http://optima.oulu.fi>).

**Grading:**

Graded 1-5 or fail.

**Person responsible:**

Professor Olli Vuolteenaho

**Working life cooperation:**

No

**043031P: Physiology interim exam, 5 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

5 ECTS credits /135 hours of work

**Language of instruction:**

Finnish. Some lectures and practicals in English.

**Timing:**

The course unit is held in the autumn semester. The course must be completed during the first two years of the Medical School curriculum

**Learning outcomes:**

After completion of the course the student:

- knows the basic principles of the function, regulation, and interrelations of the cells, tissues and organ systems of the healthy human being, as required for independent work as a physician or dentist
- can critically evaluate the knowledge and apply it for investigations of clinical physiological problems and mechanisms of diseases
- can follow and evaluate the development of medical physiology as a science, and independently maintain and improve knowledge in it
- can creatively apply knowledge in basic physiology for acquiring, evaluating and reporting scientific medical and dental information

After reaching the learning aims the student has sufficient knowledge, skills and ability of basic physiology to apply them in further studies leading to the degrees of Licentiate of Medicine and Licentiate of Dentistry, and for continuous learning.

**Contents:**

1. Cell physiology
2. Fundamentals of biophysics
3. Physiological maintenance functions of the body

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures (56 h), practicals (23 h), independent study (56 h).

**Target group:**

Second year medical and dental students.

**Prerequisites and co-requisites:**

The student should have completed the courses of Anatomy, Cell Biology, and Medical Biochemistry & Molecular Biology.

**Recommended or required reading:**

Ganong's Review of Medical Physiology (most recent edition).

- Practicals Textbook (in Finnish): Fysiologian harjoitustyöt (Oulun yliopiston oppimateriaalia-sarja, Lääketiede D, most recent edition).
- Lecture notes can be found in Optima Environment (<http://optima.oulu.fi>).

**Assessment methods and criteria:**

Written examination. The student has to obtain one third of the maximum points to pass. Detailed requirements can be found during the course period in the Optima Environment (<http://optima.oulu.fi>).

**Grading:**

Graded 1-5 or fail.

**Person responsible:**

Professor Karl-Heinz Herzig

**Working life cooperation:**

No

**043032P: Physiology group works, 2 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

2 ECTS credits /52 hours of work

**Language of instruction:**

Finnish. One practical is in English.

**Timing:**

Autumn semester. The term paper must be written during the first two years of the Medical School curriculum.

**Learning outcomes:**

After completion of the course the student:

- can better find and combine fundamental scientific and clinical knowledge and skills
- can function as member of a team when performing medical procedures
- can make diagnostic decisions as a member of a team
- can apply medical knowledge to medical skills and procedures
- can better make diagnostic decisions based on firsthand empirical evidence
- can better apply differential diagnostics thinking in medical work
- can better handle errors in medical workup and learn from them

**Contents:**

1. Entry examination on the Physiology Practicals workbook (obligatory)
2. Seven practicals in clinically applied physiology (obligatory)
3. Two group sessions on medical biophysics (obligatory)

**Mode of delivery:**

Face-to-face teaching and independent study

**Learning activities and teaching methods:**

Entry examination (1 h), practicals and group sessions (34 h), independent study (15 h).

**Target group:**

Second year medical and dental students.

**Prerequisites and co-requisites:**

The student should have completed the courses of Anatomy, Cell Biology, and Medical Biochemistry & Molecular Biology.

**Recommended or required reading:**

Practicals Textbook (in Finnish): Fysiologian harjoitustyöt (Oulun yliopiston oppimateriaalia-sarja, Lääketiede D, most recent edition).

- Ganong's Review of Medical Physiology (most recent edition).

**Assessment methods and criteria:**

Entry examination (multiple choice, pass/fail). Active participation in the practicals and the group sessions. Detailed instructions can be found during the course period in the Optima Environment (<http://optima oulu.fi>).

**Grading:**

Pass/fail.

**Person responsible:**

Professor Karl-Heinz Herzig

**Working life cooperation:**

No

**043033P: Physiology final examination, 6 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

6 ECTS credits / 165 hours of work.

**Language of instruction:**

Finnish. Some lectures, practicals and term paper subjects in English.

**Timing:**

The course unit is held in the autumn semester. The course must be completed during the first two years of the Medical School curriculum

**Learning outcomes:**

After completion of the course the student:

- knows the principles of the function, regulation, and interrelations of the cells, tissues and organ systems of the healthy human being, as required for independent work as a physician or dentist
- can evaluate the knowledge and apply it for investigations of clinical physiological problems and mechanisms of diseases
- can follow and evaluate the development of medical physiology as a science, and maintain and improve knowledge in it
- can apply knowledge in physiology for acquiring, evaluating and reporting scientific medical and dental information

After reaching the learning aims the student has sufficient knowledge and skills in physiology for studies leading to the degrees of Licentiate of Medicine and Licentiate of Dentistry, and for continuous learning.

**Contents:**

1. Cell physiology
2. Fundamentals of biophysics
3. Physiological functions of the body
4. Physiological regulation and integrative physiology
5. Applied physiology

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures (106 h), practicals (8 h), independent study (155 h).

**Target group:**

Second year medical and dental students.

**Prerequisites and co-requisites:**

The student should have completed the courses of Anatomy, Cell Biology, and Medical Biochemistry & Molecular Biology.

**Recommended or required reading:**

- Ganong's Review of Medical Physiology (most recent edition).
- Practicals Textbook (in Finnish): Fysiologian harjoitustyöt (Oulun yliopiston oppimateriaalia-sarja, Lääketiede D, most recent edition).
- Lecture notes can be found in Optima Environment (<http://optima oulu.fi>).

**Assessment methods and criteria:**

Final examination. The student has to obtain one third of the maximum points to pass. In addition, a maximum of one answer may be under the pass limit (one third of the maximum points) though not zero. Detailed requirements can be found during the course period in the Optima Environment (<http://optima oulu.fi>).

**Grading:**

Graded 1-5 or fail.

**Person responsible:**

Professor Olli Vuolteenaho

**Working life cooperation:**

No

## 043027P: Psychology for Medical Students, 4 op

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Tuula Hurtig

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

4 ECTS credits/106 hours of work

**Language of instruction:**

Finnish

**Timing:**

The course is held in spring semester, during periods III and IV

**Learning outcomes:**

A student learns to see a human and human development in lifespan, finds ways to observe and to influence on patients and their behaviour using psychological knowledge. Furthermore, an objective is to help future medical doctors and dentists to observe their influence on the behavior of patients, and to the health care system. Finally, a goal is to develop interactional skills of future doctors and to promote their wellbeing as students and doctors.

**Contents:**

Human psychological development from the perspective of developmental psychology, human behaviour from the perspective of social psychology, and motivation in health behaviour from the perspective of health psychology.

**Mode of delivery:**

The tuition will be implemented as contact teaching.

**Learning activities and teaching methods:**

Lectures 24 hours, pre-course material 5 hours, group teaching 10 hours, group work 5 hours, individual work 20 hours, web-based group discussion 5 hours.

**Target group:**

The course is compulsory for 1st year students of medicine and dentistry.

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

The course is integrated with English Module III.

**Recommended or required reading:**

Contents of the lectures, pre-course material in Optima.

**Assessment methods and criteria:**

Individual scientific essay, web-based discussion.

**Grading:**

The course utilizes verbal grading scale Pass/Fail

**Person responsible:**

University Lecturer Tuula Hurtig

**Working life cooperation:**

-

**Other information:**

-

## 043037P: Public Health, 6 op

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Taina Lajunen, Aino-Kaisa Rantala, Timo Hugg

**Opintokohteen kielet:** Finnish

### ECTS Credits:

6 ECTS credits / 163 hours of work

### Language of instruction:

Finnish/English

### Timing:

The course is held at the 2<sup>nd</sup> spring semester (C4).

### Learning outcomes:

Upon completion of the course, the student will:

- understand the essential challenges of public health
- identify the common chronic diseases and their risk factors
- understand the structure and function of Finnish health care system
- be aware of the importance of assessment and surveillance of health status and promotion among population, and as an expert in health care sector he/she is able to put it into practice
- understand the system and the function of environmental health
- identify the most harmful environmental factors and the health risks associated with those
- understand the role of doctor in the field of environmental health
- understand the basic epidemiologic thinking, is able to define the basic concepts of epidemiology, is able to identify the central types of epidemiologic studies and know how to apply epidemiological methods in public health

### Contents:

#### 1. Basics of public health

- Prevalence and incidence of population health in different phase of life
- Lifestyle, behavior and health
- Socioeconomic factors and health
- Finnish health care system
- Assessment and surveillance of health status among population
- Health promotion
- Global public health

#### 2. Epidemiology

- Causal thinking in epidemiology
- Measures of disease occurrence and effect
- Types of epidemiologic studies: cohort studies and case-control studies
- Data analysis and reasoning

#### 3. Environmental health

- Environment and health
- Risk factors in outdoor and indoor environments and their health effects
- Climate change, temperature and health
- Environmental radiation and noise
- Microbiological and chemical risks of drinking water and food
- Municipal environmental health control and exceptional situations related to environmental health
- Role of doctor in environmental health

### Mode of delivery:

Face-to-face teaching and web-based teaching

### Learning activities and teaching methods:

Lectures 19 h, group work 26 h, seminars 22 h, exams 6 h and independent work 94 h. Independent work includes preparation for the exams and producing the written works and presentations for the seminars. Written works, as population profile and health promotion, will be broken down in group meetings. Essay and presentation for the public health seminar are produced of the common chronic diseases as a group work. Environmental health part of the course will be covered during four half-day seminars. Epidemiology exercises will be performed as a group work. The course includes three exams.

### Target group:

The students from medicine and dentistry

**Recommended optional programme components:**

The course has to be completed during preclinical period of medical and dental studies. The course is linked to Advanced course in public health sciences (040116A, C11) –course.

**Recommended or required reading:**

Required: Lecture material and exercise material.

Recommended literature:

Kansanterveystied. Kauhanen J, Erkkilä A, Korhonen M, Myllykangas M, Pekkanen J. Sanoma Pro Oy, 2013.

Rothman KJ. Epidemiology: and introduction. 2nd edition. Oxford University Press, New York, 2012.

Helena Mussalo-Rauhamaa, Wendla Paile, Jouko Tuomisto, Heikki S. Vuorinen (ed.): Environmental health.

Duodecim 2007. Otavan Kirjapaino Oy, Keuruu 272 p. (in Finnish)

**Assessment methods and criteria:**

Participation to the mandatory teaching as well as passing the written works, presentations and exams. The assessment criteria are based on the learning outcomes of the course.

**Grading:**

The course utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Aino Rantala (Taina Lajunen ja Timo Hugg)

**Working life cooperation:**

Population profile and lifestyle guidance will be implemented during the practical training in health centers which is carried out during or before the course. The course includes the guest lectures of the environmental health.

## 043038P: Radiation Safety in Medicine, 2 op

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Miika Nieminen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

2 ECTS/53 hours of work

**Language of instruction:**

Finnish

**Timing:**

2nd autumn semester

**Learning outcomes:**

After the course the student can describe different forms of radiation and their application in medicine, explain the biological effects and mechanisms of radiation, define the decrees pertaining to the use of radiation and describe the radiation safety measures in the hospital working environment. The student can apply knowledge in practice and guide others to safe working practices.

**Contents:**

Basics of radiation physics, basics of radiation biology, decree of radiation protection, radiation safety procedures in working environment, the use of radiation in medicine.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures 20h, feedback session for independently performed assignments 2h, independent studying 32h, final exam.

**Target group:**

Students of medicine and dental medicine

**Recommended optional programme components:**

The course is an independent entity and does not require additional studies carried out at the same time.

Nonetheless, the course relates to tuition of imaging diagnostics and oncology

**Recommended or required reading:**

Säteily ja sen havaitseminen, Tarja K. Ikäheimonen (toim). Säteily- ja ydinturvallisuus –kirjasarja. STUK, 2002

Säteilyn terveysvaikutukset, Wendla Paile (toim). Säteily- ja ydinturvallisuus –kirjasarja. STUK, 2002

Säteilyn käyttö, Olavi Pukkila (toim), Säteily- ja ydinturvallisuus –kirjasarja. STUK, 2004

Kliininen radiologia, Roberto Blanco Sequeiros ym (toim), Duodecim, 2016

**Assessment methods and criteria:**

Participation to lectures, mandatory session for reviewing study assignments, exam in Optima-environment.

**Grading:**

pass/fail

**Person responsible:**

Professor Miika Nieminen

**Working life cooperation:**

Lecturers are experts in clinical use of radiation.

**Other information:**

The course is statutory radiation protection education in medical training.

**090603S: Advanced Practical Training DC11, 30 op**

**Voimassaolo:** 01.08.2011 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Practical training

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

30 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

6th year, Autumn term

**Learning outcomes:**

After practical training the student identifies and manages the field of a dentist in a basic health care. After the training the student knows the Health Center as an operational environment including specialist medical care and expertise in dentistry as well as different sectors offering basic health care in Finland.

**Contents:**

Student in Dentistry makes an application for employment to Health Center that has a valid agreement with the University. The Finnish Dental Association keeps a national register of the valid Health Centers. Student writes down the target for the clinical training with the tutors of the Institute of Dentistry and the Dental Training Clinic before starting the practice in the training plan. Student familiarizes with the Finnish Health care systems and Dentistry in Health Centers. Student treats patients in need of oral and dental care. During the clinical training student evaluates how the target is becoming true with the mentor(s) in the Health Center. At the end of the clinical training student writes down the final report that is signed by the main mentor in Health Center and student and gives the report to the Institute of Dentistry to get the acceptance of the clinical training. Student gives written feedback of the clinical training in Health Center, how the target has been achieved and the possible further measures.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Pages 1-2 in the Study-book contains the information of the study rights. Otherwise it is student's m means to document the entire training. Student treats patients in dentistry in basic health care in co-operation with other dental personnel. Health Center organizes the mentoring and overall circumstances so that the plan for the clinical training can be reached according to the plan. Health Center names the main mentor who has been working at least two years as a full-time dentist and deputies and other mentors if needed. The maximum for the absence, because of the studies in Dentistry, during the clinical training as full-time job is 14 calendar days.

**Target group:**

Dental students

**Prerequisites and co-requisites:**

The Institute of Dentistry assigns the permission to start the advanced practical training. The prerequisite for the permission is that the student has passed the clinical phase of the studies (40 ECTS credits). In addition, theoretical studies have to be done except for two final exams and the thesis (20 ECTS credits) has to be written and uploaded to Laturi –archiving system, oral speech has been done and the maturity exam accepted.

**Recommended optional programme components:**

-

**Recommended or required reading:**

Materials in the studies of Dentistry, materials from the Health Center

**Assessment methods and criteria:**

Six month period of full-time job in a Health Center including a preliminary plan, final report and assessment of the practical training.

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

pass/fail

**Person responsible:**

Programme director/Raija Lähdesmäki, Assistant professor

**Working life cooperation:**

Practical training is carried out by working as a dentist in a Health Center.

**Other information:**

Accepted practical training is carried out according to the signed preliminary plan in a Health Center that has a valid agreement between the University and Health Center.

**091781S: Basic Competence in Working on Public Oral Health Care Services, 2 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Marja-Liisa Laitala

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

2 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

4th year, Spring term, Advanced studies

**Learning outcomes:**

Student understands the role of the oral diseases and oral health care system in the welfare state. Student is able to recognize the costs of oral diseases in the health care system, knows when, how and where to refer a patient for treatment. Student has knowledge of the scientific basis of dentistry, the mechanisms of knowledge acquisition, scientific method and evaluation of evidence. Student understands the complex interactions between oral health, nutrition, general health, drugs and diseases that can have an impact on oral health care. Student is competent to work ergonomically.

**Contents:**

See objective of the course

**Mode of delivery:**

Face-to-face teaching, independent study

**Learning activities and teaching methods:**

Lectures 22 h, group works, independent study 24 h

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

No prerequisites or co-requisites

**Recommended optional programme components:**

-

**Recommended or required reading:**

Materials delivered in the course

**Assessment methods and criteria:**

Learning assignment

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Professor Jorma Virtanen

**Working life cooperation:**

No

**Other information:**

Basic Skills in Dentistry Strand

**091751A: Basics in Periodontology and Periodontal Treatment, 5 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pernu, Hilikka Elina, Pekka Ylöstalo

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

5 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

3rd study year, Autumn term

**Learning outcomes:**

To reach basic knowledge and skills to give periodontal therapy

**Contents:**

Anatomy and physiology of periodontium, aetiology and basic pathology of gingivitis and chronic periodontitis. Classification of clinical phenotypes concerning chronic gingivitis and periodontitis. Hygienic phase periodontal treatment.

**Basics in periodontology and periodontal treatment, part 1, 2,5 ECTS credits:**

Lectures: Anatomy and physiology of periodontium, aetiology and basic pathology of gingivitis and chronic periodontitis.

**Basics in periodontology and periodontal treatment, part 2, 2,5 ECTS credits:**

Clinical examination and diagnosis of gingivitis and periodontitis. Evaluation of prognosis and treatment plan. Oral hygiene and plaque control agents. Periodontal hand instruments ja instrumentation.

**Mode of delivery:**

lectures, practical exercises, individual studies

**Learning activities and teaching methods:**

Lectures, practical exercises, individual studies

**Target group:**

3rd year dental students

**Prerequisites and co-requisites:**

To pass the entrance examination

**Recommended optional programme components:**

090175S Dentoalveolar Surgery

**Recommended or required reading:**

Carranza's Clinical Periodontology (the last edition). Materials delivered during the course.

Available lecture books can be checked from this link.

**Assessment methods and criteria:**

Written course examination

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Pekka Ylöstalo and Senior Lecturer Hilikka Pernu

**Working life cooperation:**

No

**Other information:**

-

**091711A: Cariology I, 2 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Vuokko Anttonen

**Opintokohteen kielet:** Finnish

**Voidaan suorittaa useasti:** Kyllä

**ECTS Credits:**

2 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

4th semester, DC4

**Learning outcomes:**

After this period the student is aware of the histology of dental hard tissues as well as histo-pathology of dental caries. He is also aware of factors associated with development of dental caries lesions as well as those protecting from caries lesions. He knows prevalence of caries as well as indices meant for measuring the disease.

**Contents:**

Histology of dental tissues, histopathology, microbiology, saliva, diet, sugars, prevalence of caries, indices

**Mode of delivery:**

Lectures, web-based exam

**Learning activities and teaching methods:**

Lectures 20h requiring 40h of student's work; literature 20h

**Target group:**

Obligatory to second year (4th semester) dental students.

**Prerequisites and co-requisites:**

Accepted examination is required to proceed to hands on course in semester 5 (DC5)

**Recommended optional programme components:**

No options

**Recommended or required reading:**

Nanci A (ed.). Ten Cate's Oral Histology: Development, Structure, and Function. Edited by Antonio Nanci. Seventh edition; ss. 141-238. St. Louis, Mosby Elsevier.

Dental Caries. The Disease and its Clinical Management. Edited by Ole Fejerskov and Edwina Kidd. Second Edition. Oxford, Blackwell Munksgaard.

TAI

Vaihtoehtona: Meyer-Lueckel H, Paris S, Ekstrand K. Caries management – Science and Clinical Practice. 2013

Georg Thieme Verlag KG. Stuttgart, Saksa.

Oppikirjat; DC 4 (vaaditaan sisäänpääsykuulustelussa DC5:n alussa)

Ten Cate's Oral Histology. Development, Structure, and Function. 7nd Ed. Antonio Nanci, editor. Ss. 141-238 (98 s.)

Fejerskov O, Kidd E. Dental Caries. The Disease and its Management. 2nd Ed.

- Part I The disease and its diagnosis

o Chapter 1 Defining the disease: an introduction, ss. 4-6 (3 s.)

- Part III Dental caries in a biological context

o Chapter 10 The oral microflora and biofilms on teeth, ss. 164-185 (22 s.)

o Chapter 11 The role of saliva, ss. 190-207 (18 s.)

o Chapter 12 Chemical interactions between the tooth and oral fluids, ss. 217-230 (14 s.) - seuraavat alakappaleet:

"Demineralization and remineralization of the dental hard tissues";

"Dentin caries";

"Fluoride reactions in the oral environment"

- Part IV Non-operative therapy

o Chapter 14 The control of disease progression: non-operative treatment, ss. 252-254 (3 s.)

o Chapter 15 Role of oral hygiene, ss. 258-263 (6 s.)

o Chapter 16 Antimicrobials in caries control, ss. 266-276 (11 s.)

o Chapter 19 The role of dietary control, ss. 330-349 (20 s.)

Vaihtoehtona: Meyer-Lueckel H, Paris S, Ekstrand K. Caries management – Science and Clinical Practice. 2013

Georg Thieme Verlag KG. Stuttgart, Saksa.

o The disease; chapters 1-4, pages 10-60

**Grading:**

Web-based course Accepted/rejected

**Person responsible:**

Professor Vuokko Anttonen

**Other information:****090501A Preventive Dentistry and Cariology**

Details of the activities and teaching methods and possible compulsory attendance will be agreed in the beginning of the respective courses.

After different course parts there will be midterm exams covering the topics dealt with in the course in question. In the beginning of DC 5, there will be the exam covering the lectures given in DC 4 and related chapters in textbook: passing this exam is required for the admittance to Restorative Dentistry course 090501A-02.

Passing the midterm exams is the prerequisite for attending the clinical studies and final exam. All the topics covered in different course parts, as well as related topics in textbooks, are required in the final exam.

Final grade will be based on the a) the results of the midterm and final exams; b) score achievement in continuous clinical performance evaluation (given by clinical supervisors), and ; c) performance in competence evaluation (given by clinical supervisors and assisting staff).

**A540231: Cariology II, 9 op**

**Voimassaolo:** 01.08.2020 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Study module

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

Ei opintojaksokuvauksia.

**091706A: Clinical Training DC10, 6 - 7 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Practical training

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

7 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

5th year, Spring term

**Learning outcomes:**

Look at "Contents"; clinical assessment

**Contents:****Clinical training**

The clinical training comprises work at the City of Oulu / Dental Training Clinic in collaboration with the University Hospital of Oulu. The clinical training is part of the studies beginning the end of the fifth semester and continuing to the end of the tenth semester until the credit points are full and the practical training will be approved. Before the clinical training the theoretical preclinical studies, course of internal medicine and the courses of the fifth semester have to be approved.

The clinical training consists of comprehensive patient care under supervision of the clinical teachers in different subjects of dentistry such as clinical radiology and diagnostics, treatment planning, oral and jaw surgery, orthodontics, cariology, endodontics, pedodontics, periodontology and prosthetic dentistry. The clinical training includes also on-duty service in different fields of dentistry.

Clinical training includes practice in preventive dentistry and team work in Health Centers. During the sixth semester students go to schools to work for health prevention. During the fourth semester students participate in oral inspections for pre-school children performed by dental hygienists.

**Mode of delivery:**

Look at "Contents"

**Learning activities and teaching methods:**

Look at "Contents"

**Target group:**

5th year dental students

**Prerequisites and co-requisites:**

Clinical training DC5-DC9

**Recommended optional programme components:**

-

**Recommended or required reading:**

-

**Assessment methods and criteria:**

Look at "Contents"; clinical assessment

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Look at "Contents"; clinical assessment

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Senior researcher Raija Lähdesmäki (Raija.Lahdesmaki at oulu.fi), Päivi Harju (Paivi.B.Harju at ouka.fi)

**Working life cooperation:**

Yes. Look at "Contents".

**Other information:**

-

**091701A: Clinical Training DC5, 1 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Practical training

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

1 ECTS credit

**Language of instruction:**

Finnish

**Timing:**

3rd study year, Autumn term (DC5)

**Learning outcomes:**

Look at "Contents"; clinical assessment

**Contents:****Clinical training**

The clinical training comprises work at the City of Oulu / Dental Training Clinic in collaboration with the University Hospital of Oulu. The clinical training is part of the studies beginning the end of the fifth semester and continuing to the end of the tenth semester until the credit points are full and the practical training will be approved. Before the clinical training the theoretical preclinical studies, course of internal medicine and the courses of the fifth semester have to be approved.

The clinical training consists of comprehensive patient care under supervision of the clinical teachers in different subjects of dentistry such as clinical radiology and diagnostics, treatment planning, oral and jaw surgery, orthodontics, cariology, endodontics, pedodontics, periodontology and prosthetic dentistry. The clinical training includes also on-duty service in different fields of dentistry.

Clinical training includes practice in preventive dentistry and team work in Health Centers. During the sixth semester students go to the primary schools to work for health prevention in groups. During the fourth semester students participate in oral inspections for pre-school children performed by dental hygienists.

**Mode of delivery:**

Look at "Contents"

**Learning activities and teaching methods:**

Look at "Contents"

**Target group:**

3rd year dental students

**Prerequisites and co-requisites:**

Theoretical preclinical studies (1st and 2nd year studies) and the courses of fifth semester (3rd year, Autumn term)

**Recommended optional programme components:**

-

**Recommended or required reading:**

-

**Assessment methods and criteria:**

Look at "Contents"; clinical assessment

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Look at "Contents"; clinical assessment

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Senior researcher Raija Lähdesmäki (Raija.Lahdesmaki at oulu.fi), Päivi Harju (Paivi.B.Harju at ouka.fi)

**Working life cooperation:**

Yes. Look at "Contents".

**Other information:**

-

**091702A: Clinical Training DC6, 7 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Practical training

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

7 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

3rd study year, Spring term

**Learning outcomes:**

Look at "Contents"; clinical assessment

**Contents:****Clinical training**

The clinical training comprises work at the City of Oulu / Dental Training Clinic in collaboration with the University Hospital of Oulu. The clinical training is part of the studies beginning the end of the fifth semester and continuing to the end of the tenth semester until the credit points are full and the practical training will be approved. Before the clinical training the theoretical preclinical studies, course of internal medicine and the courses of the fifth semester have to be approved.

The clinical training consists of comprehensive patient care under supervision of the clinical teachers in different subjects of dentistry such as clinical radiology and diagnostics, treatment planning, oral and jaw surgery, orthodontics, cariology, endodontics, pedodontics, periodontology and prosthetic dentistry. The clinical training includes also on-duty service in different fields of dentistry.

Clinical training includes practice in preventive dentistry and team work in Health Centers. During the sixth semester students go to schools to work for health prevention. During the fourth semester students participate in oral inspections for pre-school children performed by dental hygienists.

**Mode of delivery:**

Look at "Contents"

**Learning activities and teaching methods:**

Look at "Contents"

**Target group:**

3rd year dental students

**Prerequisites and co-requisites:**

Theoretical preclinical studies (1st and 2nd year studies) and courses of the 5th semester

**Recommended optional programme components:**

-

**Recommended or required reading:**

-

**Assessment methods and criteria:**

Look at "Contents"; clinical assessment

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Look at "Contents"; clinical assessment

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Senior researcher Raija Lähdesmäki (Raija.Lahdesmaki at oulu.fi), Päivi Harju (Paivi.B.Harju at ouka.fi)

**Working life cooperation:**

Yes. Look at "Contents".

**Other information:**

-

**091703A: Clinical Training DC7, 8 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Practical training

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

8 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

4th study year, Autumn term

**Learning outcomes:**

Look at "Contents"; clinical assessment

**Contents:****Clinical training**

The clinical training comprises work at the City of Oulu / Dental Training Clinic in collaboration with the University Hospital of Oulu. The clinical training is part of the studies beginning the end of the fifth semester and continuing to the end of the tenth semester until the credit points are full and the practical training will be approved. Before the clinical training the theoretical preclinical studies, course of internal medicine and the courses of the fifth semester have to be approved. The clinical training consists of comprehensive patient care under supervision of the clinical teachers in different subjects of dentistry such as clinical radiology and diagnostics, treatment planning, oral and jaw surgery, orthodontics, cariology, endodontics, pedodontics, periodontology and prosthetic dentistry.

The clinical training includes also on-duty service in different fields of dentistry. Clinical training includes practice in preventive dentistry and team work in Health Centers. During the sixth semester students go to schools to work for health prevention. During the fourth semester students participate in oral inspections for pre-school children performed by dental hygienists.

**Mode of delivery:**

Look at "Contents".

**Learning activities and teaching methods:**

Look at "Contents".

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

Look at "Contents".

**Recommended optional programme components:**

-

**Recommended or required reading:**

-

**Assessment methods and criteria:**

Look at "Contents"; clinical assessment

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Look at "Contents"; clinical assessment.

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Senior researcher Raija Lähdesmäki (Raija.Lahdesmaki at oulu.fi), Päivi Harju (Paivi.B.Harju at ouka.fi)

**Working life cooperation:**

Yes. Look at "Contents".

**Other information:**

-

**091704A: Clinical Training DC8, 8 - 9 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Practical training

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

9 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

4th year, Spring term

**Learning outcomes:**

Look at "Contents"; clinical assessment

**Contents:****Clinical training**

The clinical training comprises work at the City of Oulu / Dental Training Clinic in collaboration with the University Hospital of Oulu. The clinical training is part of the studies beginning the end of the fifth semester and continuing to the end of the tenth semester until the credit points are full and the practical training will be approved. Before the clinical training the theoretical preclinical studies, course of internal medicine and the courses of the fifth semester have to be approved.

The clinical training consists of comprehensive patient care under supervision of the clinical teachers in different subjects of dentistry such as clinical radiology and diagnostics, treatment planning, oral and jaw surgery, orthodontics, cariology, endodontics, pedodontics, periodontology and prosthetic dentistry. The clinical training includes also on-duty service in different fields of dentistry.

Clinical training includes practice in preventive dentistry and team work in Health Centers. During the sixth semester students go to schools to work for health prevention. During the fourth semester students participate in oral inspections for pre-school children performed by dental hygienists.

**Mode of delivery:**

Look at "Contents"

**Learning activities and teaching methods:**

Look at "Contents"

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

Clinical training DC5-DC7

**Recommended optional programme components:**

-

**Recommended or required reading:**

-

**Assessment methods and criteria:**

Look at "Contents"; clinical assessment

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Look at "Contents"; clinical assessment.

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Senior researcher Raija Lähdesmäki (Raija.Lahdesmaki at oulu.fi), Päivi Harju (Paivi.B.Harju at ouka.fi)

**Working life cooperation:**

Yes. Look at "Contents".

**Other information:**

-

## 091705A: Clinical Training DC9, 8 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Practical training

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

8 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

5th year, Autumn term

**Learning outcomes:**

Look at "Contents"; clinical assessment

**Contents:**

**Clinical training**

The clinical training comprises work at the City of Oulu / Dental Training Clinic in collaboration with the University Hospital of Oulu. The clinical training is part of the studies beginning the end of the fifth semester and continuing to the end of the tenth semester until the credit points are full and the practical training will be approved. Before the clinical training the theoretical preclinical studies, course of internal medicine and the courses of the fifth semester have to be approved.

The clinical training consists of comprehensive patient care under supervision of the clinical teachers in different subjects of dentistry such as clinical radiology and diagnostics, treatment planning, oral and jaw surgery, orthodontics, cariology, endodontics, pedodontics, periodontology and prosthetic dentistry. The clinical training includes also on-duty service in different fields of dentistry.

Clinical training includes practice in preventive dentistry and team work in Health Centers. During the sixth semester students go to schools to work for health prevention. During the fourth semester students participate in oral inspections for pre-school children performed by dental hygienists.

**Mode of delivery:**

Look at "Contents"

**Learning activities and teaching methods:**

Look at "Contents"

**Target group:**

5th year dental students

**Prerequisites and co-requisites:**

Clinical training DC5-DC8

**Recommended optional programme components:**

-

**Recommended or required reading:**

-

**Assessment methods and criteria:**

Look at "Contents"; clinical assessment

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Look at "Contents"; clinical assessment

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Senior researcher Raija Lähdesmäki (Raija.Lahdesmaki at oulu.fi), Päivi Harju (Paivi.B.Harju at ouka.fi)

**Working life cooperation:**

Yes. Look at "Contents"

**Other information:**

## 091782S: Current Topics in Community Dentistry, 3 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Marja-Liisa Laitala

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

3 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

5th year Autumn/Spring term, Advanced studies

**Learning outcomes:**

Student has knowledge of the oral health care service system in Finland. Student understands current topics of health care such as health policy, social security, health economics and insurance medicine. Student has knowledge of the possibilities of working in the private sector. Student adopts to undertake a holistic approach to the management of their patients and is able to appraise treatment of patients with special needs. Student can act as a superior and as subordinate in oral health care, and is prepared to undertake continuing professional development supporting the concept of life-long learning.

**Contents:**

See learning outcomes of the course

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures, group works, individual studies, the course includes guest lecturers

**Target group:**

5th year dental students

**Prerequisites and co-requisites:**

No

**Recommended optional programme components:**

-

**Recommended or required reading:**

Järvinen P. Menestyvän työyhteisön pelisäännöt. Talentum, 2009, recent scientific and other relevant articles and legislation provided in the beginning of the course.

**Assessment methods and criteria:**

Participation in exercises, learning assignment, material based written (final) exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail, final exam on scale 1-5.

**Person responsible:**

Professor Jorma Virtanen

**Working life cooperation:**

No

**Other information:**

Basic Scientific Skills Strand

## 091713A: Endodontics I, 2 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Kristiina Oikarinen-Juusola

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

2 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

3rd study year

**Learning outcomes:**

The student knows the basics of pulp diseases and is able to carry out root canal treatment.

**Contents:**

Histology and morphology of pulp and root canals; Diagnostics of pulp diseases; Principles of endodontic treatment; Root canal preparation and obturation.

**Mode of delivery:**

Face-to-face: lectures, practical exercises, individual studies

**Learning activities and teaching methods:**

Lectures and practical exercises

**Target group:**

3rd year dental students. Compulsory to all dental students.

**Prerequisites and co-requisites:**

All previous courses:

Preliminary exam of cariology

Cariology I, II and III

**Recommended optional programme components:**

No alternative courses. Part of the strand of Basic Knowledge and Skills in Dentistry.

**Recommended or required reading:**

Materials from lectures

Textbook: Haapasalo, Kotiranta, Sirén, Haapasalo, Endal: Käytännön juurihoito. Savion kirjapaino Oy 2009.

Juurihoidon Käypä hoito –suositus 2016.

Oheislukemisto: Pocket Atlas of ENDODONTICS (Thieme)

<http://libguides oulu.fi/c.php?g=58653&p=377050>

**Assessment methods and criteria:**

Written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Lecturer Kristiina Oikarinen-Juusola, professor Vuokko Anttonen

## 091713S: Endodontics II, 2 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Kristiina Oikarinen-Juusola

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

2 ECTS credits / 53 hours workload

**Language of instruction:**

Finnish

**Timing:**

5th study year, Advanced studies

**Learning outcomes:**

To understand the complex endodontic diagnostics and treatment; to master the ethiology, prevention, diagnostics and treatment of the most common endodontic complications; to master the use of rotary NiTi endodontic instruments.

**Contents:**

Endodontic differential diagnostics; the reasons, prevention and treatment of perforations; theory and practice of rotary endodontic treatment.

**Mode of delivery:**

Face-to-face: lectures, individual studies

**Learning activities and teaching methods:**

Lectures 12 h representing 24 h of learning,  
practical exercises 4 h,  
literature representing 15 h learning.

**Target group:**

5th year dental students. Compulsory to all dental students.

**Prerequisites and co-requisites:**

Cariology I, II and III  
Endodontics I

**Recommended optional programme components:**

No alternative course units. The strand of the Basic knowledge and skills in dentistry

**Recommended or required reading:**

Luentomateriaali;

Oppikirja: Haapasalo M, Kotiranta A, Sirén E, Haapasalo H, Endal U. Käytännön juurihoito. 2. Painos, 2009. Savion Kirjapaino, 2009.

- Resorptiot, ss. 24-37 (14 s.)

- Erotusdiagnostiikka, ss. 58-67 (10 s.)

- Hoitoresistentti apikaalinen parodontiitti, ss. 172-194 (23 s.)

Juurihoidon Käypä hoito –suositus 2016

**Assessment methods and criteria:**

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Pass / fail

**Person responsible:**

Lecturer Kristiina Oikarinen-Juusola, Professor Vuokko Anttonen

**Working life cooperation:**

Guest lectures and internships

## 090181Y: Growing identity as a dentist Part 1, 1 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** General Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

1 ECTS Credit

**Language of instruction:**

Finnish

**Timing:**

3rd study year, Spring term (DC6)

**Learning outcomes:**

The student has knowledge of the structure and the aim of the dental undergraduate studies. The student get acquainted with the University of Oulu and the Faculty of Medicine as an educational and scientific society. Student is able to do a study plan and perceive professional identity and growth into expertise.

**Contents:**

The structure and aim of the education in dentistry (DDS); personal study plan; the University of Oulu and the Faculty of Medicine as a study and research community; the social network during the studies; growing as a dentist. Participation in the Finnish Dental Congress and Exhibition organized by the Finnish Dental Society Apollonia.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures, infos, tutorial meetings, individual guiding, congress

**Target group:**

3rd year dental students

**Recommended or required reading:**

The curriculum in Dentistry and Medical studies and general tutor of the University of Oulu, conference material

**Assessment methods and criteria:**

Active participation in tutorials and personal curriculum, participation in the Finnish Dental Congress and Exhibition.

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Programme Director of Degree Programme in Dentistry Raija Lähdesmäki

**Working life cooperation:**

Networking with working life through the Finnish Dental Congress and Exhibition.

## 090182Y: Growing identity as a dentist Part 2, 0,5 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** General Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0,5 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

4th study year, Autumn term (DC7)

**Learning outcomes:**

A student is able to make a roadmap of his studies and realize the identity as a dentist and growing expertise. A student realize the meaning of evidence-based medicine for the work as a dentist and is able to find answers to research questions.

**Contents:**

he University of Oulu and Faculty of Medicine as a study and research community; The social network during the studies; Growing as a dentist; Evidence-based medicine

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Infos, tutorial meetings, working in small groups

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

Dentistry study plan, personal study plan, databases

**Recommended or required reading:**

The curriculum in Dentistry and Medical studies and general tutor of the University of Oulu

**Assessment methods and criteria:**

Active participation in teacher tutorials and regular assessment of the personal curriculum. Working in small groups.

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Programme Director of Degree Programme in Dentistry Raija Lähdesmäki

**Working life cooperation:**

No

## 090183Y: Growing identity as a dentist Part 3, 0,5 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** General Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0,5 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

4th study year, Spring term DC8 (-DC10)

**Learning outcomes:**

A student is able to make a roadmap of his studies and realize the identity as a dentist and growing expertise. A student is preparing to work as a dental post of deputy and knows his/her responsibilities and obligations.

**Contents:**

The University of Oulu and Faculty of Medicine as a study and research community; The social network during the studies; Growing as a dentist;

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Infos, tutorial meetings, participation to educational event of Apollonia Symposium, (5th year student participation in Finnish Dental Congress and Exhibition)

**Target group:**

4th (-5th) year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

-

**Recommended or required reading:**

The curriculum in Dentistry and Medical studies and general tutor of the University of Oulu

**Assessment methods and criteria:**

Active participation in teacher tutorials and regular assessment of the personal curriculum. Participation to educational event of Apollonia Symposium (5th year student participation in Finnish Dental Congress and Exhibition). Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Programme Director of Degree Programme of Dentistry Raija Lähdesmäki

**Working life cooperation:**

Preparing to work as a dental post of deputy.

## 090182A: Introduction to Clinical Care, 5 op

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

5 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

3rd study year, Autumn term

**Contents:**

This study module contains:

090182A-01 Introduction to Clinical Work (1.5 Credits)

090182A-02 Ethics, Legislation and Patient Documents, Interpersonal and Communication Skills (1.5 Credits)

090182A-03 Nutrition (0.5 Credits) and

090182A-04 Propedeutic Course on Surgery (1.5 Credits)

For descriptions, see each course separately

*Compulsory*

**090182A-01: Introduction to Clinical Work, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pernu, Hilikka Elina

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 1.5 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

DC5-DC6, Subject studies

**Mode of delivery:**

Blended teaching

**Learning activities and teaching methods:**

Lectures, demonstrations, visits, independent work, discussions

**Target group:**

Dental students of 3rd study year

**Assessment methods and criteria:**

Attendance

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Pass / Fail

**Person responsible:**

Hilikka Pernu, Päivi Harju

**Other information:**

Basic knowledge and skills in dentistry

**090182A-02: Ethics, Legislation and Patient Documents, Interpersonal and Communication Skills, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Marja-Liisa Laitala

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 1.5 ECTS credits workload)

**Language of instruction:**

Finnish

**Timing:**

3rd study year, Autumn term, Subject studies

**Learning outcomes:**

Student has knowledge of essential ethical principles in health care and legislation, and the contemporary laws applicable to the practice of dentistry. Student has thorough understanding of the ethical responsibilities involved in the provision of care to individual patients and populations, is competent to communicate professionally with patients, their relatives and other health professionals, and recognizes own limitations. Student is competent at establishing a good patient-dentist relationship and can produce accurate patient records.

**Contents:**

See objective of the course

**Mode of delivery:**

Lectures, contact teaching

**Learning activities and teaching methods:**

Lectures, group work, individual studies

**Target group:**

3rd year dental students

**Prerequisites and co-requisites:**

No

**Recommended optional programme components:**

-

**Recommended or required reading:**

Recent scientific and other relevant articles provided in the beginning of the course

**Assessment methods and criteria:**

Exam, learning assessment

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Professor Jorma Virtanen

**Working life cooperation:**

No

**Other information:**

Basic Skills in Dentistry Strand

**090182A-03: Nutrition, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 0.5 ECTS credits workload)

**Language of instruction:**

Finnish

**Timing:**

3rd study year, Autumn term

**Learning outcomes:**

Nutritional considerations in the treatment of different diseases (dyslipidemia, hypertension etc.

Evaluation of nutritional status and the significance of malnutrition

The principles of healthy diet, nutritional recommendations, problems in nutrition and consumption of food

The principles, aims and practical implementation of diet in the prevention and treatment of type 2

diabetes, dyslipidemia and hypertension and in the treatment of celiac disease

Familiarize into life style changes

**Mode of delivery:**

Blended teaching

**Learning activities and teaching methods:**

Lectures 6 hours

Possible Optima learning task

**Target group:**

3rd year dental student

**Recommended optional programme components:**

Part of the course of Introduction to oral health

**Recommended or required reading:**

Recommended reading

Vauhkonen I, Holmström P: Sisätaudit. (4. painos, 2012), Sanoma pro

Heikkilä J, Mäkijärvi M. EKG (2003), Kustannus Oy Duodecim

Heikkilä J, Kupari M, Airaksinen J, Huikuri H, Nieminen MS, Peuhkurinen K. Kardiologia (2008), Kustannus Oy Duodecim

Mäkijärvi M, Parikka H, Raatikainen P, Heikkilä J. EKG-tulkinnan työkirja (2006), Kustannus Oy Duodecim

Huovinen P, Hedman K, Heikkinen T, Järvinen A, Meri S, Vaara M. (toim.): Mikrobiologia – Mikrobiologia, immunologia ja infektiosairaudet, kirja 1 (1.-2. painos, 2011), Kustannus Oy Duodecim

Hedman K, Heikkinen T, Huovinen P, Järvinen A, Meri S, Vaara M. (toim.): Immunologia – Mikrobiologia, immunologia ja infektiosairaudet, kirja 2 (2011), Kustannus Oy Duodecim

Hedman K, Heikkinen T, Huovinen P, Järvinen A, Meri S, Vaara M. (toim.): Infektiosairaudet – Mikrobiologia, immunologia ja infektiosairaudet, kirja 3 (2011), Kustannus Oy Duodecim

Pasternack, A (toim.): Nefrologia (2012), Kustannus Oy Duodecim Höckerstedt K, Färkkilä M, Kivilaakso E, Pikkarainen P. Gastroenterologia ja hepatologia (2007), Kustannus Oy Duodecim

Kaarteenaho R., Brander P., Halme M., Kinnula V (toim.): Keuhkosairaudet – diagnostiikka ja hoito (2013), Kustannus Oy Duodecim

Koskenvuo K. (toim.): Sairauksien ehkäisy (2003), Kustannus Oy Duodecim

Martio J., Karjalainen A., Kauppi M., Kukkurainen M-L., Kyngäs H.: Reuma (2007), Kustannus Oy Duodecim

Ruutu T, Rajamäki A, Lassila R, Porkka K. Veritaudit (2007), Kustannus Oy Duodecim

Välimäki M, Sane T, Dunkel L.: Endokrinologia (2. painos, 2009) Kustannus Oy Duodecim

Thaler M. The only EKG book you'll ever need. 4th ed (2003). Lippincott Williams & Wilkins

**Assessment methods and criteria:**

Presence in lecturers, possible Optima learning task

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

Pass / fail

**Person responsible:**

Professor Olavi Ukkola

**Other information:**

Part of the strand of Basic knowledge and skills in dentistry and the course of Introduction to Oral Health

**090182A-04: Propedeutic Course on Surgery, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Juvonen, Tatu Sakari

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

DC 5, Intermediate Studies

**Learning outcomes:**

Aim of this course is to introduce students to the surgical thinking and provide basic theoretical and practical information of major surgical diseases and treatment principles. After the course the student should understand the basics of infection control, the importance of hand hygiene in surgical units. Students will also learn the principles of surgical examination and diagnosis of the patient and the wound care.

**Contents:**

Lectures: Introductory session, lectures on surgical examination, writing the surgical medical history, surgical aseptic and hand hygiene, healthcare-associated infections of surgical patients, introduction to thoracic and vascular surgery, principles of wound care, principles of conservative and operative treatments of bone fractures, association between osteoporosis and low energy fractures.

**Mode of delivery:**

Lectures

**Learning activities and teaching methods:**

Lectures

**Target group:**

3rd year dental students

**Prerequisites and co-requisites:**

- Medical Biochemistry and Molecular Biology
- Pharmacology and toxicology
- Physiology
- Anatomy and medical cell and developmental biology
- Microbiology

**Recommended optional programme components:**

No

**Recommended or required reading:**

Lecture materials and parts of the textbook: Roberts, Alhava, Höckerstedt, Kivilaakso. 2010. Kirurgia. Kustannus Oy Duodecim. Helsinki. 2. uudistettu (tai uudempi) painos.

**Assessment methods and criteria:**

14 hours of lectures, 26 hours self-study work and a web exam with grading pass / fail. Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

approved/disapproved

**Person responsible:**

Professor Tatu Juvonen

**Working life cooperation:**

No

**Other information:**

Successful completion of the course is a prerequisite for the initiation of clinical studies in dentistry.

## 090171A: Introduction to Oral Health I, 3 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pernu, Hilikka Elina

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

3 ECTS cr

**Language of instruction:**

Finnish

**Timing:**

1st study year, Spring term

**Contents:**

This study module contains:

090171A-01 Introduction to Development of Occlusion and Orthodontics (0.5 ECTS cr),

090171A-02 Organization and Providers of Oral Health Care Services (0.5 ECTS cr) (includes lecture about Oral health, 2h)

090171A-03 Tooth Morphology (2 ECTS cr)

For descriptions, see each course separately.

**Target group:**

1st year students of Degree Programme in Dentistry

**Other information:**

Part of the strand of Basic Knowledge and Skills in Dentistry

*Compulsory*

### 090171A-01: Introduction to Development of Occlusion and Orthodontics, 0 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pirttiniemi, Pertti Mikael

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 (part of 3 ECTS cr study module, corresponds to 0,5 ECTS credits workload)

**Language of instruction:**

Finnish

**Timing:**

1st study year. It is recommended to complete the course at the beginning of studies.

**Learning outcomes:**

Student can observe normal craniofacial growth and development. Student can consider different factors effecting the development of the occlusion.

**Contents:**

Introduction to Orthodontics

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures, group work, discussion. 8 hours

**Target group:**

1st year dental students

**Prerequisites and co-requisites:**

No required studies beforehand.

**Recommended optional programme components:**

-

**Recommended or required reading:**

Handouts of the lectures

**Assessment methods and criteria:**

Participating the lectures

The course is included in the final examination of oral development and orthodontics.

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Professor Pertti Pirttiniemi

**Working life cooperation:**

No

**Other information:**

-

**090171A-02: Organization and Providers of Oral Health Care Services, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Marja-Liisa Laitala

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 3 ECTS cr study module, correspondents to 0,5 ECTS credits workload)

**Language of instruction:**

Finnish

**Timing:**

1st study year, Autumn/Spring term, Subject studies

**Learning outcomes:**

Student has knowledge of oral health care personnel and collaborators, organizations and providers of oral health care services in Finland as well as the principles of health promotion and is able to appraise their importance. The student knows main oral diseases and basic principles of oral self-care.

**Contents:**

Part of the teaching is integrated at C1 with the teaching of Department of Public Health Science and General Practice.

**Mode of delivery:**

Contact teaching and learning diary

**Learning activities and teaching methods:**

lectures, site-visit to public health dentist

**Target group:**

1st year dental students

**Prerequisites and co-requisites:**

No

**Recommended optional programme components:**

-

**Recommended or required reading:**

materials delivered in the course

**Assessment methods and criteria:**

Learning assignment

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Professor Jorma Virtanen

**Working life cooperation:**

Visit to health care center

**Other information:**

Basic knowledge and skills in dentistry, Introduction to Oral Health I

**090171A-03: Tooth Morphology, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Marja-Liisa Laitala

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 3 ECTS cr study module, correspondents to 2 ECTS credits / 54 hours of work)

**Language of instruction:**

Finnish

**Timing:**

The course is held during the 1st spring semester

**Learning outcomes:**

Upon completion of the course, the student has basic knowledge on the anatomy and morphology of dentition and teeth. The student is able to identify different types of teeth and dentitions.

**Contents:**

Different types of teeth and dentitions, dentition as a part of masticatory organ, anatomy and morphology of teeth.

**Mode of delivery:**

Lectures, hands-on exercises

**Learning activities and teaching methods:**

Lectures (9 h) integrated into hands-on exercises (16 h), 100% attendance required, web-based exam 1 h, independent work 28 h

**Target group:**

First year dental students, 100% attendance required

**Recommended or required reading:**

Hand-outs, voluntary text book: : Berkovitz BKB, Holland GR, Moxham BJ. A color atlas & textbook of oral anatomy. pp. 10–24.

**Assessment methods and criteria:**

Hands-on exercises, web-based exam and exam on teeth identification passed.  
Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

Pass/Fail

**Person responsible:**

HLT, EHL Marja-Liisa Laitala

**Working life cooperation:**

No

**Other information:**

Details of the activities and teaching methods and possible compulsory attendance will be agreed in the beginning of the respective courses.

Part of the strand of Basic Knowledge and Skills in Dentistry and the course of Introduction to Oral Health

**090170P: Introduction to Oral Health II, 1 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Basic Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Vuokko Anttonen, Olli-Pekka Lappalainen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

1 ECTS credit

Promoting oral health among primary school children (1-2 graders) 0.6 op / 17 hours of independent work by student

Introduction to public oral health care 0.2 ECTS cr / 5 hours of work

Introduction to specialized dental care and oral surgery 0.2 ECTS cr / 5 hours of work

**Language of instruction:**

Finnish

**Timing:**

DC 4

**Learning outcomes:**

**Promoting oral health among primary school children** After this period the student knows in theory main oral health promoting and threatening factors (caries, periodontal diseases). As a team member he knows how to design and implement oral health promotion among secondary school children.

**Introduction to primary dental care** The aim is to give the students basic information on the organization of primary dental care and working model at the City of Oulu, Dental Clinic of Teaching Health Centre.

**Introduction to specialized dental care and oral surgery** The aim is to give the students basic information on the organization of specialized dental care (in ambulatory and hospital level), understanding the access criteria of the patients in special care and an overview on the different treatment protocols in specialized medical care.

**Contents:**

Promoting oral health among primary school children Lectures: Introductory lecture (3h) on most common non-communicable oral diseases, how they can be prevented in individual and population levels. Brief introduction to mental development stages of children. Preliminary plan of tasks among 7th graders (4-5) In teams designing the tasks and implementation in detail (3 h) (recognizing dental caries lesions in extracted teeth by laser fluorescence; pH of juices and fizzy drinks; pH level in saliva before and after eating a candy, tooth brushing demonstration using plaque dye, quiz, Denny). Visit to school (3 h)

Introduction to primary dental care The students visits Dental Clinic of Teaching Health Centre twice during the first two years of dental studies. He/she follows the clinical work of senior dental student or assists for instance in using suction supervised by the student. For each visit approximately 2.5 h is scheduled.

Introduction to specialized dental care and oral surgery Lectures: Introductory Lecture (3h) which deals with the general outlines of the legislation and organization concerning dental special care. The patient's care pathway in

hospital. The training system of specialization studies. Presentations from different dental specialities portraying the typical treatment protocols in hospital level oral care. Visit to the City of Oulu dental special care unit and to the Oulu University Hospital Dental and Oral Diseases outpatient clinic.

**Mode of delivery:**

Lectures, team/group assignments, school visit, clinical practice assignments

**Learning activities and teaching methods:**

Lectures, team/group assignments, school visit, clinical practice assignments

**Target group:**

2nd year dental students

**Recommended or required reading:**

Materials from lectures

**Assessment methods and criteria:**

Contact teaching, presence obligatory.

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

Electronic feed-back by the student, verbal evaluation pass/fail.

**Person responsible:**

Professor fixed time, Supervisor of specializing dentist Vuokko Anttonen; University teacher Leena Niskanen / Head of the Dental Teaching Unit Päivi Harju; MD, Post doc researcher, Clinical lecturer Olli-Pekka Lappalainen

**Working life cooperation:**

This entity will provide the dental student information about functions of different health sectors and also how to promote health in theory and on practice. During this entity the student get a chance to visit different organizations and meet health personnel: school, basic health care, specialized care units in basic health as well as in the hospital.

## 043001Y: Introduction to medical profession, 4 op

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** General Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Petri Kulmala

**Opintokohteen kielet:** Finnish

**Leikkaavuudet:**

ay043001Y Introduction to Medicine (OPEN UNI) 2.0 op

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

4 ECTS

**Language of instruction:**

Finnish

**Timing:**

1st year

**Learning outcomes:**

Upon completion of the course, the student:

- Is oriented to studying at the university (medicine or dentistry)
- Has time management skills
- Is aware of various roles of medical doctor and dentist in work life
- Understands the significance of professionalism and collegialism in studies and in work life
- Knows the specific features and principles of medical ethics
- Perceives the structure and function of health care system
- Understands the significance of interactive skills in studies and in the medical profession
- Is able to name the factors that effect the successful resuscitation and the risk factors related to resuscitation
- Is able to identify situations where immediate help or resuscitation is needed, and can prevent further progression of injuries and with simple procedures maintain life support

- Recognizes heart failure patient and is able to apply given treatment recommendation to the treatment of the patient, including cardiac massage and defibrillation
- Is motivated to maintain and practice resuscitation skills

**Contents:**

- 043001Y-01 Orientation for new students: curriculum, studying medicine, study-culture matters
- 043001Y-02 Medical profession: professionalism, various roles of a medical doctor, how to become a doctor?, collegialism, management of time and work
- 043001Y-03 Introduction to health services
- 043001Y-04 Basic life support

**Mode of delivery:**

The course is carried out as blended, multiform teaching

**Learning activities and teaching methods:**

Lectures: 38 h  
 Group work 60 h  
 Self study: 10 h  
 total. 108 h

**Target group:**

First year medical and dentistry students.

**Prerequisites and co-requisites:**

There is not any prerequisites for the course.

**Recommended optional programme components:**

-

**Recommended or required reading:**

All the material will be provided during the course.

**Assessment methods and criteria:**

Attending lectures, group work and practice; personal written tasks.

**Grading:**

The course utilizes verbal grading scale pass / fail.

**Person responsible:**

Petri Kulmala, Director of the medical curriculum.

**Working life cooperation:**

Part of the course is carried out at the local health care centers, in authentic work environment.

**Other information:**

- 043001Y-01 Orientation for new students: Petri Kulmala
- 043001Y-02 The Practice of Medicine: Petri Kulmala
- 043001Y-03 Introduction to health services: Markku Timonen
- 043001Y-04 Basic life support: Seppo Alahuhta

## **A540232: Orthodontics I, 6 - 7 op**

**Voimassaolo:** 01.08.2020 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Study module

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pirttiniemi, Pertti Mikael

**Opintokohteen kielet:** Finnish

Ei opintojaksokuvauksia.

## **091751S: Periodontology II, 2 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pernu, Hilkkä Elina

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

2 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

3rd year, Spring term

**Learning outcomes:**

To give additional knowledge and skills for nonsurgical periodontal therapy

**Contents:**

Individual and population based preventive periodontal therapy; Clinical microbiology and antibiotics in periodontal therapy. Treatment of deep periodontal pockets, furcation lesions; Epidemiology and risk factors of periodontal diseases. Acute gingival and periodontal diseases. Ultrasonic and airpressure devices in periodontal treatment.

**Mode of delivery:**

Lectures, seminars/small groups, individual studies

**Learning activities and teaching methods:**

lectures, seminars/small groups, individual studies

**Target group:**

3rd year dental students

**Prerequisites and co-requisites:**

Previous courses in periodontology

**Recommended optional programme components:**

-

**Recommended or required reading:**

Carranza's Clinical Periodontology

**Assessment methods and criteria:**

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

scale 0-5 or pass/fail

**Person responsible:**

Senior lecturer Hilkkä Pernu (at) oulu.fi

**Working life cooperation:**

No

**Other information:**

-

## 091761A: Principles of Dental Radiology, 4 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Annina Sipola

**Opintokohteen kielet:** Finnish

**Voidaan suorittaa useasti:** Kyllä

**ECTS Credits:**

4 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

3rd study year

**Learning outcomes:**

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

Understand the basic principles underlying of dental imaging, panoramic and intraoral imaging and perform a dental X-ray examination. The student knows the importance of accurate diagnosis for successful treatment, radiographic

appearances of normal anatomy, dental anomalies, dental caries, periodontal disease, periapical inflammatory lesions, paranasal sinuses and temporomandibular joints. In addition, the student shall have basic knowledge of the health effects of ionizing radiation and of the exposure of the patient to radiation based on which one can assume the responsibility for the justification and optimization of the procedure.

**Learning activities and teaching methods:**

Lectures, group work

**Target group:**

3rd year dental students

**Prerequisites and co-requisites:**

-

**Recommended or required reading:**

White, Pharoah; Oral Radiology: Principles and Interpretation (Rosberg J. Hammaslääketieteellinen Radiologia)

**Assessment methods and criteria:**

Written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Annina Sipola

**Working life cooperation:**

-

**Other information:**

Basic knowledge and skills in dentistry

## 091721A: Principles of Oral and Maxillofacial Surgery, 4 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Olli-Pekka Lappalainen

**Opintokohteen kielet:** Finnish

**Voidaan suorittaa useasti:** Kyllä

**ECTS Credits:**

4 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

3rd year Autumn/Spring term, Subject studies

**Learning outcomes:**

At the completion of this course the student should be able to perform anamnesis and examination of a surgical patient. He/she should be aware of the risks of general diseases and medication to surgical treatment. The student should perform independently conventional local anaesthetic measures and should be able to perform tooth extractions.

- To teach how to examine the oral surgical patient and do the anamnesis
- To study the essentials of general diseases and medication of the patients
- Theoretical and practical teaching -to learn to give local anesthetics
- To learn to do uncomplicated tooth extractions

**Contents:**

- Theoretical and practical teaching how to examine the patient
- Theoretical and practical teaching in local anesthetic
- Theoretical and practical teaching in aseptics
- Theoretical and practical teaching in tooth extractions
- Theoretical and practical teaching in suturing technique

**Mode of delivery:**

Lectures, practical exercises, seminars/small groups, individual studies

**Learning activities and teaching methods:**

Lectures, practical exercises, seminars/small groups, individual studies

**Target group:**

3rd year dental students

**Prerequisites and co-requisites:**

Written entrance exam to get into the course

**Recommended optional programme components:**

090502A Oral and Maxillofacial Surgery

**Recommended or required reading:**

Contemporary Oral and Maxillofacial Surgery/Editors: James R. Hupp, Edward Ellis, Myron R. Tucker. Mosby, latest edition

**Assessment methods and criteria:**

Written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Senior Lecturer Olli-Pekka Lappalainen

**Working life cooperation:**

Includes supervised practical clinical training

**Other information:**

Accepted course is a prerequisite for clinical studies in Oral and Maxillofacial Surgery

## 091506S: Radiation Safety in Dentistry, 0,5 - 0,6 op

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Annina Sipola

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0,5 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

4th study year Spring term

**Learning outcomes:**

Upon completion of the course, the student: knows appropriate radiation safety requirements and guidelines. Knows how to arrange quality assurance procedures for dental X-ray appliances (intraoral and panoramic tomography X-ray equipment and the cephalostats associated with these). Student understands that the use of radiation is monitored to ensure the radiation exposure of patients and staff is as low as possible.

**Contents:**

Basics of radiation physics, basics of radiation biology, decree of radiation protection, radiation safety procedures in working environment, radiation use in medicine

**Mode of delivery:**

Lectures, mandatory face-to-face teaching

**Learning activities and teaching methods:**

Lectures, mandatory face-to-face teaching

**Target group:**

4th year dental students

**Assessment methods and criteria:**

lectures, exam, mandatory face-to-face teaching, test

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Pass / fail

**Person responsible:**

Annina Sipola

**Working life cooperation:**

No

**Other information:**

The course is statutory radiation protection education in dentist training.

## 091772S: Special features in occlusal development, 2 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

2 ECTS Credits

**Language of instruction:**

Finnish

**Timing:**

5th study year, Autumn term

**Contents:**

This study module contains:

091772S-01 ORTHO-Seminars 1-5 (1.5 credit)

091772S-02 Pathology in occlusal development and adult orthodontics (0.5 credit)

For descriptions, see each course separately

**Target group:**

1st year students of Degree Programme in Dentistry

**Recommended optional programme components:**

Part of the Basic knowledge and skills in dentistry

*Compulsory*

### 091772S-01: ORTHO-Seminars 1-5, 0 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 2 ECTS cr study module, correspondents to 1.5 ECTS credits / 40 hours of work)

**Language of instruction:**

Finnish

**Timing:**

The course unit is held in five half day seminars:

Seminar 1 is held in the autumn semester, fourth year

Seminars 2 and 3 are held in the spring semester, fourth year

Seminar 4 is held in the autumn semester, fifth year

Seminar 5 is held in the spring semester, fifth year

**Learning outcomes:**

After the seminar student can assess the meaning of the variation of the occlusion and the screening of the treatment need. He is also able to assess between different treatment options and in that the timing of treatment. Student is able to look for new knowledge and assess it critically.

**Contents:**

Tutorial teaching deepens the knowledge on the variation and treatment options of abnormal occlusion by student's seminar presentations of the treatment goals, procedures and result with their orthodontic patients (DC7-1, DC8-3, DC10-5). In a theoretical seminar student makes presentations of given methods

and timing on the treatment of abnormal occlusion (DC8-2, DC9-4). After each seminar (1-5) student gives a structured reflection of the learning experience in OPTIMA-learning environment and gets written tutorial feed-back and the score.

**Mode of delivery:**

The delivery for the course unit is blended teaching (independent learning + face-to-face teaching + web-based teaching)

**Learning activities and teaching methods:**

Independently prepared presentation (software e.g. Power Point) to the Seminar 1-5 (á 4.5 hours), patient and theoretical seminar presentations in the given group (1-5, á 4 x 45 min) and given reflection in OPTIMA learning environment after the seminar (1-5, á 0.5 hours).

**Target group:**

4th and 5th study year (DC7-DC10), to deepen the knowledge in Orthodontic treatment

**Prerequisites and co-requisites:**

This course is part of 'Special features of occlusal development' (2 ects credits) You should have passed Basic Orthodontic Skills parts 1-3 before entering yourself for the course.

**Recommended or required reading:**

The documentation of the orthodontic patients in clinical teaching. Independent work with references from Medline and PubMed to make a presentation for the theoretical seminars at an appointed title.

**Assessment methods and criteria:**

Self-made presentation in seminar (1-5) and activity in discussions. After the seminar structured reflection in OPTIMA learning environment. The teacher gives written comments and the score for each seminar (1-5).

Each seminar is separate entity, the order is advisory.

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail. All the seminars 1-5 will be assessed numerically and the final score is the mean in the scale 1-5.

Each seminar 1-5 has to be passed independently.

**Person responsible:**

Adjunct professor Raija Lähdesmäki

**Working life cooperation:**

The course unit utilizes patients from Oulu City Teaching Clinic.

**Other information:**

The strand of the Basic Skills in Dentistry.

Credits of this course are included in the final degree in Orthodontics.

**091772S-02: Pathology in occlusal development and adult orthodontics, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pirttiniemi, Pertti Mikael

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 2 ECTS cr study module, correspondents to 0.5 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

5th year, Autumn term

**Learning outcomes:**

To be able to make diagnosis of malocclusions in adult patients, to send the case to the orthodontist, to be familiar with the risks of treatment and nontreatment.

**Contents:**

Pathology in occlusal development and basic items of adult orthodontics

**Mode of delivery:**

Lectures 5 hours

**Learning activities and teaching methods:**

Lectures 5 hours

**Target group:**

All 5th year dental students

**Prerequisites and co-requisites:**

Earlier courses in orthodontics and terminology, before final exam in Orthodontics

**Recommended optional programme components:**

Oral rehabilitation

Oral Development and Orthodontics

**Recommended or required reading:**

Lecture hand-outs

L. Mitchell: An Introduction to Orthodontics, 2nd Edition, Oxford

**Assessment methods and criteria:**

Lectures

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Pass/failed

**Person responsible:**

Senior Lecturer Tuomo Heikkinen

**Working life cooperation:**

No

**Other information:**

-

**091731A: Stomatognathic Physiology I (orthofunction), 3 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Kirsi Sipilä

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

3 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

2nd year, Autumn/Spring term

**Contents:**

Bony structure of the masticatory system; macro- and microanatomy of temporomandibular joint; structure and function of the masticatory muscles, function of the mandible, registration of the occlusion, examination of a patient.

**Mode of delivery:**

Lectures, self-access learning, clinical training

**Learning activities and teaching methods:**

Lectures, self-access learning, clinical training

**Target group:**

2nd year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

-

**Recommended or required reading:**

lecture handout material,

Okeson JP. Management of temporomandibular disorders and occlusion 7 ed. Elsevier Mosby 2013

**Assessment methods and criteria:**

Written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Scale 0-5

**Person responsible:**

Professor Kirsi Sipilä, Senior Lecturer Ritva Näpänkangas

**Working life cooperation:**

-

**Other information:**

-

## 091714S: Cariology III, 2 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Vuokko Anttonen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

2 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

4th and 5th year

**Learning outcomes:**

Causal caries diagnostics and treatment planning, deepening knowledge of conditions destructive to dental hard tissues other than those of microbial origin i.e. erosion, attrition, abfraction and treatment plans, conditions affecting salivary functions and properties.

**Contents:**

Causal caries diagnostics, tooth wear caused by erosion, attrition, abrasion, abfraction; hyposalivation; endo-paro lesions, most recent topics/findings in cariology

**Mode of delivery:**

Face-to-face: lectures

**Learning activities and teaching methods:**

16h (32h of student's work), literature 14h

**Target group:**

4th and 5th year dental students, obligatory to all dental students

**Recommended optional programme components:**

No alternative course units. Part of the strand of the Oral diseases and overall health

**Recommended or required reading:**

Hand outs during lectures

Fejerskov O, Kidd E. Dental Caries. The Disease and its Management. 2nd Ed.

- Part III Dental caries in a biological context

o Chapter 13 Erosion of the teeth, ss. 234-246 (13 s.)

Alternatively

Meyer-Lueckel H, Paris S, Ekstrand K. Caries management

– Science and Clinical Practice. 2013 Georg Thieme Verlag KG. Stuttgart, Saksa.

o Diagnostics, treatment decision and documentation AND Minimal interventional treatment of caries in the permanent dentition: clinical cases; Chapters 24-25, pages 333-371.

Sreebny L, Vissink A. Dry mouth, the malevolent symptom a clinical guide. 2010, Wiley-Blackwell, USA <https://www.dawsonera.com/abstract/9780813820972>

Lussi A, Ganss C. Erosive tooth wear - from diagnosis to therapy. 2014 Monographs in oral science vol. 25. Karger publishers, Saksa.

Availability can be checked [here](#)

**Assessment methods and criteria:**

Final exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Person responsible:**

Professor Vuokko Anttonen

**Working life cooperation:**

Clinicall work integrated to Dental Teaching Clinic City of Oulu, Finland

**Other information:**

**Cariology III**

Details of the activities and teaching methods and possible compulsory attendance will be agreed in the beginning of the respective courses.

After different course parts there will be midterm exams covering the topics dealt with in the course in question. In the beginning of DC 5, there will be the exam covering the lectures given in DC 4 and related chapters in textbook:

passing this exam is required for the admittance to Restorative Dentistry course 090501A-02.

Passing the midterm exams is the prerequisite for attending the clinical studies and final exam. All the topics covered in different course parts, as well as related topics in textbooks, are required in the final exam.

Final grade will be based on the a) the results of the midterm and final exams; b) score achievement in continuous clinical performance evaluation (given by clinical supervisors), and ; c) performance in competence evaluation (given by clinical supervisors and assisting staff).

## 091791A: Diseases of Oral Mucosa, 3 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Salo, Tuula Anneli

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

3 ECTS credits

**Language of instruction:**

Lectures in Finnish; research projects also in English

**Timing:**

4th year, Spring term, Subject studies

**Learning outcomes:**

As general requirements for all dentist is the basic knowledge about the anatomical and histological structures of oral mucosa. The student will know variations in the normal structures of the oral mucosa and is able to diagnose and treat the oral mucosal diseases.

**Contents:**

Anamnestic and clinical examination of patients with oral mucosal diseases including practise of biopsies.

Aetiopathogenesis and relationship of oral mucosal diseases with general diseases (including e.g. dermatological and sexually transmitted diseases and HIV-infection). Treatment and follow-up of oral mucosal disease patient in health care. The clinical and pathological manifestations of the following conditions: oral mucosal vesiculo-bullous, ulcerative, white, red-blue, pigmented, verrucous and connective tissue lesions premalignant lesions and conditions and oral cancer. Special features related to burning mouth and Sjögren´s syndromes.

**Mode of delivery:**

Lectures and seminars

**Learning activities and teaching methods:**

Lectures and seminars

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

All preclinical dental studies are prerequisites for this course

**Recommended optional programme components:**

091791S Oral Pathology

**Recommended or required reading:**

Study material; selected portions:

Regezi JA, Sciubba J, Jordan RCK. Textbook: *Oral & Maxillofacial Pathology: Clinical-Pathologic Correlations. 7th edition. WB Saunders Co.*, Philadelphia, PA, 2008

**Assessment methods and criteria:**

Written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Tuula Salo

**Working life cooperation:**

Clinical work in the Department of Diagnostics and Oral Medicine

**Other information:**

To obtain clinical work in the Department of Diagnostics and Oral Medicine the course of Diseases of Oral Mucosa has to be completed.

**091754A: Geriatric Dentistry, 2 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Syrjälä, Anna-Maija Hannele

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

2 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

4th year Spring term - 5th year Autumn term, Subject studies

**Learning outcomes:**

Upon completion of the course the student knows general traits related to aging and special features of dental diseases and dental treatment among the elderly people. The student is able to notice oral changes related to aging, to diagnose oral diseases of the elderly people, to take account the functional ability and frailty of the elderly people in planning and performing dental care, to take account the effect of aging on the medical treatment of the elderly people and to manage principles of oral palliative care.

**Contents:**

Lectures (Department of Periodontology and Geriatric Dentistry):

- Theories of aging
- Demography
- Factors related to biological aging
- Use of drugs in old age
- Diseases in old age
- Changes in healing and immunological response
- Oral changes in old age
- Epidemiology of oral diseases in old age
- Problems in oral health in old age
- Prevention of oral diseases
- Dental treatment plan in old age
- Dental care of disabled people
- Specific traits in dental care in aged people
- Geriatric pharmacology in dentistry

- Complications in dental care
- Oral palliative care
- Theme day of lectures:
- Restorative treatment and prevention of dental caries among elderly patients (Department of Pedodontics, Cariology and Endodontics)
- Prosthodontic treatment of elderly patients (Department of Prosthetic Dentistry and Stomatognathic Physiology)
- Periodontal treatment of elderly patients (Department of Periodontology and Geriatric Dentistry)
- Radiographic features among elderly patients (Department of Diagnostics and Oral Medicine)
- Quality of life related to oral health among elderly people (Department of Community Dentistry)
- Surgical treatment of elderly patient (Department of Oral Surgery)
- Oral mucosal diseases of the elderly people (Department of Diagnostics and Oral Medicine)
- Participation to the teaching of geriatry in Medicine: lectures/theme day

**Mode of delivery:**

The tuition will be implemented as face-to-face teaching and web-based teaching. The tuition includes also visits to sheltered home and nursing home, where dental students make oral clinical examinations to elderly people. Group working is made in web-site Optima. A log book is kept about the lectures.

**Learning activities and teaching methods:**

Face-to-face teaching, web-based teaching, group working is made on web-site, study-group working to prepare learning diary, visits to sheltered home and nursing home, Lectures 18 hours / study-group working to prepare learning diary and group working as web-site discussion: Workingtime for student 54 hours = 2 ECTS cr

**Target group:**

4th - 5th year dental students

**Prerequisites and co-requisites:**

It is recommended to complete course units 091551A, 091553S, 091554A, 091555S and 091556S.

**Recommended optional programme components:**

There are no parallel courses to be performed

**Recommended or required reading:**

The literature used in the course unit consists of handouts of lectures and databases of Terveystietä. In website Optima there is also a folder including references for literature.

Carranza's Clinical Periodontology, 12th edition, pages 40-44, 420-436, 447-450.

**Assessment methods and criteria:**

The course unit is completed by participation in the lecture concerning treatment plan, medical treatment of elderly people, participation in lectures in the theme day of geriatric dentistry, visiting the sheltered home and nursing home, where dental students make oral clinical examinations to elderly people, participating on web-discussion in Optima as group-working and making a learning-diary. Learning-diary is usually made as a study-group-working.

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading pass/fail

**Person responsible:**

University researcher Anna-Maija Syrjälä

**Working life cooperation:**

Yes, training in sheltered home and nursing home. This training is included in clinical work in dental training clinic.

**Other information:**

-

**090173S: Medical Specialities I, 1 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Syrjälä, Anna-Maija Hannele

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

1 ECTS Credits

**Language of instruction:**

Finnish

**Timing:**

4th study year, spring

**Contents:**

This study module contains:

090173S-01 Dermatology and Venereology (0.5 ECTS Credits)

090173S-02 Otorhinolaryngology (0.5 ECTS Credits)

For descriptions, see each course separately

*Compulsory***090173S-01: Dermatology and Venereology, 0 op****Voimassaolo:** 01.08.2017 -**Opiskelumuoto:** Advanced Studies**Laji:** Partial credit**Vastuuyksikkö:** Dentistry**Arvostelu:** 1 - 5, pass, fail**Opintokohteen kielet:** Finnish**ECTS Credits:**

0 ECTS cr (part of 1 ECTS cr study module, correspondents to 0.5 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th study year, Spring

**Learning outcomes:**

After the course the student is able to recognize the most common dermatological and venereological diseases relating to oral and dental diseases. He is able to adapt his work and/or redirect the patient to appropriate care.

**Contents:**

Recognize the most common dermatological and venereological diseases, diagnostic methods in allergology

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures (6 hours)

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

no

**Recommended optional programme components:**

Oral diseases and health strand

**Recommended or required reading:**

Active participation in teaching and hand-out materials

**Assessment methods and criteria:**

Written examination or obligation to 100% attendance in teaching

Read more about [assessment criteria](#) at the University of Oulu webpage.**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Professor Kaisa Tasanen-Määttä

**Working life cooperation:**

No

**Other information:**

-

**090173S-02: Otorhinolaryngology, 0 op****Voimassaolo:** 01.08.2017 -**Opiskelumuoto:** Advanced Studies**Laji:** Partial credit**Vastuuyksikkö:** Dentistry**Arvostelu:** 1 - 5, pass, fail**Opintokohteen kielet:** Finnish**ECTS Credits:**

0 ECTS Credits (part of 1 ECTS cr study module, correspondents to 0.5 ECTS cr / 12 hours of work)

**Language of instruction:**

Finnish

**Timing:**

During the 4th year of studies for dental students

**Learning outcomes:**

After the course the student has basic knowledge on otorhinolaryngology in relation to oro-dental diseases.

**Contents:**

Short description of the diseases of the ear, nose, mouth, pharynx, larynx, salivary glands and face and neck. The origin, epidemiology, diagnostics and treatment of these diseases are dealt with.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures 6 hours and learning diary 6 hours

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

None

**Recommended optional programme components:**

Oral Diseases and Health Strand

**Recommended or required reading:**

Material given during the lectures

**Assessment methods and criteria:**

Obligatory lectures and learning diary

Read more about [assessment criteria](#) at the University of Oulu webpage.**Grading:**

Pass / Fail

**Person responsible:**

Professor Olli-Pekka Alho

**Working life cooperation:**

None

**Other information:**

## 090174S: Medical Specialities II, 5 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Syrjälä, Anna-Maija Hannele

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

5 ECTS Credits

**Language of instruction:**

Finnish

**Timing:**

5th study year, Autumn

**Contents:**

This study module contains:

090174S-01 Internal Medicine for Dental Students (0.8 ECTS Credits)

090174S-02 Clinical microbiology (2.1 ECTS Credits)

090174S-03 Neurology (0.4 ECTS Credits)

090174S-04 Clinical Pharmacology (1.0 ECTS Credits)

090174S-05 Psychiatry (0.4 ECTS Credits)

090174S-06 Forensic Dentistry (0.3 ECTS Credits)

For descriptions, see each course separately

**Target group:**

5th year students of Degree Programme in Dentistry

**Recommended optional programme components:**

Part of the strand of the Oral diseases and overall health

*Compulsory*

### 090174S-01: Internal Medicine for Dental Students, 0 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS Credits (part of 5 ECTS cr study module, correspondent to 0.8 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

5th year Autumn term

**Target group:**

5th year dental students

**Recommended optional programme components:**

-

**Recommended or required reading:**

Vauhkonen I, Holmström P: Sisätaudit. (4. painos, 2012), Sanoma pro  
Heikkilä J, Mäkijärvi M. EKG (2003), Kustannus Oy Duodecim

Heikkilä J, Kupari M, Airaksinen J, Huikuri H, Nieminen MS, Peuhkurinen K. Kardiologia (2008), Kustannus Oy Duodecim

Mäkijärvi M, Parikka H, Raatikainen P, Heikkilä J. EKG-tulkinnan työkirja (2006), Kustannus Oy Duodecim

Huovinen P, Hedman K, Heikkinen T, Järvinen A, Meri S, Vaara M. (toim.): Mikrobiologia – Mikrobiologia, immunologia ja infektiosairaudet, kirja 1 (1.-2. painos, 2011), Kustannus Oy Duodecim

Hedman K, Heikkinen T, Huovinen P, Järvinen A, Meri S, Vaara M. (toim.): Immunologia – Mikrobiologia, immunologia ja infektiosairaudet, kirja 2 (2011), Kustannus Oy Duodecim

Hedman K, Heikkinen T, Huovinen P, Järvinen A, Meri S, Vaara M. (toim.): Infektiosairaudet – Mikrobiologia, immunologia ja infektiosairaudet, kirja 3 (2011), Kustannus Oy Duodecim

Pasternack, A (toim.): Nefrologia (2012), Kustannus Oy Duodecim

Höckerstedt K, Färkkilä M, Kivilaakso E, Pikkarainen P. Gastroenterologia ja hepatologia (2007), Kustannus Oy Duodecim

Kaarteenaho R., Brander P., Halme M., Kinnula V (toim.): Keuhkosairaudet – diagnostiikka ja hoito (2013), Kustannus Oy Duodecim

Koskenvuo K. (toim.): Sairauksien ehkäisy (2003), Kustannus Oy Duodecim

Martio J., Karjalainen A., Kauppi M., Kukkurainen M-L., Kyngäs H.: Reuma (2007), Kustannus Oy Duodecim

Ruutu T, Rajamäki A, Lassila R, Porkka K. Veritaudit (2007), Kustannus Oy Duodecim

Välimäki M, Sane T, Dunkel L.: Endokrinologia (2. painos, 2009) Kustannus Oy Duodecim

Thaler M. The only EKG book you'll ever need. 4th ed (2003). Lippincott Williams & Wilkins

**Assessment methods and criteria:**

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Professor Olavi Ukkola

**Working life cooperation:**

No

**Other information:**

-

**090174S-02: Clinical microbiology, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Syrjälä, Anna-Maija Hannele

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 2.1 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

5th study year, Autumn term

**Learning outcomes:**

After the course the student knows the basics of most usual infection diseases and the principles of the diagnostics and treatment of infection diseases.

**Contents:**

Most usual infection diseases, diagnostics and treatment modalities

**Mode of delivery:**

Lectures

**Learning activities and teaching methods:**

Lectures, learning diary in study group

**Target group:**

5th year dental students

**Prerequisites and co-requisites:**

Microbiology and immunology

**Recommended optional programme components:**

Part of the course of Medical Specialities II

**Recommended or required reading:**

Hand-outs, articles

**Assessment methods and criteria:**

Learning diary

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Pass / Fail

**Person responsible:**

Anna-Maija Syrjäälä ja Olavi ukkola

**Working life cooperation:**

No

**Other information:**

-

**090174S-03: Neurology, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 3 ECTS cr study module, correspondents to 0.4 ECTS credits workload)

**Language of instruction:**

Finnish

**Timing:**

DC9, Advanced studies

**Learning outcomes:**

After the course the student has knowledge on the background and more brief examination need for the neurological symptoms of the cranial nerves and head. Student is able to consult neurologist and take into account special features with the neurological patients in dentistry.

**Contents:**

Examination of the neurological patient, neurological patient in dental office, headache, sleep disorders and most common neurological diseases

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures (6 hours)

**Target group:**

5th year dental students

**Prerequisites and co-requisites:**

No

**Recommended optional programme components:**

Oral diseases and health strand

**Recommended or required reading:**

Active participation in teaching and hand-out materials

**Assessment methods and criteria:**

Obligation to 100% attendance in teaching (substitutive written essay)

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail

**Person responsible:**

Clinical teacher Mikko Kärppä

**Working life cooperation:**

No

**Other information:**

-

**090174S-04: Clinical Pharmacology, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 1 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

The course is held in the autumn semester. It is recommended to complete the course at the 5th autumn semester.

**Learning outcomes:**

After passing the course the student should have ability to safe, efficient and cost effective drug therapy. The student should understand the basis for drug therapy from the point of view of dentist.

**Contents:**

Factors affecting drug selection, dosage and therapy will be discussed applying knowledge of basic pharmacology. Furthermore, the common problem cases of drug therapy will be discussed. Use of major classes of drugs and special treatment situations will also be discussed.

**Mode of delivery:**

The tuition will be arranged as face-to-face teaching.

**Learning activities and teaching methods:**

Lectures 10 hours, clinical pharmacology patient case discussions in study groups 2 h, self-study 15 h.

**Target group:**

Target group is dentistry students.

**Prerequisites and co-requisites:**

The required prerequisite is the completion of the following courses prior to enrolling for the course unit: Pharmacology and toxicology

**Recommended optional programme components:**

The course is an independent entity and does not require additional studies carried out at the same time.  
No alternative courses.

**Recommended or required reading:**

Book: Neuvonen, Backman, Himberg, Huupponen, Keränen, Kivistö (eds.) Kliininen farmakologia ja lääkehoito, Kandidaatikustannus Oy (last edition). Materials of the lectures.

**Assessment methods and criteria:**

Attending all lectures and the patient case discussion group or attending the patient case discussion group and final exam.

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

The course utilizes verbal grading scale pass/fail

**Person responsible:**

Miia Turpeinen

**Working life cooperation:**

No

**090174S-05: Psychiatry, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 0.4 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

DC9, Advanced studies

**Learning outcomes:**

Aim of the course is that a student knows special features of the psychiatric patients, young people and addicts. A student is able to find the proper approach and treatment decisions based on psychiatric patients, and patients with alcohol and drug abuse problems. In addition, a student knows the psychological meaning of the oro-dental environment.

**Contents:**

Most common psychiatric diseases, aetiology, treatment and medication and significance in dentistry. Also, facing a psychiatric patient and young people, patients with alcohol and drug abuse problems

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures (6 hours)

**Target group:**

5th year dental students

**Prerequisites and co-requisites:**

No

**Recommended optional programme components:**

Oral diseases and health strand

**Recommended or required reading:**

Active participation in teaching and hand-out materials

**Assessment methods and criteria:**

Obligation to 100% attendance in teaching

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail

**Person responsible:**

Professor Juha Veijola, professor Pirjo Mäki and Clinical teacher

**Working life cooperation:**

no

**Other information:**

-

**090174S-06: Forensic Dentistry, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Marja-Liisa Laitala

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 0.3 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

5th study year Autumn term (DC9)

**Learning outcomes:**

The student gets acquainted with forensic dentistry.

**Contents:**

Forensic dentistry

**Mode of delivery:**

Lectures

**Learning activities and teaching methods:**

Lectures

**Target group:**

Dental students

**Prerequisites and co-requisites:**

No

**Recommended optional programme components:**

No

**Recommended or required reading:**

No

**Assessment methods and criteria:**

Participation in the lectures

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Assistant professor, docent Arja Kullaa (at) oulu.fi

**Working life cooperation:**

No

**Other information:**

-

**091822S: Oral Surgery and General Health, 4 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Ritva Kuoppala, Olli-Pekka Lappalainen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

4 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

5th year Autumn term, Advanced studies

**Learning outcomes:**

To deepen the student's understanding about general diseases, to give him/her the basics of treating oral cancer and sleep apnea, bring out the special features required in treating patients under radiation and chemotherapeutic treatment

**Contents:**

General diseases in regards of oral surgery, treatment of a patient under radiation therapy, treatment of a patient under chemotherapeutics, treatment of oral cancer, diagnosis and treatment of sleep apnea

**Mode of delivery:**

Lectures, individual studies

**Learning activities and teaching methods:**

Lectures, individual studies

**Target group:**

5th year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

090175S-01 Oral Surgery

**Recommended or required reading:**

Contemporary Oral and Maxillofacial Surgery/Editors: James R. Hupp, Edward Ellis, Myron R. Tucker. 5th ed. Mosby 2008.

**Assessment methods and criteria:**

Attendance at lectures is compulsory

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Olli-Pekka Lappalainen

**Working life cooperation:**

Work placement takes place during clinical training and teaching

**091791S: Oral pathology, 5 - 6 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Salo, Tuula Anneli

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

6 ECTS credits

**Language of instruction:**

**Lectures in Finnish;** research projects also in English

**Timing:**

5th year Autumn term, Subject studies and Advanced studies

**Learning outcomes:**

As general requirements for all dentists is the basic knowledge about the anatomical and histological structures of oral cavity, teeth and jaw bones. The student will know the clinical and histological variations in the normal structures of the oral cavity and jaws and the diagnostic features, steps and evaluations related to the most common oral mucosal, soft and hard tissue diseases. Particularly the student knows the special features related to oral cancer diagnostics and treatment. In addition the basic knowledge related to scientific research is required in order to be able to follow critically and adapt new evidence based research in medical and dental field.

**Contents:**

Clinical and histopathological findings of oral mucosal diseases, odontogenic, salivary gland, soft tissue and bone tumors, as well as in inflammatory and autoimmune conditions within oral cavity and jaw bones. In addition, the challenges in diagnostics and treatment of oral cancer are covered.

**Mode of delivery:**

lectures and seminars

**Learning activities and teaching methods:**

lectures and seminars

**Target group:**

5th year dental students

**Prerequisites and co-requisites:**

**All preclinical dental studies are prerequisites for this course**

**Recommended optional programme components:**

**All preclinical dental studies are prerequisites for this course**

**Recommended or required reading:**

Study material; selected portions:

Regezi JA, Sciubba J, Jordan RCK. Textbook: *Oral & Maxillofacial Pathology: Clinical-Pathologic Correlations. 7th edition.* [WB Saunders Co.](#), Philadelphia, PA, 2008

**Assessment methods and criteria:**

written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Tuula Salo

**Working life cooperation:**

No

**Other information:**

-

## **091755S: Periodontology V, 2 - 3 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pekka Ylöstalo

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

3 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

5th study year, Spring term

**Learning outcomes:**

Associations between periodontal diseases and systemic health and diseases. To give advanced knowledge of periodontal infections on tissue and cell level.

**Contents:**

Different systemic diseases and disorders as a risk for periodontal diseases; Periodontal medicine. Molecular biology of inflammation; Genetic aspects of periodontal diseases.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures, individual studies

**Target group:**

5. year dental students

**Recommended optional programme components:**

Strand of Oral diseases and overall health

**Recommended or required reading:**

Carranza's Clinical Periodontology

**Assessment methods and criteria:**

Written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Pekka Ylöstalo

**Working life cooperation:**

No

**Other information:**

-

## 080206A: Prescriptions, 0,5 op

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Miia Turpeinen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0.5 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

The course is held in the autumn semester. It is recommended to complete the course at the 4th autumn semester.

**Learning outcomes:**

Upon completion of the course, the student will be able to understand an appropriate way to write prescriptions. The student knows authoritative regulations and restrictions concerning the prescription and delivery of pharmaceuticals. In addition the student understands the role of pharmacy in delivering the drugs.

**Contents:**

Laws and rules regarding prescribing. The construction of a prescription. The information to be entered to the prescription. The authoritative regulations concerning the prescription and delivery of pharmaceuticals. The role of pharmacy in drug delivery, pharmaceutical forms, the quality control and storage of pharmaceuticals.

**Mode of delivery:**

The tuition will be arranged as face-to-face teaching.

**Learning activities and teaching methods:**

Lectures 6 hours, prescription demonstration 2 h, self-study 5,5 h.

**Target group:**

Target group is dentistry students.

**Prerequisites and co-requisites:**

The recommended prerequisite for participation to the course is the completion of preclinical studies.

**Recommended optional programme components:**

The course is an independent entity and does not require additional studies carried out at the same time. No alternative courses.

**Recommended or required reading:**

Terveysportin (<http://www.terveysportti.fi>) lääketietokannan reseptiopas. The National Archive of Health Information www-pages (<http://kanta.fi/en>). national legislation and guidance regarding prescribing (<http://www.finlex.fi/fi/>)

**Assessment methods and criteria:**

Exam assessment

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

The course utilizes verbal grading scale pass/fail

**Person responsible:**

Miia Turpeinen

**091734S: Implant Dentistry II, 2 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

2 ECTS Credits

**Language of instruction:**

Finnish

**Timing:**

5th study year, Autumn term

**Contents:**

This study module contains:

091734S-01 Prosthetic Management for Advanced Cases (1.0 ECTS cr)

091734S-02 Implant Dentistry (1.0 ECTS cr)

For descriptions, see each course separately

**Target group:**

5th year dental students

**Recommended optional programme components:**

Part of the strand of Rehabilitation of the occlusion, Prosthetics III

*Compulsory*

**091734S-01: Prosthetic Management for Advanced Cases, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Kirsi Sipilä

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 2 ECTS cr study module, corresponds to 1 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

5th study year Autumn term

**Learning outcomes:**

After the lectures the student is able to

- recognise the need for prosthetic management in advanced cases
- to tell to the patient about the prosthetic management in advanced cases
- recognise the need for referring to the specialists

**Contents:**

Prosthetic management in advanced cases

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures

**Target group:**

5th year dental students

**Prerequisites and co-requisites:**

Preclinical studies

**Recommended optional programme components:**

Rehabilitation of the occlusion, Prosthetics III

**Recommended or required reading:**

Hand out lecture materials

**Assessment methods and criteria:**

Lectures

**Grading:**

Pass/fail

**Person responsible:**

Professor Kirsi Sipilä (at) oulu.fi, Senior lecturer Ritva Näpänkangas (at) oulu.fi, Senior lecturer Ritva Kuoppala (at) oulu.fi

**Working life cooperation:**

None

**Other information:**

-

**091734S-02: Implant Dentistry, 0 op****Voimassaolo:** 01.08.2017 -**Opiskelumuoto:** Advanced Studies**Laji:** Partial credit**Vastuuyksikkö:** Dentistry**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Ritva Kuoppala, Olli-Pekka Lappalainen, Pekka Ylöstalo**Opintokohteen kielet:** Finnish**ECTS Credits:**

0 ECTS credits (part of 2 ECTS cr study module, correspondents to 1 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th/5th study year, Advanced studies

**Learning outcomes:**

After the course student

- has sufficient theoretical knowledge of implant treatment for practical work(ing life)
- can assess the indications and contraindications of implant treatment
- has skills to make the treatment plan and procedures in outline
- be able to tell about different prosthetic treatment options when planning the implant treatment
- can assess additional examinations needed for the treatment (e.g. X-rays or other imaging)
- can assess the effect of implant treatment on oral health and maintenance

**Contents:**

Basics of implant treatment

**Mode of delivery:**

Lectures

**Learning activities and teaching methods:**

Lectures

**Target group:**

4th/5th year dental students

**Prerequisites and co-requisites:**

No

**Recommended optional programme components:**

Rehabilitation of the occlusion, Prosthetics III

**Recommended or required reading:**

Lecture materials

**Assessment methods and criteria:**

Attendance at lectures is compulsory

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Lecturer Ritva Kuoppala, lecturer Olli-Pekka Lappalainen, Professor Pekka Ylöstalo

**Working life cooperation:**

No

**Other information:**

-

**091833A: Prosthetics I, 9 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

9 ECTS Credits

**Language of instruction:**

Finnish

**Timing:**

3rd study year, Spring

**Contents:**

This study module contains parts:

091833A-01 Fixed Prosthodontics I (3.5 ECTS cr)

091833A-02 Removable Prosthodontics I (3.0 ECTS cr)

091833A-03 Dental Materials (1.5 ECTS cr)

091833A-04 Occlusal Rehabilitation in Periodontal Therapy (1 ECTS cr)

For descriptions, see each course separately

**Target group:**

3rd year dental students

**Recommended optional programme components:**

Part of the Rehabilitation of the occlusion strand

*Compulsory***091833A-01: Fixed Prosthodontics I, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Ritva Näpänkangas

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 9 ECTS cr study module, correspondents to 3.5 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

3rd - 4th study year, Subject studies

**Learning outcomes:**

After the course student has skills to examine the patient for prosthetic treatment with crowns and fixed partial dentures and knows the indications and contraindications for fixed prostheses. Student can make the treatment plan concerning fixed prostheses and perform the clinical phases of the treatment. Student knows the importance of the maintenance phase in success of the treatment.

**Contents:**

Indications/contraindications, Treatment planning, Principles of preparation, Metal crowns, Porcelain fused to metal, All ceramic crowns/fixed partial dentures, Resin-bonded fixed partial dentures, Impressions, Temporary crowns/bridges, Cementing, Complications/prognosis

**Mode of delivery:**

Lectures, demonstrations, phantom laboratory exercises, individual studies

**Learning activities and teaching methods:**

Lectures, demonstrations, phantom laboratory exercises, individual studies

**Target group:**

3rd-4th study year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

Rehabilitation of the occlusion, Prosthetics I

**Recommended or required reading:**

Lecture handout material,

Shillingburg HT et al. Fundamentals of fixed prosthodontics. 4<sup>th</sup> ed. Quintessence Publishing Co 2012.

**Assessment methods and criteria:**

Phantom laboratory exercises, written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Scale 0-5

**Person responsible:**

Senior lecturer Ritva Näpänkangas, senior lecturer Ritva Kuoppala

**Working life cooperation:**

Phantom laboratory exercises (impressions)

**Other information:**

-

**091833A-02: Removable Prosthodontics I, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Ritva Kuoppala

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 9 ECTS cr study module, correspondents to 3 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

3rd year Spring term - 4th year Autumn term

**Learning outcomes:**

To recognize and diagnose patients with partially edentulous jaws and to give theoretical and clinical skills for the treatment of patients with removable or totally denture.

**Contents:**

Destruction of occlusion, indications of removable dentures, patient examination/treatment planning, pre-prosthetic treatment, components and design aspects of a removable denture, impressions, occlusion, complications/problems/prognosis

**Mode of delivery:**

Lectures, demonstrations, treatment planning exercises

**Learning activities and teaching methods:**

Lectures, demonstrations, treatment planning exercises

**Target group:**

3rd - 4th year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

Rehabilitation of the occlusion, Prosthetics I

**Recommended or required reading:**

Lecture handout material

**Assessment methods and criteria:**

Written exam (together with 090505A-08 Oral Rehabilitation in Periodontal Therapy)

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

Scale 0-5

**Person responsible:**

Senior Lecturer Ritva Kuoppala (at) oulu.fi

**Working life cooperation:**

-

**Other information:**

-

**091833A-03: Dental Materials, 0 op****Voimassaolo:** 01.08.2018 -**Opiskelumuoto:** Intermediate Studies**Laji:** Partial credit**Vastuuyksikkö:** Dentistry**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Ritva Näpänkangas**Opintokohteen kielet:** Finnish**ECTS Credits:**

0 ECTS credits (part of 9 ECTS cr study module, correspondents to 1.5 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

3rd year, Spring term

**Learning outcomes:**

After the course the student knows the properties and manipulation the basic materials used in prosthodontics.

**Contents:**

Gypsum products, Waxes, Polymers and polymerization, Impression materials, Dental cements, Structure and properties metals and alloys

**Mode of delivery:**

Lectures, demonstrations, individual studies

**Learning activities and teaching methods:**

Lectures, demonstrations, individual studies

**Target group:**

3rd year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

Rehabilitation of the occlusion, Prosthetics I

**Recommended or required reading:**

Lecture handout material,

O'Brien WJ. Dental materials and their selection. 4<sup>th</sup> ed. Quintessence Publishing Co 2008. ss 1-24**Assessment methods and criteria:**

Written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.**Grading:**

Scale 0-5

**Person responsible:**

Senior Lecturer Ritva Näpänkangas (at) oulu.fi

**Working life cooperation:**

-

**Other information:**

-

**091833A-04: Occlusal Rehabilitation in Periodontal Therapy, 0 op****Voimassaolo:** 01.08.2018 -**Opiskelumuoto:** Intermediate Studies**Laji:** Partial credit**Vastuuyksikkö:** Dentistry**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Pernu, Hilikka Elina**Opintokohteen kielet:** Finnish**ECTS Credits:**

1 ECTS credit

**Language of instruction:**

Finnish

**Timing:**

3rd year, Spring term

**Contents:**

Occlusal aspects in diagnostics and treatment of periodontally destructed dentition

**Learning activities and teaching methods:**

Lectures, demonstrations, individual studies

**Target group:**

3rd year dental students

**Recommended optional programme components:**

Oral Rehabilitation Strand

Dental Prosthetics I

**Recommended or required reading:**

Carranza's Clinical Periodontology

**Assessment methods and criteria:**

Written exam (together with courses Removable partial dentures and Dental materials)

Read more about [assessment criteria](#) at the University of Oulu webpage.**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Senior Lecturer Hilikka Pernu

**Other information:**

Oral Rehabilitation Strand

**091733S: Prosthetics II, 5 op****Voimassaolo:** 01.08.2017 -**Opiskelumuoto:** Advanced Studies**Laji:** Course**Vastuuyksikkö:** Dentistry**Arvostelu:** 1 - 5, pass, fail**Opintokohteen kielet:** Finnish

**ECTS Credits:**

5 ECTS Credits

**Language of instruction:**

Finnish

**Timing:**

4th year, Autumn term

**Contents:**

This study contains:

091733S-01 Fixed Prosthodontics II (1.4 ECTS cr)

091733S-02 Removable Prosthodontics II (2.0 ECTS cr)

091733S-03 Stomatognathic Physiology III (1.0 ECTS cr)

091733S-04 Oral and Maxillofacial Rehabilitation (0.6 ECTS cr)

**Target group:**

4th year dental students

**Recommended optional programme components:**

Part of the strand of Rehabilitation of the occlusion

*Compulsory***091733S-04: Oral and Maxillofacial Rehabilitation, 0 op****Voimassaolo:** 01.08.2018 -**Opiskelumuoto:** Advanced Studies**Laji:** Partial credit**Vastuuyksikkö:** Dentistry**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Olli-Pekka Lappalainen**Opintokohteen kielet:** Finnish**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 0,6 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th study year, Advanced studies

**Learning outcomes:**

To give the student understanding about the possibilities of the surgical treatment in occlusal rehabilitation

**Contents:**

Orthognathic surgery

**Mode of delivery:**

Lectures

**Learning activities and teaching methods:**

Lectures

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

No

**Recommended optional programme components:**

Rehabilitation of the occlusion, Prosthetics II, Oral and Maxillofacial Surgery

**Recommended or required reading:**

Contemporary Oral and Maxillofacial Surgery/Editors: James R. Hupp, Edward Ellis, Myron R. Tucker. 5th ed. Mosby 2008.

**Assessment methods and criteria:**

Attendance at lectures is compulsory

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Olli-Pekka Lappalainen

**Other information:**

-

**091733S-01: Removable prosthodontics II, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Ritva Kuoppala

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 2 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th year, Autumn term

**Learning outcomes:**

To give theoretical basic knowledge and clinical skills which are needed for the treatment of edentulous patient by conventional methods, including laboratory training.

**Contents:**

Introduction to complete dentures, changes in masticatory system caused by tooth extractions, pre-prosthetic preparation of the mouth, impressions, relationship of edentate jaws, shape of the dentures - retentive, phonetic and hygienic aspects, occlusion in complete dentures, controls and recall procedures, immediate dentures

**Mode of delivery:**

Lectures, demonstrations, practical exercises, patient demonstrations (video), laboratory training, self-access learning

**Learning activities and teaching methods:**

Lectures, demonstrations, practical exercises, patient demonstrations (video), laboratory training, self-access learning

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

Rehabilitation of the occlusion, Prosthetics II

**Recommended or required reading:**

Lecture handout material

Molin Thorén Margareta, Gunne Johan (eds.) Textbook of removable prosthodontics - the Scandinavian approach. Munksgaard Danmark 2012.

RM Basker and JC Davenport: Prosthetic Treatment of the Edentulous Patient. Blackwell Munksgaard, 2002 Fourth Edition

**Assessment methods and criteria:**

Written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Scale 0-5

**Person responsible:**

Ritva Kuoppala

**Working life cooperation:**

-

**Other information:**

-

**091733S-02: Fixed prosthodontics II, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Ritva Kuoppala

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 1.4 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th year, Autumn term

**Learning outcomes:**

After the course student has skills to examine the patient for prosthetic treatment with inlays/onlays.

**Contents:**

Gold and ceramic inlays-onlays

**Mode of delivery:**

Lectures

**Learning activities and teaching methods:**

Lectures

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

Part of the strand of Rehabilitation of the occlusion

**Recommended or required reading:**

Lecture handout material

**Assessment methods and criteria:**

Full-time participation needed

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

Pass/fail

**Person responsible:**

Senior Lecturer Ritva Näpänkangas (at) oulu.fi, Senior Lecturer Ritva Kuoppala (at) oulu.fi

**Working life cooperation:**

-

**Other information:**

-

**091733S-03: Stomatognathic Physiology III, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Kirsi Sipilä

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, corresponds to 1 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th year, Autumn term

**Learning outcomes:**

To know the heterogenous background of TMD and to recognize complicated TMD and the need for special care and multidisciplinary treatment in TMD patients.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures and group work

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

Rehabilitation of the occlusion, Prosthetics II

**Recommended or required reading:**

Lecture hand out material

**Assessment methods and criteria:**

Attendance in teaching and groupwork

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Professor Kirsi Sipilä

**Working life cooperation:**

No

**091732A: Stomatognathic Physiology II (pathofunction), 4 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Kirsi Sipilä

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

4 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

3rd study year Autumn term

**Contents:**

The concept of pathofunction of the masticatory system; epidemiology, etiology, diagnosis and treatment of temporomandibular disorders (TMD); examination of a patient: differential diagnosis and treatment procedures.

**Mode of delivery:**

Lectures, demonstrations, self-access learning

**Learning activities and teaching methods:**

Lectures, demonstrations, self-access learning

**Target group:**

3rd year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

-

**Recommended or required reading:**

Lecture handout material,

Okeson JP. Management of temporomandibular disorders and occlusion 7 ed. Elsevier Mosby 2013

**Assessment methods and criteria:**

Written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Kirsi Sipilä, Senior Lecturer Ritva Näpänkangas

**Working life cooperation:**

-

**Other information:**

-

## 090175S: Dentoalveolar Surgery, 7 op

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

7 ECTS Credits

**Language of instruction:**

Finnish

**Timing:**

4th study year, Autumn term

**Contents:**

This study module contains:

090175S-01 Dentoalveolar Surgery (3.7 ECTS cr)

090175S-02 Periodontal Surgery (2.0 ECTS cr),  
 090175S-03 Radiology of Dentoalveolar Surgery (1.3 ECTS cr), and  
 090175S-04 Abnormal eruption patterns of permanent teeth 2 h

For descriptions, see each course separately

**Target group:**

4th year dental students

**Other information:**

Part of the strand of Basic knowledge and skills on surgery

*Compulsory*

**090175S-01: Oral Surgery, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Olli-Pekka Lappalainen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 7 ECTS cr study module, correspondents to 3.7 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th study year Autumn term, Advanced studies

**Learning outcomes:**

After completion of this course the student knows the basics principles of dentoalveolar surgery and has skills to perform the most common surgical procedures in dental practise.

**Contents:**

- wound healing
- incisions and flap technique
- operative extractions
- transplantation of the teeth
- deliberation of the teeth
- biopsies
- surgery of the benign oral tumors

**Mode of delivery:**

Luennot. Harjoittelu dissekoidulla sianpäällä yhdessä parodontologian opetuksen kanssa.

**Learning activities and teaching methods:**

Luennot. Harjoittelu dissekoidulla sianpäällä yhdessä parodontologian opetuksen kanssa.

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

Accepted course in principles of oral and maxillofacial surgery is a prerequisite for this course.

**Recommended optional programme components:**

Basic knowledge and skills in surgery, Dentoalveolar surgery, Oral and maxillofacial surgery

Written exam together with courses

090175S-02 Periodontal surgery I

090175S-03 Radiology of dentoalveolar surgery and

090175S-04 Abnormal eruption patterns of permanent teeth

**Recommended or required reading:**

Contemporary Oral and Maxillofacial Surgery/Editors: James R. Hupp, Edward Ellis, Myron R. Tucker. 5th ed. Mosby 2008.

Availability of the course textbooks can be check from [this link](#).

**Assessment methods and criteria:**

Written exam together with courses  
090175S-02 Periodontal surgery I  
090175S-03 Radiology of dentoalveolar surgery and  
090175S-04 Abnormal eruption patterns of permanent teeth  
Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Lecturer Olli-Pekka Lappalainen

**Working life cooperation:**

Work placement period is performed as a part of clinical training and clinical teaching in clinical teaching units.

**Other information:**

Part of the strand of Basic knowledge and skills in surgery

**090175S-02: Periodontal Surgery I, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pernu, Hilikka Elina

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 7 ECTS cr study module, correspondents to 2 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th study year, Autumn term

**Learning outcomes:**

To understand wound healing and the most important techniques of periodontal surgery

**Contents:**

General principles of periodontal surgery, surgical anatomy and different techniques of periodontal surgery

**Mode of delivery:**

Lectures, fantom

**Learning activities and teaching methods:**

lectures, practical exercises, individual studies

**Target group:**

4th year dental students

**Recommended or required reading:**

Carranza's Clinical Periodontology  
Availability of the course textbook can be checked from [this link](#).

**Assessment methods and criteria:**

Written exam together with Oral surgery, Radiographic Studies for Dentoalveolar Surgical Purposes and from orthodontic therapy Exceptional tooth eruption.

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Senior Lecturer Hilikka Pernu

**Other information:**

Part of the strand of Basic knowledge and skills in surgery

**090175S-03: Roentgenographic Studies for Surgical Purposes, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Annina Sipola

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 7 ECTS cr study module, corresponds to 3.7 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th study year Autumn term, Advanced studies

**Learning outcomes:**

Upon completion of the course, the student will be able to:  
to find and identify abnormal patterns in the diagnostic image such as cysts, benign tumors, other bone diseases, systemic diseases, and malignant diseases. The student understands the benefits and limits of dental basic imaging and advanced imaging (CBCT, CT, MRI, Ultrasonography) for the detection of disease or other abnormalities.

**Mode of delivery:**

Blended teaching

**Learning activities and teaching methods:**

Lectures, group work

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

-

**Recommended or required reading:**

(Goaz & White. Oral Radiology), lectures

**Assessment methods and criteria:**

written exam

Read more about [assessment criteria](#) at the University of Oulu webpage.

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Annina Sipola

**Working life cooperation:**

-

**Other information:**

Part of the strand of Basic Knowledge and Skills in Surgery and the course of Dentoalveolar Surgery

**090175S-04: , 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Raija Lähdesmäki

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 op

**Language of instruction:**

Finnish

**Timing:**

4th study year, Autumn term

**Learning outcomes:**

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

- explain the abnormalities in the eruption of the permanent teeth (except third molar)
- is able to assess between follow-up and guiding the patient for proper treatment in the case of abnormal eruption pattern
- knows what to do as early treatment option in the case of abnormal eruption pattern
- is able to consult senior dentist or specialist and/or remit the patient to treatment planning and properly timed treatment

**Contents:**

Eruption abnormalities of the permanent teeth; incidence, aetiology, early diagnostics and treatment options especially in the view of the permanent canine.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures 2 h / self-study 2 h

**Target group:**

Dental students of 4th study year

**Prerequisites and co-requisites:**

Prerequisites are the requirements for the Dentoalveolar surgery course.

**Recommended optional programme components:**

Part of orthodontics and its final exam.

**Recommended or required reading:**

Mitchell Laura. An Introduction to orthodontics. 3<sup>rd</sup> ed. Chapter 14 Canines. New York, US 2007.

<https://ebookcentral.proquest.com/lib/oulu-ebooks/detail.action?docID=3055505>

**Assessment methods and criteria:**

Assessment is based on core curriculum by attending the lecture and self-study the literature. Competence is needed to pass the exam in the Dentoalveolar course or final exam in Orthodontics.

**Grading:**

The course is assessed as part of larger exam using numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Senior lecturer Raija Lähdesmäki

**Working life cooperation:**

No

**Other information:**

Dentoalveolar surgery –course is part of the Basic knowledge and skills in the oral surgery – strand as well as part of the final exam in Orthodontics (5<sup>th</sup> year autumn semester)

## **090186S: Injuries and Odontogenic Infections, 5 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Olli-Pekka Lappalainen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

5 ECTS Credits

**Language of instruction:**

Finnish

**Timing:**

4th study year, Spring term

**Contents:**

This study module contains:

090186S-01 Trauma and infection radiology (0.8 ECTS cr),

090186S-02 Dental and maxillofacial injuries - diagnostics and treatment (2.7 ECTS cr),

090186S-03 Odontogenic infections (0.5 ECTS cr),

090186S-04 Anaesthesiology (1 ECTS cr) and

090186S-05 Periodontic-endodontic lesions (2h)

**Target group:**

4th year students of Degree Programme in Dentistry

**Other information:**

Part of the strand of Basic Knowledge and Skills in Surgery

*Compulsory*

### **090186S-01: Roentgenographic Picture of Osteomyelitis. Roentgenographic Features of the Benign and Malignant Tumors, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Annina Sipola

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 4 ECTS cr study module, correspondents to 0.8 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th study year Spring term, Advanced studies

**Learning outcomes:**

Upon completion of the course, the student:

knows the imaging features of inflammatory lesions of the jaws (periapical inflammatory lesions, pericoronitis, osteomyelitis, osteoradionecrosis, bisphosphonate-related osteonecrosis of the jaws); and features of traumatic injuries and fractures of the teeth, facial bones and monitoring the healing of fractures.

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures

**Target group:**

4th year dental students

**Recommended optional programme components:**

Part of the strand of Basic Knowledge and Skills in Surgery and the course of Injuries and Odontogenic Infections

**Recommended or required reading:**

Lecture hand out material

**Assessment methods and criteria:**

Written exam

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Annina Sipola

**Other information:**

Part of the strand of Basic Knowledge and Skills in Surgery and the course of Injuries and Odontogenic Infections

**090186S-02: Dental and Maxillofacial Injuries - diagnostics and treatment, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Olli-Pekka Lappalainen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 4 ECTS cr study module, correspondents to 2.7 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th year Spring term, Advanced studies

**Learning outcomes:**

At the completion of this course the student must be familiar with the first aid and treatment principles of dental traumas and maxillofacial traumas. The student must be able to perform dental splinting of traumatized teeth.

**Contents:**

- dental trauma
- maxillofacial trauma
- maxillofacial pain

**Mode of delivery:**

Lectures, practical studies

**Learning activities and teaching methods:**

Lectures, practical studies

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

Oral and Maxillofacial Surgery  
Injuries of the Teeth, Jaws and Face

**Recommended or required reading:**

Contemporary Oral and Maxillofacial Surgery/Editors: James R. Hupp, Edward Ellis, Myron R. Tucker. 5th ed. Mosby 2008.

Andreasen Jens O. et al. Traumatic dental injuries. A manual. Munksgaard, latest edition

**Assessment methods and criteria:**

Written exam together with the course of Trauma and Infection Radiology

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Senior Lecturer Olli-Pekka Lappalainen

**Working life cooperation:**

Work placement is performed as an integrated part of clinical teaching.

**Other information:**

Part of the strand of Basic Knowledge and Skills in Surgery and the course of Injuries and Odontogenic Infections

**090186S-03: Odontogenic Infections, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Olli-Pekka Lappalainen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 4 ECTS cr study module, correspondents to 0.5 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th year Spring term

**Contents:**

Odontogeeniset infektiot, aktinomykoosi ja osteomyeliitti, absessit (5KORV)

**Mode of delivery:**

Lectures, individual studies

**Learning activities and teaching methods:**

Lectures, individual studies

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

Strand of Basic Knowledge and Skills in Surgery  
090175S-01 Dentoalveolar Surgery  
090176S-01 Trauma and Infection Radiology  
090176S-02 Dental and Maxillofacial Injuries - diagnostics and treatment

**Recommended or required reading:**

Contemporary Oral and Maxillofacial Surgery/Editors: James R. Hupp, Edward Ellis, Myron R. Tucker. 5th ed. Mosby 2008.

**Assessment methods and criteria:**

Written exam together with course 090506A-02 Roentgenographic Picture of Osteomyelitis, Roentgenographic Features of the Benign and Malignant Tumors  
Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Senior Lecturer Olli-Pekka Lappalainen

**Working life cooperation:**

Work placement is part of clinical training and clinical teaching

**Other information:**

-

**090186S-04: Anaesthesiology, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

1 ECTS credit

**Language of instruction:**

Finnish

**Timing:**

DC8, Subject studies

**Learning outcomes:**

The aim is to get understanding in different types of anesthesia and handling of emergency situations

**Contents:**

Different modes of anesthetic emergency situations, cannulation

**Mode of delivery:**

Lectures, practical exercises

**Learning activities and teaching methods:**

Lectures and practical exercises (12 h)

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

No

**Recommended or required reading:**

Lecture materials

Contemporary Oral and Maxillofacial Surgery/Editors: James R. Hupp, Edward Ellis, Myron R. Tucker. 5th ed. Mosby 2008. Chapter 2

Kurssikirjojen saatavuuden voi tarkistaa [tästä linkistä](#).

**Assessment methods and criteria:**

Presence

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

Approved/disapproved

**Person responsible:**

Professor Seppo Alahuhta

**Working life cooperation:**

-

**Other information:**

Part of the strand of Basic Knowledge and Skills in Surgery

**090186S-05: Endo-perio problems, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pekka Ylöstalo

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

4th study year, Spring term

**Learning outcomes:**

Upon completion of the course the student knows how to diagnose and treat endo-perio infections.

**Contents:**

Endo-perio infections: clinical picture, diagnosis and treatment.

**Mode of delivery:**

Face to face teaching

**Learning activities and teaching methods:**

Lectures (2h)

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

-

**Recommended or required reading:**

Carranza's Clinical Periodontology, 12th ed. pages: 470-479.

**Assessment methods and criteria:**

OSCE-test

Read more about [assessment criteria](#) at the University of Oulu webpage.**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Professor Pekka Ylöstalo

**Working life cooperation:**

No

**Other information:**

-

**091753S: Periodontal Surgery II, 1 op****Voimassaolo:** 01.08.2017 -**Opiskelumuoto:** Advanced Studies**Laji:** Course**Vastuuyksikkö:** Dentistry**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Pekka Ylöstalo**Opintokohteen kielet:** Finnish**ECTS Credits:**

1 ECTS Credits

**Language of instruction:**

Finnish

**Timing:**

4th study year, Spring term (DC8), Advanced studies

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures, seminars, study-group work, independent work

**Target group:**

Dental students of 4th study year

**Recommended or required reading:**Carranzas Clinical Periodontology. **Twelfth (12th) Edition**. Newman, Takei, Klokkevold, Carranza. W.B. Saunders Company (2015). ISBN: 978-0-323-18824-1**Assessment methods and criteria:**

Attendance to lectures, small group teaching and study-group work

Read more about assessment criteria at the University of Oulu [webpage](#).**Grading:**

Pass / Fail

**Person responsible:**

Hilkka Pernu

**Working life cooperation:**

No

**091773S: Dental and orofacial development, 3 op****Voimassaolo:** 01.08.2017 -**Opiskelumuoto:** Advanced Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pirttiniemi, Pertti Mikael

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

3 ECTS credits

**Language of instruction:**

Finnish

**Timing:**

4th study year (Fall semester)

**Learning outcomes:**

After passing the course, the student understands the concepts the normal growth of the craniofacial region and expands the understanding towards growth deviations. The student understand how the tooth develops and erupts and the occlusion is formed. After these studies student can assess the developing occlusion and determine the treatment need. Student has knowledge and skills to assess the timing of the treatment and treatment options and can consider between orthodontic devices in different stages of occlusal development with the help of patient documentation and published research. Furthermore the student is aware of the possibilities and limitations in modifying occlusal development.

**Contents:**

Normal and abnormal development in craniofacial region. Normal dental and occlusal development.

The pathogenesis of malocclusions and the most usual orthodontic treatment of them is brought up especially from the viewpoint of growth.

The retention of orthodontic treatment and growth.

Screening in orthodontics.

The course includes the pathogenesis of the most frequent syndromes and developmental aberrations in the orofacial area and the orthodontics in cleft children.

The developmental history in dental anthropology and genetics are dealt with as well as dental morphology in different species and human populations. In addition, dental features of some groups of individuals with developmental abnormalities are discussed.

Treatment protocols with the aid of documentation of treated patient cases; give a summary on research articles; mechanics with typodonts: the treatment protocols for crossbite and anchor in the treatment with fixed appliances.

**Mode of delivery:**

Blended teaching

**Learning activities and teaching methods:**

Lectures 27 hours, group learning 14 hours

**Target group:**

4th year Dental students

**Prerequisites and co-requisites:**

**091771A Basic Skills in Orthodontics**

**Recommended optional programme components:**

Oral Development and Orthodontics

**Recommended or required reading:**

Various published research articles

Lecture hand-outs

L. Mitchell: An Introduction to Orthodontics, 4rd Edition, Oxford 2013 A. Nanci: Ten Cate's Oral Histology.

Development, Structure, and Function. 2008 chapters 3,5,6,10,13

Additional: H. Sariola: Solusta yksilöksi. Kehitysbiologia. Duodecim, Jyväskylä 2003, Aula, Kääriäinen, Leisti:

Perinnöllisyys-lääketiede. 2. ed. Duodecim, Jyväskylä 2002.

**Assessment methods and criteria:**

Passing of essay examination

Active memeber in group work

The course is included in the final examination of oral development and orthodontics

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Pertti Pirttiniemi

**Working life cooperation:**

No

**Other information:**

The course is included in the final examination.

**090177A: Paediatric Dentistry, 5 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Course

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Vuokko Anttonen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

5 ECTS Credits

**Language of instruction:**

Finnish

**Timing:**

4th study year, Autumn term

**Contents:**

This study module contains:

090177A-01 Paediatrics (0.5 ECTS cr)

090177A-02 Pedodontics (2.7 ECTS cr),

090177A-03 Periodontal diseases in children (0.3 ECTS cr)

090177A-04 Oral Health and Health Service System (1 ECTS cr)

090177A-05 Pediatric oral and maxillofacial surgery (0.5 ECTS cr)

For descriptions, see each course separately

**Target group:**

4th year dental students

**Other information:**

Part of the strand of Growth and Development

*Compulsory*

**090177A-01: Paediatrics, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Vuokko Anttonen

**Opintokohteen kielet:** Finnish

**Voidaan suorittaa useasti:** Kyllä

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 0.5 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th year Autumn term, Subject studies

**Learning outcomes:**

After the period the student has knowledge of child's normal mental development as well as factors associated with it. He/she also has knowledge of the most common acute and chronic pediatric diseases as well as how to deal with child's infections and pain.

**Contents:**

Normal mental development of a child and its most common disturbances. Endocrinology, asthma, cancer, juvenile arthritis, diabetes in a child; CP, genetics, infections and how to treat, controlling pain.

**Mode of delivery:**

Lectures, 100% participation required

**Learning activities and teaching methods:**

12 h lectures arranged as a seminar

**Target group:**

Obligatory to all dental students

**Prerequisites and co-requisites:**

-

**Recommended optional programme components:**

No options for accomplishment

**Recommended or required reading:**

Material delivered during lectures

**Assessment methods and criteria:**

Obligatory presence

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

100% attendance required

**Person responsible:**

Professor Vuokko Anttonen

**Other information:**

This period is obligatory to all dental students

**090177A-02: Pedodontics, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Vuokko Anttonen

**Opintokohteen kielet:** Finnish

**Voidaan suorittaa useasti:** Kyllä

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 2.7 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th study year Autumn term, Subject studies

**Learning outcomes:**

The aim is the student knows how to deal with the child and his/her family while doing dental treatment. He is familiar with the child's growth and development and most common disturbances in it. She is familiar with developmental tooth disorders. He /she has knowledge and skills for controlling dental caries at individual level. He knows the basic methods for controlling and preventing dental fear, using local anesthetics and sedation for children. He/she is competent of using relevant non-invasive and invasive methods in treating caries and simple developmental anomalies. Endodontic treatment of deciduous and permanent teeth. He /she is capable to carry out child's acute dental care. He/she is aware of principles in treating medically compromised children. He is aware most common syndromes.

**Contents:**

How to deal with and treat a child in dental care: growth and development of a child, how to deal with children of different age and developmental stage, dealing with the family, dental fear and sedation, ECC and riskfactors, control of caries and oral health promotion in children, restorative dentistry, endodontic treatment of deciduous and permanent developing teeth, developmental anomalies of teeth, dental treatment of medically compromised and mentally retarded children. In simulation laboratory, fissure sealant, restoration, pulpotomy and stainless steel crown.

**Mode of delivery:**

Lectures 16 h, 100% attendance required, simulation, examination as a part of Growth and development entity

**Learning activities and teaching methods:**

Lectures 16h, respective work required from the student 32h, book 20h, simulation hands on 4h

**Target group:**

4th year dental students, obligatory to all dental students

**Prerequisites and co-requisites:**

Previous studies according to the dental curriculum.

**Recommended optional programme components:**

The only option, part of Growth and Development Strand

**Recommended or required reading:**

Koch G & Poulsen S (eds.): Pediatric dentistry- A clinical approach. 2 nd edition, May 2009, Wiley-Blackwell. ISBN: 978-1-4051-6100-8 TAI Welbury, Duggal, Hosey. Paediatric Dentistry. Oxford University Press 2012

Kurssikirjojen saatavuuden voi tarkistaa [tästä linkistä](#).

**Assessment methods and criteria:**

Compulsory attendance in lectures and fantom teaching, exam

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

In the exam 3-4 questions/ 6 in the examination, 1-5, 0 rejected; the score in the exam is the score of this period.

**Person responsible:**

Professor Vuokko Anttonen

**Working life cooperation:**

Patient work and oral health promotion to children after the period in the Dental teaching Unit of the City of Oulu, Finland. Following the work of a pediatric dentist in Oulu University Hospital.

**Other information:****Preventive Dentistry and Cariology**

After different course parts there will be midterm exams covering the topics dealt with in the course in question. In the beginning of DC 5, there will be the exam covering the lectures given in DC 4 and related chapters in textbook: passing this exam is required for the admittance to Restorative Dentistry course 090501A-02.

Passing the midterm exams is the prerequisite for attending the clinical studies and final exam. All the topics covered in different course parts, as well as related topics in textbooks, are required in the final exam. Final grade will be based on a) the results of the midterm and final exams; b) score achievement in continuous clinical performance or performance in competence evaluation (given by clinical supervisors and assisting staff); c) additionally the master thesis if done on the department will be taken into consideration.

This period is obligatory to all dental students

**090177A-03: Periodontal diseases in children, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Meeri Ojala

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 0.3 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th year Autumn term, Subjects studies

**Learning outcomes:**

To understand special features of periodontal tissues on children and adolescents. To recognise early changes and identify risk individuals and make a treatment plan.

**Contents:**

Diagnostics and treatment of periodontal diseases of young and adolescents.

**Mode of delivery:**

Face-to-face teaching, individual studies

**Learning activities and teaching methods:**

Lectures and patient cases 3 hours, examination

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

Student must have passed earlier theoretical study modules in periodontology.

**Recommended optional programme components:**

This study module is part of combination of oral and cranial growth and development.

**Recommended or required reading:**

Available lecture books can be checked [from this link](#).

**Assessment methods and criteria:**

Written examination together with the courses of Pedodontics, Periodontal Diseases in Children, Oral Health and Health Service System and Pediatric Oral and Maxillofacial Surgery.

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

**Person responsible:**

Professor Pekka Ylöstalo

**Working life cooperation:**

No

**090177A-04: Controlling Oral Diseases among Populations; Evidence-based Dentistry, 0 op**

**Voimassaolo:** 01.08.2017 -

**Opiskelumuoto:** Intermediate Studies

**Laji:** Partial credit

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Marja-Liisa Laitala

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

0 ECTS credits (part of 5 ECTS cr study module, correspondents to 1 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th year Autumn term, Subject studies

**Learning outcomes:**

Student has knowledge of oral health promotion and prevention of diseases, and is able to recognize oral diseases as a public health problem. Student is competent at promoting and improving the oral health of individuals, families and groups in the community. Student has knowledge of the organization and provision of health care in the community.

**Contents:**

See learning outcomes of the course

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures 12 hours, group work, individual studies 15 hours, small group teaching

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

No

**Recommended optional programme components:**

-

**Recommended or required reading:**

Materials delivered in the course

**Assessment methods and criteria:**

Learning assignment

Read more about assessment criteria at the University of Oulu [webpage](#).**Grading:**

The course unit utilizes verbal grading scale pass/fail.

**Person responsible:**

Professor Jorma Virtanen

**Working life cooperation:**

No

**Other information:**

Part of the strand of Growth and Development and the course of Pediatric Dentistry

**090177A-05: Pediatric oral and maxillofacial surgery, 0 op****Voimassaolo:** 01.08.2017 -**Opiskelumuoto:** Intermediate Studies**Laji:** Partial credit**Vastuuyksikkö:** Dentistry**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Olli-Pekka Lappalainen**Opintokohteen kielet:** Finnish**ECTS Credits:**

0 ECTS credits (part of 3 ECTS cr study module, corresponds to 0.5 ECTS cr workload)

**Language of instruction:**

Finnish

**Timing:**

4th study year Autumn term, Subjects studies

**Learning outcomes:**

In the end of the course the student knows the special features in surgery working with children and recognises developmental disturbances with oral and craniofacial changes

**Contents:**

Childrens' oral and maxillofacial treatment possibilities

**Mode of delivery:**

Face-to-face teaching

**Learning activities and teaching methods:**

Lectures

**Target group:**

4th year dental students

**Prerequisites and co-requisites:**

No

**Recommended optional programme components:**

No

**Recommended or required reading:**

Contemporary Oral and Maxillofacial Surgery/Editors: James R. Hupp, Edward Ellis, Myron R. Tucker. Mosby, latest edition

Availability of the textbook of the course can be checked from [this link](#).

**Assessment methods and criteria:**

Attendance at lectures is compulsory.

Read more about assessment criteria at the University of Oulu [webpage](#).

**Grading:**

Pass/fail

**Person responsible:**

Senior Lecturer Olli-Pekka Lappalainen

**Working life cooperation:**

No

**Other information:**

Part of the strand of Growth and Development and the course of Pediatric Dentistry

**043003Y: Knowledge and Research I: Literature retrieval, 2 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** General Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Mimmi Tolvanen, Grekula, Sirpa Birgitta

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

2 ECTS

**Language of instruction:**

Finnish

**Timing:**

1st year

**Learning outcomes:**

The student will be able to search research articles using basic literature retrieval methods and to use bibliographic databases available at the Medical Faculty.

**Contents:**

Library information systems, medical and dental publications, scientific online journals, Medline, Medic, Scopus, Cochrane Library, electronic books, reference management software.

**Mode of delivery:**

Blended teaching

**Target group:**

Medical and dental students

**Prerequisites and co-requisites:**

None.

**Recommended optional programme components:**

-

**Recommended or required reading:**

Material in lessons small group lessons

**Assessment methods and criteria:**

Completion of practical project

**Grading:**

Pass/Fail

**Person responsible:**

Associate professor Pentti Nieminen

**Working life cooperation:**

-

**Other information:**

-

**043002Y: Knowledge and Research I: Scientific writing, 3 op**

Voimassaolo: 01.08.2016 -

Opiskelumuoto: General Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Pentti Nieminen

Opintokohteen kielet: Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

3 ECTS

**Language of instruction:**

Finnish

**Timing:**

1st year

**Learning outcomes:**

By the end of the course the student has practiced the following skills: using information and communication technology resources in the University of Oulu, using workstations available in the Medical Faculty, applying basic software necessary in the studies. The student knows basics in scientific writing.

**Contents:**

Information and communication technology:

Workstations, information security and confidentiality, networks, and office software.

Guidelines for written assignments and word processing:

Structure of assignments and thesis, reporting of findings, tables and figures, citing and references.

**Mode of delivery:**

Blended teaching

**Target group:**

Medical and dental students

**Prerequisites and co-requisites:**

None.

**Recommended or required reading:**

Material in lessons and small group lessons

**Person responsible:**

Pentti Nieminen

**Working life cooperation:**

-

**Other information:**

-

**043004Y: Knowledge and Research II: Scientific communication, 5 op**

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** General Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pentti Nieminen

**Opintokohteen kielet:** Finnish

**Proficiency level:**

-

**Status:**

-

**Required proficiency level:**

-

**ECTS Credits:**

5 ECTS

**Language of instruction:**

Finnish

**Timing:**

1st year

**Learning outcomes:**

The student is familiar with the research process and with the characteristics of scientific information including an ability to obtain and process scientific information, and to report and apply the results especially in the fields of medicine, dentistry and health sciences.

The student knows the role of scientific publications, can use and evaluate information sources critically. The student will be able to search research articles using basic literature retrieval methods and to use bibliographic databases available at the Medical Faculty.

The student knows basic principles in research ethics and good scientific practice.

**Contents:**

Guidelines for written assignments and word processing:

Structure of assignments and thesis, reporting of findings, tables and figures, citing and references.

Scientific information:

Principles of scientific research, ethics in research, research methods in the main disciplines (clinical medicine, epidemiology, biomedicine and health sciences).

Scientific communication:

Scientific journals, research articles, critical evaluation of research findings, ethics in scientific publication and bibliometrics.

Special issues in medical research:

Ethics in research, regulations in clinical research and use of animals in scientific research, research groups.

**Mode of delivery:**

Blended teaching

**Learning activities and teaching methods:**

040024Y (4 ECTS) Knowledge Management and Research II

**Target group:**

Medical, dental, health sciences and medical wellness technology students

**Prerequisites and co-requisites:**

None

**Recommended optional programme components:**

-

**Recommended or required reading:**

Material in lessons and small group lessons

**Assessment methods and criteria:**

Regular and active participation in the small group lessons, readiness tests and completion of practical projects.

**Grading:**

1 - 5, fail

**Person responsible:**

Associate professor Pentti Nieminen

**Working life cooperation:**

-

**Other information:**

-

## 043005Y: Knowledge and Research III: Data analysis, 3 op

**Voimassaolo:** 01.08.2016 -

**Opiskelumuoto:** General Studies

**Laji:** Course

**Vastuuyksikkö:** Medicine

**Arvostelu:** 1 - 5, pass, fail

**Opettajat:** Pentti Nieminen

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

3 ECTS

**Language of instruction:**

Finnish

**Timing:**

2nd year

**Learning outcomes:**

The student is familiar with statistical computing in the fields of medicine, dentistry and health sciences. Further, the student is able to analyze data with basic statistical methods, use basic statistical significance tests and inference methods, and evaluate critically scientific research reports.

**Contents:**

Aims and phases of statistical research, planning statistical research, obtaining data, variable distributions (frequencies, graphs and statistics), basics in statistical inference and methods (estimates, significance tests and confidence limits), basic methods in comparing groups and estimating associations between variables, specific methods applied in medical research.

**Mode of delivery:**

Blended teaching

**Target group:**

Medical and dental students

**Prerequisites and co-requisites:**

No

**Recommended or required reading:**

Material in lessons and small group lessons.

**Assessment methods and criteria:**

Exam

**Grading:**

1 - 5, fail

**Person responsible:**

Pentti Nieminen

**Working life cooperation:**

The course does not contain working life cooperation.

**040300A: Maturity exam (native language), 0 op****Opiskelumuoto:** Advanced Studies**Laji:** Course**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Outi Mikkola**Opintokohteen kielet:** Finnish**ECTS Credits:**

0 ECTS Credits

**Language of instruction:**

Finnish

**Contents:**

Student writes an essay in his/her native language about the topic of the thesis to show a good command of the language and the content of the thesis. If the student's native language is another than Finnish or Swedish the Faculty will define separately the requirements for the language test.

**Learning activities and teaching methods:**

Writing an essay.

**Assessment methods and criteria:**

The essay is examined first by the supervisor of the thesis and then by the language teacher.

**Grading:**

Pass / fail

**091601S: Study plan, 4 op****Voimassaolo:** 01.08.2015 -**Opiskelumuoto:** Advanced Studies**Laji:** Course**Vastuuyksikkö:** Dentistry**Arvostelu:** 1 - 5, pass, fail**Opintokohteen kielet:** Finnish**ECTS Credits:**

4 ECTS credits

**Language of instruction:**

Finnish, English

**Timing:**

It is possible to start to do thesis already at the beginning of the studies. Prerequisites of the thesis depends of the theme and should be agreed with the responsible person of the research project.

**Learning outcomes:**

The thesis in the degree Programme in Dentistry is a scientific work which shows the student's ability to scientific thinking and research. The student gets acquainted with scientific research and is able to evaluate research publications, the student is capable of independent and responsible work as part of a scientific community, develops his/her problem solving skills as well as critical and ethical thinking, and increases his/her readiness to scientific communication.

The thesis (20 ECTS credits) includes formulation of research plan (4 ECTS credits), independent research work under the supervision of the teacher, writing a thesis or scientific article (student as a first or second writer), oral presentation of the research and participation twice in research seminar.

Directors of the disciplines in the degree Programme in Dentistry give information about their research projects and possible aims of the thesis. Info session will be also held every year. One potential way to find the aim of the thesis and its supervisor is Syväriportti <http://www.duodecim.fi/syvariportti/>.

**Contents:**

Writing a study plan and make an agreement of supervision.

**Assessment methods and criteria:**

Form of the agreement of supervision can be found here:

<http://www oulu.fi/ltk/node/1617>

**Grading:**

Pass / Should be complemented

**Person responsible:**

Tuomo Heikkinen

**Working life cooperation:**

Research work gives excellent possibilities to develop practices in working life and create contacts.

## 091602S: Thesis, 16 op

**Voimassaolo:** 01.08.2015 -

**Opiskelumuoto:** Advanced Studies

**Laji:** Diploma thesis

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

16 ECTS credits

**Language of instruction:**

Finnish, English

**Timing:**

It is possible to start to do thesis already at the beginning of the studies. Prerequisites of the thesis depends of the theme and should be agreed with the responsible person of the research project.

**Learning outcomes:**

The thesis in the degree Programme in Dentistry is a scientific work which shows the student's ability to scientific thinking and research. The student gets acquainted with scientific research and is able to evaluate research publications, the student is capable of independent and responsible work as part of a scientific community, develops his/her problem solving skills as well as critical and ethical thinking, and increases his/her readiness to scientific communication.

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**Assessment methods and criteria:**

Assessment criterias can be found here: <http://www oulu.fi/ltk/node/21902>

**Grading:**

1-5

**Person responsible:**

Tuomo Heikkinen

**Working life cooperation:**

Research work gives excellent possibilities to develop practices in working life and create contacts.

## Tutkintorakenteisiin kuulumattomien opintokokonaisuuksien ja -jaksojen kuvaukset

**091704A-01: Dental hygienist workshop, 0 op**

**Voimassaolo:** 01.08.2018 -

**Opiskelumuoto:** Practical Training

**Laji:** Practical training

**Vastuuyksikkö:** Dentistry

**Arvostelu:** 1 - 5, pass, fail

**Opintokohteen kielet:** Finnish

**ECTS Credits:**

5 hours (part of clinical training DC8)

**Language of instruction:**

Finnish

**Timing:**

4th year Spring semester (part of clinical training DC8)

**Learning outcomes:**

To be able to diagnose oral disease based on anamnesis, clinical and radiological changes and to be capable of planning treatment together with multiple dental professionals.

**Contents:**

Diagnose of oral diseases and treatment plan as multiprofessional co-operation.

**Mode of delivery:**

Clinical trial

**Learning activities and teaching methods:**

Workshop

**Target group:**

4th year dental student

**Recommended optional programme components:**

Dental hygienist workshop is part of clinical training.

**Recommended or required reading:**

Material will be given in workshop

**Assessment methods and criteria:**

Dental hygienist seminar is accomplished together with dental hygienist –students. Participation is compulsory.

**Grading:**

acknowledged/failed

**Person responsible:**

Professor Pekka Ylöstalo

**Working life cooperation:**

No