

Opasraportti

FMEd - Medicine (2017 - 2018)

CURRICULUM FOR THE DEGREE PROGRAMME IN MEDICINE 2017-2018

Objective of the degree programme

A graduate from the University of Oulu is able to work independently in the medical doctor's profession in primary healthcare level tasks and diverse on-call duties, and has capabilities for continuing professional training and research.

After completing the Licentiate of Medicine degree programme, the student will have attained the following learning outcomes:

A doctor as a professional

- knows how to interpret key professional values in his or her work, including prioritisation of the patient's best interest, integrity, respect and confidentiality
- knows how to make conclusions based on the principles of professional ethics
- knows how to plan and deliver treatment following recommendations and approved treatment methods
- knows how to make conclusions as a member of a healthcare team
- is able to plan his or her personal competence development and the activities of his or her work community as well as responsibly engage in health promotion work together with patients, other healthcare professionals and society

Scientific knowledge in a doctor's profession

- knows how to acquire and combine key clinical and scientific knowledge and skills
- is able to adjust scientific methods for the purposes of patient work
- is convincing as an expert and a developer of his or her field
- is able to evaluate information critically and interpret it while working in different healthcare roles

Interaction in a doctor's profession

- is able to communicate productively with patients and their family members, behaves with consideration and sympathy, and knows how to terminate communication with a patient if necessary
- in interaction and treatment, is able to take into account the religious and cultural background and social circumstances of patients and their families
- knows how to communicate orally and in writing with other healthcare professionals and supervise students in different teaching situations

Clinical problem-solving in a doctor's profession

- knows how to plan individual treatment that takes the patient's personal needs and preferences into account as well as prepare treatment plans for acute and chronic illnesses for patients of different ages
- knows how to make diagnoses analytically and based on research data
- is capable of differential diagnostic thinking in his or her work

- is able to assess the significance of the healthcare system structure and financial impacts of healthcare on activities with patients
- is able to assess the significance of the coordination of healthcare and its stakeholders for securing the continuity, safety and reliability of treatment

A doctor's role in supporting patients and the community

- knows how to promote comprehensive and high-quality treatment and rehabilitation of patients regardless of their culture, language, ethnic background or social status
- is able to evaluate the importance of health promotion for society
- is able to plan projects that improve the population's well-being and promote the use of healthcare service organisations and society's resources in order to increase well-being
- A doctor as a human being
- recognises his or her own motives, values and restrictions and obtains proposals from others to develop his or her activities
- recognises his or her reactions in difficult situations and strives to find means for staying in control in upsetting situations
- is able to assess the impacts of these reactions on his or her life and work and strives to find an appropriate work-life balance
- knows how to process medical errors and learn from them

The degree of Licentiate of Medicine, 6 years

Level of qualification

The degree programme in Medicine leads to the degree of Licentiate of Medicine, which Corresponds M.D. degree in Angloamerican countries.

ECTS Credits

The minimum extent of the Licentiate of Medicine degree is 360 credits.

Language of instruction

The teaching is given in Finnish language.

Admission requirements

The admission requirements for the degree programme in Medicine comprise the Matriculation Examination Certificate or the upper secondary vocational education and an entrance examination. Equivalent foreign education also gives general eligibility for degree programme in medicine. Foreign applicant's admission is based exclusively on the results of the entrance examination.

All applicants to the degree programme in Medicine have to attend an entrance examination, which is held in Finnish or in Swedish and is based on Finnish or Swedish literature. If a foreign applicant wants to answer in Swedish to the entrance examination, she/he has to demonstrate language proficiency in Finnish. The teaching is given in Finnish language.

Arrangements for recognition of prior learning

Recognizing official, unofficial or informal learning: AHOT, University of Oulu Education Regulations

Profile of the programme

The degree programme in Medicine leads to the degree of Licentiate of Medicine, which Corresponds M.D. degree in Angloamerican countries. The instruction in the degree programme in medicine emphasizes the regular updating of knowledge and has a strong connection to scientific research. The contents of instruction are fully in line with the intended learning outcomes, and they are under constant evaluation and development.

Graduates of the degree programme in medicine become experts in demanding tasks on both national and international level. Studying in an academic community of diverse scientific fields and high standards is challenging and rewarding. Our programme offers graduates a range of career opportunities on different professional paths as well as in research.

The training has strong connection to diverse and cross-disciplinary scientific research at Faculty of Medicine. For students, it is possible to begin scientific research work in research groups before graduation.

Course structure diagram and required for the degree courses

The minimum extent of the Licentiate of Medicine degree is 360 credits. One Finnish credit equals to one ECTS credit. The average input of 1600 working hours needed for studies of one academic year is equivalent to 60 credits. Medical studies are pre-scheduled and the training is organized in such a manner that with full-time attendance the degree can be taken in six years.

The degree programme consists of basic, intermediate and advanced studies, language studies and compulsory practical training. Studies are carried out as contact teaching. Medical studies are pre-scheduled and organized according the order presented in curriculum. Studies have to be accomplished according the pre-scheduled order. Exceptions can be made only based on the accepted personal study plan.

The preclinical stage lasts for two years (Semesters 1-4) and consists of general and basic studies. The completion of clinical studies takes four years (Semesters 5-12). During this phase students focus on the occurrence, onset, diagnostics, treatment and prevention of various diseases. Bed-side teaching is part of students' daily routine. Some clinical studies are integrated in preclinical stage of studies.

The degree structure (2017)

General studies (total 23 ECTS)

- 043001Y Introduction to medical profession 4 ECTS
- 043002Y Knowledge and research I: Scientific writing 3 ECTS
- 043003Y Knowledge and research I : Literature retrieval 2 ECTS
- 043004Y Knowledge and research I: Scientific communication 5 ECTS
- 043005Y Knowledge and Research II: Data-analysis 3 ECTS

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Language studies

- 902155Y Medical English 3 ECTS
- 901036Y Second Official Language (Swedish), Written Skills 1,5 ECTS
- 901037Y Second Official Language (Swedish), Oral Skills 1,5 ECTS

Basic studies (total 91 ECTS)

- A540141 Anatomy and Medical cell and developmental biology 21 ECTS
- A540142 Medical Biochemistry and Molecular Biology 13 ECTS
- 043026P Genomic medicine I 2 ECTS
- 043027P Psychology for Medical Students 4 ECTS
- A540143 Physiology 15 ECTS
- 043037P Public health 6 ECTS
- 043038P Radiation Safety in Medicine 2 ECTS

A540144	Microbiology and immunology 10 ECTS
A540145	Pharmacology and toxicology 10 ECTS
043052P	General Pathology 5 ECTS
043053P	Basic skills in doctor-patient relationship 3 ECTS

Intermediate studies (total 161 ECTS)

083000A	Basic clinical skills and tools in physician's work I 5 ECTS
A540146	Pathology and diagnostics 10 ECTS
083010A	Acute medicine I 7 ECTS
083011A	Cardiology 6 ECTS
083012A	Gastrointestinal diseases 8 ECTS
083013A	Hematology and Endocrinology 5 ECTS
083014A	Nephrology/Urology 6 ECTS
083015A	Patient care and prevention 5 ECTS
083001A	Basic clinical skills and tools in physician's work II 2 ECTS
083021A	Forensic Medicine 4 ECTS
A540147	Diseases of the musculoskeletal system 12 ECTS
083030A	Infections and respiratory diseases 5 ECTS
083031A	Otorhinolaryngology 7 ECTS
083032A	Neurology and Neurosurgery 9 ECTS
083033A	Psychiatry and mental health 10 ECTS
083034A	General practice 5 ECTS
083040A	Pathology and diagnostics II 4 ECTS
A540148	Pediatrics 17 ECTS
083050A	Ophthalmology 4 ECTS
083051A	Dermatology and Venereology 5 ECTS
083052A	Obstetrics and Gynecology 10 ECTS
083002A	Basic clinical skills and tools in physician's work III 4 ECTS
083054A	Genomic medicine II 3 ECTS
083060A	Oncology and palliative care 4 ECTS
083061A	Geriatrics 4 ECTS

Advanced studies (total 61 ECTS)

044000S	Clinical patient work 5 ECTS
A540149	Measures and support for functioning 12 ECTS
044030S	Physician, health and society 7 ECTS
083062A	Acute medicine II 8 ECTS
	Optional studies 9 ECTS
A540150	Thesis 20 ECTS

Practice (24 ECTS)

044001S	Practice 24 ECTS
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Total 360 ECTS

The degree structure of each semester (2017)

1. Semester (C1 and C2) total 60 ECTS

043001Y	Introduction to medical profession 4 ECTS
043002Y	Knowledge and research I: Scientific writing 3 ECTS
043003Y	Knowledge and research I : Literature retrieval 2 ECTS
043004Y	Knowledge and research I: Scientific communication 5 ECTS
902155Y	Medical English 3 ECTS
901036Y	Second Official Language (Swedish), Written Skills 1,5 ECTS
901037Y	Second Official Language (Swedish), Oral Skills 1,5 ECTS

A540141	Anatomy and Medical cell and developmental biology 21 ECTS
A540142	Medical Biochemistry and Molecular Biology 13 ECTS
043026P	Genomic medicine I 2 ECTS
043027P	Psychology for Medical Students 4 ECTS

2. Semester (C3 and C4) total 60 ECTS

A540143	Physiology 15 ECTS
043037P	Public health 6 ECTS
043038P	Radiation Safety in Medicine 2 ECTS
A540144	Microbiology and immunology 10 ECTS
A540145	Pharmacology and toxicology 10 ECTS
043052P	General Pathology 5 ECTS

043005Y Knowledge and Research II: Data-analysis 3 ECTS

043053P Basic skills in doctor-patient relationship 3 ECTS

Optional studies 6 ECTS

3. Semester (C5 and C6) total 60 ECTS

083000A Basic clinical skills and tools in physician's work I 5 ECTS

A540146 Pathology and diagnostics 10 ECTS

083010A Acute medicine I 7 ECTS

083011A Cardiology 6 ECTS

083012A Gastrointestinal diseases 8 ECTS

083013A Hematology and Endocrinology 5 ECTS

083014A Nephrology/Urology 6 ECTS

083015A Patient care and prevention 5 ECTS

044000S Clinical patient work 5 ECTS

044001S Practice 3 ECTS

4. Semester (C7 and C8) total 60 ECTS

083001A Basic clinical skills and tools in physician's work II 2 ECTS

083021A Forensic Medicine 4 ECTS

A540147 Diseases of the musculoskeletal system 12 ECTS

083030A Infections and respiratory diseases 5 ECTS

083031A Otorhinolaryngology 7 ECTS

083032A Neurology and Neurosurgery 9 ECTS

083033A Psychiatry and mental health 10 ECTS

083034A General practice 5 ECTS

044001S Practice 6 ECTS

5. Semester (C9 and C10) total 60 ECTS

083040A Pathology and diagnostics II 4 ECTS

A540148 Pediatrics 17 ECTS

083050A Ophthalmology 4 ECTS

083051A Dermatology and Venereology 5 ECTS

083052A Obstetrics and Gynecology 10 ECTS

083002A Basic clinical skills and tools in physician's work III 4 ECTS

083054A Genomic medicine II 3 ECTS

044010S Thesus, study plan 4 ECTS

044001S Practice 6 ECTS

Optional studies 3 ECTS

6. Semester (C11 and C12) 60 ECTS

A540149 Measures and support for functioning 12 ECTS

044030S Physician, health and society 7 ECTS

083060A Oncology and palliative care 4 ECTS

083061A Geriatrics 4 ECTS

083062A Acute medicine II 8 ECTS

A540150 Thesis and maturity exam 16 ECTS

044001S Practice 9 ECTS

DEGREE PROGRAMME IN MEDICINE (Government Decree on University Degrees 794/2004)

1. year	2. year	3. year	4. year	5. year	6. year
C1-C2	C3-C2	C5-C6	C7-C8	C9-C10	C11-C12
<p>Introduction to medical profession 4 ECTS</p> <p>Knowledge and research I: Scientific writing 3 ECTS; Literature retrieval 2 ECTS; Scientific communication 5 ECTS Anatomy and Medical cell and developmental biology 21 ECTS</p> <p>Medical Biochemistry and Molecular Biology 13 ECTS</p> <p>Genomic medicine I 2 ECTS</p> <p>Psychology for Medical Students 4 ECTS</p> <p>Language studies: Medical English 3 ECTS</p>	<p>Physiology 15 ECTS</p> <p>Public health 6 ECTS</p> <p>Radiation Safety in Medicine 2 ECTS</p> <p>Microbiology and immunology 10 ECTS</p> <p>Pharmacology and toxicology 10 ECTS</p> <p>General Pathology 5 ECTS</p>	<p>Basic clinical skills and tools in physician's work I 5 ECTS</p> <p>Tautioppi ja diagnostiikka 10 ECTS</p> <p>Acute medicine I 7 ECTS</p> <p>Cardiology 6 ECTS</p> <p>Gastrointestinal diseases 8 ECTS</p> <p>Hematology and Endocrinology 5 ECTS</p>	<p>Basic clinical skills and tools in physician's work II 2 ECTS</p> <p>Forensic Medicine 4 ECTS</p> <p>Diseases of the musculoskeletal system 12 ECTS</p> <p>Infections and respiratory diseases 5 ECTS</p> <p>Otorhinolaryngology 7 ECTS</p> <p>Neurology and Neurosurgery 9 ECTS</p>	<p>Mindful Diagnostic 4 ECTS</p> <p>Pediatrics 17 ECTS</p> <p>Ophthalmology 4 ECTS</p> <p>Dermatology and Venereology 5 ECTS</p> <p>Obstetrics and Gynecology 10 ECTS</p> <p>Basic clinical skills and tools</p>	<p>Measures and support for functioning 12 ECTS</p> <p>Physician, health and society 7 ECTS</p> <p>Oncology and palliative care 4 ECTS</p>

Second Official Language (Swedish), Written Skills 1,5 ECTS Oral Skills 1,5 ECTS	Knowledge and Research II: Data-analysis 3 ECTS Basic skills in doctor-patient relationship 3 ECTS	Nephrology /Urology 6 ECTS Patient care and prevention 5 ECTS Clinical patient work 5 ECTS	Psychiatry and mental health 10 ECTS General practice 5 ECTS	in physician's work III 4 ECTS Genomic medicine II 3 ECTS	Geriatrics 4 ECTS Acute medicine II 8 ECTS
	Optional studies 6 ECTS			Optional studies 3 ECTS	
		Practice 3 ECTS	Practice 6 ECTS	Practice 6 ECTS	Practice 9 ECTS
				Thesis, study plan 4 ECTS	Thesis and maturity exam 16 ECTS
60 ECTS	60 ECTS	60 ECTS	60 ECTS	60 ECTS	60 ECTS
Optional studies 9 ECTS					
Practice total 24 ECTS					
Thesis, study plan and maturity exam 20 ECTS					
Licentiate of Medicine degree 360 ECTS					

Graduation requirements

The minimum extent of the Licentiate of Medicine degree is 360 ECTS credits. The degree programme consists of general, basic, intermediate and advanced studies, language studies and compulsory practical training. The thesis and a maturity test are included in the advanced studies of major. The total amount of compulsory practical training is 24 ECTS credits.

Separate provisions have been laid down for assessing the proficiency in Finnish and Swedish language required in accordance with the Government Decree on University Degrees (794/2004), <http://www.finlex.fi/en/laki/kaannokset/2004/en20040794.pdf>:

1. The student must demonstrate in studies included in education for a degree of Licentiate of Medicine or otherwise that he/she has attained:

a) Proficiency in Finnish and Swedish which is required of civil servants in bilingual public agencies and organizations under Section 6(1) of the Act on the Knowledge of Languages Required of Personnel in Public Bodies (424/2003) and which is necessary for their field; and

b) Skills in at least one foreign language needed to follow developments in the field and to operate in an international environment.

2. The provisions of subsection 1 do not concern a student who has been educated in a language other than Finnish or Swedish or a student who has been educated abroad. The language proficiency of such students shall be determined by the university.

3. For special reasons, the university may either totally or partially exempt a student from the requisite language skills referred to in subsection 1.

In order to gain a degree certificate the student has to supply an application to the faculty's office according to instructions given by the faculty.

Learning outcomes

The goal of the studies towards the degree of Licentiate of Medicine is to provide the students with such knowledge, skills and psycho-social abilities that will enable them, after graduation, to successfully function as experts, developers and team participants and leaders in hospitals as well as in primary health care. An additional goal is that a graduate will have the prerequisite skills for research work and post-graduate study as well as the ability and motivation for lifelong learning. The instruction, which emphasizes the regular updating of knowledge, has a strong connection to scientific research. The contents of instruction have been derived from the goals, and they are under constant evaluation and development.

The learning outcomes of the degree are based on the competences described in the publication of The Tuning Project (Medicine): Learning outcomes/competences for undergraduate medical education in Europe.

Modes of study

Medical studies are pre-scheduled and the training is organized in such a manner that with full-time attendance the degree can be taken in six years. Most of the courses are compulsory for all students. Some study modules, especially thesis in advanced studies, can be chosen according to the student's own interests.

Examination regulations, Assessment and Grading

Assessment is based on examinations, exercises, essays, field work, clinical work, reports or any other method determined pedagogically appropriate for the particular course. Additional information is given in study unit descriptions.

A numerical scale 0-5 in whole numbers or verbal grading Pass or Fail is used in assessing a completed course. When assessing theses, verbal grading hyväksytty (Approved) or hylätty (Rejected) is being used. In numerical scale zero stands for fail.

Qualification requirements and regulations

The degree provides doctor's eligibility. National Supervisory Authority for Welfare and Health (Valvira) grants, upon application, the right to practice as a licenced medical doctor. More information: http://www.valvira.fi/en/licensing/professional_practice_rights

Occupational profiles of graduates

The goal of the degree programme in medicine is to prepare students for a career as a physician as well as for professional and scientific post-graduate education. In addition to the traditional work as a physician, the training

enables graduates to work in the fields of teaching and research as well as in other positions as an expert in the field of medicine.

Access to further studies

After completing the basic degree, students may apply for the post-graduate professional education that leads to a specialist degree and/or pursue the Doctor of Medicine degree as a scientific post-graduate degree.

The degree of a Doctor of Medical Science is a postgraduate degree in medicine. The doctorate may take 3 - 4 years full time study. An accepted thesis is required as well as theoretical studies.

The Specialist degree is a professional postgraduate degree. In Finland there are 49 specialist degree programmes. The specialist education in medicine takes 5 to 6 years after permission granted by the National Supervisory Authority for Welfare and Health (Sosiaali- ja terveystieteiden lupa- ja valvontavirasto, Valvira) to practice as a physician in Finland. It consists of theoretical lectures, working in hospitals and health centers and an examination.

Information about the post-graduate professional education: <http://www.oulu.fi/ltk/opiskelu/jatkokoulutus/ammattillinen> (in Finnish)

Information about the scientific post-graduate education: <http://www.oulu.fi/ltk/opiskelu/jatkokoulutus/tieteellinen> (in Finnish)

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Tutkintorakenteet

Licentiate of Medicine

Tutkintorakenteen tila: published

Lukuvuosi: 2017-18

Lukuvuoden alkamispäivämäärä: 01.08.2017

General Studies

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

Language and Communication Studies

- 902155Y: Medical English, 3 op
- 901037Y: Second Official Language (Swedish), Oral Skills, 2 op
- 901036Y: Second Official Language (Swedish), Written Skills, 1 op

Basic studies

- 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

Intermediate Studies

- 083010A: Acute medicine I, 7 op
- 083062A: Acute medicine II, 8 op
- 083000A: Basic clinical skills and tools in physician's work I, 5 op
- 083001A: Basic clinical skills and tools in physician's work II, 2 op
- 083002A: Basic clinical skills and tools in physician's work III, 4 op
- 083011A: Cardiology, 6 op
- 083051A: Dermatology and venereology, 5 op
- A540147: Diseases of the musculoskeletal system, 12 op
 - Compulsory*
 - 083022A: Diseases of the musculoskeletal system I: Surgery, 6 op
 - 083023A: Diseases of the musculoskeletal system II: Surgery, 3 op
 - 083024A: Diseases of the musculoskeletal system III: Physiatry and rheumatology, 3 op
- 083021A: Forensic Medicine, 4 op
- 083012A: Gastrointestinal diseases, 8 op
- 083034A: General practice, 5 op
- 083054A: Genomic Medicine II, 3 op
- 083061A: Geriatrics, 4 op
- 083013A: Hematology and Endocrinology, 5 op
- 083030A: Infections and respiratory diseases, 5 op
- 083014A: Nephrology/Urology, 6 op
- 083032A: Neurology and Neurosurgery, 9 op
- 083052A: Obstetrics and gynecology, 10 op
- 083060A: Oncology and palliative care, 4 op
- 083050A: Ophthalmology, 4 op
- 083031A: Otorhinolaryngology, 7 op
- A540146: Pathology and diagnostics I, 10 op
 - Compulsory*
 - 083003A: Pathology and diagnostics I: Laboratory medicine, 1 op
 - 083004A: Pathology and diagnostics II: Organ pathology, 6 op
 - 083005A: Pathology and diagnostics III Radiology and safe practice in radiology, 3 op
- 083040A: Pathology and diagnostics II, 4 op
- 083015A: Patient care and prevention, 5 op
- A540148: Pediatrics, 17 op
 - Compulsory*
 - 083041A: Pediatrics PART I (pediatrics), 14 op
 - 083042A: Pediatrics PART II (child psychiatry), 3 op
- 083033A: Psychiatry and mental health, 10 op

Advanced Studies

Check the correct amount of ECTS credits for courses that have empty box on the scheduling tab.

- 044000S: Clinical patient work, 5 op
- A540149: Measures and support for functioning, 12 op
 - Compulsory*
 - 044020S: General practice, 7 op
 - 044021S: Physical and rehabilitation medicine, 3 op
 - 044022S: Occupational health, 2 op
- 044030S: Physician, health and society, 7 op
- 044001S: Practical Training 1, 3 - 18 op
- A540150: Thesis, 20 op
 - Compulsory*
 - 044010S: Thesis, Study plan, 4 op

044011S: Thesis, 16 op

044012S: Maturity exam (native language), 0 op

Optional studies (vähintään 9 op)

Optional studies 9 ECTS credits

Optional studies will be done so that the total extent of the degree is at least 360 credits. Optional studies can be chosen from courses organized by the Degree Programme in Medicine and from other courses organized by the university that clearly support the degree. In addition, studies done during students exchange, voluntary practices, and participation to national and international seminars or conferences can be accepted to optional studies. In the case of optional studies, if necessary, the student must agree with the organizing department for the participation for the course. Recommended optional courses organized by the Degree Programme in Medicine are:

2nd study year (6 ECTS credits):

- [044102S](#) Dissection, 2 credits
- [044103S](#) Medical Physics, 3 credits
- [044111S](#) Basics of cell culture, 3 credits
- [044112S](#) Tissue Analytics, 3 credits
- [044113S](#) Basics in eHealth for Medical Students 3 credits
- [902156Y](#) Scientific Writing for Medics (online) 3 credits
- [044104S](#) Evidence-based Medicine Toolkit, 1 credits
- [044114S](#) Searching skills, finding the evidence, 1 credits
- [044115S](#) Diagnostics Tests, 1 credits
- [044116S](#) Statistics toolkit, 1 credits
- [044117S](#) Users' guides to the medical literature, 2 credits

5th study year (3 ECTS credit):

- [044106S](#) Exercise physiology, 6 credits
- [044108S](#) Gastrointestinal pathophysiology, 6 credits
- [044109S](#) Military medicin, the basics of the field and catastrophe medicin, 2 credits
- [044201S](#) Ultrasound course, 1 credits
- [044203S](#) Dermatology: from basics to clinic, 1 credits
- [044205S](#) Elective course of surgery, 1 credits
- [044206S](#) Adolescent medicine, 4 credits
- [044208S](#) Surgical hand-skills -optional course, 2 credits
- [044210S](#) Connected Health/ Medical ICT innovations, 3credits
- [044110S](#) Acutology advanced course, 4 credits
- [044227S](#) Patient cases in internal medicines, 1 credits
- [044220S](#) General practioner's essentials in internal medicine and pulmology: Gastroenterology, 1,5 credits
- [044221S](#) General practioner's essentials in internal medicine and pulmology: Pulmonary Diseases, 1,5 credits
- [044222S](#) General practioner's essentials in internal medicine and pulmology: Endocrinology, 1,5 credits
- [044223S](#) General practioner's essentials in internal medicine and pulmology: Hematology and Infectious Diseases, 1,5 credits
- [044224S](#) General practioner's essentials in internal medicine and pulmology: Rheumatology and nephrology, 1,5 credits
- [044225S](#) General practioner's essentials in internal medicine and pulmology: Cardiology, 1,5 credits
- [044226S](#) General practioner's essentials in internal medicine and pulmology: Acutology, 1,5 credits

Tutkintorakenteisiin kuulumattomat opintokokonaisuudet ja -jaksot

080601A: Anaesthesiology I, 3 - 4 op
 080613A: Anesthesiology II, 3 op
 040105Y: Basic Epidemiology, 1,5 op
 080503A: Child psychiatry, 3 op
 040038Y: Clinical Anatomy, 3rd period, 1 op
 040037Y: Clinical Pathology, 2nd period, 1 op
 040040Y: Clinical Physiology, 3rd period, 2 op
 080505A: Clinical genetics, 2 op
 040128A: Clinical pharmacology and medicinal treatment, 1 op
 040127A: Clinical pharmacology and prescriptions, 1 op
 080203A: Dermatology and venereology, 5 op
 080722A: Elective Course of Surgery, 1 op
 041002Y-04: Environment, Lifestyle and Health Studies, 1 op
 041002Y-05: Environment, Lifestyle and Health Studies, 1 op
 041002Y-06: Environment, Lifestyle and Health Studies, 1 op
 040119Y: Environmental health care, 1 op
 041001Y-05: Evidence Based Medicine-studies, 1 op
 040032Y: Evidence Based Medicine-studies, 2nd period, 0,5 op
 040033Y: Evidence Based Medicine-studies, 3rd period, 0,5 op
 080202A: Forensic medicine, 4 op
 040108A: General Pathology, 3,5 - 5 op
 080417A: General Practitioner and Public Health, 9,5 op
 080914A: Geriatrics, 4 op
 040015Y-04: Health Care Ethics, 1 op
 040015Y-03: Health Care Ethics Studies, 1 op
 080716A: Internal Medicine 2, 4,5 op
 080711A: Internal medicine I, 4,5 - 21 op
 040117Y: Interviewing and examining patients, 4 op
 043005Y-02: Knowledge and Research III: Course exam, 0 op
 043005Y-01: Knowledge and Research III: Group teaching, 0 op
 040025Y: Knowledge and research, Lessons and written examination, 1,5 op
 040027Y: Knowledge and research, Practical project, 1 op
 040026Y: Knowledge and research, Small group exercises, 1 op
 080633A: Laboratory medicine, 3 op
 042001Y-06: Medical Biochemistry and Molecular Biology, clinical studies 1, 1 op
 042001Y-07: Medical Biochemistry and Molecular Biology, clinical studies 2, 1 op
 040039Y: Medical Biochemistry and Molecular Biology, clinical studies, 3rd period, 1 op

Compulsory

040039Y-01: , 0 op
 040039Y-02: , 0 op
 040119A: Microbiology, 9,5 - 10 op
 080301A: Neurology, 6 - 6,5 op
 080304A: Neurosurgery, 3 op
 080510A: OSCE, 0 op
 080401A: Obstetrics and gynecology, 10 op
 080410A: Occupational health, 2 op
 080204A: Oncology, 4 op
 080303A: Ophthalmology, 4 op
 080224A: Organ pathology 3, 2 op
 080222A: Organ pathology I, 6 op
 080223A: Organ pathology II, 2 op
 080302A: Oto-rhino-laryngology, 6 op
 080502A: Pediatrics, 14 op
 083043A: Pediatrics PART III, 0 op
 040106A: Pharmacology and toxicology, 10 op
 080916A: Physiathry and rehabilitation, 5 op
 040112A: Physiology, 15 op
 080707S: Practical training, 3 - 24 op

041003Y-06: Professional Development, 2 op
 040036Y: Professional Development in Medicine Studies, 3rd period, 1 op
 080103A: Psychiatry, 12 - 14 op
 040104A: Psychology, 4 - 4,5 op
 043027P-02: Psychology for Medical Students: Group learning with tutorial, 0 op
 043027P-03: Psychology for Medical Students: Individual scientific essay with web-based group learning, 0 op
 043027P-01: Psychology for Medical Students: Lectures, 0 op
 040104A-05: Psychology, assignment, 3 op
 040104A-04: Psychology, small group teaching, 1 op
 080427A-03: Public Health, 5 op
 080427A-02: Public Health, 1 op
 080427A-04: Public Health 4, 8 - 9 op
 081421A: Public Health, 3rd period, 1 op
 040116A: Public health science, 5 op
 080205A: Pulmonary diseases, 3 op
 081803A: Radiation and its safe use, 1,5 op
 080803A: Radiology I, 3,5 - 5 op
 080813A: Radiology II, 2 op
 902007Y: Scientific Communication, 1,5 op
 080712A: Surgery I, 16 - 24 op
 080714A: Surgery II, 1 - 8 op
 080723A: Surgical operations-optional course, 1 op
 080001Y: Treatment of critically ill patient and patient safety, 4 - 5 op

Opintojaksojen kuvaukset

Tutkintorakenteisiin kuuluvien opintokohteiden kuvaukset

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

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.

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 1st 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. The first module is held in the autumn semester, during period I. The 2nd and third modules are held in the spring semester, in period III and 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 their own medical vocabulary,
- understand medical reports related to specific body systems,
- demonstrate their ability to communicate effectively with patients (patient-centered interviewing), discuss cases with colleagues and report to medical professionals in English,
- discuss and present cases of interest (case studies) in clinical psychology,
- produce specific text types in English, such as scientific reports, abstracts, posters, following the conventions of specific fields (such as cell biology, clinical psychology, general medical practice).

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: 27 hrs = 1 ECTS. 10 hrs of guided teaching in the form of 3 lectures and 2 compulsory tutorials, 17 hrs independent work, team work

Module 2: 27 hrs = 1 ECTS. 18 hrs guided teaching and 9 hrs independent work – Alternatively, students with C1 language skills can complete the course by participating in 10 hrs contact lessons and 17 hrs self-study and team work

Module 3: 27 hrs = 1 ECTS. 8 hrs guided teaching, 12 hrs self-study, online learning and team work 7 hrs participating in mini-conference

Target group:

Students in 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 grading scale is 1-5 or Fail.

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).

901037Y: Second Official Language (Swedish), Oral Skills, 2 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Language and Communication Studies

Laji: Course

Vastuuyksikkö: Languages and Communication

Opettajat: Liisa Niemi

Opintokohteen kielet: Swedish

Leikkaavuudet:

ay901037Y Second Official Language (Swedish), Oral Skills (OPEN UNI) 2.0 op

Ei opintojaksokuvauksia.

901036Y: Second Official Language (Swedish), Written Skills, 1 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Language and Communication Studies

Laji: Course

Vastuuyksikkö: Languages and Communication

Opettajat: Liisa Niemi

Opintokohteen kielet: Swedish

Leikkaavuudet:

ay901036Y Second Official Language (Swedish), Written Skills (OPEN UNI) 1.0 op

Ei opintojaksokuvauksia.

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:

- 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 / Self-study 352 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. In addition the dental students have at the 2nd term tooth development, histology and morphology given by the department of Dentistry. Anatomy study module includes an optional course of the anatomical dissection (2 ECTS credits)

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:

Anatomy

Textbooks:

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

Atlas:

R. Putz, R. Pabst: Sobotta, Atlas of human anatomy, Vols I-II. Elsevier Urban&Fischer, München (latest edition) or F. H. Netter: Atlas of human anatomy or Thieme Atlas of Anatomy, Latin Nomenclature.

Pocket atlas:

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

Neuroanatomy

W. Kahle, H. Leonhardt, W. Platzer: "Color Atlas and Textbook of Human Anatomy" Vol. 3: Central Nervous System and Sensory Organs (W. Kahle)

G. Thieme Pub. Stuttgart, (latest edition) (Thieme Flexibook)

Embryology:

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

Cell Biology:

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).

Histology:

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

Histology atlas can be found also in Thiemen e-books. (Color Atlas of Cytology, Histology and Microscopic Anatomy, 4th edition).

Web material:

<http://herkules.oulu.fi/isbn9789514293238/> collection of essays written by students from previous courses of Medical cell and developmental biology.

Assessment methods and criteria:

-

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 Juha Tuukkanen ja Petri Lehenkari

Other information:

Evaluation of the course as total is obligatory.

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 the 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: 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 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 assessmen. 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: Tuukkanen, Kaarlo Juha Kullervo, Elina Kylmäoja

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 look 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 system in microscope preparations, 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 practices microscopic anatomy with histological preparations, 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 exercises 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 assessments exercise 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: Markku Timonen

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:

Professor Markku Timonen

043052P: General Pathology, 5 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Basic Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Karttunen, Tuomo Juhani

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS

Language of instruction:

Finnish

Timing:

2nd 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 25 hours, demonstrations 36 hours. Self study including a Flashcard project 70 hours. Written examinations 4 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 Tuomo Karttunen

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: Jukka Moilanen, Karppinen, Peppi Leena Elina

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**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:

-

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: 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

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

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**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

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

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 -

Opiskelumuoto: 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.

You can check the availability of the course books [via this link](#).

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

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: 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 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:

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

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:

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 lääkärilehti 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

Opettajat: Vuolteenaho, Olli Jaakko Tuomas

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:

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

Opettajat: Vuolteenaho, Olli Jaakko Tuomas

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:

The course unit utilizes a numerical grading scale 0-3. Zero stands for 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

Opettajat: Vuolteenaho, Olli Jaakko Tuomas

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 Olli Vuolteenaho

Working life cooperation:

No

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Basic Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Vuolteenaho, Olli Jaakko Tuomas

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 Olli Vuolteenaho

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**Opettajat:** Vuolteenaho, Olli Jaakko Tuomas**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

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 partially integrated with Neuroanatomy and English.

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 Excellent/Good/Fail.

Person responsible:

University Lecturer Tuula Hurtig.

043037P: Public Health, 6 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Basic Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

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

Opintokohteen kielet: Finnish

ECTS Credits:

6 ECTS credits / 163 hours of work

Language of instruction:

Finnish/English

Timing:

The course is held at the 2nd spring semester (C4).

Learning outcomes:

Upon completion of the course, the student will:

- understand the essential challenges of public health
- know 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
- know the most beneficial and 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:

- 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

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

- 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 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 lifestyle guidance, 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 mid exam(s) and a final examination.

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 "Sairaus, terveys ja yhteiskunta" (C11) –course.

Recommended or required reading:

The course has to be completed during preclinical period of medical and dental studies. The course is linked to "Sairaus, terveys ja yhteiskunta" (C11) –course.

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 27h, independent studying 26h, 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

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.

083010A: Acute medicine I, 7 op

Voimassaolo: 01.08.2017 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Alahuhta, Seppo Matias, Janne Liisanantti

Opintokohteen kielet: Finnish

ECTS Credits:

7 ECTS credits / 189 hours of work

Language of instruction:

The course can be completed in English as a book examination associated with clinical training

Timing:

The course will be held for the first time during the period 2019-2020

Learning outcomes:

Learning outcomes are outcome descriptions showing, from the student's point of view, what the student is expected to master at the end of the course in order to receive a passing grade.

The learning outcomes are clear and simply stated sentences which describe student's skills and which are easy to evaluate. The learning outcomes have been compiled enabling the student to reach them during the course.

Write each learning outcome on a separate line as follows:

E.g. 1. "Upon completion of the course, the student will be able to:

- *explain the software and hardware problematics of signal handling implementations and the roles of design solutions*
- *knows how to change the fixed point of a digital filter designed for floating point arithmetics into implementation and optimize the word lengths to reach the behavior complying with the specifications*
- *will be able to explain the most significant algorithm implementation structures and to recognize their applications*
- *is able to model solutions that adapt signal handling of the fixed point passably, utilizing Matlab and Simulink software, and to interpret the gained results."*

See [further information about learning outcomes](#) (in Finnish)

Prerequisites and co-requisites:

Pre-clinical studies

Person responsible:

Professor Seppo Alahuhta

083062A: Acute medicine II, 8 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Alahuhta, Seppo Matias

Opintokohteen kielet: Finnish

Proficiency level:

-

Status:

-

Required proficiency level:

-

ECTS Credits:

8 ECTS credits

Language of instruction:

Finnish

Timing:

Sixth year

Learning outcomes:

The students will be motivated to refresh his or her knowledge in recognition, diagnostic and initial management of the critically ill patient.

The student knows the basics of the patient triage and is motivated to continuous learning and training in emergency medicine.

The student refreshes his or her knowledge on patient safety issues

The students will be motivated to refresh his or her skills in communication, team working, leadership, hand-over, treatment of the critically ill patient in a multidisciplinary environment, and knowledge in trauma psychotherapy and patient safety.

The student knows the basics of the EMS system and organisation

The student refreshes his/her skills on acute medicine

The student refreshes his/her skills on acute surgery

Contents:

Recognition, assessment and treatment of critically ill patient. Triage, leadership, situation awareness, communication, hand-over patient data, patient safety and trauma psychotherapy.

Mode of delivery:

Blended teaching

Learning activities and teaching methods:

Multidisciplinary simulation teaching for small groups including web-based pre-exam

Lectures

Two-day sessions in small groups focusing specific issues on acute medicine and critical care including OSCE-exam

Target group:

Students of the sixth year

Prerequisites and co-requisites:

The required prerequisite is the completion of the following courses prior to enrolling for the course unit:

Anesthesiology 1

Recommended optional programme components:

-

Recommended or required reading:

Given during the course

Assessment methods and criteria:

Multidisciplinary simulation teaching for small groups including web-based pre-exam

Lectures

Two-day sessions in small groups focusing specific issues on acute medicine and critical care including OSCE-exam

Grading:

Pass/fail

Person responsible:

Clinical lecturer Janne Liisanantti

Working life cooperation:

-

Other information:

-

083000A: Basic clinical skills and tools in physician's work I, 5 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Olavi Ukkola, Hannuksela, Jokke Mikael

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS

Language of instruction:

Finnish

Target group:Medical doctor degree students, 3rd year**083001A: Basic clinical skills and tools in physician's work II, 2 op**

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies**Laji:** Course**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Essi Varkki**Opintokohteen kielet:** Finnish**Status:**

This course is compulsory to all students of medicine (MD degree)

ECTS Credits:

2 ECTS credits / 53 hours of work

Language of instruction:

This course is available only in Finnish

Timing:

The course is completed during the 4th year of studies

Learning outcomes:

After completion of the course students are able to:

- describe the principles of social and insurance medicine and systems and bring these principles to practice including different medical statements.
- understand an appropriate way to write prescriptions. The student knows authoritative regulations and restrictions concerning the prescription and delivery of pharmaceuticals.
- know the most essential patient recording systems used in primary health care.
- understand the concept of patient safety, and how promoting patient safety can prevent risk events and improve the effectiveness of care.
- understand the concept of human factor in health care and its significance to patient safety

Contents:

Health care and social security legislation and medical statements.

The most essential patient recording systems used in primary health care.

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.

Principles of patient safety.

Mode of delivery:

The tuition will be arranged as face-to-face teaching

Learning activities and teaching methods:

Lectures 14 hours

Prescription demonstration 2 hours

Small group teaching 4 hours

Target group:

Target group is medical students.

Prerequisites and co-requisites:

Completion of the course "Basic clinical skills and tools in physician's work 1"

Recommended optional programme components:

This course is in connection with "Basic clinical skills and tools in physician's work 1 ja 3"

Recommended or required reading:Terveysportti: (<http://www.terveysportti.fi>)The National Archive of Health Information www-pages (<http://kanta.fi/en>)National legislation and guidance regarding prescribing (www.finlex.fi)

Assessment methods and criteria:

Small group teaching sessions are obligatory, and a written examination

Grading:

pass/ fail

Person responsible:

Professor of General Medicine

Working life cooperation:

Lectures lectured by a medical advisor from KELA (National social insurance institution)

083002A: Basic clinical skills and tools in physician's work III, 4 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Markku Timonen

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

083011A: Cardiology, 6 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Juha Perkiömäki

Opintokohteen kielet: Finnish

ECTS Credits:

6 credit points

Language of instruction:

Finnish

Timing:

The course will be delivered during the 3rd year medical studies (M.D. degree students)

Learning outcomes:

After completion of a course a student can.

- Knows how to examine a cardiological patient.
- Understands the principles of diagnostics, treatment and follow-up of coronary artery disease.
- Is able to recognize the different types of acute coronary syndrome, knows their acute and long-term treatment.
- Knows the etiology of heart failure, its diagnostics, treatment and follow-up.
- Understands the principles of diagnostics, follow-up and treatment of valvular diseases.
- Knows the etiological factors of myocarditis and the most common cardiomyopathies and their diagnostics and the principles of treatment
- Understands the general principles of the follow-up of the most common congenital heart diseases in adults.
- Knows the significance of cardiac premature depolarizations in different conditions, is able to adjust the needed further examinations in different situations and is able to assess, if the cardiac premature depolarizations need any specific
- Knows the most important risk factors of atrial fibrillation, is able to recognize atrial fibrillation, knows its classification, the strategies of rhythm and rate control, the indications and contraindications of anticoagulant treatment in different situations as well as the general principles of medical and electrical cardioversion. Knows the drugs used in the anticoagulant treatment.
- Is able to recognize supraventricular tachycardias, is aware of the principles of their acute and long-term treatment. Is also able to recognize WPW syndrome from an electrocardiogram during sinus rhythm.

- Is able to recognize ventricular tachyarrhythmias: ventricular fibrillation, sustained and nonsustained ventricular tachycardia. Knows their acute treatment and understands the principles of their long-term treatment. Understands in general the electrocardiographic and etiological differences of monomorphic, polymorphic and torsades de pointes ventricular tachycardias.
- Knows the factors which may cause cardiogenic syncope and knows the principles of their treatment.
- Is able to recognize pacemaker rhythm. Knows the general indications and basic treatment principles of pacemakers, implantable cardioverter-defibrillators and cardiac resynchronization therapy.
- Can measure QT interval from ECG and correct it for heart rate. Knows when one should suspect congenital or acquired (e.g., caused by drugs) long QT syndrome and how to manage with them.
- Understands the genesis of different waves and intervals of ECG in normal and pathological conditions. Can interpret normal ECG and understands when there is something abnormal. Knows how to register ECG.
- Particularly, is able to recognize the ECG abnormalities in acute coronary syndrome (ST elevation myocardial infarction, non-ST elevation myocardial infarction, unstable angina pectoris) and knows the differential diagnostics of these changes.
- Is able to recognize left ventricular hypertrophy and atrial load from ECG.
- Is able to recognize bundle branch blocks and hemiblocks from ECG.
- Can recognize the different degrees of the disturbances of atrial-ventricular conduction from ECG, understands the significance and possible need for treatment of these changes. Can also suspect sick sinus syndrome as a cause of bradycardia.
- Knows the basic principles of specific cardiological examinations, such as echocardiography, bicycle ergometer stress test, 24-hour electrocardiographic recording, coronary angiography and electrophysiological examinations.
- Knows the basic principles of specific cardiological treatments, such as percutaneous coronary intervention (PCI), the catheter ablation of arrhythmias and the implantation of pacemakers.
- Knows the basic principles of cardiac surgery, particularly coronary artery bypass grafting and heart valve surgery as well as the principles of extracorporeal circulation.
- Can recognize the major complications occurring after cardiac surgery.
- Knows the pathophysiology and treatment of chest injuries.
- Be able to insert a pleural drainage.
- Can recognize and treat pneumothorax.
- Can recognize and treat pericardial tamponade.
- Can make a diagnosis of acute lower limb ischemia, rupture of the abdominal aorta and aortic dissection and know the basic principles of treatment of this vascular emergencies
- Knows the basic principle of treatment of vascular disease.
- Knows the main diseases of the chest as well as general thoracic surgery procedures

Contents:

Clinical examination of a cardiological patient (anamnesis, status).

Diagnostics, treatment and follow-up of coronary artery disease.

The different types of acute coronary syndrome, acute treatment and the principles of long-term treatment.

Etiology, diagnostics, treatment and follow-up of heart failure.

Diagnostics, follow-up and treatment of valvular diseases.

Etiology, diagnostics and treatment of myocarditis and the most common cardiomyopathies.

Diagnostics and treatment of cardiac arrhythmias:

-Significance, evaluation and possible treatment of premature depolarizations

-Evaluation and general treatment principles of atrial fibrillation

-Evaluation and treatment of supraventricular tachycardias

-Significance and treatment of ventricular tachyarrhythmias

-Bradyarrhythmias, atrio-ventricular conduction disturbances, sick sinus syndrome

Interpretation of ECG: _

-Normal ECG

-Myocardial infarction, ischemia and differential diagnostic aspects

-Hypertrophy and bundle branch blocks

-Tachyarrhythmias

-Disturbances of atrio-ventricular conduction

-Sick sinus syndrome

-Evaluation of QT interval

- Clinical evaluation of patients with chest trauma

- Clinical evaluation of patients with vascular diseases

- Clinical evaluation of patients with vascular emergencies (lower limb ischemia, rupture of the abdominal aortic aneurysm)

- Indications for coronary artery bypass grafting

- Indications for heart valve surgery

- Diagnosis of complications occurring after cardiac surgery

- Diagnosis of the causes of acute chest pain and/or dyspnea requiring cardiothoracic surgery.

Mode of delivery:

The course is implemented as face-to-face teaching.

Learning activities and teaching methods:

The course contains:

Small group teaching, theme day(s), lectures.

Target group:

Medical degree (M.D.) students of 3rd year.

Prerequisites and co-requisites:

Qualification of candidate of medicine

Recommended optional programme components:

The course is an independent unity.

Recommended or required reading:

Recommended textbooks:

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

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

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

Thaler M. The only ECG book you'll ever need. The latest edition. Lippincott Williams & Wilkins.

Braunwald's Heart Disease, A Textbook of Cardiovascular Medicine (the latest edition).

Assessment methods and criteria:

There are examinations in the connection of cardiological small group teaching. This facilitates learning and the evaluation of learning. Dealing with and discussing about patient cases interactively helps to monitor students' progress in learning. Polling equipments are used during the theme days to resolve patient cases, which also facilitates the evaluation of students learning.

Interaction and use of polling equipments during lectures also facilitates the evaluation of students' learning.

Group teaching sessions on wads provides good opportunities for more learning. At the same time, the students' learning can be monitored. At the end of the cardiological course, there is an examination, which evaluates cardiological knowledge widely.

Grading:

Numeric scale from 1 to 5 is used in the evaluation in the cardiological course. Score 0 corresponds a failed examination.

Person responsible:

Person in charge of the course: Juha Perkiömäki, Associate Professor

Working life cooperation:

Part of the teaching will be delivered in an authentic clinical working environment

083051A: Dermatology and venereology, 5 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Laura Huilaja, Kaisa Tasanen-Määttä

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

A540147: Diseases of the musculoskeletal system, 12 op

Voimassaolo: 01.08.2017 -

Opiskelumuoto: Intermediate Studies

Laji: Study module

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Leppilähti, Juhana Ilmari

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

083022A: Diseases of the musculoskeletal system I: Surgery, 6 op**Voimassaolo:** 01.08.2016 -**Opiskelumuoto:** Intermediate Studies**Laji:** Course**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Leppilahti, Juhana Ilmari**Opintokohteen kielet:** Finnish**ECTS Credits:**

TULES I 6 ECTS

SURGERY (lectures and exam)

ORTHOPAEDICS AND TRAUMATOLOGY: 3,4 ETCS credits /89 hours of student's work

PLASTIC SURGERY 0.75 CREDITS/16 h

HAND SURGERY: 0.75credits / 16 h

PATHOLOGY: 0.5. credits/ 15 h

CHRONIC PAIN: 1 credits /27 h

Language of instruction:

Finnish

Timing:

Third and fourth year of medical school

Learning outcomes:[ORTHOPAEDICS AND TRAUMATOLOGY](#)

Upon completion of the course the student is able to perform profound clinical musculoskeletal- examination of the patient and is able to evaluate the significance of the findings of the examination and make a diagnosis.

Furthermore student is able to treat the most common musculoskeletal disorders and injured patients at the level of the primary health care.

Furthermore student is able to evaluate when to refer the patient with the injury or musculoskeletal disorder to the specialized medical care for the examinations and treatment.

[PLASTIC SURGERY:](#)

After completion the course the student

- knows the main features of the plastic surgery and what kind of patients are treated by plastic surgeons
- knows how to study the plastic surgeon patient
- can treat in primary health certain patients (small, superficial burns, dermatologic tumors, subcutaneous tissue tumors, etc.)
- is able to evaluate when to send a plastic surgeon patient to the special health care unit for studies and treatment
- can make an appropriate referral to special health care

[HAND SURGERY:](#)

Upon completion of the course the student knows the anatomy and biomechanics of the hand, understands how a hand surgical patient is being studied, can identify various types of diseases and injuries in the hand, and can evaluate when to send a patient to a specialist health care unit.

[PATHOLOGY](#)

Upon completion of the course, the student is able to describe etiology, pathogenesis and basic patterns of progression of diseases and conditions included in the course, is able recognize their most important macroscopical and microscopical features and their association with symptoms and clinical findings, and to use all of this knowledge in clinical diagnostics and selection of treatment. The student is able to use diagnostic pathology services in the clinical work of general practioner, and knows their main limitations and sources of error.

[CHRONIC PAIN](#)

Upon completion of the course, the student is able to describe the significance of chronic pain in public health and economy, can explain the mechanisms of chronic pain, transmission and regulation in the nervous system and design the treatment of pain.

Student can classify chronic pain, take pain anamnnesis and pain status, can apply chronic pain medicines, and take advantage of multiprofessional vision in the diagnosis and treatment of chronic pain patient.

Contents:[ORTHOPAEDICS AND TRAUMATOLOGY:](#)

Musculoskeletal disorders; examination, diagnostics and the treatment.

Traumatology, examination of the single injuries and multi-trauma patient, diagnostics and the treatment

[PLASTIC SURGERY:](#)

Examination, diagnostics and the treatment.

[HAND SURGERY](#)

Examination, diagnostics and the treatment.

[PATHOLOGY](#)

Etiology, pathogenesis and basic patterns of progression of diseases in the course, and most important macroscopical and microscopical features

[CHRONIC PAIN](#)

Mechanism of chronic pain, transmission and regulation. Examination, diagnostics and treatment

Mode of delivery:

[ORTHOPAEDICS AND TRAUMATOLOGY:](#)

Face- to- face teaching

[PLASTIC SURGERY:](#)

Face- to -face teaching

[HAND SURGERY](#)

Face- to- face teaching

[PATOLOGY](#)

Face-to-face teaching

[CHRONIC PAIN](#)

Multiple teaching

Learning activities and teaching methods:

One common exam including the whole course (MUSKE I)

[ORTHOPAEDICS:](#)

Lectures 12

[TRAUMATOLOGY:](#)

Lectures 7h

[PLASTIC SURGERY:](#)

Lectures 8h

Self study 30h

[HAND SURGERY:](#)

Lectures 10h

[PATHOLOGY:](#)

Lectures 4 h

[CHRONIC PAIN:](#)

Lectures 4 h, exam

Target group:

Third and [fourth year medical students](#)

Prerequisites and co-requisites:

The required prerequisite for the course is the completion of the first and second year`s preclinical studies as well as the online optima course exam of surgery has to be passed.

Recommended optional programme components:

[ORTHOPAEDICS AND TRRAUMATOLOGY:](#)

Musculoskeletal anatomy course from the first year will be a good base for this course. The course of radiology, situated at third year, will be supportive for this course as well.

[PLASTIC SURGERY:](#)

Multiprofessionality is emphasized.

Mamma surgery: Co-operation with onkology, radiology and pathology.

Lower limb ulcers; Co-operation with dermatologist, diabetes doctor, vascular surgeon and orthopaedic surgeon.

[HAND SURGERY:](#)

Musculoskeletal anatomy course from the first year will be a good base for this course. The course of radiology at third year and pathology will be supportive for this course as well.

[PATHOLOGY:](#)

Musculoskeletal anatomy in the first year and radiology in the third year.

[CHRONIC PAIN:](#)

The student has completed Acutology I at third year.

Recommended or required reading:

[ORTHOPAEDICS:](#)

Textbook: Orthopaedics, kandidaattikustannus Oy, 2012

TRAUMATOLOGY:

Textbook: Traumatology, 7.renewed edition:Kandidaattikustannus oy 2010

Current treatment recommendations: Osteoarthritis of hip and knee, Low back pain, Tendinitis of the shoulder

OPTIMA: lecture and group-study materials

PLASTIC SURGERY:

Textbook: SURGERY, Duodecim 2000

Next paragraphs:

1. Wound healing
2. Surgical infections
3. Instruments
4. Wound saturation
5. Dirty and contaminated wounds
6. Small surgical procedures
29. Burn-frostbite injuries*
31. Gas gangrene
73. Mammary gland*
74. Plastic Surgeon

Current treatment recommendations:

Diabetic foot problems 2009

Chronic lower limb ulcer 2014

Breast cancer, diagnostics and treatment 2016

Handbook: Breast reconstruction

OPTIMA: Lecture materials

HAND SURGERY:

Textbooks: HAND SURGERY, Candidate edition, 2016

Current treatment recommendations: hand and forearm stress disorders, distal radius fractures

OPTIMA: Lecture materials

PATHOLOGY:

Textbook: Pathology (Duodecim; in Finnish) or: Kumar: Robbins Basic Pathology, 9th ed., section 21, Musculoskeletal system: Joints, Bones, soft tissue tumors.

Lecture notes in Optima; Material for virtual microscopy practicals in PathXL.

CHRONIC PAIN:

Basics of anesthesiology and Intensive care (in Finnish), 2016 Kustannus Oy Duodecim.

Guides:

- Neuropathic pain treatment (in Finnish): <http://www.suomenkivuntutkimusyhdistys.fi/system/files/files/neuropaattisen%20kivun%20hoito-opas.pdf>

- Cancer pain treatment (in Finnish) <http://www.suomenkivuntutkimusyhdistys.fi/system/files/files/Sy%C3%B6p%C3%A4kivunhoito-opas.pdf>

- Chronic pain treatment (http://www.suomenkivuntutkimusyhdistys.fi/system/files/files/Kroonisen%20kivun%20hoito-opas_final.pdf)

Assessment methods and criteria:

One common exam including the whole course (MUSKE I). Questions are from all courses

Grading:

MUSKE I includes 1 numeric grading (0-5).

Person responsible:

Professor Juhana Leppilähti

Working life cooperation:

Part of the teaching will take place in authentic hospital and/ or health center environment.

083023A: Diseases of the musculoskeletal system II: Surgery, 3 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Leppilähti, Juhana Ilmari

Opintokohteen kielet: Finnish

ECTS Credits:

3 credits points

Language of instruction:

Finnish

Timing:

Third and fourth year MD students

Learning outcomes:**ORTHOAEDICS AND TRAUMATOLOGY**

Upon completion of the course the student is able to perform profound clinical musculoskeletal- examination of the patient and is able to evaluate the significance of the findings of the examination and make a diagnosis.

Furthermore student is able to treat the most common musculoskeletal disorders and injured patients at the level of the primary health care.

Furthermore student is able to evaluate when to refer the patient with the injury or musculoskeletal disorder to the specialized medical care for the examinations and treatment.

PLASTIC SURGERY:

After completion the course the student

- knows the main features of the plastic surgery and what kind of patients are treated by plastic surgeons
- knows how to study the plastic surgeon patient
- can treat in primary health certain patients (small, superficial burns, dermatologic tumors, subcutaneous tissue tumors, etc.)
- is able to evaluate when to send a plastic surgeon patient to the special health care unit for studies and treatment
- can make an appropriate referral to special health care

PATHOLOGY

Upon completion of the course, the student is able to describe etiology, pathogenesis and basic patterns of progression of diseases and conditions included in the course, is able recognize their most important macroscopical and microscopical features and their association with symptoms and clinical findings, and to use all of this knowledge in clinical diagnostics and selection of treatment. The student is able to use diagnostic pathology services in the clinical work of general practioner, and knows their main limitations and sources of error.

CHRONIC PAIN

Upon completion of the course, the student is able to describe the significance of chronic pain in public health and economy, explain the mechanisms of chronic pain, transmission and regulation in the nervous system, and design the treatment of pain.

Student can classify chronic pain, take pain anamnnesis and pain status, can apply chronic pain medicines, and take advantage of multiprofessional vision in the diagnosis and treatment of chronic pain patient.

Contents:**ORTHOAEDICS AND TRAUMATOLOGY:**

ThemE days, seminars and small group teaching.

Musculoskeletal disorders; examination, diagnostics and the treatment.

Traumatology, examination of the single injuries and multi-trauma patient, diagnostics and the treatment

PLASTIC SURGERY:

2 theme days

PATHOLOGY:

Small group teaching

CHRONIC PAIN:

Theme days, seminars, preliminary tasks

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:**ORTHOAEDICS:**

theme day/seminars 9 h, small group teaching 4.5 h

TRAUMATOLOGY:

small-group teaching 4.5h

PLASTIC SURGERY:

Two theme days 12h

PATHOLOGY:

group teaching 2h

CHRONIC PAIN:

group teaching 2 h, seminar 6 h, preliminary tasks

Target group:

Third and [fourth year MD students](#)

Prerequisites and co-requisites:

The first and second year preclinical studies have been successfully completed, as well as the start of the course Optima Network Exam must be completed successfully.

Recommended optional programme components:

[ORTHOPAEDICS AND TRRAUMATOLOGY:](#)

Musculoskeletal anatomy course from the first year will be a good base for this course. The course of radiology, situated at third year, will be supportive for this course as well.

[PLASTIC SURGERY:](#)

Multiprofessionality is emphasized.

Mamma surgery: Co-operation with onkology, radiology and pathology.

Lower limb ulcers; Co-operation with dermatologist, diabetes doctor, vascular surgeon, orthopaedic surgeon and infection doctor.

[PATHOLOGY:](#)

Musculoskeletal anatomy in the first year and radiology in the third year.

[CHRONIC PAIN:](#)

The student has completed Acutology I at third year.

Recommended or required reading:

[ORTHOPAEDICS:](#)

Textbook: Orthopaedics, kandidaattikustannus Oy, 2012

[TRAUMATOLOGY:](#)

Textbook: Traumatology, 7. uusittu painos, Kandidaattikustannus oy 2010

National level treatmentline recommendations: Osteoarthritis of hip and knee, Low back pain, Tendinitis of the shoulder

OPTIMA: lecture and group-study materials

[PLASTIC SURGERY:](#)

Textbook: SURGERY, Duodecim 2000

Next chapters (*important):

3. Wound healing
4. Surgical infections
5. Instruments
6. Wound saturation
7. Dirty and contaminated wounds
8. Small surgical procedures
29. Burn-frostbite injuries*
31. Gas gangrene
73. Mammary gland*
74. Plastic Surgery*

Current treatment recommendations:

- Diabetic foot problems 2009
- Chronic lower limb ulcer 2014
- Breast cancer, diagnostics and treatment 2016

Handbook: Breast reconstruction

OPTIMA: Lecture materials

[PATHOLOGY:](#)

PATHOLOGY: Textbook: Patologia (Duodecim; in Finnish) or: Kumar: Robbins Basic Pathology, 9th ed., section 21, Musculoskeletal system.

Lecture notes in Optima; Material for virtual microscopy practicals in PathXL.

[CHRONIC PAIN:](#)

Basics of anesthesiology and Intensive care (in Finnish), 2016 Kustannus Oy Duodeim.

Guides:

- Neuropathic pain treatment (in finnish): <http://www.suomenkivuntutkimusyhdistys.fi/system/files/files/neuropaattisen%20kivun%20hoito-opas.pdf>
- Cancer pain treatment (in finnish) <http://www.suomenkivuntutkimusyhdistys.fi/system/files/files/Sy%C3%B6p%C3%A4kivunhoito-opas.pdf>
- Chronic pain treatment (http://www.suomenkivuntutkimusyhdistys.fi/system/files/files/Kroonisen%20kivun%20hoito-opas_final.pdf)

Assessment methods and criteria:

Participation in theme days, seminars and small group teaching

Grading:

Pass/ Fail

Person responsible:

083024A: Diseases of the musculoskeletal system III: Physiatry and rheumatology, 3 op**Voimassaolo:** 01.08.2016 -**Opiskelumuoto:** Intermediate Studies**Laji:** Course**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Karppinen, Jaro Ilari, Karjalainen, Anna Helena**Opintokohteen kielet:** Finnish**ECTS Credits:**

MUSKE III: PHYSIATRY and RHEUMATOLOGY 3 ECTS

Language of instruction:

Finnish

Learning outcomes:PHYSIATRY:

Upon completion the student understands the principles of diagnostics, differential diagnostics, treatment and evaluation of functional ability of musculoskeletal problems. The student is able to adapt his/her knowledge to primary health care practice.

RHEUMATOLOGY:

After completing the course, the student knows the general diagnosis, treatment and care of arthritis and other rheumatic diseases, identifies the patients who are being sent to special medical care and takes care of further care, knows indications, contraindications, techniques and devices of joint injections, as well as in the required extent immunosuppressive and biological anti-rheumatic drugs and perceives the multiprofessional care of rheumatic diseases

Contents:PHYSIATRY:

The definitions and assessment methods of functional ability during a thematic day in spring (1/2 day)

From Oppiportti webportal (<http://www.oppoportti.fi/op/okk00008>) musculoskeletal disorders part of the clinical physiatry. Two questions & answers sessions of musculoskeletal disorders in autumn.

Clinical examination of a musculoskeletal patient in health care center (together with rheumatology)

Mode of delivery:PHYSIATRY:

Webportal lectures of musculoskeletal disorders and two questions & answers sessions in autumn.

Thematic day (1/2 day) with focus on functional ability.

Clinical examination of musculoskeletal patients in health care center.

RHEUMATOLOGY

Face-to-face teaching.

Learning activities and teaching methods:PHYSIATRY:

Webportal lectures ca. 450 min. Questions and answers sessions of internet lectures 3h

Assessment of a patient with musculoskeletal disorder at the 4th study year (2h).

½ thematic day (3h)

RHEUMATLOGY:

Lectures 12h

Group teaching together with physiatry

Target group:PHYSIATRY:

Fourth year medical students

RHEUMATLOGY:

Fourth year medical students

Prerequisites and co-requisites:

The required prerequisite for the course is the completion of the first and second years.'s preclinical studie

Recommended optional programme components:**PHYSIATRY:**

Clinical examination of health care center patient organized together with rheumatology

RHEUMATOLOGY:**Person responsible:**

PHYSIATRY

Professor Jaro Karppinen.

Professor Mauri Kallinen

RHEUMATOLOGY

MD, PhD Anna Karjalainen

083021A: Forensic Medicine, 4 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Philippe Lunetta

Opintokohteen kielet: Finnish

ECTS Credits:

4 ECTS credits / 90 hours of studies

Language of instruction:

Finnish

Timing:

The course is held in the spring semester. It is recommended to complete the course during the spring semester on the 4th year of a student studies.

The course will be held for the first time in the academic year 2020-2021

Learning outcomes:

Once the course has been completed, the student will:

- know the main aspects of the Finnish medico-legal system and the outlines of medical legislation
- be able to detail the legislation concerning the assessment of cause of death and to list the indications for the medico-legal assessment of cause of death and apply them in practice
- be able to specify the main causes of natural, sudden and unexpected death
- recognize primary and secondary post-mortem changes and their value to diagnose death and the time of death
- recognize the different types of physical injuries and be able to assess their mechanisms of production and their age
- manage to use appropriate medico-legal procedures and approaches to determine the cause and manner of death
- manage to perform the main clinical forensic medicine investigations (sexual crimes, toxicological investigations, body packer) according to the current legislation
- manage to compile a certificate of cause of death and write a medico-legal statement in criminal cases, using the current rules and legislation

Contents:

1. Organization of Forensic Medicine in Finland
2. Investigations into the cause of death and forensic traumatology
 - legislation
 - primary and secondary post-mortem changes
 - assessment of the time of death
 - vital reaction and wound age estimation
 - sudden unexpected natural death
 - injury deaths
 - blunt injuries

- injuries by sharp instruments
 - gunshot wounds
 - other injuries
 - drowning
 - other asphyxia deaths
 - cadaver's external examination and the related report
3. Clinical forensic medicine
 - sexual crimes
 - crimes against life and healthy
 - body packers
 - driving under the influence of alcohol and drugs
 - medico-legal reports and criminal law
 4. Other branches of forensic medicine
 - forensic toxicology
 - forensic genetic
 - forensic odontology
 5. Legislation concerning medical activities
 - Monitoring medical doctors
 - Complaints against medical doctors
 - Medical doctor's and patient's legal status

6. Collaboration between medical doctors and authorities
Further details on the course contents will be provided later

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lectures 30 h / Autopsy and external examination, group teaching 10 h / Self-studies 50 h (total 90 h = 4 ECTS credits)

Further details on learning activities and teaching methods will be provided later

Target group:

Medical Degree students, 4th year

Prerequisites and co-requisites:

The courses of the previous academic years must have been passed

Recommended optional programme components:

Possible recommended optional programme components will be provided later

Recommended or required reading:

Textbook:

Penttilä A, Hirvonen J, Saukko P, Karhunen P. Oikeuslääketiede, Kustannus Oy Duodecim, 2000

Other suggested textbooks:

- Di Maio D, Di Maio VJM. Forensic Pathology, CRC Press, Boca Raton, 2001
- Madea B. Handbook of Forensic Medicine, Wiley-Blackwell, Oxford, 2014
- Saukko P, Knight B. Knight's Forensic Pathology. Edward Arnold, London, 2015

Further and updated details on recommended or required reading will be provided later

Assessment methods and criteria:

Participation to lectures, group-teaching, cadaver's external examination and autopsy.

Participating and passing the final examination

Grading:

Details on the grading system will be provided later

Person responsible:

Philippe Lunetta, Professor in Forensic Medicine

Working life cooperation:

The course includes guest lectures or group teaching by specialists in forensic medicine of the National Institute for Health and Welfare (NIHW). The cadaver's external examination and autopsy demonstrations will be held in the autopsy rooms of the NIHW.

Other information:

The course is included in the medical degree program of the new curriculum starting in 2017. The first year the course will be held is given under the "TIMING" section.

083012A: Gastrointestinal diseases, 8 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Vasunta, Riitta-Liisa, Mäkelä, Jyrki Tapani, Jukka Palm

Opintokohteen kielet: Finnish

ECTS Credits:

8 ECTS credits

Language of instruction:

Finnish

Timing:

The course is held during years 3.-6. of medical education, mainly in the 3th year.

Learning outcomes:

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

- know the diagnostical criteria of typical gastroenterological and gastrosurgical illnesses, their treatment and situations when senior consultation is needed
- independently diagnose common gastroenterological and gastrosurgical diseases based on the anamnesis, status and clinical findings
- start medication in acute gastroenterological and gastrosurgical situations and recognizes emergency situations when immediate consultation is mandatory
- differentiate gastroenterological and gastrosurgical entities from each other

Contents:

The basic concepts of gastroenterological and gastrosurgical diseases and their treatment.

Mode of delivery:

Face-to-face-teaching, lectures, seminars, bed side-learning, learning in policlinic and emergency department, independent learning by literature, task-based learning

Learning activities and teaching methods:

Gastroenterology: lectures 12 h, optional lecture 2 h (6th year), bed side-learning (2 h), learning practical skills in gastroenterological unit (10-16 students), additional demonstration in enteroscopy (1-2h + 2 h), voluntary participating in patient appointments with gastroenterologist (0-3 h), possibility to produce a limited dissertation in gastroenterology (1-6 students/year). Studying independently 60 h.

Gastrosurgery: lectures 20 h, bed side- and senior guided team learning 8 h. Studying independently 60 h.

Gastroenterology + gastrosurgery: seminarium (3x8h + preparing hours for the preparing student group 15-20 h).

Target group:

Medical students (3th-6th years)

Prerequisites and co-requisites:

Years 1.-2. (preclinical years) completed

Recommended optional programme components:

The course in an independent entity.

Recommended or required reading:

Gastroenterology: Färkkilä et al: Gastroenterologia ja hepatologia. Kustannus Oy Duodecim 2013. Lääkäriin käsikirja (separately specified details). Publications and articles specified separately.

Gastrosurgery: Kirurgia. Kustannus Oy Duodecim. Latest edition.

Assessment methods and criteria:

Gastroenterology and gastrosurgery: collaborated exam. Grading system 1-5, zero stands for a fail

Grading:

The course utilizes grading scale 1-5. Zero stands for a fail. Students are supposed to read additional specified literature before the lectures and bed side-learning appointments. Learning will be controlled mutually or literally during the course.

Person responsible:

Riitta-Liisa Vasunta, clinical teacher

Working life cooperation:

Possibility to participate in working life during duty on department.

Other information:

The student practises in acute care, policlinical appointments and patient care at hospital as part of bed side-learning. The student takes part of operations during their on duty at the surgical unit. The on duty period at the internal medicine and gastrosurgical department consists of following the senior round, examining the patient independently and following the examinations (e.g. endoscopic and radiological examinations).

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Markku Timonen

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS /132,5 hours of work

Language of instruction:

Finnish

Timing:

The course is completed during the 4th year of studies

Learning outcomes:

After completion of the course students is able to

- use holistic biopsychosocial approach to a patient
- use family-centered approach in clinical practice
- use multidisciplinary team in network meetings while helping patient and his/her family
- use holistic approach to assessment of older adults' special needs during inpatient admission
- diagnose and treat typical acute diseases of older adults'
- understand the main principles in pain relief and palliative care of older adults'
- to write a treatment and rehabilitation plan

Contents:

- patient-centered interview
- holistic biopsychosocial approach
- family-centered approach
- multidisciplinary team work
- holistic approach to older adults' diseases
- management of pain relief and palliative care of older adults'
- critical review of medicines
- Treatment and rehabilitation plan

Mode of delivery:

The course will be arranged as face-to-face teaching.

Learning activities and teaching methods:

Lectures 12 hours, prescription demonstration 2 hours, small group teaching 4 x 4hours, and one week (5 days * 8 h = 40 h) practical work in health center wards

Target group:

Fourth year medical students

Prerequisites and co-requisites:

The earlier courses of general practice

Recommended optional programme components:

A part of the continuum of the courses of general practice in basic medical education.

Recommended or required reading:

A text book of general practice, Duodecim

A text book of geriatrics, Duodecim

Grading:

Pass/Fail

Person responsible:

Markku Timonen / Juha Auvinen

083054A: Genomic Medicine II, 3 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Jukka Moilanen, Karppinen, Peppi Leena Elina

Opintokohteen kielet: Finnish

Leikkaavuudet:

083056A Medical Genetics II 3.0 op

080505A Clinical genetics 2.0 op

Ei opintojaksokuvauksia.

083061A: Geriatrics, 4 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Antikainen, Riitta Liisa

Opintokohteen kielet: Finnish

Proficiency level:

-

Status:

-

Required proficiency level:

-

ECTS Credits:

5 ECTS credits

Language of instruction:

Finnish

Timing:

C11

Learning outcomes:

-

Contents:

-

Mode of delivery:

-

Learning activities and teaching methods:

-

Target group:

-

Prerequisites and co-requisites:

-

Recommended optional programme components:

-

Recommended or required reading:

-

Assessment methods and criteria:

-

Grading:

-

Person responsible:

Professor Riitta Antikainen

Working life cooperation:

-

Other information:

-

083013A: Hematology and Endocrinology, 5 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Olavi Ukkola, Hannuksela, Jokke Mikael

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS credits

Language of instruction:

Finnish

Target group:

3rd year M.D. degree students of University of Oulu

Prerequisites and co-requisites:

Pre-clinical studies

083030A: Infections and respiratory diseases, 5 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Riitta Kaarteenaho

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS

Language of instruction:

Finnish

Timing:

The course is held in the autumn and spring semesters, during the 4th year (C7-8)

Learning outcomes:

Upon completion of the course, the student will be able to diagnose and treat the most common pulmonary and infectious diseases on the level of primary health care. The student also knows how to prevent infectious and pulmonary diseases and is able to identify and deal with emergency situations of these conditions. In addition, the student knows the basic epidemiology of pulmonary and infectious diseases and the main principles of controlling epidemic infections

Contents:

The most essential respiratory and infectious diseases, their treatment, prevention and identification of rare, more serious infectious conditions are covered from a general practitioner's point of view.

Mode of delivery:

Face-to-face teaching

Lectures

Web-based learning

Learning activities and teaching methods:

Various teaching and learning methods are used in the course:

There are lectures, seminars, small group and bedside lessons as well as written exams. Teaching is compulsory apart from lectures.

Target group:

Medical degree students, C7-C8

Prerequisites and co-requisites:

Student must have completed interviewing and examining patients - course

Recommended optional programme components:

The course is performed simultaneously with other studies of the fourth year.

Recommended or required reading:

Textbooks:

Kaarteenaho R, Brander P, Halme M, Kinnula V. Keuhkosairaudet – Diagnostiikka ja hoito (Duodecim, in Finnish)

The most essential pages of the following textbooks: Huovinen P, Hedman K, Heikkinen T, Järvinen A, Meri S, Vaara M (toim.) Mikrobiologia, immunologia ja infektiosairaudet, kirjat 1-3 (2011), Duodecim (in Finnish).

Käypä hoito –recommendations, which are applicable for the course (in Finnish)

Separate papers

Web courses

Assessment methods and criteria:

Attendance in the compulsory teaching and passing the examinations.

Grading:

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

Person responsible:

Professor Riitta Kaarteenaho, docent Timo Hautala

Working life cooperation:

Small group classes on the ward and at the outpatient department are to apply the theoretical knowledge to practice in authentic environment.

083014A: Nephrology/Urology, 6 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Parpala-Spärman, Teija Mirjami

Opintokohteen kielet: Finnish

ECTS Credits:

6 ECTS credits

Language of instruction:

Finnish

Timing:

The course is held in the autumn and spring semester during the 4th year of studies

Learning outcomes:

- The student recognizes and is able to raise conversation with the patient about voiding disorders in the holistic patient care. He/She recognizes treatment requirements of abnormal symptoms and findings.
- The student observes and recognizes common renal and urinary tract symptoms and is able to diagnose these on the primary care level.
- The student is able to treat and follow up e.g. the benign prostatic hyperplasia patient and recognizes the situations, when the patient needs to be examined and treated in specialized care.
- The student understands the principles of cancers of the kidneys and urinary tract.
- The student is able to follow up the urinary tract cancer patients after curative treatment on primary care.
- The student is able to treat emergency situations of the urinary tract and urinary tract trauma on the first aid level in the emergency department.
- Student is able to treat acute urinary retention.
- Student knows the main causes, diagnosis and the treatment of acute kidney injury.
- Student recognizes nephrotic syndrome, knows the etiology and the diagnostic examinations.
- Student knows how to diagnose diabetic nephropathy, knows main principles of the treatment and the follow-up.
- Student knows the most common glomerulonephritis, interstitial nephritis, polycystic kidney disease and renal vasculitis.
- Student recognizes chronic renal insufficiency and knows the management.
- Student is familiar with the renal replacement therapies.

Contents:

- Congenital anomalies of the urinary tract.
- Renal tumours and parenchymal diseases – diagnosis and treatment.
- Disseminated kidney cancer treatment in special care.
- Catheterization of urinary bladder.
- Prostatic diseases diagnosis and treatment.
- Hemotamponation of the urinary bladder.
- The diagnosis and treatment of hematuria.

- Urinary tract trauma and emergency care.
- Diagnosis and treatment of urethral diseases.
- Diagnosis and treatment of voiding disorders.
- Evaluation of kidney function and urinary analysis.
- Diagnosis and treatment of the most common renal diseases: diabetic nephropathy, glomerulonephritis, polycystic kidney disease, tubulointerstitial nephritis and renal vasculitis.
- Acute kidney injury: etiology, diagnosis and treatment.
- Chronic renal insufficiency: conservative and active management.

Mode of delivery:

Blended teaching.

Learning activities and teaching methods:

Urology:

Lectures 24h (+ self learning 24h)

Patient centered student group teaching

on the urological ward and outpatient clinic 4h (self learning 8h)

Theme days 12h (+ self learning 12h)

Exam 8h

Final Exam 32h

Nefrology:

Lectures 12 h

Patient centered group teaching 2 h

Seminars 4 h

Exam

Final exam

Target group:

3rd year medical degree students

Prerequisites and co-requisites:

Previous studies completed acceptably.

Grading:

Numeric 1-5.

Value 0 stands for fail.

Person responsible:

Teija Parpala, clinical teacher

Working life cooperation:

Part of the teaching will take place in the clinical hospital environment.

083032A: Neurology and Neurosurgery, 9 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Majamaa, Kari Gunnar

Opintokohteen kielet: Finnish

ECTS Credits:

9 ECTS credits

Language of instruction:

Finnish

Timing:

The course begins in the autumn semester and major part is in the spring semester. The course is available from 2020 – 2021.

Learning outcomes:

The course supports the professional growth of students and increases their ability to meet the patients. After the course the students will be able to diagnose and treat neurological and neurosurgical patients as primary health care physician and will be able to work in a multiprofessional work community.

After completion of the course, the student

- masters the basics of neurology and neurosurgery, neuroradiology and clinical neurophysiology at the level required from general practitioner

- is able to perform the neurological examination on a patient and interpret the findings
- understands the most important clinical features and neuropathological changes of neurological and neurosurgical disease progression and major changes in the anatomic structures explaining the manifestations of various symptoms and findings
- is able to evaluate the urgency of neurological and neurosurgical conditions and understands the life-threatening nature of these diseases. The course educates the student to diagnose and give emergency treatment to neurological and neurosurgical acute patients at the hospital ER clinic
- knows the indications of the most common neurophysiological and neuroradiological examinations and is able to interpret their results

Contents:

- Course opening and initial information
- Lectures, can be followed online (recorded)
- Seminars, can be followed online (partly recorded)
- The initial exams (neurology and neurosurgery)
- Group teaching of clinical neurological examination
- Contact teaching period (group teaching)
 - at the outpatient clinic
 - at the hospital ward of neurosurgery and in the operating room
 - the neurology ward section [spinal tap training with the simulator, attending ward round, teaching session on stroke, examining the patients, teaching session on summary of the section]
 - attending emergency clinic work of neurology
 - Exam after the contact teaching period (neurology)
 - Final exam

Exchange students can also earn 3.0 ETCS credits (Neurosurgery) through the Erasmus program clinical elective. This requires full time (8.00 am – 3.45 pm) participation in all clinical activities for minimum of one week and participation in group sessions. For ETCS credits the final examination in neurosurgery section must be passed.

Learning activities and teaching methods:

Lectures, small group teaching, clinical studies

Target group:

Medical degree students, 4th year.

Prerequisites and co-requisites:

Preclinical studies, clinical studies during the 3rd year

Recommended optional programme components:

The course is an independent entity and no simultaneous studies are required

Recommended or required reading:

Requirements in the final exams include all theory and practice taught during the course and the material used and the corresponding subjects in the textbooks:

-Neurology (Duodecim). Link to the textbook: <http://www.oppiportti.fi/op/neu00001/do>

-Chapter on Neurosurgery in the textbook Surgery (Duodecim). Link to the textbook: <http://www.oppiportti.fi/op/opk04494>

-Chapter on Nervous system and muscle in the textbook Pathology (Duodecim). Link to textbook: <http://www.oppiportti.fi/op/XX>

-Chapter on Neuroradiology in the textbook Radiology (Duodecim). Link to textbook: <http://www.oppiportti.fi/op/XX>

-Clinical Neurophysiology (Duodecim). Link to the textbook: <http://www.oppiportti.fi/op/XX>

For exchange students: Lindsay-Bone: Neurology and Neurosurgery Illustrated, latest edition.

Literature is available in the internet pages of Oppiportti of Duodecim and other study material in the electronic portal of Oulu University (Optima).

The literature of neurosurgery for Erasmus-students is available at the Oulu university library.

Assessment methods and criteria:

Exams will be held during the course. The initial exams in neurology and neurosurgery are graded pass/fail.

Neurology exam following the contact teaching period is graded numerically and approved grades must be reached.

These grades contribute to the final grading.

Approved grades must be reached in final exam.

Attendance is compulsory in several teaching sessions during the course.

Read more about assessment criteria at the University of Oulu webpage.

Grading:

The initial exams are graded pass/fail. The grade of the exam following the contact teaching period contributes to the final grade. The grade of the final exam is 1-5.

Person responsible:

Neurology: Kari Majamaa, professor

Neurosurgery: Ville Leinonen, professor
 Neuropathology: Tuomo Karttunen, professor
 Neuroradiology: Osmo Tervonen, professor
 Clinical Neurophysiology: Mika Kallio, clinical director

Working life cooperation:

All clinical phases of the course are conducted in the university hospital. The students meet patients in outpatient clinic appointments and in the ward.

Other information:

The course is included in the new curriculum of medical studies from 2017. The course will be carried out for the first time in 2020. The course is conducted by the Research Units of Clinical Neuroscience (neurology, neurosurgery), Cancer and Translational Medicine (pathology), Medical Imaging, Physics and Technology (radiology and clinical neurophysiology)

083052A: Obstetrics and gynecology, 10 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Hannu Martikainen

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

083060A: Oncology and palliative care, 4 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Turpeenniemi-Hujanen, Taina Marjatta

Opintokohteen kielet: Finnish

Proficiency level:

-

Status:

-

Required proficiency level:

-

ECTS Credits:

4 ECTS credits

Language of instruction:

Finnish/English

Timing:

September-November.

Learning outcomes:

-

Contents:

The diagnostics, oncological therapeutic modalities and the patient follow-up of solid cancers and lymphomas. Palliative care and end-of-life care of oncological patients.

Mode of delivery:

Lectures, web-based teaching, seminars, small group teaching.

Learning activities and teaching methods:

Lectures 33 h/ Small Group Teaching 10h/ Oncological Seminars 10h. Preliminary Examination 3 h (online). Final Examination 2 h.

Target group:

Target groups are the 6 th year medical students (MD).

Prerequisites and co-requisites:

The required prerequisite for participation to the course unit is the completion of 5 years of medical studies in Oulu curriculum.

Recommended optional programme components:

Teaching is also given during other courses (e.g. anesthesiology, geriatry, general medicine, neurology, urology, plastic surgery).

Recommended or required reading:

Joensuu, Roberts, Teppo, Tenhunen: Syöpätaudit, last edition, Kustannus Oy Duodecim

UICC: TNM-luokituskirja ja UICC Clinical Oncology, viim.painos.

Recommended literature:

Joensuu H, Kouri M, Ojala A, Tenhunen M, Teppo L: Kliininen sädehoito. Duodecim viim.painos.

Saarto T ym: Palliatiivinen hoito. Duodecim viim.painos.

Lahtinen T, Holsti LR: Kliininen säteilybiologia. Duodecim viim.painos.

Bomford CK & Kunkler IH: Walter and Miller's Textbook of Radiotherapy. Radiation Physics, Therapy and Oncology. Churchill Livingstone 2003.

Elonen E ym: Syöpälääkeopas. Viim. painos.

Kallanranta T, Rissanen P, Vilkkumaa I: Kuntoutus. Duodecim viim.painos.

Assessment methods and criteria:

During the course unit, there are preliminary and final exams. Both of them should be passed. In addition, passing of preliminary exam is required before the final exam.

Grading:

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

Person responsible:

Taina Turpeenniemi-Hujanen, Professori

Peeter Karihtala, Clinical lecturer

Jussi Koivunen, Clinical lecturer

Working life cooperation:

Small group teaching includes examining patients.

Other information:

-

083050A: Ophthalmology, 4 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Nina Hautala

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

083031A: Otorhinolaryngology, 7 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Alho, Olli-Pekka

Opintokohteen kielet: Finnish

ECTS Credits:

7 ECTS credits / 187 hours of work

Language of instruction:

Finnish

Timing:

The course is held in the autumn and spring semester during the 4th year of studies

Mode of delivery:

Blended teaching

Target group:

4th year medical degree students

Person responsible:

Professor Olli-Pekka Alho

A540146: Pathology and diagnostics I, 10 op**Voimassaolo:** 01.08.2017 -**Opiskelumuoto:** Intermediate Studies**Laji:** Study module**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Mäkinen, Markus Juhana**Opintokohteen kielet:** Finnish**ECTS Credits:**

10 ECTS credits

Laboratory Medicine:

1.0 ECTS/ 27 hours of work

Organ Pathology:

6.0 ECTS credits/162 hours of work

Radiology:

3 ECTS credits /80 hours of work

Language of instruction:

Finnish

Timing:

Laboratory medicine:

C5 (3rd year, Autumn semester)

Organ pathology:

Autumn semester of 3rd year, except autopsy teaching that extends to Spring semester of 3rd year.

Radiology:

C5-6 (3rd year, Autumn and Spring semester)

Learning outcomes:**Laboratory medicine:**

By the end of the course the student can list the most frequently used tests in clinical chemistry and their indications and critical interpretation. The student can standardize sample taking so that the above facts that increase the deviation in test results can be eliminated. The student can specify the basics of the quality control of the laboratory tests. The student understands the feedback control systems in endocrinology and on this base can diagnose the common endocrine disorders and their reasons. The student can list the hormone determinations and indications to use them. The student knows the common weaknesses and disturbing factors of hormone determinations. The student understands how to diagnose heritable metabolic diseases and the use of cancer markers. The student knows the effects of childhood, pregnancy and older age on the laboratory methods. The student can work as a member in a team.

Organ pathology:

The student is expected to:

Understand the key aspects of disease pathology, their clinical correlation and clinical relevance; to know the principles of histo- and cytopathological diagnostics, limitations and the main sources of errors and artifacts.

After taking the course, student will

- Master the basics of pathology at the level required in primary health care

- Understand the pathogenesis, pathological changes of the most important diseases and their clinical course, symptoms and findings of the disease and the correlation of the underlying diseases
- Understand the possibilities and limitations of diagnostic pathological studies and the main sources of error in diagnosis
- Know the indications of the most common pathology studies and can interpret pathologist responses
- Understand the role of pathologist in patient care and multiprofessional co-operation and can work in a team

Radiology

Upon completion of this first curricular unit of radiology, student should be able to understand the principle of justification of radiological studies. Additionally student should have competence to explain the most important indications for radiological studies and principles of radiological modalities, including nuclear medicine. After completing the unit, student should master basic image interpretation skills of radiographs and know the most common findings of these examinations. Student can work in a group.

Contents:

Laboratory medicine:

Lectures contain following subjects: Clinical Chemistry as a medical speciality, diagnostics of heart and vascular disorders, examination of kidneys and urinary tracts, clinical enzymology, examination of liver and gastrointestinal tract, tests to analyse water, sodium and potassium balance, therapeutic drug monitoring and chemical toxicology, most frequently used laboratory test and their indications. Theoretical background of clinical endocrinology, hormone determinations, adrenal function and its disorders, hypothalamic and hypophysis hormones, the follow up of pregnancy by clinical chemical methods, endocrinology of aging, thyroid function and its disorders and calcium metabolism and its disorders. Analyzing congenital heritable metabolic diseases and cancer markers.

Contents of small group practical courses: taking blood samples and preparation of samples for different tests, results of laboratory test in healthy individuals, reference ranges, sources of errors and their origin and quality controls of laboratory tests.

Goal of the theme day: The students can perform to point of care tests.

Organ pathology:

Lectures 25 h

Seminars integrated into other Clinical Courses 1 h

Seminars 2 x 4 h = 8 h

Exercises, total. 33 h

Autopsy exercises 3 x 2 h = 6 h

- Autopsy demonstrations 3 x 1 h = 3 h

- Group teaching 3 x 2 h = 6 h

- Histopathology 6 x 2 h = 12 h

- Laboratory of Pathology 1 x 2h = 2h

- Meetings 2 x 1 h = 2 h

- Preparing for seminar 2 x 1h = 2h

Exam 3 h

Total 70 h

Self study:

Lectures 24 h

Seminars 8 h

Exercises:

Autopsy exercises and demonstrations 0 h

Group teaching 9 h

Histopathology 18 h

Preparing for seminars 0.125 x 8 h = 1h

Preparing for the final exam 32 h

A total of 162 hours of student work = 6 credits

Radiology:

General introduction to radiology (techniques) and indications, principle of justification, emergency radiology, musculoskeletal radiology, thoracic radiology, abdominal radiology, neuroradiology and nuclear medicine and molecular imaging

Flipped learning approach is used applying G Suite learning environment.

Mode of delivery:

Blended learning.

Learning activities and teaching methods:

Laboratory medicine:

Lectures 10 h, small group practical courses 4 h and one theme day. In addition the student has independent preparation for small group practical courses and for the theme day.

Organ pathology:

Lectures and exercises are interactive teaching. Some of the lectures can be provided with the opportunity to follow the lectures through the network.

Group teaching and histology exercises are guided exercises, and a student is expected to prepare oneself to the subject beforehand.

In the autopsy exercises and demonstrations, students have an opportunity to get familiar with the pathological changes resulting from various diseases, and to their relationship with the cause of death. These teachings are offered in an authentic situation and medical records.

Meetings and laboratory teaching deal with authentic patient cases.

Exam is a traditional final exam. Examination of microscopic changes (histology) can be used to utilize the online learning environment (PathXL).

Radiology:

The implementation methods of the course vary.

The learning methods are based on flipped classroom, i.e. independent self-education based on electronic materials and teacher guided checkpoints in small group.

Target group:

3rd year medical doctor degree students

Prerequisites and co-requisites:

Completion of preclinical studies (first 2 years of medical school)

Recommended optional programme components:

There are no alternative courses.

Recommended or required reading:

Laboratory medicine:

Textbook: Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics, 7th edition, CA Burtis, DE Bruns, 2015. Other textbooks: Endokrinologia, Kustannus Oy Duodecim, M Välimäki, T Sane, L Dunkel, 2009.

Organ pathology:

Books: Mäkinen M et al. (Eds.): Pathology, Duodecim (2012)

Alternatives:

Cross SS, Underwood's Pathology, a Clinical Approach (6th or newer edition)

Kumar V et al., Robbins Basic Pathology (9th or newer edition)

Optima course material (Finnish): Seminars; Lecture handouts; guide to autopsy (Optimassa)

Course contents (histology lessons) at <https://lieko.oulu.fi>

Käypä hoito recommendations

Recommended: The articles published in Duodecim and Finnish Medical Journal that are related to the course topics and are published during the course

Radiology:

Books:

Either, Roberto Blanco Sequeiros et al (Editors): Kliininen radiologia [in Finnish] or Mettler, FA (Editor): Essentials of Radiology 100-tärkeintä rtg-kuvaa (National teaching image base): Distributed through university Optima online environment.

Assessment methods and criteria:

Laboratory medicine:

At the end there will be an essay examination based on materials given in lectures, small group practical courses, in textbooks and other materials given to the students.

Organ pathology:

Lectures are voluntary but recommended. Group teachings and seminars are compulsory and attendance is recorded.

Compulsory teachings must be completed prior to the final exam.

The final exam must be completed successfully.

Radiology:

This course unit utilizes online short questions and multiple choice exam assessment.

Grading:

0-5

Person responsible:

Markus Mäkinen

Working life cooperation:

Student learns partially in an authentic clinical environment as a team member. No clinical internship placements during the courses.

Compulsory

083003A: Pathology and diagnostics I: Laboratory medicine, 1 op

Voimassaolo: 01.08.2017 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Risteli, Juha

Opintokohteen kielet: Finnish

ECTS Credits:

Laboratory Medicine:

1.0 ECTS/ 27 hours of work

Language of instruction:

Finnish

Timing:

Laboratory medicine:

C5 (3rd year, Autumn semester)

Learning outcomes:

Laboratory medicine:

By the end of the course the student can list the most frequently used tests in clinical chemistry and their indications and critical interpretation. The student can standardize sample taking so that the above facts that increase the deviation in test results can be eliminated. The student can specify the basics of the quality control of the laboratory tests. The student understands the feedback control systems in endocrinology and on this base can diagnose the common endocrine disorders and their reasons. The student can list the hormone determinations and indications to use them. The student knows the common weaknesses and disturbing factors of hormone determinations. The student understands how to diagnose heritable metabolic diseases and the use of cancer markers. The student knows the effects of childhood, pregnancy and older age on the laboratory methods.

Contents:

Laboratory medicine:

Lectures contain following subjects: Clinical Chemistry as a medical speciality, diagnostics of heart and vascular disorders, examination of kidneys and urinary tracts, clinical enzymology, examination of liver and gastrointestinal tract, tests to analyse water, sodium and potassium balance, therapeutic drug monitoring and chemical toxicology, most frequently used laboratory test and their indications. Theoretical background of clinical endocrinology, hormone determinations, adrenal function and its disorders, hypothalamic and hypophysis hormones, the follow up of pregnancy by clinical chemical methods, endocrinology of aging, thyroid function and its disorders and calcium metabolism and its disorders. Analyzing congenital heritable metabolic diseases and cancer markers.

Contents of small group practical courses: taking blood samples and preparation of samples for different tests, results of laboratory test in healthy individuals, reference ranges, sources of errors and their origin and quality controls of laboratory tests.

Goal of the theme day: The students can perform to point of care tests.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lectures 10 h, small group practical courses 4 h and one theme day. In addition, the student has independent preparation for small group practical courses and for the theme day.

Target group:

3rd year medical doctor degree students

Prerequisites and co-requisites:

Completion of preclinical studies (first 2 years of medical school)

Recommended optional programme components:

There are no alternative courses.

Recommended or required reading:

Textbook: Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics, 7th edition, CA Burtis, DE Bruns, 2015. Other textbooks: Endokrinologia, Kustannus Oy Duodecim, M Välimäki, T Sane, L Dunkel, 2009.

Assessment methods and criteria:

At the end there will be an essay examination based on materials given in lectures, small group practical courses, in textbooks and other materials given to the students.

Grading:

Numerical grading with a grading scale 0-5, when 0 stands for fail and 5 for excellent.

Person responsible:

Professor Juha Risteli

Working life cooperation:

During the course, a student will learn partially in an authentic laboratory environment. No clinical internship placements are involved during the course.

083004A: Pathology and diagnostics II: Organ pathology, 6 op

Voimassaolo: 01.08.2017 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Mäkinen, Markus Juhana

Opintokohteen kielet: Finnish

ECTS Credits:

6 ECTS credits

Language of instruction:

Finnish

Timing:

Autumn semester of 3rd year, except autopsy teaching that extends to Spring semester of 3rd year.

Learning outcomes:

The student is expected to:

Understand the key aspects of disease pathology, their clinical correlation and clinical relevance; to know the principles of histo- and cytopathological diagnostics, limitations and the main sources of errors and artifacts.

After taking the course, student will

- Master the basics of pathology at the level required in primary health care
- Understand the pathogenesis, pathological changes of the most important diseases and their clinical course, symptoms and findings of the disease and the correlation of the underlying diseases
- Understand the possibilities and limitations of diagnostic pathological studies and the main sources of error in diagnosis
- Know the indications of the most common pathology studies and can interpret pathologist responses
- Understand the role of pathologist in patient care and multiprofessional co-operation and can work in a team

Contents:

Lectures 25 h

Seminars integrated into other Clinical Courses 1 h

Seminars 2 x 4 h = 8 h

Exercises, total. 33 h

Autopsy exercises 3 x 2 h = 6 h

- Autopsy demonstrations 3 x 1 h = 3 h

- Group teaching 3 x 2 h = 6 h

- Histopathology 6 x 2 h = 12 h

- Laboratory of Pathology 1 x 2h = 2h

- Meetings 2 x 1 h = 2 h

- Preparing for seminar 2 x 1h = 2h

Exam 3 h

Total 70 h

Self study:

Lectures 24 h

Seminars 8 h

Exercises:

Autopsy exercises and demonstrations 0 h

Group teaching 9 h

Histopathology 18 h

Preparing for seminars 0.125 x 8 h = 1h

Preparing for the final exam 32 h

A total of 162 hours of student work = 6 credits

Mode of delivery:

Blended learning.

Learning activities and teaching methods:

Lectures and exercises are interactive teaching. Some of the lectures can be provided with the opportunity to follow the lectures through the network.

Group teaching and histology exercises are guided exercises, and a student is expected to prepare oneself to the subject beforehand.

In the autopsy exercises and demonstrations, students have an opportunity to get familiar with the pathological changes resulting from various diseases, and to their relationship with the cause of death.

These teachings are offered in an authentic situation and medical records.

Meetings and laboratory teaching deal with authentic patient cases.

Exam is a traditional final exam. Examination of microscopic changes (histology) can be used to utilize the online learning environment (PathXL).

Target group:

3rd year medical doctor degree students

Prerequisites and co-requisites:

Completion of preclinical studies (first 2 years of medical school)

Recommended optional programme components:

The course is an independent entity and no simultaneous studies are required.

Recommended or required reading:

Books: Mäkinen M et al. (Eds.): Pathology, Duodecim (2012)

Alternatives:

Cross SS, Underwood's Pathology, a Clinical Approach (6th or newer edition)

Kumar V et al., Robbins Basic Pathology (9th or newer edition)

Optima course material (Finnish): Seminars; Lecture handouts; guide to autopsy (Optimassa)

Course contents (histology lessons) at <https://lieko.oulu.fi>

Käypä hoito recommendations

Recommended: The articles published in Duodecim and Finnish Medical Journal that are related to the course topics and are published during the course.

Assessment methods and criteria:

Group teaching and theme days are compulsory, and the attendance will be recorded.

Acceptably completed final examination is compulsory.

Grading:

Acceptably completed final examination will be assessed in a grading scale 1-5

Person responsible:

Markus Mäkinen

Working life cooperation:

Group teachings are conducted using authentic patient cases in the university hospital. Autopsy teaching, laboratory practical and meetings are taught as a part of clinical practice.

Other information:

The course is included in the new curriculum of medical studies from 2017. The course will be carried out for the first time in 2019.

083005A: Pathology and diagnostics III Radiology and safe practice in radiology, 3 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Tervonen, Osmo Antti, Jaakko Niinimäki

Opintokohteen kielet: Finnish

ECTS Credits:

3 ECTS credits /80 hours of work

Language of instruction:

Tuition is organized in Finnish.

Timing:

The course unit is held during the autumn and spring semester of the third year of medical studies.

Learning outcomes:

Upon completion of this first curricular unit of radiology, student should be able to understand the principle of justification of radiological studies. Additionally student should have competence to explain the most important indications for radiological studies and principles of radiological modalities, including nuclear medicine. After completing the unit, student should master basic image interpretation skills of radiographs and know the most common findings of these examinations.

Contents:

The English curriculum consists both Radiology 1 and 2. The English curriculum also includes voluntary modules of Radiation safety and Nuclear medicine (separate exam).

Radiology:

General introduction to radiology (techniques) and indications, principle of justification, emergency radiology, musculoskeletal radiology, thoracic radiology, abdominal radiology, neuroradiology and nuclear medicine and molecular imaging

Flipped learning approach is used applying G Suite learning environment.

Mode of delivery:

The mode of delivery for the course unit is flipped learning i.e. self-education and face-to-face checkpoints.

Learning activities and teaching methods:

The implementation methods of the course vary.

The learning methods are based on flipped classroom, i.e. independent self-education based on electronic materials and teacher guided checkpoints in small group.

Target group:

Target group are the 3rd year medical degree students (MD).

Prerequisites and co-requisites:

Prerequisite for participation to the course unit is the completion of preclinical studies (first 2 years of medical school)

Recommended optional programme components:

There are no alternative courses.

Recommended or required reading:

Books: Either, Roberto Blanco Sequeiros et al (Editors): Kliininen radiologia [in Finnish] or Mettler, FA (Editor): Essentials of Radiology
100-tärkeintä rtg-kuvaa (National teaching image base): Distributed through university Optima online environment.

Assessment methods and criteria:

This course unit utilizes online short questions and multiple choice exam assessment.

Grading:

The course unit utilizes passed/failed grading scale. The grade will not be given until all the obligatory teaching courses are completed.

Person responsible:

Osmo Tervonen, Professor

Jaakko Niinimäki, Professor

Vesa Kiviniemi, clinical lecturer

Working life cooperation:

Student learns partially in an authentic clinical environment as a team member.

083040A: Pathology and diagnostics II, 4 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

083015A: Patient care and prevention, 5 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Tero Raiskila

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS credits

Language of instruction:

Finnish

Mode of delivery:

Face-to-face teaching

Prerequisites and co-requisites:

Pre-clinical medical studies

Working life cooperation:

Part of the teaching will be held in health center with guidance of GP and clinical teacher

A540148: Pediatrics, 17 op

Voimassaolo: 01.08.2017 -

Opiskelumuoto: Intermediate Studies

Laji: Study module

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Mika Rämetsä, Petri Kulmala

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

Compulsory

083041A: Pediatrics PART I (pediatrics), 14 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

083042A: Pediatrics PART II (child psychiatry), 3 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Petri Kulmala

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

083033A: Psychiatry and mental health, 10 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Pirkko Riipinen

Opintokohteen kielet: Finnish

ECTS Credits:

10 ECTS credits

Language of instruction:

Finnish

Timing:

The course is held in the 4th year, beginning at August.

Learning outcomes:

A student who has passed the course in psychiatry is expected to have mastered the following modules:

- Basic knowledge of psychiatry from a general practitioner's perspective
- Basic skills, required for independent medical practice, in the diagnosis and treatment of common mental disorders to the extent needed in general medical practice (psychotherapeutic therapies, drug therapy, family and network activities)
- Basic knowledge of the identification of common and serious mental disorders and substance abuse at different stages of life: at the perinatal stage and among youths, adults and the elderly
- Treatment classification: the timely referral of patients for psychiatric consultation and specialist hospital care
- Evaluation of need for sick leave on psychiatric grounds
- Basic knowledge of urgent treatment during psychological crises
- Evaluate risk for suicidality
- Knowledge of the legal and insurance psychiatric regulations necessary for a general practitioner and their application to one's own work (especially Mental Health Act, Child Welfare Act and the Finnish Transport Safety Agency's (Trafi's) instructions on the capacity to drive)

Basic knowledge of interaction in a patient/physician relationship and multi-professional work

- Understanding the importance of one's own personality and emotions, the physician-patient relationship, and instructions for professionals on the success of treatment and taking such instructions into account in the care relationship
- Understanding the importance of cooperation with the patient's relatives and with other employees involved in psychiatric care: health centre and school psychologist, nurse, psychiatric nurse, public health nurse
- Familiarity with the basics of network and family therapy
- Taking account of the situation of children of psychiatric patients
- Knowledge of the most common psychological tests and readiness to cooperate with health centre psychologists
- Ability to act as a specialist in a psychiatric organisation, under the guidance of a specialist and in cooperation with other psychiatric healthcare staff

Contents:

Basic knowledge of psychiatry as a general practitioner, identification of the most common mental disorders and substance abuse problems, and treatment at different stages of life: perinatal stage, youths, adults and the elderly, as well as referring the patient for psychiatric specialist care.

Mode of delivery:

The tuition will be implemented mainly as face-to-face teaching.

Learning activities and teaching methods:

Lectures 42 hours, group teaching 18 hours, seminars 40 hours and group work 10 hours, examining patients 10 hours, apprenticeship in psychiatric ward 1-2 weeks and in emergency duty 6 hours, web-based teaching 40 hours, final exam and individual work 64 hours.

Target group:

The course is compulsory for 4th year students of medicine.

Prerequisites and co-requisites:

Previous medical studies have to be completed.

Recommended optional programme components:

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

Recommended or required reading:

As a textbook by Lönnqvist J, et al. (ed.) *Psykiatria*. (Psychiatry, in Finnish only) published by Oy Duodecim, Helsinki, latest edition. Kumpulainen K et al. (ed.) *Lastenpsykiatria ja nuorisopsykiatria*, Kustannus Oy Duodecim (Child Psychiatry and Adolescent Psychiatry), published by Oy Duodecim, Helsinki, latest edition (for adolescent psychiatry, in Finnish only). In addition, the final examination includes the topics covered in the lectures, group teaching, seminars and theme days, as well as the related preliminary materials. Recommended reading includes the Evidence Based Guidelines (www.terveysportti.fi), the Mental Health Act and Mental Health Decree, and the Child Welfare Act (<http://www.finlex.fi/en/laki/> - legislation) and Duodecim's books on alcohol dependence and drug and pharmaceutical addiction (in Finnish only).

Assessment methods and criteria:

Students complete the preliminary test in Optima at the beginning of the course. During the course, students gather entries on completed courses in the logbook: opening session, group sessions, M1 seminar, theme days, clinical training and on-call duty. Feedback sessions (group chat, inquiry and feedback session, and Optima feedback form) are also part of the learning process. The grade for the course is based on a written final exam.

Grading:

The grade for the psychiatry course is based on a final exam, which is graded on a scale of 0 to 5 (where 0 is a fail).

Person responsible:

Professor Pirkko Riipinen and clinical lecturers

Working life cooperation:

The course includes a clinical practice period lasting one week in psychiatric units.

044000S: Clinical patient work, 5 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Jukka Palm

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS credits

Language of instruction:

Finnish

Timing:

3rd year of medical studies (M.D. degree students)

Grading:

Pass-fail.

Working life cooperation:

Authentic clinical working environment

A540149: Measures and support for functioning, 12 op

Voimassaolo: 01.08.2017 -

Opiskelumuoto: Advanced Studies

Laji: Study module

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Leena Ala-Mursula

Opintokohteen kielet: Finnish

Proficiency level:

-

Status:

-

Required proficiency level:

-

ECTS Credits:

12 ECTS credits

Language of instruction:

Finnish

Timing:

The course is held during the 6th year of the curriculum, from semester 2022-23 onwards

Learning outcomes:

Upon completion of the course, the student

- is able to evaluate functioning in a holistic manner and is able to support the patient's actorship

- is able to consider work-related origins of ill health, as well as the aspect of promoting work ability, when seeing working-aged patients
- knows the structure of the Finnish Occupational Health Care (OHC) system and the principles of its collaboration with other parts of Health Care and with working life
- understands the goals and principles of rehabilitation as a discipline and knows the structure and principles of the Finnish rehabilitation system
- is able to coordinate care regarding main public health issues with special reference to both multi-morbidity and to patient groups with particular needs
- understands the relevance of continuity of care as well as planning actions together with the patient

Contents:

- The basic theoretical concepts of general practice, occupational health care and rehabilitation with regard to the learning goals listed above
- Techniques of patient-centered interview
- Multi-disciplinary collaboration and how to lead networking meetings
- The making of plans of care and rehabilitation together with the patient and the stakeholders
- The optimal use of various systems of care and rehabilitation

Mode of delivery:

-

Learning activities and teaching methods:

-

Target group:

Tuition is targeted to 6th year medical students

Prerequisites and co-requisites:

The earlier studies in the curriculum of basic medical education

Recommended optional programme components:

The course is a compulsory one and cannot be replaced with other courses, although it has interfaces with several disciplines

Recommended or required reading:

Text books: General Practice, Health from work, Physiatrics (in Finnish)

Course materials

Current Care Guidelines with relevance to the course

Assessment methods and criteria:

To be confirmed later; several evaluations during the course with regard to the specified learning goals

Grading:

Pass/fail

Person responsible:

Person responsible: Leena Ala-Mursula. Deputy: Juha Auvinen

Working life cooperation:

Part of the tuition will take place at workplaces

Other information:

-

Compulsory

044020S: General practice, 7 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Juha Auvinen

Opintokohteen kielet: Finnish

Proficiency level:

-

Status:

-

Required proficiency level:

-

ECTS Credits:

7 ECTS credits

Language of instruction:

Finnish

Timing:

The sixth year (CXI-XII), autumn and spring semester

Learning outcomes:

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

- describe factors affecting morbidity on individual and population level
- diagnose and treat common diseases
- uncover patient's experience of her/his disease and find out patient's own relation to her/his illness
- act as an expert in preventive medicine in primary care
- apply health promoting and disease preventing methods on individual, family and population level
- function as a member in interprofessional team and benefit from the expertise of other team members
- manage time in patient practice

Contents:

Supervision of health professionals, insurance in medicine, military medicine?, health legislation, child welfare polyclinic, medical certificates, patient with multiple issues in primary health care, patient care in primary health care in light of medical guidelines, critical evaluation and practical use of research in primary health care. Health centre practice

Mode of delivery:

Face-to-face teaching. One week practical training in health centers.

Learning activities and teaching methods:

Lectures, seminars and small group teaching. One week practice period in health centers

Target group:

The students from medicine

Recommended or required reading:

Yleislääketiede, Kumpusalo E, Ahto M, Eskola K, Keinänen-Kiukaanniemi, S, Kosunen E, Kunnamo I, Lohi J (toim) Kustannus Oy Duodecim 2005; Laki potilaan asemasta ja oikeuksista 17.8.1992/785; Laki terveydenhuollon ammattihenkilöistä 28.6.1994/559; Sosiaali- ja terveysministeriön asetus potilasasiakirjojen laatisemisesta sekä niiden ja muun hoitoon liittyvän materiaalin säilyttämisestä. 99/2001; SosTMA lääkkeen määräämisestä 726/2003; L sähköisestä lääkemääräyksestä 2.2.2007/61; a SosTMA sähköisestä lääkemääräyksestä 25.6.2008/485.

Assessment methods and criteria:

Written examinations. participation in seminars and small group teaching and practical period in health centers.

Grading:

The final examination is an OSCE –examination having five questions. Each question utilizes verbal grading scale "pass/ fail ". To pass the exam student has to pass each questions. The final grading scale is also pass/fail

Person responsible:

Professor of general practice Markku Timonen

Working life cooperation:

The course includes one week practical period in the health center

Other information:

-

044021S: Physical and rehabilitation medicine, 3 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Karppinen, Jaro Ilari

Opintokohteen kielet: Finnish

Proficiency level:

-

Status:

-

Required proficiency level:

-

ECTS Credits:

3 ECTS credits

Language of instruction:

Finnish

Timing:

The course is held in the autumn and spring terms of the sixth year

Learning outcomes:

Upon completion the student understands the principles of diagnostics, differential diagnostics, treatment, evaluation of functional ability and rehabilitation in the field of Physical and Rehabilitation Medicine. The student is able to adapt his/her knowledge to primary health care practice.

Contents:

The definitions and assessment methods of functional ability in the context of ICF (International Classification of Functioning and Health)

Multi-professionality in rehabilitation

Low back disorders

Neck disorders

Lower extremity disorders

Upper extremity disorders

Rehabilitation of spinal cord injuries

Rehabilitation of strokes

Rehabilitation of brain injuries

Limb amputations, prostheses and rehabilitation

Principles of physiotherapy

Principles of occupational therapy

Social work in rehabilitation

Pain psychology

Assistive devices

Vocational rehabilitation

Recognition of obstacles in functional ability and finding solutions for these

Mode of delivery:

Internet lectures, lecture-related exercises and questions & answers sessions

Thematic days with focus on functional ability

Learning activities and teaching methods:

Internet lectures ca. 30-40h

Exercises linked to lectures ca. 15-20h

Questions and answers sessions 6h

Visit of rehabilitation ward or spinal cord policlinic 2,5 h

Thematic days 8h (+ 4h within Geriatrics)

Exercises related to thematic days 12h (+ 6h within Geriatrics)

Assessment of a patient with musculoskeletal disorder at the 4th study year 2h

Musculoskeletal clinical examination at the 6th study year (optional) 5h

Target group:

Medical students sixth year

Prerequisites and co-requisites:

-

Recommended optional programme components:

Theme days will be arranged in collaboration with Geriatrics and Oulu University of Applied Sciences

Recommended or required reading:

Last issue of Physical and Rehabilitation Medicine textbook. Current Care guidelines of Physical and Rehabilitation Medicine. The new text book on Rehabilitation when appropriate. Internet material of Oppiportti.

Assessment methods and criteria:

Internet lectures-related exercises (>100), of which 50% has to be solved

Final examination (essay)

Grading:

Approved/failed (50% of maximum points)

Person responsible:

Professor Jaro Karppinen

Professor Mauri Kallinen

Working life cooperation:

-

Other information:

-

044022S: Occupational health, 2 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Leena Ala-Mursula

Opintokohteen kielet: Finnish

Proficiency level:

-

Status:

-

Required proficiency level:

-

ECTS Credits:

2 ECTS credits

Language of instruction:

Finnish

Timing:

The course is held in the 6th year, C11

Learning outcomes:

Upon completion of the course, the student is able to take notice of potential work-related origins of ill health, as well as the aspect of promoting work ability, when seeing working-aged patients

The student will be able to understand the structure of the Finnish Occupational Health Care (OHC) system and the principles of its collaboration with other parts of Health Care and with the workplaces

Contents:

The Finnish Occupational Health Care (OHC) system and the guidelines of its collaboration with the working life and the health care sector

Relationships between work and health, work-related diseases, occupational diseases
The assessment and supporting of work ability

Mode of delivery:

Kurssi toteutetaan lähiopetuksena. Luentoja voi seurata myös etänä.

Learning activities and teaching methods:

There will be 14 hours of lectures and 10 hours of guided group teaching. The remaining 30 hours of self-study includes preparatory and reflective tasks attached to the group tuition sessions, conducted both individually and in small groups. Activating methods are utilized in all teaching.

Target group:

Medical students in their 6th year, C11.

Prerequisites and co-requisites:

The earlier studies in the curriculum of basic medical education.

Recommended optional programme components:

-

Recommended or required reading:

Material is mainly in Finnish, see left column

Assessment methods and criteria:

The students' progress towards the learning goals is discussed and supported during the group tuitions, which are based on the presentations and documents prepared by the students.

The passing of the course examination is required.

An anonymous electronical survey for evaluation and feedback is organized after the course, asking e.g. the students' self-perception of reaching the central learning goals of the course.

Feedback of the feedback is provided to the students in the electronical learning environment, including an overview of the performance in the examination and the ideas received for further development of the tuition.

Grading:

Pass/Fail

Person responsible:

Professor of Occupational Health Care Leena Ala-Mursula

Working life cooperation:

-

Other information:

-

044030S: Physician, health and society, 7 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Tiina Ikäheimo

Opintokohteen kielet: Finnish

Proficiency level:

-

Status:

-

Required proficiency level:

-

ECTS Credits:

7 ECTS credits

Language of instruction:

Finnish/English

Timing:

The sixth year. autumn semester (C11)

Learning outcomes:

The course is structured based on the interaction between the general population and individuals. Understanding the state of health of the population and factors related to it is necessary, for cost-efficient and effective treatment of patients, appropriate professional orientation, as well as rational decision-making. Respectively, knowing the state of an individual/patient and applying holistic and effective care increases wellbeing and reduces the burden of health care at the population level. The objective of the course is that students understand the population-based approach and close connection with clinical work, identify how public health science is associated with the practical work of a medical doctor and know how to apply it in their own work. The more specific learning objectives are to understand the specific features of population health, enable critical examination and interpretation of epidemiologic research, understand the framework of health economy as a part of cost-accounting of health care, understand the various structures of health leadership, gain knowledge of the principles and systems related to insurance medicine and rehabilitation, as well as legislation the obliges health care practitioners. One objective is also that a student understands the significance of multiculturalism in the work of a physician, as well as receive an overview of the global public health challenges, and how these are reflected in the health status of the Finnish population.

Contents:

Lectures and theme days:

- Epidemiology of diseases
- Fundamentals of health economics
- Leadership in different health systems
- Rehabilitation
- Health promotion and disease prevention
- Health policy
- Health sociology
- Health care legislation
- Multiculturalism in the work of a physician
- Global health
- Public health science and the work of a medical doctor
- Insurance medicine

Group work and seminars:

- The topics of the group work include major public health threatening environmental and lifestyle risk factors and diseases. Solutions are sought for preventing or reducing the adverse health effects from a national, regional and individual doctor's perspective.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lectures, theme days, group work and seminars.

Target group:

Students of medicine

Prerequisites and co-requisites:

-

Recommended optional programme components:

The course is linked to C4 – Public health science (public health science, environmental health care, epidemiology)

Recommended or required reading:

Koskenvuo K. (toim) Sairauksien ehkäisy. Duodecim 2003, soveltuvilta osin; Terveystieteiden tutkimuskeskus 1326/2010.

Kauhanen ym. (2013) Kansanterveystiede. Sanoma Pro Oy, 320s.; Terveystieteiden tutkimuskeskus 30.12.2010/1326.

Assessment methods and criteria:

Written examinations. Participation in the lectures, theme days, group work and seminars.

Grading:

Final grade of public health course will consist of final written exam and seminar assessment. Seminar work is assessed as a pass/fail. Final examination of public health comprises 3-4 questions, 2.5–10 points each. At least 10 points are required for passing the examination.

Person responsible:

Docent Tiina Ikkäheimo

Working life cooperation:

-

Other information:

-

044001S: Practical Training 1, 3 - 18 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Practical Training

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Voidaan suorittaa useasti: Kyllä

Proficiency level:

-

Status:

-

Required proficiency level:

-

ECTS Credits:

Degree of medical licentiate includes 24 ECTS of clinical training. Training has to be done at least in 2 weeks periods (2 weeks = 3 ECTS).

Language of instruction:

finnish

Timing:

1.-6. years of medical studies

Learning outcomes:

The aim of the training is to depend the knowledge and skills of medical students in practical work. During the training student applies the learned skills in practice, performs basic operations under supervision ja gets acquainted to work in a multi professional environment and to the operation of hospitals and health care centers

Contents:

Compulsory training is included in the degree of medical licentiate. The regulations regarding training are defined in Finnish in a separate document (Harjoitteluohjesääntö) that has been taken in effect at 1.1.2013. These regulations will be applied to all clinical training for the students who have started their medical school in 2011 or later. Each student has to fill the learning diary during each period of clinical training. The students are encouraged to carefully get acquainted with the instructions defined in the regulations (Harjoitteluohjesääntö) and in the learning diary booklet, before the beginning of a training period.

Mode of delivery:

The regulations regarding training are defined in Finnish in a separate document (Harjoitteluohjesääntö)

Learning activities and teaching methods:

Degree of medical licentiate includes 24 ECTS of clinical training. Training has to be done at least in 2 weeks periods (2 weeks = 3 ECTS). Please contact the coordinator of international affairs in the Faculty for further information (Virpi.parkkila@oulu.fi)

Target group:

Medical students

Grading:

Pass/fail

Person responsible:

Responsible person of the study programme

A540150: Thesis, 20 op

Voimassaolo: 01.08.2017 -

Opiskelumuoto: Advanced Studies

Laji: Study module

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Petri Kulmala

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

Compulsory

044010S: Thesis, Study plan, 4 op

Voimassaolo: 01.08.2016 -
Opiskelumuoto: Advanced Studies
Laji: Course
Vastuuyksikkö: Medicine
Arvostelu: 1 - 5, pass, fail
Opettajat: Petri Kulmala
Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

044011S: Thesis, 16 op

Voimassaolo: 01.08.2016 -
Opiskelumuoto: Advanced Studies
Laji: Diploma thesis
Vastuuyksikkö: Medicine
Arvostelu: 1 - 5, pass, fail
Opettajat: Petri Kulmala
Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

044012S: Maturity exam (native language), 0 op

Voimassaolo: 01.08.2016 -
Opiskelumuoto: Advanced Studies
Laji: Course
Vastuuyksikkö: Medicine
Arvostelu: 1 - 5, pass, fail
Opettajat: Petri Kulmala
Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

Tutkintorakenteisiin kuulumattomien opintokokonaisuuksien ja -jaksojen kuvaukset

080601A: Anaesthesiology I, 3 - 4 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Medicine
Arvostelu: 1 - 5, pass, fail
Opettajat: Alahuhta, Seppo Matias
Opintokohteen kielet: Finnish

ECTS Credits:

4 ECTS/ 106 hours of work

Language of instruction:

Finnish.

Timing:

During third year, C 5-C 6

Learning outcomes:

The students recognize cardiac arrest and can resuscitate. He or she knows what belongs to advanced life support both in adults and children. The student knows how to treat the patient after successful resuscitation. He or she recognizes life threatening cardiac arrhythmias. The student knows how to examine the patient pre-operatively. He or she knows the basics of fluid and nutritional therapy. The student knows the basics of infusion therapy and knows how to manage the airway. He or she knows the local anaesthetics and the techniques of regional anaesthesia. The student understands the basics of general anaesthesia and monitoring during the anaesthesia. He or she is able to recognize the unstable patient and knows how to start the treatment.

Contents:

Theoretical part: resuscitation and first aid, pre-operative examination and treatment, anaesthetic drugs and anaesthesia methods, regional anaesthesia, monitoring of the patient, nutrition and infusion therapy.

Small group teaching: cardio pulmonary resuscitation, managing the airway, basics of fluid therapy, managing of critically ill patients, practical duty in operating theatres.

Mode of delivery:

Blended teaching

Learning activities and teaching methods:

Lectures, theme days, practicing in small groups, practicing in operation theatres, web exams (Optima).

Target group:

For the students of the third year.

Prerequisites and co-requisites:

Preclinical studies completed

Recommended optional programme components:

The course is performed simultaneously with other third`s year`s courses.

Recommended or required reading:

Alahuhta S, Ala-Kokko T, Kiviluoma K, Ruokonen E, Silfvast T (toim.). Peruselintoimintojen häiriöt ja niiden hoito. Kustannus Oy Duodecim, 2016.

Niemi-Murola L, Metsävaino K, Saari T, Vahtera A, Vakkala M. Anestesiologian ja tehohoidon perusteet, Kustannus Oy Duodecim, 2016.

Material handed out during the course.

Assessment methods and criteria:

Taking part into the group teaching events, theme days and practicing in operation theatres. Web exam of resuscitation. Written end examination.

Grading:

Internet examination evaluated pass/fail

Familiarize with pre-course material and good knowledge of content. A teacher will decide of acceptance of performance and possible extra work.

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

Person responsible:

Professor Seppo Alahuhta

Working life cooperation:

Yes (practical training in the operating room)

Other information:

No other information

080613A: Anesthesiology II, 3 op

Voimassaolo: 01.08.2013 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Alahuhta, Seppo Matias

Opintokohteen kielet: Finnish

ECTS Credits:

3 ECTS

Language of instruction:

Finnish

Timing:

Fourth year, C 7- C 8

Learning outcomes:

Upon completion of the course the student:

- has theoretical and practical knowledge of pain treatment both in acute and chronic pain
- is able to explain the social and economical meaning of the pain
- understand basic mechanism of the pain and pain control and can plan the treatment of the pain patient
- knows how to treat pain among special patient groups (e.g. children and elderly people)
- can consultate the multidisciplinary professional team for diagnostics and treatment of chronic pain patient
- knows how to treat cancer pain
- is able to recognize and start treatment in disorders of vital signs in different patient groups
- masters fluid and nutrition disorders in-depth.

Contents:

Basics of pain mechanisms and types of pain. Diagnostics of chronic pain. Principles of pain treatment in acute and chronic pain. Special pain treatment methods with medicines, central blocks and combination therapy.

The student will deepen his or her knowledge on fluid and nutritional therapy.

Mode of delivery:

Blended teaching.

Learning activities and teaching methods:

Variable teaching and learning methods:

Lectures 8 h

Practicing in small groups 2 h

Other compulsory teaching

Exams (1) (Variable evaluation methods: book examination, oral examination, web-exam)

Target group:

For the students of the fourth year.

Prerequisites and co-requisites:

The required prerequisite is the completion of the following course prior to enrolling for the course unit:
Anesthesiology 1.

Recommended optional programme components:

No

Recommended or required reading:Textbooks:

- *Alahuhta S, Ala-Kokko T, Kiviluoma K, Ruokonen E, Silfvast T (toim.)* Peruselintoimintojen häiriöt ja niiden hoito. Kustannus Oy Duodecim, 2016
- Niemi-Murola L, Metsävaino K, Saari T, Vahtera A, Vakkala M. Anestesiologian ja tehohoidon perusteet, Kustannus Oy Duodecim, 2016.

Guides:

- Neuropaattisen kivun hoito-opas:

<http://www.suomenkivuntutkimusyhdistys.fi/system/files/files/neuropaattisen%20kivun%20hoito-opas.pdf>

- Syöpäkivunhoito-opas <http://www.suomenkivuntutkimusyhdistys.fi/system/files/files/Sy%C3%B6p%C3%A4kivunhoito-opas.pdf>

- Kroonisen kivun hoito-opas http://www.suomenkivuntutkimusyhdistys.fi/system/files/files/Kroonisen%20kivun%20hoito-opas_final.pdf

- Material handed out in course.

Assessment methods and criteria:

Taking part actively into teaching events.

Optima-examination.

Grading:

Pass/fail

Person responsible:

Professor Seppo Alahuhta

Working life cooperation:

No

Other information:

No other information

040105Y: Basic Epidemiology, 1,5 op**Opiskelumuoto:** General Studies**Laji:** Course**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Taina Lajunen**Opintokohteen kielet:** Finnish**ECTS Credits:**

1.5 ECTS / 40 hours of work.

Language of instruction:

Finnish, exercise 6 in English

Timing:

During the second year, spring semester (C4).

Learning outcomes:

Upon completion of the course the student will:

- understand the basic epidemiologic thinking
- is able to define the basic concepts of epidemiology
- is able to identify the central types of epidemiologic studies
- is able to calculate the key measures of disease occurrence
- can use measures of effect to estimate the association between a given exposure and disease
- understand the concept of confounding
- know how to apply his/her knowledge in professional practice

Contents:

1. Introduction to epidemiology; causation
2. Measures of disease occurrence and effect
3. Types of epidemiologic studies: cohort studies
4. Types of epidemiologic studies: case-control studies
5. Data analysis and reasoning

Mode of delivery:

Face-to-face teaching (lectures and exercises) and independently performed exercise in the Optima environment.

Learning activities and teaching methods:

Lectures 5 h / group work 10 h / self-study 25 h. The exercises are done as group work. Exercise 6 (a critical evaluation of a scientific article) is included to self-studies and is done as individual work utilizing the Optima-environment.

Target group:

Medical and dental students of the second year.

Prerequisites and co-requisites:

None.

Recommended optional programme components:

The course is linked to the following courses:

C1 Basics of public health

C4 Environmental health

C11 General practitioner and public health

Knowledge Management and Research –studies and Evidence based medicine.

Recommended or required reading:

Required: Lecture material and exercise material. Recommended reading: Rothman KJ. Epidemiology: and introduction. 2nd edition. Oxford University Press, New York, 2012.

Assessment methods and criteria:

Written final examination. Participation to the lectures and group exercises is mandatory and controlled for. A pass in the individual exercise (exercise 6) is required. 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 stand for a fail.

Person responsible:

Taina Lajunen

Working life cooperation:

Does not include.

080503A: Child psychiatry, 3 op**Opiskelumuoto:** Intermediate Studies**Laji:** Course**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Ebeling, Hanna Elina**Opintokohteen kielet:** Finnish**ECTS Credits:**

3,0 ECTS / 84 hours of work

Language of instruction:

Finnish

Timing:

C 9 and C 10

Half of the students C9 and the other half C10

Learning outcomes:

The student who has passed the course of Child Psychiatry understands the normal psychological development of children, developmental risks and protective factors, and he/she is able to distinguish mental disorders in different developmental phases. He is acquainted with the child psychiatric health care organization, legislation and is able to diagnose and organize treatment of the most common child psychiatric disorders. The students will have readiness to work as a physician in health care centers and as a junior trainee in hospitals.

Contents:

1) Lectures:

- the diagnostics and treatment of the most common child psychiatric disorders and child psychiatric health care organization

- prevention of child psychiatric disorders, risks and protective factors

2) Special themes:

- sexual abuse and child molestation

- and legislation

- intoxications: drugs and alcohol

3) Own patients:

- getting acquainted with the own patient case, examination and treatment

- participating to the discussions of diagnostics and treatment

- getting acquainted with the child psychiatric treatment

4) Out-patient teaching:

- following of two out-patient sessions, discussion of the examination

5) Problem based learning:

- solving and representing the example patient cases in the study group

- getting acquainted with the evidence based practices

- important legislation in child psychiatry

Mode of delivery:

Lectures

Special theme days

Small group teaching: Own patients, Out-patient teaching and Problem based learning.

Learning activities and teaching methods:

Lectures 15h

Theme-day 6h

Part of the pediatric theme-day 1h

Small group teaching:

Outpatient sessions 4h

Own patient

- discussions 5h

- examining 6h

Problem based learning:

- guided teaching 4h

The admission exam 1h

The Final exam 2 h

Self-study 40h

Target group:

Medical Students

Prerequisites and co-requisites:

The prerequisites for the course unit are previous studies (C1-8 course units).

Recommended optional programme components:

No alternative course units.

Simultaneously with Pediatrics 080502A.

Recommended or required reading:

Kumpulainen K, Aronen E, Ebeling H, Laukkanen E, Marttunen M, Puura K, Sourander A. Lastenpsykiatria ja nuorisopsykiatria. Kustannus Oy Duodecim, 2016.

or

Barker P: Basic child psychiatry. Oxford, Blackwell Science, last edition.

Assessment methods and criteria:

The assessment of the course unit is based on the learning outcomes of the course unit.

The admission exam:

Required literature: Text book, part 1: Psychological development of the child and adolescent. The admission exam is either a web-based multiple choice test or viva voce.. Exam is required to be passed.

Attending to all compulsory teaching.

The final exam (Requirements: text book, lectures and group teaching material) is evaluated from 0 to 10 points (the approval limit is 5 points), grading scale pass/ fail.

Grading:

The course unit utilizes verbal grading scale pass/ fail.

The course is approved when all exams are approved and the student has attended to all compulsory teaching,

Person responsible:

Professor Hanna Ebeling

Working life cooperation:

No.

040038Y: Clinical Anatomy, 3rd period, 1 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Tuukkanen, Kaarlo Juha Kullervo

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS credits / 25-30 hours of work

Language of instruction:

Finnish

Timing:

The course is organized during spring semester of third year. It is recommended to complete the course after the radiology course.

Learning outcomes:

Upon completion of the course, the student will be able to use clinical viewer of computer tomography and magnetic resonance image stacks. Selected anatomical structures are analyzed as they are visualized clinically in 3D.

Contents:

The basic contents are a lecture and introductory exercises, which are conducted with clinical viewer software. The 3D clinical CT and MR image stacks are studied with help of anatomical books, anatomical models and other sources.

Mode of delivery:

After the lecture the student performs the introductory exercises with the image viewer and after that starts the electronic examination in Optima portal.

Learning activities and teaching methods:

Lectures 2h / Self-study

Target group:

The course is targeted for the third year medical students to support the skills of radiological 3D clinical anatomy.

Prerequisites and co-requisites:

In addition to the first year anatomy course the radiology course should be mainly lectured.

Recommended optional programme components:

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

Recommended or required reading:

Through the Optima portal the student will receive the clinical viewer loaded with three dimensional image stacks. The portal provides also the lecture material and introductory texts for the imaging modalities. Links for the electronic books are provided as well.

Assessment methods and criteria:

The electronic examination has 20 image questions.

Grading:

The assessment is pass/fail. The level of acceptance is 10/20.

Person responsible:

Professor Juha Tuukkanen.

Working life cooperation:

No.

040037Y: Clinical Pathology, 2nd period, 1 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Karttunen, Tuomo Juhani

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS credits / 28,5 hours of work

Language of instruction:

Finnish

Timing:

2. year (autumn), linked with the General pathology course

Learning outcomes:

This course focuses on the most important diseases with dominantly systemic manifestations. This field relates with General Pathology as these diseases manifest themselves in similar patterns in organs involved. The course includes introduction to use of pathology in clinical diagnostics.

After the course, students should be able to describe etiology and pathogenesis of the most important diseases presenting with systemic manifestations and structural abnormalities of such diseases. The student should be able to explain how structural and functional abnormalities manifest themselves as clinical symptoms and signs. In addition, students should be able to identify and classify the most common types of macroscopic and microscopic abnormalities in these diseases.

Contents:

Systemic diseases (including pathology of diabetes and other diseases of the endocrine system); pathology of cardiovascular diseases.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lectures 9 h, practical training 4 h, exam 1 h.

Independent work 15 h

Target group:

Medical and dental students

Prerequisites and co-requisites:

040108A General Pathology

Recommended optional programme components:

Teaching and exam are coordinated with the course 040108A General pathology

Recommended or required reading:

Mäkinen M. et al. Patologia, Duodecim, 2012.

Or: Cross SS: Underwood's Pathology, a clinical approach (6th ed. 2013)

Or: Underwood JCE: General and systematic pathology (5th ed. 2009).

Or: Kumar V. et al.: Robbins Basic Pathology, (9 th ed. 2012 tai 7th ed. 2007).

Other: Kumar V. et al.: Robbins and Cotran, Pathologic basis of disease (8 th ed. 2010).

Lecture handouts (Optima); Material associated with virtual pathology teaching program (in Finnish).

Assessment methods and criteria:

Attendance in compulsory teaching, exam.

Grading:

The exam will be coordinated with that of 040108A General pathology. Exam of Pathology integrated studies

040037Y is assessed separately with grading 1-5 and fail.

Person responsible:

Professor Tuomo Karttunen

Working life cooperation:

No

040040Y: Clinical Physiology, 3rd period, 2 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Vuolteenaho, Olli Jaakko Tuomas

Opintokohteen kielet: Finnish

ECTS Credits:

2 ECTS credits / 54 hours of work.

Language of instruction:

Finnish

Timing:

C5-C6

Learning outcomes:

Upon completion of the course, the student will be familiar with basic methods of clinical physiology and clinical neurophysiology, and their application to clinical work.

Contents:

Kliinisen fysiologian ja kliinisen neurofysiologian keskeiset menetelmät ja niiden soveltaminen potilastyössä sekä fysiologian integroituja luentoja tai itsenäistä opiskelua 3. lukuvuoden oppiaineiden yhteydessä.

Mode of delivery:

Lectures and demonstrations.

Learning activities and teaching methods:

Lectures 16 h, demonstration 2 h, examination 1 h, self-study 35 h.

Target group:

Medical students

Prerequisites and co-requisites:

Physiology (040112A, 15 ECTS credits).

Recommended optional programme components:

Internal Medicine, Pulmonary Medicine, Anesthesiology.

Recommended or required reading:

Lectures and lecture materials.

Assessment methods and criteria:

Attending the demonstrations is compulsory.

Multiple choice examination

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

Grading:

Pass/ fail

Person responsible:

Professor Olli Vuolteenaho

080505A: Clinical genetics, 2 op**Opiskelumuoto:** Intermediate Studies**Laji:** Course**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opintokohteen kielet:** Finnish**Leikkaavuudet:**

083054A Genomic Medicine II 3.0 op

ECTS Credits:

2 ECTS credits / 53 hours of work

Language of instruction:

Finnish.

Timing:

C 9-10, in the autumn and spring semester.

Learning outcomes:

Upon completion the student will be able to identify/suspect a genetic disease in the patient/family, identify patients who need genetic counselling and refer them further to a clinical genetics unit, describe the structure of chromosomes and genes, their examination and to interpret the results of a chromosome or DNA examination, explain the recurrence risks in different modes of inheritance and to discuss their significance for family members and the possibilities of prenatal diagnostics, explain the unique spectrum of genetic disease in Finland, understand the special nature of genetic disease and recognize the ethical problems related to genetic testing, and to recognize the need of special care for families with a child suffering from congenital malformations/genetic disease and adult patients with serious genetic conditions.

Contents:

Clinical genetics as a medical speciality. Examination of the patient and family, drawing the pedigree. Modes of inheritance. Chromosomal disorders, principles and indications of chromosome studies. Principles and clinical applications of DNA studies. Population genetics and "Finnish Disease Heritage". Hereditary cancer, diagnosis, examination and counselling. Congenital malformations, basics of dysmorphology and syndrome identification. Prenatal diagnostics, genetic screening and counselling. Genetics of complex diseases. Genetic ethics. Principles and practice of genetic counselling, genetic services.

Mode of delivery:

Blended teaching

Learning activities and teaching methods:

Lectures 18h / Small group teaching 2h. Independent work and online work 33h.

Target group:

Medical students.

Prerequisites and co-requisites:

The required prerequisite is the completion of preclinical courses prior to enrolling for the course unit.

Recommended optional programme components:

No alternative course units.

Recommended or required reading:

Aittomäki K, Moilanen J, Perola M (eds.): Lääketieteellinen genetiikka. Duodecim, 2016. Additionally recommended: Read A, Donnai D: New Clinical Genetics, Scion 2011.

Assessment methods and criteria:

The course utilizes continuous assessment. During the course, there are intermediate exams and the students compile a learning diary, which will be assessed. In addition, the students prepare a written coursework with peer review as the assessment method. The course can be completed also in a final exam, if necessary. The assessment criteria are based on the learning outcomes of the course. Participation in obligatory teaching events is required.

Grading:

The course unit utilizes verbal grading scale "laudatur/pass/fail".

Person responsible:

Jukka Moilanen, Clinical Lecturer in Clinical Genetics.

Working life cooperation:

Teachers have a position at Oulu University Hospital and have personal experience of the current working life.

040128A: Clinical pharmacology and medicinal treatment, 1 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Miia Turpeinen

Opintokohteen kielet: Finnish

ECTS Credits:

1.0 ECTS/26 hours of work

Language of instruction:

Finnish

Timing:

The course is held in the autumn semester. It is recommended to complete the course at the C9-10.

Learning outcomes:

After passing the course the student understands the principles of rational drug treatment and 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 general practitioner and the treatment of most common intoxications.

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, special treatment situations and most common intoxications will also be discussed.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Clinical pharmacology patient case discussions in study groups (2 h). Thematic seminars (7 x 2 h) will cover major areas of drug therapy and special situations of drug treatment and most common intoxications. Final exam.

Target group:

Medical 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 (040106A)

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) concerning the topic of thematic seminars. Materials of the thematic seminars.

Assessment methods and criteria:

Attending the patient case discussion with the tutor and passing of the final exam.

Grading:

The course unit utilizes verbal grading scale pass/fail.

Person responsible:

Doc. Miia Turpeinen (miia.turpeinen@oulu.fi)

Working life cooperation:

No

040127A: Clinical pharmacology and prescriptions, 1 op

Voimassaolo: 01.08.2013 -

Opiskelumuoto: Basic Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Miia Turpeinen

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS credits /26 hours of work

Language of instruction:

Finnish

Timing:

The course is held in the autumn semester. It is recommended to complete the course at the 3rd autumn semester.

Learning outcomes:

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. The student understands principles of personalized drug therapy and mechanisms and significance of adverse drug reactions.

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. Effect of diseases on pharmacokinetics, adverse drug reactions and reporting adverse drug reactions. Personalized drug therapy. Prescription demonstration.

Mode of delivery:

The tuition will be arranged as face-to-face teaching.

Learning activities and teaching methods:

Lectures 12 hours, prescription demonstration 2 h, self-study 12 h. Final exam.

Target group:

Target group is medical students.

Prerequisites and co-requisites:

The recommended prerequisite for participation to the course is the completion of the Pharmacology and toxicology course (040106A).

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 (www.finlex.fi). Oppikirja Neuvonen, Backman, Himberg, Huupponen, Keränen, Kivistö (toim.) Kliininen farmakologia ja lääkehoito, Kandidaatikustannus Oy (uusin painos), soveltuvin osin.

Assessment methods and criteria:

Exam assessment.

Grading:

The course utilizes verbal grading scale: pass/ fail.

Person responsible:

Doc., Specialist Miia Turpeinen

Working life cooperation:

No

080203A: Dermatology and venereology, 5 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Kaisa Tasanen-Määttä

Opintokohteen kielet: English

ECTS Credits:

5,0 ECTS/148 hours of work

Language of instruction:

The tuition is arranged in Finnish. The course unit can be completed in English by group teaching.

Timing:

The course unit is held in the autumn/spring semester C9-C10.

Learning outcomes:

Objective of the course expressed in terms of learning outcomes: After this course the student has the knowledge and skills in diagnostics and treatment of common skin diseases in order to be able to work as a general practitioner or house officer. Furthermore, the student has the basic skills to diagnose and treat allergological and venereal diseases.

Contents:

Theoretical teaching: Special features of status and anamnesis. Structure of skin. Basics of local treatments. Basics of allergology. Common skin diseases and their clinical findings. Skin tumours. Hereditary skin diseases. Dermatopathology. Venereal and paraveneal disease.. Practical teaching: Demonstrations, patient examination, small group teaching, bedside teaching, outpatient clinic, self study (material available in the Optima)

Mode of delivery:

The tuition will be implemented as lectures face-to-face teaching and web-based teaching (Optima).

Learning activities and teaching methods:

Theoretical teaching 49 h

1. Lectures 42 h (partly mandatory)

2. Interactive lectures 3 h

3. Examinations 4 h

Practical teaching 15 h

3. Small group teaching in the outpatient ward 9 h

4 Small group teaching in the inpatient ward 6 h

Self study

6. Self study using material available in the Optima.

Target group:

Medical students

Prerequisites and co-requisites:

The recommended prerequisite is the completion of studies for previous semesters.

Recommended optional programme components:

The study unit cannot be completed alternatively.

Recommended or required reading:

Books:

Hannuksela, M., Karvonen, J., Reunala, T., Suhonen, R. (eds.). Ihotaudit. Kustannus Oy Duodecim.

Recommended reading: Haahtela T., Hannuksela M., Mäkelä M., Terho, E.O. (toim.): Allergia. Kustannus Oy Duodecim.

Assessment methods and criteria:

Initial examination in the Optima has to be passed before starting the practical teaching. The end-of-course examination: books, lectures and small group teaching. Obligatory presence in the theme day teaching of allergology and in the theme day of venereology.

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

Grading:

The course unit utilizes a numerical grading scale 1-5.

The end-of-course examination contains 10 questions which are graded from 0-3. Maximal grade is 30 points and the level of acceptance is 15 points.

Person responsible:

Clinical lecturer Laura Huilaja

Working life cooperation:

No

Other information:

Research projects / Department of Dermatology

1. Molecular biology of bullous skin diseases

Responsible person: professor Kaisa Tasanen-Määttä

1 student per year

2. Epidemiology of bullous skin diseases in Finland

Responsible person: professor Kaisa Tasanen-Määttä

1 student per year

3. Epidemiology of skin diseases in Northern Finland Birth

Cohort (NFBC1966)

Responsible person: professor Kaisa Tasanen-Määttä

1 student per year

080722A: Elective Course of Surgery, 1 op

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Juvonen, Tatu Sakari

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS

Language of instruction:

The tuition shall be arranged in Finnish.

Timing:

During the sixth year

C 11-12

Learning outcomes:

The student will be familiar with the symptoms, diagnostics and treatment of the most usual surgical diseases.

Contents:

The repetition concerning most problems in important surgical diseases. Lessons during two days of Orthopedics, Thoracic and Vascular surgery, Pediatric surgery, Gastroenterological surgery and Urology.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lessons and contact teaching 20h, independent work 7 hours.

Target group:

This is an intensive unit course of surgery is of particular benefit for medical students who will shortly graduate.

Prerequisites and co-requisites:

Surgery 1 and 2

Recommended or required reading:

Lecture material.

Assessment methods and criteria:

Obligatory study

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

Grading:

Pass/fail

Person responsible:

Professor Tatu Juvonen and professor Jyrki Mäkelä.

Working life cooperation:

No

Other information:

No other information

041002Y-04: Environment, Lifestyle and Health Studies, 1 op

Voimassaolo: 01.08.2011 -

Opiskelumuoto: Intermediate Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Timo Hugg

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS

Language of instruction:

Finnish

Timing:

4th year

Learning outcomes:

Rehabilitation (0.5 ECTS CR)

ELH – advanced studies (0,5 ECTS CR): The student is aware of the importance of addiction medicine, nutrition, physical activity / exercise and environmental health in the maintenance and promotion of health. The student is able to understand that the importance of before mentioned themes is based on strong scientific evidence and is able to utilize the knowledge in his/her work.

Contents:

Rehabilitation:

ELH – advanced studies: Including contents from the following topics

- Intoxicants, health and guidelines in the light of the most recent scientific evidence
- Nutrition, health and guidelines in the light of the most recent scientific evidence
- Physical activity, exercise and health and guidelines in the light of the most recent scientific evidence
- Environment, health and “guidelines” in the light of the most recent scientific evidence

Mode of delivery:

Rehabilitation (0.5 ECTS CR)

ELH – advanced studies (0,5 ECTS cr)

Learning activities and teaching methods:

Rehabilitation (0.5 ECTS CR)

ELH – advanced studies: Theme day type course consists of lectures and periods of discussion (6 h) and group work (7 h). Students are working as 5-6 person groups. Every group will receive a scientific article related to theme. The task is to find answers to the questions previewed, summarize the main findings of articles and merge contents of each subtheme as a one entity in the Optima environment and, give a short summary type presentation (10-15 min) from the combined results in the theme day.

Recommended and required reading:

ELH – advanced studies: Lecture notes and a scientific article

Target group:

Medical students.

Prerequisites and co-requisites:

No.

Assessment methods and criteria:

The assessment of the course unit is based on the learning outcomes of the course unit.

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

Grading:

The course unit utilizes verbal grading scale “pass/fail”

Person responsible:

The person in charge of the ELH-studies is Timo Hugg

Following persons are in charge of the sub-tracks:

Rehabilitation Jaro Karppinen

ELH – advanced studies: Timo Hugg

Working life cooperation:

No.

Voimassaolo: 01.08.2011 -

Opiskelumuoto: Intermediate Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS

Language of instruction:

Finnish

Timing:

5th year

Learning outcomes:

Sexual Health (0.5 ECTS CR)

Global health (0,5 ECTS cr): The student will recognize the main challenges of global health/global public health. The student will understand that global health/morbidity is strongly associated with the availability and allocation of resources, the undisturbed development of societies and functionality of political systems.

Contents:

Sexual Health (0.5 ECTS CR)

A Theme day of sexual health included in the courses of gynaecology and venereology. Female sexual disorders, the impact of pregnancy and child birth for human sexuality, sexuality in intimate relationship, the impact of diseases such as cancer for sexual health.

Global health (0,5 ECTS cr): Including contents from the following topics

- Health, education, poverty and the economy
- Ethical and human rights concerns in global health
- An introduction to health systems
- Culture and health
- Women's and child health
- Communicable and non-communicable diseases
- Unintentional injuries and violence
- Natural disasters and complex humanitarian emergencies
- Reproductive health
- Global mental health
- Management and planning of global health
- Pharmaceuticals
- Evaluations of large-scale health programs
- Cooperation in global health

Mode of delivery:

Sexual Health (0.5 ECTS CR) Face-to-face teaching

Global health (0,5 ECTS cr) Face-to-face teaching, group and independent work

Learning activities and teaching methods:

Sexual Health (0.5 ECTS CR) Theme day and other integrated teaching

Global health (0,5 ECTS cr): Theme day type course consists of group works (7 h) in the Optima environment and the theme day (6 h) where the main results of group works are summarized, presented and discussed. Students are working as 5-6 person groups. Every group will receive 1–2 chapters of the textbook to work with it. The group has to summarize the relevant information and give 5–10 minutes presentation based on the content of the textbook in the theme day.

Recommended and required reading:

Global health (0,5 ECTS cr): 1) Richard Skolnik: Global health 101. 2. edition, 2012, Jones & Bartlett Learning, LLC, an Ascend Learning Company, Burlington, USA. and 2) Michael H. Merson, Robert E. Black, Anne J. Mills: Global Health: Diseases, Programs, Systems, and Policies. 3. edition, 2012, Jones & Bartlett Learning, LLC, an Ascend Learning Company, Burlington, USA.

Target group:

Medical students.

Prerequisites and co-requisites:

No.

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:

The person in charge of the ELH-studies is Timo Hugg

Following persons are in charge of the sub-tracks:

Sexual health: Teija Parpala

Global health Timo Hugg

Working life cooperation:

No.

041002Y-06: Environment, Lifestyle and Health Studies, 1 op

Voimassaolo: 01.08.2011 -

Opiskelumuoto: Intermediate Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Timo Hugg

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS

Language of instruction:

Finnish

Timing:

6th year

Learning outcomes:

Final examination 1 ECTS cr (Timo Hugg). The student will recognize the needs and challenges linked to health behavior change. The student is aware of the importance of health behavior change in the well-being of patient.

The student is able to utilize his/her knowledge in the implementation of health behavior change.

Contents:

The content of final examination includes the following themes:

- Dietary behaviors: Promoting healthy eating
- Physical activity behavior
- Addressing tobacco use and dependence
- Alcohol prevention and treatment: Interventions for hazardous, harmful and dependent drinkers
- Reducing stress to improve health

Mode of delivery:

Self-directed learning

Learning activities and teaching methods:

Examination in the Optima environment.

Target group:

Medical students.

Prerequisites and co-requisites:

Other studies in the ELH track completed.

Recommended or required reading:

Kristin A. Riekert, Judith K. Ockene, Lori Pbert (eds.): The handbook of Health Behavior Change. 4. Edition, 2014, Springer Publishing Company, LLC, New York. Chapters: 7-12. Availability: as an e-book through the internet pages of library.

Assessment methods and criteria:

Participation to final examination and accepted completion of examination

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

Grading:

The course unit utilizes verbal grading scale "pass/fail"

Person responsible:

The person in charge of the ELH-studies is Timo Hugg

Following person is in charge of this sub-track: Timo Hugg

Working life cooperation:

No

040119Y: Environmental health care, 1 op

Opiskelumuoto: General Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Timo Hugg

Opintokohteen kielet: Finnish

ECTS Credits:

1.0 ECTS credits / 27 hours of work

Language of instruction:

Finnish/English (Mostly in Finnish); The course can be completed in English as a book examination.

Timing:

During the second year, spring semester (C4)

Learning outcomes:

Upon completion of the course, the student will

- get an overview from the system and the function of environmental health
- get to know the most beneficial and harmful environmental factors and the health risks associated with those
- understand the role of doctor in the field of environmental health

Contents:

Environmental health consist of following contents:

- Environment and health
- Climate change and health
- Outdoor air quality and health
- Health effects of hot and cold environment – and control
- Environmental radiation and health
- Environmental noise
- Drinking water, food, microbes, microbiological risks and epidemics
- Chemical risk factors of drinking water
- Physical, chemical and biological risk factors in indoor environments
- Municipal environmental health control
- Exceptional situations related to environmental health – preparation and action
- Role of doctor in environmental health

Mode of delivery:

Face-to-face teaching. The course will be arranged during two or four half-day seminar days. The course will consist of the lectures, the group works and the final examination.

Learning activities and teaching methods:

The course of environmental health includes:

- 10 h of lectures
- 2-3 h of group works
- 1 h of open conversation
- 13 h of independent work

Students will get to know as a group to the topical news related to environmental health and give a short presentation based on it.

Target group:

Graduate students of medicine and dentistry.

Recommended optional programme components:

Studies in question belong to Environment, Lifestyle and Health (ELH) track that continues integrated throughout the curriculum. The course is also linked to C1 – Basics of public health science, C4 – Epidemiology, C11 – Advanced studies of public health science and Evidence Base Medicine and Professional Development in Medicine Studies.

Recommended or required reading:

Reguired reading:

a) Helena Mussalo-Rauhamaa, Wendla Paile, Jouko Tuomisto, Heikki S. Vuorinen (ed.): Environmental health. Duodecim 2007. Otavan Kirjapaino Oy, Keuruu 272 p. (in Finnish)

b) Handouts can be loaded from Optima system.

Recommended reading:

Exceptional situations related to environmental health. A handbook for environmental health care staff and cooperation partners. Publications of Ministry of Social Affairs and Health 2010:2. Ministry of Social Affairs and Health, Helsinki, 2010. 226 p. (In Finnish with English summary). (<http://www.stm.fi/julkaisut/nayta/julkaisu/1537669>)

Assessment methods and criteria:

The course of Environmental health is an entity with compulsory and active attendance. Students have to participate to the seminar days, group works and pass the final examination.

Grading:

The course unit utilizes verbal grading scale "pass/fail". At least 10 points are required for passing the examination.

Person responsible:

The person in charge of the Environmental health -studies is post-doctoral researcher Timo Hugg.

Working life cooperation:

The course includes the guest lectures of research units and/or university hospital and Environmental Health Care of Oulu region.

041001Y-05: Evidence Based Medicine-studies, 1 op

Voimassaolo: 01.08.2011 -

Opiskelumuoto: Intermediate Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Marjo Renko

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS

Timing:

5th year

Learning outcomes:

The students knows how search and appraise medical literature and how to perform systematic clinical reasoning.

Contents:

Practising EBM with real patient problems. More about systematic reasoning.

040032Y: Evidence Based Medicine-studies, 2nd period, 0,5 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: General Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Marjo Renko

Opintokohteen kielet: Finnish

ECTS Credits:

0,5 ECTS

Learning outcomes:

Osaamistavoitteet Tavoitteena on, että opiskelija ymmärtää tärkeimmät epidemiologiset käsitteet ja niiden merkityksen lääkärintyössä.

The objective during the second year is that the student understands the principles of epidemiology and what it means in practical medicine.

Contents:

The teaching includes the most important elements needed in reading and appraising medical articles.

040033Y: Evidence Based Medicine-studies, 3rd period, 0,5 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Marjo Renko

Opintokohteen kielet: Finnish

ECTS Credits:

0,5 ECTS

Learning outcomes:

The student understands what is normal and abnormal, the principles of causation and clinical reasoning and is able to appraise diagnostic tests.

Contents:

The teaching includes principles of causation, basics of information technology, biostatistics, epidemiology and clinical decision making. Estimating the appropriateness of diagnostic tests.

080202A: Forensic medicine, 4 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

ECTS Credits:

4 ECTS

Language of instruction:

Finnish

Timing:

During spring term of the 4th year (C8)

Learning outcomes:

Upon completion of the course the student knows the legislation and legal status concerning doctor and patient, knows how to write medical certificates and statements, knows the principles of death investigation and especially investigation of unexpected and violent deaths, and is familiar with forensic way of thinking, e.g. how to act as a medical authority.

Contents:

The organization of forensic medicine in Finland. Forensic medicine as a medical speciality. Legal status and supervision concerning doctors, complaints against doctors. Professional secrecy. Medical certificates and statements, especially forensic statements. The organization of death investigations, causes of death and circulation of death certificates. Mechanisms of death and declaration of legal death. Legal status of the deceased and his/her relatives. Sexual forensic medicine. Traffic medicine. Homicides and suicides. Fatal intoxications and deaths related to drug abuse. Molecular biology in forensic medicine. Injuries by stabbing, incisive wounds, and injuries by blunt force. Fatal firearm injuries, burns and electrical fatalities. Hypothermia, suffocation and asphyxia, fatal pressure on the neck. Drowning and decompression. Pediatric forensic medicine. Death certificates, medical examinations for driving license, medical certificate of physical assault injuries and in sexual offences, certificate after an external post mortem examination, clinical drunkenness examination.

Mode of delivery:

Face –to-face teaching

Learning activities and teaching methods:

Lectures 28 h. Autopsy demonstrations and slide shows 8 h, medical certificates 8 h. A visit to Oulu police department 1.5 h.

Target group:

For the medical students of the fourth year

Prerequisites and co-requisites:

All earlier studies in the curriculum of basic medical education.

Recommended optional programme components:

The course is performed simultaneously with other courses including the curriculum in 4th year.

Recommended or required reading:

Lectures, slide shows and written exercises (medical certificates).

Assessment methods and criteria:

Obligatory participation in autopsy demonstrations. Lectures, slide shows and practical training on medical certificates. Examination.

Examination with 7 questions. The evaluation scale of each question is from 0 to 6. The evaluation scale of the examination is 0-5, according to the total sum of the 7 questions (0-42). The student will not pass the examination if two or more of the answers are graded as 0. Three examinations are arranged each year.

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

Grading:

The evaluation scale is 0-5 (0=fail, 5=excellent).

Person responsible:

Lasse Pakanen

040108A: General Pathology, 3,5 - 5 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Basic Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Karttunen, Tuomo Juhani

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS credits

Language of instruction:

Finnish

Timing:

2nd year, autumn (C3/DC3)

Learning outcomes:

Upon completion the student should know the basic mechanisms of diseases (etiology and pathogenesis), their basic morphological, functional and clinical characteristics, and terminology related with diseases. The student should be able to recognize the most common macroscopical and microscopical features of diseases and be able to reason the relationship between these features of the diseases and their symptoms and other clinical manifestations.

Contents:

Cellular adaptation; cell and tissue injury; genetic and environmental causes of diseases; infections and immunological mechanisms in disease; inflammation; healing; disorders of fluid balance and circulation; basic pathology of neoplastic diseases; basics of medical post-mortem investigation.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

Lectures 25 hours, practicals 33 hours. Self study. Written examination 3 hours.

Target group:

Medical and dental students.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

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

Recommended or required reading:

Books: 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; Lecture handouts; Guidebook for microscopy practicals; Guidebook for autopsy practicals. Material associated with virtual pathology teaching program.

Web-based material (in Finnish): Please, see Optima

Assessment methods and criteria:

The course requirements include participation in the compulsory practicals and passing in the end-of-course examination.

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

Grading:

The evaluation scale is 1-5/fail.

Person responsible:

Professor Tuomo Karttunen

Working life cooperation:

Teaching related with medical autopsies is organized in collaboration with the Department of Pathology, Oulu University Hospital

080417A: General Practitioner and Public Health, 9,5 op

Voimassaolo: 01.08.2007 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Heini Kelloniemi, Markku Timonen

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

080914A: Geriatrics, 4 op

Voimassaolo: 01.08.2011 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Antikainen, Riitta Liisa

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

040015Y-04: Health Care Ethics, 1 op

Voimassaolo: 01.08.2010 -

Opiskelumuoto: General Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Mäkelä, Jyrki Tapani

Opintokohteen kielet: Finnish

Voidaan suorittaa useasti: Kyllä

ECTS Credits:

1 ECTS

Language of instruction:

Finnish

Timing:

6th year autumn term

Learning outcomes:

Upon completion of the course, the student will be able to recognize the social responsibility of the medical profession and to depict the basics of the professional communication. He or she will also be able to apply the principles that guide the medical profession to practice. The student will be able to recognize and evaluate his or her own attitudes towards the ethical questions concerning the end of life, and their background.

Contents:

The current social challenges in health care ethics, a physician as a part of the health care system.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lectures 4 x 90min and theme day, contemplation assignment, tutoring

Target group:

Medical students.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

The course is part of Professional development in medicine –studies including into new curriculum of Medicine.

Recommended or required reading:

[Lääkäriin etiikka](#) (2013) Finnish Medical Association (in Finnish). In addition other scientific literature of the student's choice.

Assessment methods and criteria:

Lectures and theme day, contemplation assignment.

Grading:

Pass/fail

Person responsible:

Minna Soinio-Kivari

Working life cooperation:

No.

040015Y-03: Health Care Ethics Studies, 1 op

Voimassaolo: 01.08.2010 -

Opiskelumuoto: General Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Mäkelä, Jyrki Tapani

Opintokohteen kielet: Finnish

Voidaan suorittaa useasti: Kyllä

ECTS Credits:

1 ECTS

Language of instruction:

Finnish

Timing:

5th year spring term

Learning outcomes:

Upon completion of the course, the student will be able to contemplate and discuss the ethical issues involved in clinical work and how to apply them to practice. The student will be able to recognize and evaluate his or her own attitudes towards the issues of health care ethics and the ethical questions concerning the beginning of life, and their background.

Contents:

The ethical questions of different patient groups and individual patients in clinical practice, the ethical questions of the beginning of life.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lectures 1 x 90min, seminar and theme day.

Target group:

Medical students and dental students.

Prerequisites and co-requisites:

No

Recommended optional programme components:

The course is part of Professional development in medicine –studies including into new curriculum of Medicine

Recommended or required reading:

[Lääkäriin etiikka](#) (2013) Finnish Medical Association (in Finnish). In addition other scientific literature of the student's choice.

Assessment methods and criteria:

Lectures and theme day, contemplation assignment.

Grading:

Pass/fail

Person responsible:

Minna Soini-Kivari

Working life cooperation:

No

080716A: Internal Medicine 2, 4,5 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Olavi Ukkola

Opintokohteen kielet: Finnish

ECTS Credits:

4,5 ECTS/ 122 hours of work

Language of instruction:

Finnish

Timing:

4th year, C7-C8

Learning outcomes:

Internal medicine: This course gives the student advanced knowledge in internal medicine and skills of critical thinking. The student is able to treat the patients appropriate way in health care system. The student understands the significance of different levels of healthcare.

Infectious Diseases: After this course student recognices the main infectious diseases, knows their diagnostics, treatment and epidemiology. He/she understands the main principles of the infection control in the hospital and outpatient care.

Rheumatology: The student will identify the most common rheumatic diseases. The students understand the role of health centers in the treatment of rheumatic diseases and situations in which the patient should be immediately referred to a specialist hospital.

Contents:

Infectious Diseases: Most common infectious diseases: diagnostics, treatment and prevention.

Rheumatology: Most common rheumatologic diseases and treatments.

Internal medicine: Essential issues of internal medicine.

Mode of delivery:

Blended teaching (web-based teaching and face to face teaching).

Learning activities and teaching methods:

Variable teaching and learning methods

Lectures, small group classes, theme days and seminars. Attendance is compulsory.

Ward practice, 1 week

Small group classes, theme days and seminars are compulsory.

Target group:

Medical students, C7-C8

Prerequisites and co-requisites:

Student must have completed the course of Internal Medicine I.

Recommended optional programme components:

The course is performed simultaneously with other fourth year's courses.

Recommended or required reading:

Infectious Diseases:

- Huovinen P, Hedman K, Heikkinen T, Järvinen A, Meri S, Vaara M. (toim.): Mikrobiologia – Mikrobiologia, immunologia ja infektiosairaudet, kirja 1 (2010), 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

Rheumatology: Martio Jukka, Karjalainen Anna, Kauppi Markku, Kukkarainen Marja Leena, Kyngäs Helvi: Reuma. Duodecim, 2007.

Internal medicine: Internal medicine literature C5-C6

Assessment methods and criteria:

Attendance at compulsory teaching. Small exams and final exam of internal medicine.

Grading:

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

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

Final exam of Internal medicine: Exam consists of eight short essays: general internal medicine, endocrinology and metabolic diseases, cardiology and ECG, kidney diseases, haematology, infectious diseases, rheumatology and gastroenterology. The exam utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail.

Proportion of Infectious Diseases and Rheumatology is 50% and proportion of Final exam is 50% in the grade of 'Internal Medicine II'.

Person responsible:

Professor: Olavi Ukkola (olavi.ukkola@oulu.fi)

Infectious Diseases: Heikki Kauma (heikki.kauma@ppshp.fi)

Rheumatology: Anna Karjalainen (anna.karjalainen@ppshp.fi)

Working life cooperation:

Yes

Other information:

The final grade of internal medicine (A540131) consists of the Internal Medicine I and Internal Medicine II.

Proportion of Internal Medicine I is 40% and proportion of Internal Medicine II is 60% in the final grade of internal medicine.

080711A: Internal medicine I, 4,5 - 21 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Olavi Ukkola

Opintokohteen kielet: Finnish

Voidaan suorittaa useasti: Kyllä

ECTS Credits:

16,5 ECTS credits/ 440 hours of work

Language of instruction:

Finnish

Timing:

C5-C6

Learning outcomes:

After this course the student is familiar with diseases of internal medicine as well as diagnostics and treatment of these diseases. The student understands the connection between internal medicine and other medical specialities. The student learns independent problem solving and critical thinking and also to cooperate with healthcare professionals.

Contents:

Endocrinology and metabolic diseases (nutrition), cardiology, kidney diseases, haematology, gastroenterology and emergencies in internal medicine.

Mode of delivery:

Face to face teaching

Learning activities and teaching methods:

1. Lectures 77 h
 2. Guided medical procedures and examinations. Carried out in small group classes and in ward practice.
 3. Small group classes and seminars 22 h. Attendance is compulsory.
 4. Practice in outpatient clinic 8 h. Attendance is compulsory.
 5. Practice in the Department of Emergency (Internal Medicine) 3 x 6 h. Attendance is compulsory.
 6. Ward practice 40 h. Attendance is compulsory. Part of practice is carried out in the hospitals of Northern Finland. Student writes accurate patient history and status of patients that he/she has examined carefully.
 7. Theme days 45 h. Problem-oriented discussions about wider thematic entities. Attendance is compulsory.
 8. Exams 11 h
- Independent work 219 h.

Target group:

Medical students

Prerequisites and co-requisites:

Student must have completed preclinical studies.

Recommended optional programme components:

The course is performed simultaneously with other third year's courses.

Recommended or required reading:**Varsinaiset oppikirjat/Tekst books:**

- Andreoli TE, Benjamin I, Griggs RC, Wing EJ: Andreoli and Carpenter's Cecil Essential of Medicine. Elsevier, 2012
- Saha H, Salonen T, Sane T.: Potilaan tutkiminen (2016), Kustannus Oy Duodecim.
- Mäkijärvi M, Harjola V-P, Päivä H, Valli J, Vaula E. Akuuttihoito-opas (2012), Kustannus Oy Duodecim

Suosittelavia oppikirjoja/ Recommended reading:

- Vauhkonen I, Holmström P: Sisätaudit. (4. painos, 2012), Sanoma pro (**suositellaan luettavaksi ennen kurssille tuloa**)
- 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:

Attendance in teaching.

Examinations of endocrinology and metabolic diseases, cardiology, kidney diseases, haematology and gastroenterology.

Grading:

Grading scale in intermediate examinations is 1-5. In the numerical scale zero stands for a fail.

The course unit 'Internal Medicine I' utilizes mean scale of all intermediate examinations.

The course unit Internal Medicine I utilizes mean scale of all intermediate examinations.

Person responsible:

Professor Olavi Ukkola

(olavi.ukkola@oulu.fi)

Working life cooperation:

Yes. Small group teaching, ward practice, practice in outpatient clinic and in the department of emergency.

Other information:

The course unit 'Internal Medicine II' will be held during the fourth year.

The final grade of internal medicine (A540131) consists of the Internal Medicine I and Internal Medicine II.

Proportion of Internal Medicine I is 40% and proportion of Internal Medicine II is 60% in the final grade of internal medicine.

040117Y: Interviewing and examining patients, 4 op

Opiskelumuoto: Basic Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Savolainen, Markku, Vasunta, Riitta-Liisa

Opintokohteen kielet: Finnish

ECTS Credits:

4 ECTS: general practice 2.0 and internal medicine 2.0 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 principles of clinical examination of patients.
- exam patients independently;
- 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, the medical history and patients record, as well as clinical examination of patients with musculoskeletal, stomach, lungs, heart, neurological problems.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

Lectures (14 hours), introductory seminar, small group teaching, exercise session for doctor-patient communication, practical period in health care center (3 days), and closing work-shop.

Target group:

The students from medicine and dentistry.

Prerequisites and co-requisites:

C1 Public health and interprofessional collaboration course have to be done.

Recommended optional programme components:

The course has to be completed during preclinical period (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 (ed.): Yleislääketiede, Kustannus Oy Duodecim, Karisto Oy, Hämeenlinna 2005. Pages 93-104, 105-115 and 116-123.

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

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

Grading:

Pass/fail

Person responsible:

Professor Markku Timonen; general practice

Professor Olavi Ukkola; internal medicine

Working life cooperation:

Yes, during the three day practical training in health care centres.

043005Y-02: Knowledge and Research III: Course exam, 0 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: General Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Pentti Nieminen

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

043005Y-01: Knowledge and Research III: Group teaching, 0 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: General Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Pentti Nieminen

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

040025Y: Knowledge and research, Lessons and written examination, 1,5 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: General Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Pentti Nieminen

Opintokohteen kielet: Finnish

Leikkaavuudet:

ay040025Y Knowledge and research, Lessons and written examination (OPEN UNI) 1.5 op

ECTS Credits:

1,5 ECTS

Timing:

1st year Bachelor students of degree programme in health sciences

2nd year Students of degree programmes in medicine and dentistry

3rd year Bachelor students of medical wellness technology

Learning outcomes:

Upon completion of the course, the student is familiar with basics and main methods of planning, data retrieval, analysis, reporting and statistical inference of statistical research in medical, dental and health sciences. The student is able to evaluate critically scientific publications, which have applied statistical methods.

Contents:

Aims and phases of statistical research, from research plan to practice, retrieval of data, inspection of variable distributions (frequencies, graphs and statistics), basics and methods in statistical inference (estimates, significance tests and confidence limits), basic methods in comparing groups and estimating associations between variables, specific methods applied in medical statistical research. Critical approach when reading scientific articles.

Mode of delivery:

Contact teaching.

Learning activities and teaching methods:

040025Y Knowledge and research, Lessons and written examination, 1.5 ECTS cr.

Target group:

Medical, dental and medical wellness technology students, Bachelor students of the degree programme in health sciences.

Prerequisites and co-requisites:

None.

Recommended or required reading:

Handouts/material from lectures and supplementary material for group exercises.

Uhari M ja Nieminen P: Epidemiologia ja biostatistiikka. Toinen painos Duodecim, 2012.

Assessment methods and criteria:

Written exam on lectures and supplementary material.

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

Grading:

1,2,3,4,5, fail

Recognition of prior learning: The student has completed earlier at least 6 ECTS cr in statistics at the university. If the number of ECTS cr completed earlier is lower than 6 ECTS cr, the student must agree on supplementary studies with responsible teacher separately.

Person responsible:

University lecturer Pentti Nieminen

040027Y: Knowledge and research, Practical project, 1 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: General Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Pentti Nieminen

Opintokohteen kielet: Finnish

Leikkaavuudet:

ay040027Y Knowledge and research, Practical project (OPEN UNI) 1.0 op

ECTS Credits:

1 ECTS

Timing:

1st year Bachelor students of the degree programme in health sciences

2nd year Students of degree programmes in medicine and dentistry

3rd year Bachelor students of medical wellness technology

Learning outcomes:

Upon completion of the course the student is able to apply independently basic statistical methods for analysis of research data. The student masters reporting of results in accordance with good scientific reporting practices.

Contents:

Statistical basic methods, basics of statistical software, reporting of results, writing instructions.

Mode of delivery:

Blended teaching

Learning activities and teaching methods:

040027Y Knowledge and research, Small group exercises, 1 ECTS cr

Target group:

Medical, dental and medical wellness technology students, Bachelor students of the degree programme in health sciences.

Prerequisites and co-requisites:

None

Recommended or required reading:

Handouts/material from lectures and supplementary material for group work.

Uhari M ja Nieminen P: Epidemiologia ja biostatistiikka. Toinen painos Duodecim, 2012.

Assessment methods and criteria:

Written assignment which the student submits in Optima by given date. Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Grading: Pass/fail. Recognition of prior learning: The student has completed earlier at least 6 ECTS cr in statistics at the university. If the number of ECTS cr completed earlier is lower than 6 ECTS cr, the student must agree on supplementary studies with responsible teacher separately.

Person responsible:

University lecturer Pentti Nieminen

040026Y: Knowledge and research, Small group exercises, 1 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: General Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Pentti Nieminen

Opintokohteen kielet: Finnish

Leikkaavuudet:

ay040026Y Knowledge and research, Small group exercises (OPEN UNI) 1.0 op

ECTS Credits:

1 ECTS

Timing:**Timing**

1st year Bachelor students of degree programme in health sciences

2nd year Students of degree programmes in medicine and dentistry

3rd year Bachelor students of medical wellness technology

Learning outcomes:

Upon completion of the course the student is familiar with basics and methods of statistical computing in the fields of medicine, dentistry and health sciences. The student is able to use independently statistical software for analysis of research data.

Contents:

Statistical basic methods: variable distributions (frequencies, graphs and statistics), basics and methods of statistical inference (estimates, significance tests and confidence limits), basic methods for comparing groups and estimating associations between variables.

Mode of delivery:

Contact teaching

Learning activities and teaching methods:

040026Y Knowledge and research, Small group exercises, 1 ECTS cr.

Target group:

Medical, dental and medical wellness technology students, Bachelor students of the degree programme in health sciences.

Prerequisites and co-requisites:

None

Recommended or required reading:

Handouts/material from lectures and supplementary material for group work

Uhari M ja Nieminen P: Epidemiologia ja biostatistiikka. Toinen painos Duodecim, 2012.

Assessment methods and criteria:

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

Grading:

Pass/fail. Recognition of prior learning: The student has completed earlier at least 6 ECTS cr in statistics at the university. If the number of ECTS cr completed earlier is lower than 6 ECTS cr, the student must agree on supplementary studies with responsible teacher separately.

Person responsible:

University lecturer Pentti Nieminen

Working life cooperation:

No.

080633A: Laboratory medicine, 3 op

Voimassaolo: 01.08.2013 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Risteli, Juha

Opintokohteen kielet: Finnish

ECTS Credits:

3.0 ECTS/ 80 hours of work

Language of instruction:

Finnish

Timing:

Timing C5-6

Learning outcomes:

Objectives

By the end of the course the student can list the most frequently used tests in clinical chemistry and haematology and their indications and critical interpretation. The student can specify the facts that affect the deviation of the laboratory tests, biological variation, pre-analytical and analytical factors, and understand their importance in interpreting the test results. The student can standardize sample taking so that the above facts that increase the deviation in test results can be eliminated. The student can specify the basics of the quality control of the laboratory tests. The student understands the feedback control systems in endocrinology and on this base can diagnose the common endocrine disorders and their reasons. The student can list the hormone determinations and indications to use them. The student knows the common weaknesses and disturbing factors of hormone determinations. The student understands how to diagnose heritable metabolic diseases and the use of cancer markers. The student knows the effects of childhood, pregnancy and older age on the laboratory methods. The student knows what methods are available in the health centers and how the student can order other methods available.

Contents:

Contents

Lectures contain following subjects: Clinical Chemistry as a medical speciality, diagnostics of heart and vascular disorders, examination of kidneys and urinary tracts, clinical enzymology, examination of liver and gastrointestinal tract, laboratory tests in haematology, tests to analyze water, sodium and potassium balance, therapeutic drug monitoring and chemical toxicology, most frequently used laboratory test and their indications.

Contents of small group practical courses: taking blood samples and preparation of samples for different tests, results of laboratory test in healthy individuals, reference ranges, sources of errors and their origin and quality controls of laboratory tests, basic blood cell count and microscopic examination of blood cells. Theoretical background of clinical endocrinology, hormone determinations, adrenal function and its disorders, hypothalamic and hypophysis hormones, the follow up of pregnancy by clinical chemical methods, endocrinology of aging, thyroid function and its disorders and calcium metabolism and its disorders. Analyzing congenital heritable metabolic diseases and cancer markers.

Goal of the theme day: The students can perform to point of care tests.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Working methods

Lectures 22 h, small group practical courses 6 h and one theme day. In addition the student has independent preparation for small group practical courses and for the theme day.

Target group:

Medical students in clinical phase.

Prerequisites and co-requisites:

Candidate of Medicine

Recommended or required reading:

Study materials

Textbook: Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics, 7th edition, CA Burtis, DE Bruns, 2015. Other textbooks: Veritaudit, Kustannus Oy Duodecim, K Porkka, R Lassila, K Remes, E-R Savolainen, 2015; Endokrinologia, Kustannus Oy Duodecim, M Välimäki, T Sane, L Dunkel, 2009.

Assessment methods and criteria:

Assessment methods

Assessment is at the beginning based on multiple choice examination where lectures of basic laboratory medicine and beginning fourth of the textbook are tested. At the end there will be an essay examination based on materials given in lectures, small group practical courses, in textbooks and other materials given to the students.

Grading:

Numerical grading 0-5.

Person responsible:

Responsible person Professor Juha Risteli

Working life cooperation:

No

042001Y-06: Medical Biochemistry and Molecular Biology, clinical studies 1, 1 op

Voimassaolo: 01.08.2011 -

Opiskelumuoto: Intermediate Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS credits/27 hours of work

Language of instruction:

Finnish.

Timing:

The course unit is held in the autumn semester of the 5th 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 of inherited diseases. Furthermore, student will understand basics of the modern techniques in medical genetics.

Contents:

Basics of inheritance of man, selected basic methodology used in medical genetics.

Mode of delivery:

Lectures with exercises

Learning activities and teaching methods:

10 hours of lectures including some exercises

Target group:

Major students

Recommended optional programme components:

It is recommended to pass this course before the course "Perinnöllisyyslääketieteen kurssia (080505A)".

Assessment methods and criteria:

Final exam

Grading:

Pass/Fail

Person responsible:

Joni Mäki

Working life cooperation:

No

042001Y-07: Medical Biochemistry and Molecular Biology, clinical studies 2, 1 op

Voimassaolo: 01.08.2011 -

Opiskelumuoto: Intermediate Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Heljasvaara, Ritva-Leena

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS credits / 27 hours of work

Language of instruction:

Finnish

Timing:

The course unit is held in the 6th autumn semester (prior to clinical oncology).

Learning outcomes:

Upon completion of this course student will be introduced to mechanisms that underlie in cancer development, and to the common cellular pathways affected in cancer and to the significance of tumor microenvironment to cancer development and progression.

Contents:

Basics of cancer biology, examples of targets of highly selective drugs in cancer treatment and cancer genetics.

Mode of delivery:

Lectures, essays and oral presentations.

Learning activities and teaching methods:

Lectures 8 h + 2 h seminars, essays as a teamwork.

Target group:

Major students.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

It is recommended to pass this course before the course "Clinical oncology (080204A)".

Recommended or required reading:

Lectures.

Assessment methods and criteria:

Attendance at lectures is compulsory (80%)

Grading:

Course is evaluated with principle of fail or accepted.

Person responsible:

Docent Ritva Heljasvaara

Working life cooperation:

No

040039Y: Medical Biochemistry and Molecular Biology, clinical studies, 3rd period, 1 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Faculty of Biochemistry and Molecular Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Karppinen, Peppi Leena Elina

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS credits / 27 hours of work.

Language of instruction:

Finnish

Timing:

The course unit is held in the 3rd autumn semester.

Learning outcomes:

Upon completion of the course the student will be able to explain the regulation of the hypoxia-response in cells, and its diverse effects on various diseases and physiological conditions.

Contents:

Topics of lectures may vary annually.

Mode of delivery:

Lectures, essays. Some of the lectures are integrated to course of hematology.

Learning activities and teaching methods:

Lectures 10h from which 2h is integrated to the course of hematology. Essays.

Target group:

Major students.

Recommended or required reading:

Lectures.

Assessment methods and criteria:

Attendance at lectures is compulsory.

Grading:

Course is evaluated with principle of fail or accepted.

Person responsible:

Peppi Karppinen

Working life cooperation:

No.

Compulsory

040039Y-01: , 0 op

Voimassaolo: 01.08.2017 -

Opiskelumuoto: Intermediate Studies

Laji: Partial credit

Vastuuyksikkö: Faculty of Biochemistry and Molecular Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Karppinen, Peppi Leena Elina

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

040039Y-02: , 0 op

Voimassaolo: 01.08.2017 -

Opiskelumuoto: Intermediate Studies

Laji: Partial credit

Vastuuyksikkö: Faculty of Biochemistry and Molecular Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Karppinen, Peppi Leena Elina

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

040119A: Microbiology, 9,5 - 10 op

Voimassaolo: 01.01.2012 -

Opiskelumuoto: Basic Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Hörkkö, Sohvi Helena Tellervo

Opintokohteen kielet: Finnish

Leikkaavuudet:

040118A Microbiology 9.5 op

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.

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:

2h pre-examination

Immunology: 14 h lectures, 30 h self study for 15 h group work, 2 h voluntary examination of immunology

Mikrobiology: 14 h lectures, 30 h self study for 15 h group work, 2 h labwork, preparing the presentation 2h.

Self study 140h

4 h final examination

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.

You can check the availability of the course books [via this link](#).

Assessment methods and criteria:

The pre-examination is evaluated pass / fail. 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 final examination in the end of the course covers the immunology and microbiology parts of the course. The student has a possibility to complete the immunology part with alternative intermediate exam. Points from the passed intermediate exam substitute the immunology part in final examination.

Grading:

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

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.

080301A: Neurology, 6 - 6,5 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Majamaa, Kari Gunnar

Opintokohteen kielet: Finnish

Voidaan suorittaa useasti: Kyllä

ECTS Credits:

6 ECTS/ 162 hours of work

Language of instruction:

Finnish

Timing:

4th year, C7 – C8

Learning outcomes:

The course focuses on pathogenesis, diagnostics, treatment and prevention of common neurological diseases and rehabilitation of neurological patients. After completing this course the student should

- be able to carry out the neurological examination of the patient;
- be familiar with the diagnosis and management of common neurological illnesses;
- be familiar with ancillary investigations that are used for neurological evaluation;
- be familiar with current developments in the clinical neurosciences.

Contents:

The neurology course consists of an introductory course on clinical neurological examination and the main neurology course. Lectures will be given in Finnish and are voluntary. Small group sessions will be held in outpatient neurology clinic and neurology ward. Lumbar puncture will be practised with a torso simulated manikin. Each student also participates in the clinical evaluation of patients at the emergency department and at the neurology ward and examines patients under supervision at the outpatient clinic. Attendance is mandatory in small group sessions and emergency service. Course also includes seminars, three of them are mandatory. There is a written final exam in the end of the course.

Mode of delivery:

Blended teaching (web-based teaching and face to face teaching).

Learning activities and teaching methods:

- Introduction 2 h (in Finnish)
- Lectures 24 h
- Introductory course of clinical neurological examination 3 h
- Seminars 13 h
- Small group sessions at the outpatient clinic and neurology ward 14 h
- Service at neurology ward 12h including practicing lumbar puncture
- Practising at emergency department 5 h

Target group:

Medical students, C7-C8

Prerequisites and co-requisites:

All earlier studies in the curriculum of basic medical education.

Recommended optional programme components:

The course is performed simultaneously with other fourth year's courses.

Recommended or required reading:

Soinila S, Kaste M: Neurologia. Duodecim Oppiportti 8.9.2015 (<http://www.oppoportti.fi/op/opk04598>).

Kallela M, Häppölä O, Soinila S, Lindsberg P, Erkinjuntti T: Neurologinen status. Helsingin yliopisto, lääketieteellinen tiedekunta, kliininen laitos, neurotieteen osasto, 2011.

Assessment methods and criteria:

Attendance to all small group sessions and clinical examination of patients in neurology ward and emergency department, attendance to three seminars and passed examination.

A written final examination consists of five questions. The requirements of the final exam include the textbook, issues raised in the lectures, small group sessions and seminars. Zero points is allowed only in one question. In order to pass the exam the student must obtain half of the total points.

Grading:

The evaluation scale is 0-5 (0=fail, 5=excellent).

Person responsible:

Professor: Kari Majamaa (kari.majamaa@oulu.fi)

Working life cooperation:

In small group sessions held in outpatient neurology clinic and neurology ward. Each student also participates in the clinical evaluation of patients at the emergency department and at the neurology ward and examines patients under supervision at the outpatient clinic.

Other information:

Updated 1 FEB 2017

080304A: Neurosurgery, 3 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

ECTS Credits:

3.0 ECTS credits/ 82 hours of work

Language of instruction:

Finnish

Timing:

C8

Learning outcomes:

After the course the student has knowledge of clinical manifestations, diagnostics and treatment of neurosurgical diseases from the general practitioners point of view. The student can evaluate the urgency of treatment of neurosurgical conditions and understands the life-threatening nature of these diseases.

Contents:

6 lectures (1,5 hours each)

2 group sessions

3 symposia (4 hours each)

Mode of delivery:

Lectures and symposia can be seen in internet through ConnectPro-system

Group sessions are face-to face teaching

Learning activities and teaching methods:

Lectures (12h) including patient demonstrations. Mandatory small group patient rounds and discussion (6h + 2h).

Three symposia.

Target group:

Medical students

Recommended optional programme components:

No alternative course units.

Recommended or required reading:

Lindsay-Bone: Neurology and Neurosurgery Illustrated, latest edition.

Assessment methods and criteria:

The course requirements include participation in compulsory group sessions and passing the end-of-course examination.

Grading:

The evaluation scale is 1-5/fail.

Final examination (6 essay and multiple choice questions). At least half of the total points are needed to pass the test, and a minimum of 1 point per question must be achieved. One month clinical internship can enhance the grade.

Person responsible:

Professor Sami Tetri

Working life cooperation:

Alternatively, international students can also get full ETCS credits through the Erasmus program clinical elective.

This requires full time (8.00 am – 3.45 pm) participation in all clinical activities for minimum of one week and participation on group sessions. For ETCS credits the above textbook final examination must be passed; it is usually taken during the last week of practice.

080510A: OSCE, 0 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Uhari, Matti Kalervo

Opintokohteen kielet: Finnish

Voidaan suorittaa useasti: Kyllä

ECTS Credits:

0.0 ECTS

Language of instruction:

Finnish

Timing:

C10

The course unit is held in the spring semester.

Learning outcomes:

To assess the abilities of student performance on the subjects of the 5th year curriculum.

Contents:

A joined examination of the subjects on the fifth year.

Mode of delivery:

Contact teaching

Learning activities and teaching methods:

Each student makes a circuit of about 15 exam sites comprising of practical tests in different disciplines. 8 minutes /site, 2 minutes for transferring between sites.

Total time about 2 hours 30 minutes.

Target group:

Medical Students

Prerequisites and co-requisites:

The prerequisites for the course unit are previous studies (C1-10 course units).

Recommended optional programme components:

No alternative course units.

Recommended or required reading:

Textbooks and lecture notes of the fifth year.

Assessment methods and criteria:

The assessment of the course unit is based on the learning outcomes of the 5th year course units.

The examiner on each exam site assesses the performance of the student.

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

Grading:

Pass/fail in every single exam site.

The course is approved when all practical tests are approved.

The course unit utilizes verbal grading scale pass/ fail.

Person responsible:

Doc. Petri Kulmala

Working life cooperation:

No

Other information:

OSCE exam is compulsory examination for the fifth year students. The final grade of the course unit is required for the sixth year student.

080401A: Obstetrics and gynecology, 10 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Hannu Martikainen

Opintokohteen kielet: Finnish

ECTS Credits:

10,0 ECTS/ 267 hours of work

Language of instruction:

Finnish

Timing:

C9 and C10

The course unit is held in the autumn semester and spring semester

Learning outcomes:

After completing the course *Obstetrics and Gynecology* the student will have sufficient theoretical and practical knowledge in obstetrics and the most common gynecological illnesses, as well as the diagnostics, treatments and prevention thereof. Furthermore, the student will learn about a normal pregnancy, childbirth and puerperium. The course will provide the student skills required to work in a public health center as a general practitioner and to handle the treatment of acute cases.

Contents:

Introduction: patient's anamnesis and examination, diagnosis and treatment plan, ultrasonography and other medical procedures, sexology.

Obstetrics: physiology of a pregnancy, planning and monitoring of pregnancy, multiple pregnancy, fetal growth retardation, infections during pregnancy, internal medicine problems during pregnancy, 3rd trimester hemorrhaging, miscarriage, premature delivery, monitoring of childbirth, puerperium.

Gynecology: menstrual cycle, birth control, termination of pregnancy, gynecological endocrinology, infertility, gynecological infections, uterine prolapse, incontinence, endometriosis, abnormal gynecological bleeding, hormonal replacement therapy, benign and malignant tumors.

Mode of delivery:

Blended teaching

Learning activities and teaching methods:

Lectures 27 h

Theme-days 10 h

Student Congress 4 h

Practical training in Central Hospitals 40 hours

Small group teaching

- Group teaching 15 h

- Ward rounds and learning at wards, following of the own patient 22 h

- Outpatient clinic learning 17 h

- Maternity care center and health care center learning 4,5 h (learning diagnostics and treatment of real patients)

Problem based learning:

- guided teaching 16h

- without guidance either privately or in a group 24h

The admission exam 6 h (web-based)
 Week exams I, II and III (web-based) 6 h
 The Patient cases exam 4 h

Self-study (preparing for Theme-days, congress and exams) 95 h.

Target group:

Medical students.

Prerequisites and co-requisites:

The prerequisites for the course unit are previous studies (C1-8 course units).

The admission exam (web-based) should be passed.

Recommended optional programme components:

No alternative course units.

Recommended or required reading:

Text book:

Ylikorkala O., Tapanainen J. (edit.) Naistentaudit ja synnytykset. 5. edition. Kustannus Oy Duodecim, 2011.

Recommended reading :

Collins Sally, Arulkumaran Sabaratman, Hayes Kevin, Jackson Simon, Impey Lawrence: Oxford Handbook of Obstetrics and Gynaecology. The third edition.

Assessment methods and criteria:

The assessment of the course unit is based on the learning outcomes of the course unit.

The admission exam is multiple choice test. Required literature: text book. Exam should be passed.

Attending to all compulsory teaching
 (evaluated pass/fail)

Week exams I, II and III.
 Grading: 1-5/fail.

The Patient cases exam (final exam): evaluated from 0-48 points, approval limit is 24 points.
 Grading: 1-5/fail.

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.

The final grade of the course is formed of

Patient cases exam (70 %) and Week exams (30 %).

Person responsible:

Prof. Hannu Martikainen

Working life cooperation:

Each student will participate the work of gynecologist/obstetrician taking care of patients in one central hospital during one week.

In maternity care center and health care center learning diagnostics and treatment of real patients.

Other information:

Multi-professional work

080410A: Occupational health, 2 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Leena Ala-Mursula

Opintokohteen kielet: Finnish

Proficiency level:

-

Status:

Required proficiency level:

-

ECTS Credits:

2.0 ECTS credits / 54 hours of work

Language of instruction:

The course is held in Finnish

Timing:

The course unit is held in the autumn semester

Learning outcomes:

Upon completion of the course, the student is able to take notice of potential work-related origins of ill health, as well as the aspect of promoting work ability, when seeing working-aged patients

The student will be able to understand the structure of the Finnish Occupational Health Care (OHC) system and the principles of its collaboration with other parts of Health Care and with the workplaces

Contents:

The Finnish Occupational Health Care (OHC) system and the guidelines and practices of co-operation with the working life and the health care sector

Relationship between work and health, work-related diseases, occupational diseases

Assessment of and possibilities of supporting work ability.

Mode of delivery:

Face-to-face tuition is used. Lectures are also webcasted.

Learning activities and teaching methods:

There will be 14 hours of lectures and 10 hours of guided group teaching. The remaining 30 hours of self-study includes preparatory and reflective tasks attached to the group tuition sessions, conducted both individually and in small groups. Activating methods are utilized in all teaching.

Target group:

Medical students in their 6th year, C11.

Prerequisites and co-requisites:

The earlier studies in the curriculum of basic medical education.

Recommended optional programme components:

-

Recommended or required reading:

Material is mainly in Finnish, see left column.

Assessment methods and criteria:

The students' progress towards the learning goals is discussed and supported during the group tuitions, which are based on the presentations and documents prepared by the students.

The passing of the course examination is required.

An anonymous electronical survey for evaluation and feedback is organized after the course, asking e.g. the students' self-perception of reaching the central learning goals of the course.

Feedback of the feedback is provided to the students in the electronical learning environment, including an overview of the performance in the examination and the ideas received for further development of the tuition.

Grading:

Pass/Fail

Person responsible:

Leena Ala-Mursula

Professor, Occupational Health

Working life cooperation:

No

Other information:

-

080204A: Oncology, 4 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Turpeenniemi-Hujanen, Taina Marjatta, Karihtala, Peeter Johannes

Opintokohteen kielet: Finnish

ECTS Credits:

4.0 ECTS credits /107 hours of work

Language of instruction:

Tuition shall be arranged in Finnish.

Timing:

The course unit is held in the end of the autumn semester (September-December).

Learning outcomes:

Upon completion of this curricular unit, student should be able to understand principles of cancer ethiology, diagnosis, therapeutic modalities and will be able to give basic chemotherapies based on instructions. In addition, student will be able to detect and treat possible adverse events of therapeutic modalities, organize outpatients controls of common malignancies and advise patients to rehabilitation after cancer therapy. Furthermore, the student will be able to master principles of palliative care and consult a specialist when needed.

Contents:

The diagnostics, oncological therapeutic modalities and monitoring of solid cancers and lymphomas.

Mode of delivery:

The tuition will be implemented as blended teaching.

Learning activities and teaching methods:

Lectures 33 h/ Small Group Teaching 10h/ Oncological Seminars 10h

Preliminary Examination 3 h (online)

Final Examination 2 h

Target group:

Target groups are the 5-6th year medical students (MD).

Prerequisites and co-requisites:

The required prerequisite for participation to the course unit is the completion of 5 years of medical studies.

Recommended optional programme components:

Teaching is also given during other courses (neurology, urology, plastic surgery).

Recommended or required reading:

Joensuu, Roberts, Teppo, Tenhunen: Syöpätaudit, last edition, Kustannus Oy Duodecim

UICC: TNM-luokituskirja ja UICC Clinical Oncology, viim.painos.

Recommended literature:

Joensuu H, Kouri M, Ojala A, Tenhunen M, Teppo L: Kliininen sädehoito. Duodecim viim.painos. Vainio A, Hietanen P: Palliatiivinen hoito. Duodecim viim.painos.

Lahtinen T, Holsti LR: Kliininen säteilybiologia. Duodecim viim.painos.

MacDonald IS: Palliative Medicine. Oxford Univ Press 1998. Bomford CK & Kunkler IH: Walter and Miller's Textbook of Radiotherapy. Radiation Physics, Therapy and Oncology. Churchill Livingstone 2003.

Elonen E, Järviuoma E: Solunsalpaajaopas. Duodecim viim.painos.

Kallanranta T, Rissanen P, Vilkkumaa I: Kuntoutus. Duodecim viim.painos.

Hänninen: Saattohoito. Duodecim viim.painos.

Availability of the course book can be [checked by clicking this link](#).

Assessment methods and criteria:

During the course unit, there are preliminary and final exams. Both of them should be passed. In addition, passing of preliminary exam is required before the final 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 fail.

Person responsible:

Taina Turpeenniemi-Hujanen, Professor

Peeter Karihtala, Clinical lecturer

Jussi Koivunen, Clinical lecturer

Working life cooperation:

Yes, Students will examine cancer patients at an outpatient clinic and at ward round (8h).

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Nina Hautala

Opintokohteen kielet: Finnish

ECTS Credits:

4 ECTS Credits/108 hours

Language of instruction:

English (but lectures are in Finnish)

Timing:

(C9-10)

Learning outcomes:

The course of ophthalmology is focused on learning basic ophthalmology and skills needed for working in general practice. After completing the course the student will have basic knowledge of symptoms, diagnostics and treatment options of ophthalmic diseases and of relationship of systemic diseases and ophthalmic problems. The student will be able to examine vision and eye health for purposes of health check up, screening a child's vision, treatment of common eye diseases and assessing the need and urgency for consultation.

Contents:

Examination of eyes and visual acuity and treatment of ophthalmic diseases focusing on the skills needed as a general practitioner.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

The course contains lectures (38 h, Finnish), group sessions (10 h) and evaluation of the course through exams (6 h). Self-study 54 hours.

Target group:

Medical students

Prerequisites and co-requisites:

The studies of the prior terms of medical school have been passed.

Recommended or required reading:

Book: Harper RA (ed.). Basic Ophthalmology (9th ed) American Academy of Ophthalmology, San Francisco, 2010.

Assessment methods and criteria:

The student has to attend the obligatory learning sessions. The assessment is based on examination.

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

Grading:

Preliminary examination: pass/fail; final examination 0-5.

Person responsible:

Professor Nina Hautala

Working life cooperation:

Examination of a referred eye patient.

Other information:

Optional studies are available in Finnish.

080224A: Organ pathology 3, 2 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Karttunen, Tuomo Juhani

Opintokohteen kielet: Finnish

ECTS Credits:

2.0 ECTS credits/54 hours of work

Language of instruction:

Finnish

Timing:

C 9-10, spring semester

Learning outcomes:

Upon completion the student should know, for each organ system included, the basic mechanisms of diseases (etiology and pathogenesis), their basic morphological, functional and clinical characteristics, and terminology related with diseases. The student should be able to recognize and classify the most common diseases of the organ systems, understand the relationship between these features of the diseases and their symptoms and other clinical manifestations. The student should know the most important sources of error in histopathological diagnostics, and be familiar with the collaboration between clinician and pathologists needed in every day clinical work.

Contents:

Gynecopathology. Dermatopathology. Clinocopathological collaboration in primary health care.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lectures 6 hours; theme days 8 hours, Practicals 6 hours. Self study 33 hours, written examination 2 hour.

Target group:

Medical students

Prerequisites and co-requisites:

The required prerequisite is the completion of the following courses prior to enrolling for the course unit: 040108A General pathology; 080211A-01 Organ Pathology I; integrated studies of basic sciences 042001Y Pathology; Organ pathology 2 (4. year medical studies).

Recommended optional programme components:

No alternative course units.

Recommended or required reading:

Books: Cross SS: Underwood's Pathology, a clinical approach (6th ed. 2013); or Underwood JCE: General and systematic pathology (5th ed. 2009); sections Skin, Female genital tract, partly section How do pathologists help patient care; or Kumar V. et al.: Robbins Basic Pathology, (9th ed. 2012 or 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; Lecture handouts. Material associated with virtual pathology teaching program.

Assessment methods and criteria:

The course requirements include participation in compulsory practicals and passing the end-of-course examination.

Grading:

The evaluation scale is 1-5/fail.

Person responsible:

Tuomo Karttunen

Working life cooperation:

No

080222A: Organ pathology I, 6 op

Voimassaolo: 01.08.2013 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Karttunen, Tuomo Juhani

Opintokohteen kielet: Finnish

ECTS Credits:

6 ECTS/ 154 hours of work

Language of instruction:

Finnish

Timing:

C5-6 (3rd year)

Learning outcomes:

This course focuses on the essential features of etiology, pathogenesis and structural changes of diseases of the different organ systems. Pathophysiological aspects of diseases are reviewed as well as relationship between the abnormal function and structure and the clinical manifestations of disease, such as symptoms and clinical findings.

After the course, students should be able to describe etiology and pathogenesis of the most important diseases of each organ system, and the structural abnormalities of such diseases. The student should be able to explain how structural and functional abnormalities manifest themselves as clinical symptoms and signs. In addition, students should be able to identify and classify the most common types of macroscopic and microscopic abnormalities in different organ systems. He/she should know the most important sources of error in surgical pathological and cytological diagnostics, and be prepared on a proper teamwork with pathologists in his/her clinical work, for the best of his/her patients. The student should master relevant concepts and terminology and be able to use them in professional communication.

Contents:

Methods of pathology. Sources of errors in surgical pathology and diagnostic cytology. Pathology of the liver, biliary tract and pancreas. Pathology of the gastrointestinal tract. Hematopathology including pathology of the lymph nodes and the spleen. Pathology of the kidney, urinary tract and male genitals. Pathology of bones, joints and soft tissues. Pathology of breast.

Mode of delivery:

The tuition will be implemented as face-to-face teaching.

Learning activities and teaching methods:

Lectures 22 h, theme days 8 h, practical training 32 h, exam 3h.

Independent work 88 h

Target group:

Medical students.

Prerequisites and co-requisites:

040108A General Pathology

040037Y, Pathology integrated studies, 1 credits (2nd year)

Recommended or required reading:

Mäkinen M. et al. Patologia, Duodecim, 2012.

Or: Cross SS: Underwood's Pathology, a clinical approach (6th ed. 2013)

Or: Underwood JCE: General and systematic pathology (5th ed. 2009).

Or: Kumar V. et al.: Robbins Basic Pathology, (9 th ed. 2012 tai 7th ed. 2007).

Other: Kumar V. et al.: Robbins and Cotran, Pathologic basis of disease (8 th ed. 2010).

Lecture handouts; Guidebook for autopsy (in Finnish). Material associated with virtual pathology teaching program (in Finnish).

Assessment methods and criteria:

Attendance in compulsory teaching, examination.

Grading:

1 - 5, fail

Person responsible:

Prof. Tuomo Karttunen

Working life cooperation:

Autopsy teaching and introduction to activities in the Department of Pathology are organized in collaboration with the Department of Pathology, Oulu University Hospital. Students attend selected clinicopathological conferences arranged by the Department of Pathology and Clinical Departments of Oulu University Hospital.

080223A: Organ pathology II, 2 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Karttunen, Tuomo Juhani

Opintokohteen kielet: Finnish

ECTS Credits:

2 ECTS credits/ 52 hours of work

Language of instruction:

Finnish

Timing:

C 7-8, autumn semester

Learning outcomes:

Upon completion the student should know, for each organ system included, the basic mechanisms of diseases (etiology and pathogenesis), their basic morphological, functional and clinical characteristics, and terminology related with diseases. The student should be able to recognize and classify the most common diseases of the organ systems, understand the relationship between these features of the diseases and their symptoms and other clinical manifestations. The student should know the most important sources of error in histopathological diagnostics, and be familiar with the collaboration between clinician and pathologists needed in every day clinical work.

Contents:

Neuropathology, oral pathology, pathology of ear and eye diseases, pathology of the respiratory tract.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

Lectures 12 hours, Practicals 10 hours. Self study 36 hours. Written examination 2 hour.

Target group:

Medical students.

Prerequisites and co-requisites:

The required prerequisite is the completion of the following courses prior to enrolling for the course unit: 040108A General pathology; 080222A Organ Pathology I

Recommended or required reading:

Books: Cross SS: Underwood's Pathology, a clinical approach (6th ed. 2013) sections relating on the organs /organs systems, which are on the focus of this course (see Contents); or Underwood JCE: General and systematic pathology (5th ed. 2009);; or Kumar V. et al.: Robbins Basic Pathology, (9th ed. 2012 or 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; Lecture handouts; Guidebook for microscopy practicals. Material associated with virtual pathology teaching program.

Assessment methods and criteria:

The course requirements include participation in compulsory practicals and passing the end-of-course examination.

Grading:

The evaluation scale is 1-5/fail.

Person responsible:

Prof.Tuomo Karttunen

Working life cooperation:

No

080302A: Oto-rhino-laryngology, 6 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Alho, Olli-Pekka

Opintokohteen kielet: Finnish

ECTS Credits:

6 ECTS credits / 159 hours of work

Language of instruction:

Finnish

Timing:

The course is held in the autumn and spring semester, during the fourth year

Learning outcomes:

The aim of the course is to familiarize the student with examining, treating and referring an otorhinolaryngological patient. After the course, the student has the knowledge and skills needed to work as an independent general practitioner.

Contents:

The course deals with diseases of the ear, nose, paranasal sinuses, mouth, throat, salivary glands and larynx as well as facial trauma. The epidemiology, diagnostics, treatment and also rehabilitation regarding these diseases

are handled. An introduction to the specialty of Foniatics is included. The group instructions, theme day and independently performed tasks focus on diagnostics and treatment of the ear, throat and nose diseases as well as on techniques of the most common ambulatory procedures.

Mode of delivery:

The course is delivered as blended teaching (web-based+face-to-face).

Learning activities and teaching methods:

Lectures 38 h (+self study 38 h)

Polyclinical real-case based group teaching 14 h (+self study 14 h).

Independently performed tasks 6 h

Theme day 4 h (+self study 4 h)

Entering examination 8 h

Final examination 32 h

Target group:

For the medical students of the fourth year

Prerequisites and co-requisites:

All earlier courses in the curriculum are completed

Recommended optional programme components:

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

Recommended or required reading:

Textbook: Korva-, nenä- ja kurkkutautioppi ja Foniatrian perusteet. Korvatieto Oy (the most recent edition)

Material given in the lectures.

Assessment methods and criteria:

The teachers monitor, evaluate and give feed back to the students during all face-to-face teaching situations. At the beginning of the course, the students have an entering examination. Performed group teaching sessions, independent tasks and theme day are registered in the course log book. At the end, the students have the final examination.

Read more about assessment criteria at the University of Oulu webpage.

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

Grading:

The course utilizes a numerical grading scale 1-5 (based on the final exam). In the numerical scale zero stands for a fail.

Person responsible:

Professor Olli-Pekka Alho

Working life cooperation:

No

080502A: Pediatrics, 14 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Mika Rämät

Opintokohteen kielet: Finnish

ECTS Credits:

14 ECTS / 370 hours of work

Language of instruction:

Finnish, some teaching in English

Timing:

C9 and C10

The course unit is held in the autumn semester and spring semester

Learning outcomes:

Upon completion the student is able

- to diagnose and treat the most common pediatric diseases as a general practitioner or as a first-year resident in a hospital
- to provide first aid to acutely and critically ill children
- to suspect and recognize child maltreatment
- to understand pediatric preventive health care and health education

Contents:

Growth and development; medical history and clinical examination of a child; allergology; endocrinology; diabetology, gastroenterology, hematology, infectious diseases; cardiology, pediatric surgery; pediatric neurology, nephrology, neonatology; oncology; emergency medicine.

Mode of delivery:

Blended teaching

Learning activities and teaching methods:

Lectures 65 h

Theme-day 4 h

Small group teaching

- Group teaching 39 h

- Ward rounds and learning at wards including examination of own patients 24 h

- Outpatient clinic based learning 26 h

- Following work at the pediatric emergency room (including patient examinations and 7 written case reports) 12 hours

Seminars 16 h

Practical training in Central Hospitals 40 h

The admission exam 1h (web-based)

The patient exam 1 h

The final exam 4 h

Self-study 138 h

Target group:

Medical Students.

Prerequisites and co-requisites:

The prerequisites for the course unit are successfully completed previous studies (C1-8 course units).

Recommended optional programme components:

No alternative course units.

Recommended or required reading:

Text book: Heikinheimo M, Rajantie J & Renko M (edit.) Lastentaudit 6. edition, Kustannus Oy Duodecim 2016.

Recommended reading:

1) Lastenneurolakäsikirja <http://www.thl.fi/fi/web/lastenneurolakasikirja>

2) Louhimo I, Peltonen J, Rintala R. Louhimon lastenkirurgiaa. Kandidaattikustannus Oy, Jyväskylä 2000.

3) Pihko H, Haataja L., Rantala H. (toim.) Lastenneurologia. Helsinki, Duodecim 2014.

4) Korppi M., Kröger L., Rantala H. & Harri Niinikoski. (toim.) Lastentautien päivystyskirja. Duodecim, 2016.

5) Kamei R. Rudolph's Fundamentals of Pediatrics. Last edition.

6) Lissauer T., Clauden G. Illustrated textbook of paediatrics. Mosby, London, Last Edition.

Assessment methods and criteria:

The assessment of the course unit is based on the learning outcomes of the course unit.

Admission test is a multiple choice test. Required literature: text book. The test is evaluated from 0 to 50 points (the approval limit is 20 points). Exam should be passed during the first week of the course.

Attending to all compulsory teaching
(evaluated pass/fail)

Patient cases exam (evaluated from 0 to 20 points, approval limit is 5 points)

Grading: 1-5/fail

The final exam (evaluated from 0-60 points, approval limit is 35 points.

Grading: 1-5/fail.

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.

The final grade of the course is formed of

final exam (85%) and patient cases exam(15%)

Person responsible:

Prof. Mika Rämetsä

Working life cooperation:

Yes. Each student will follow the work of pediatricians taking care of patients in a Central hospital for one week.

083043A: Pediatrics PART III, 0 op**Voimassaolo:** 01.08.2016 - 02.08.2016**Opiskelumuoto:** Intermediate Studies**Laji:** Course**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Mika Rämetsä, Petri Kulmala**Opintokohteen kielet:** Finnish

Ei opintojaksokuvauksia.

040106A: Pharmacology and toxicology, 10 op**Opiskelumuoto:** Basic Studies**Laji:** Course**Vastuuyksikkö:** Medicine**Arvostelu:** 1 - 5, pass, fail**Opettajat:** Hakkola, Jukka Antti Tapio**Opintokohteen kielet:** Finnish**Required proficiency level:**

10 ECTS Credits / 267 hours of work

ECTS Credits:

10 ECTS Credits / 267 hours of work

Language of instruction:

Finnish

Timing:

The course unit is held in the spring semester C4 / DC4

Learning outcomes:

Upon completion of the course the student knows fundamentals of pharmacology and toxicology. The student is able to explain pharmacokinetics of a specific drug after administration and physiologic effects of drugs and their mechanisms of action. The student is familiar with major drug classes and their role in the treatment of diseases. Furthermore, the student understands the basis of individualized drug therapy. After passing the course, the student has ability to carry out safe and efficient drug therapy.

Contents:

The basic terminology of pharmacology: pharmacodynamics and pharmacokinetics. Systematic review of major classes of drugs: drugs affecting cardiovascular system, gastrointestinal drugs, drugs affecting the respiratory tract, drug treatment of pain, drugs used to treat endocrinological disorders, affecting the central nervous system, anesthetic agents, antimicrobial drugs, anticancer drugs. Details of key drugs in each class will be discussed including route of administration, drug effects, drug interactions and most common adverse effects. Toxicology: the basics of toxicology, the most common poisonings, tissue specific toxic responses in most important organs and fundamentals of risk assessment.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lectures 74h / tutorials 20h / Self-study 173h. The tutorials are completed as small group work.

Target group:

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

Prerequisites and co-requisites:

-

Recommended optional programme components:

-

Recommended or required reading:

Ruskoaho H., Hakkola J., Huupponen R., MacDonald E., Moilanen E., Pasanen M., Scheinin M., Vähäkangas K (eds.) Lääketieteellinen farmakologia ja toksikologia (Kustannus Oy Duodecim) (latest edition) or Rang, Ritter, Flower, Henderson: Rang & Dale's Pharmacology, Churchill Livingstone (latest edition).

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, two midterm exams and a final exam are given. Midterm exams are graded on a pass/fail basis. The grading of the course is based on the grading of final exam. Two failed answers in final exam result in failing of the exam.

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

Grading:

The evaluation scale is 1-5. In the numerical scale zero stands for a fail.

Person responsible:

Professor Risto Kerkelä

Working life cooperation:

No

080916A: Physiathry and rehabilitation, 5 op

Voimassaolo: 01.08.2011 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Karppinen, Jaro Ilari

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS

Language of instruction:

Finnish

Timing:

The course is held in the autumn and spring terms of the sixth year in the medical school.

Learning outcomes:

Upon completion the student understands the principles of diagnostics, differential diagnostics, treatment, evaluation of functional ability and rehabilitation in the field of Physical and Rehabilitation Medicine. The student is able to adapt his/her knowledge to primary health care practice.

Contents:

The definitions and assesment methods of functional ability in the context of ICF (International Classification of Functioning and Health)

Multi-professionality in rehabilitation

Low back disorders

Neck disorders

Lower extremity disorders

Upper extremity disorders

Rehabilitation of spinal cord injuries

Rehabilitation of strokes

Rehabilitation of brain injuries

Limb amputations, prostheses and rehabilitation

Principles of physiotherapy

Principles of occupational therapy

Social work in rehabilitation

Pain psychology

Assistive devices

Vocational rehabilitation

Recognition of obstacles in functional ability and finding solutions for these

Mode of delivery:

Internet lectures, lecture-related exercises and questions & answers sessions

Thematic days with focus on functional ability

Group instruction at rehabilitation ward

Optional patient examination practice

Learning activities and teaching methods:

Internet lectures ca. 30-40h

Exercises linked to lectures ca. 15-20h
 Questions and answers sessions 6h
 Group instruction at rehabilitation ward 2,5 h
 Thematic days 8h (+ 4h within Geriatrics)
 Exercises related to thematic days 12h (+ 6h within Geriatrics)

Target group:

Medical students (sixth year)

Recommended optional programme components:

Theme days will be arranged in collaboration with Geriatrics and Oulu University of Applied Sciences

Recommended or required reading:

Last issue of Physical and Rehabilitation Medicine textbook. Current Care guidelines of Physical and Rehabilitation Medicine. The new text book on Rehabilitation when appropriate.

Rehabilitation ward and thematic days educational material.

Assessment methods and criteria:

Internet lectures-related exercises (>100), of which 50% has to be solved

Final examination (essay)

Grading:

Approved/failed (50% of maximum points)

Person responsible:

Professor Jaro Karppinen

Professor Mauri Kallinen

040112A: Physiology, 15 op

Voimassaolo: 01.08.2005 -

Opiskelumuoto: Basic Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Vuolteenaho, Olli Jaakko Tuomas

Opintokohteen kielet: Finnish

ECTS Credits:

15 ECTS credits /402 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 Licenciate of Medicine and Licenciate 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 optional programme components:

-

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 1-3, 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:

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

Person responsible:

Professor Olli Vuolteenaho

Working life cooperation:

No

080707S: Practical training, 3 - 24 op

Opiskelumuoto: Practical Training

Laji: Practical training

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Voidaan suorittaa useasti: Kyllä

ECTS Credits:

The Licentiate of Medicine degree programme includes 24 ECTS cr of practical training that can be completed in periods of two weeks minimum (2 weeks = 3 cr).

Language of instruction:

Finnish

Timing:

1. - 6. academic year

Learning outcomes:

The goal of practical training is to deepen the medical students' skills and knowledge in practical work. During the practical training the student applies the abilities received from theoretical studies into practice, performs general practitioner level procedures under supervision, and explores multi-professional work and the operation of hospitals and health centres.

The goal of the practical training periods is to strengthen the competences included in the Licentiate of Medicine degree, which are:

- Doctor's work as a professional
- Using science-based information in practical work
- Communication skills
- Skills in solving clinical problems
- A doctor's role in supporting patients and the community
- Recognising and controlling one's own motivations, values, and limitations

The practical training periods are an essential part of professional growth as a doctor. It is important to visualise the learning that takes place during the practical training periods. A [practical training book](#) is used during every practical training period. The practical training book is where the student evaluates their own performance, and receives feedback from, as well as gives it to, their supervisor and the work community. Before the practical training period begins, the student uses the practical training book to define their most essential learning goals (knowledge goals) for the training period. Also the supervisor of the training period can express certain training period expectations for the student.

Contents:

The content and implementation of the practical training are specified in the [practical training regulations](#). The student must read the practical training regulations carefully when planning the practical training period. A supervisor agreement is drawn up before the beginning of each practical training period. A supervisor agreement form can be found from the practical training website at <http://www oulu.fi/ltk/node/2118>. The supervisor agreement must be delivered to the Medical Faculty student affairs services before the beginning of the practical training.

Each practical training period is supervised by a designated supervisor in the establishment the training takes place. The supervisor can be either a specialist or a registrar. The trainee and the supervisor must be in an employment relationship with the operator of the organisational unit where the practical training takes place. The organisational unit where the training takes place can be a municipality, a federation of municipalities or a public employer, or other completely outsourced organisational unit.

The practical training includes [using a practical training book](#) as described in the [practical training regulations](#) and in the practical training book. The practical training book is a general tool for planning and evaluating learning and giving feedback about it. The clinics can add their own sections to the book if required. The training book includes sections for self-evaluation and feedback from the supervisor.

The trainee must follow the general employee regulations of the workplace, and possible separate guidelines regarding practical training. The trainee is responsible for their actions according to general legal principles.

The student participating in the practical training must have the necessary guidance and supervision, sufficient possibilities for consultation, and training in performing the procedures that are part of the work in the workplace. The trainee must participate in medical doctors' training organised in the workplace within the limits of the weekly working hours. Time spent in emergency duty is included in the practical training time. A maximum of 1/3 of the total working hours can be work done during a hospital's hours of emergency duty.

Mode of delivery:

The practical training is organised as described in the [practical training regulations](#).

Learning activities and teaching methods:

The degree programme in Medicine includes a required practical training of a total of 24 ECTS cr (16 weeks) completed during the studies. The practical training is carried out in places chosen by the student themselves, and must be organised **in minimum periods of 2 weeks as full weeks and working in at least three different specialities**. The student can simultaneously work only in one training place, and the practical training must be full-time.

The practical training can be carried out working as a paid trainee with the salary paid from the Northern Ostrobothnia hospital district's EVO-funding. The practical training can also be carried out working as a doctor in a specialist-led hospital or health centre, in the Defence Forces or during non-military service, in Finland or abroad.

The practical training periods at OYS are coordinated by Oulun Lääketieteellinen Kilta r.y. (Oulu medical society). OYS traineeship posts are organised by the society and an application form is used when applying to them. Separate assignment regulations are used when the traineeship posts are filled.

Before the practical training is carried out, an approved supervisor agreement must be returned to the student affairs services. If the student wishes to carry out the training **somewhere else than at OYS**, they must **agree beforehand** on the contents of training, and get a written permission on the supervisor agreement form from the discipline's person responsible for training. The disciplines may also have separate guidelines about traineeship posts outside OYS.

Working in research or teaching tasks at a department of a Faculty of Medicine for a minimum of two weeks and a maximum of four weeks can also be approved as a practical training. A supervisor agreement for a research traineeship must have an attached research plan that must be delivered before the training period. The student evaluates the training by writing a free-form report on the research done: evaluating their own performance during the traineeship and giving feedback to the supervisor.

Target group:

Students of the degree programme in Medicine.

Prerequisites and co-requisites:

The practical training is carried out after the study phase of the discipline in question has been completed. If the student wants to carry out training in a speciality they have taken no studies in, they must beforehand request a written permission to do the practical training from the discipline's person responsible for training.

Recommended optional programme components:

The trainee's tasks and discipline-related learning outcomes have been defined in the trainee's job description created in every discipline.

Recommended or required reading:

According to what has been arranged with the supervisor. The student can orient themselves in the practical training period by reading literature related to the traineeship's speciality.

Assessment methods and criteria:

After the practical training period, the student evaluates the realisation of the learning outcomes they had set in the practical training book. The supervisor and the work community also evaluate the student's learning and development during the practical training period. The student also enters feedback for the training place in the training book. The practical training regulations define practices regarding working hours, absences, and compensations.

The practical training is recorded in the study attainment register after the training period has ended, and the student has delivered a reference or a testimonial of service and the last page of the training book, or, in teaching and research practice, a final report to the student affairs services.

The completed practical training must be applied to be included in the degree immediately after the training has been completed, by the end of next August at the latest.

Read more about [grading study attainments](#) from the university's web site.

Grading:

The training is graded as pass/fail.

Person responsible:

Programme Director

Working life cooperation:

Includes learning by working as defined in each discipline, and agreed upon with the practical training supervisor.

Other information:

The practical training is carried out as defined in the practical training regulations. The regulations and the training-related forms are available on the website.

041003Y-06: Professional Development, 2 op

Voimassaolo: 01.08.2011 -

Opiskelumuoto: Intermediate Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Wiik, Heikki Tapani

Opintokohteen kielet: Finnish

ECTS Credits:

2 ECTS

Language of instruction:

Finnish

Timing:

6th year

Learning outcomes:

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

- understands the different roles of an expert and a leader
- understands the dynamics of a specialist organization and the basis of good leadership
- knows the basics of economical thinking and is able to use these in clinical decision making
- has got some tools in controlling workload and developing leading skills further
- critically evaluate decision making processes

Contents:

The basics of good work community. leading people in a specialist organization, self leadership, economics to clinicians.

Mode of delivery:

Lectures, teamwork.

Learning activities and teaching methods:

Lectures 5 x 1,5 hours

Group teaching session 1,5 hour

Target group:

6th class

Recommended or required reading:

Lecture and other material in Optima

Assessment methods and criteria:

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

Grading:

Pass/fail

Person responsible:

Heikki Wiik

040036Y: Professional Development in Medicine Studies, 3rd period, 1 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS

Timing:

3.yrs

Learning outcomes:

The student is able to analyze the doctor's practice as a situation from an interactional perspective and is conscious and can recognize interactional factors that relate to doctor's practice. The student is able to observe their own interaction as well as that of others in diverse situations. The student is able to reflect on the strengths of their interactional skills as well as areas in need of development.

Contents:

- 1) Lectures:
 - On the significance of interaction in doctor's practice and patient-doctor relationship
 - How can interactional skills be developed
- 2) Group work:
 - Reflection in small groups on different situations in doctor's practice and written summaries of the conversations that took place
 - One group produces material for the seminar
- 3) Individual exercises:
 - Written analysis of one doctor's practice situation
 - Keeping a learning diary for eight weeks
- 4) Seminar and final lecture:
 - The seminar includes reflection on interactional skills as part of professional skills in medicine supported by video and other material

Summary of students' group and individual exercises during the final lecture of the course.

Mode of delivery:

Face-to-face teaching, group and individual work.

Learning activities and teaching methods:

Lectures and seminar, group work, individual exercises.

Target group:

Medical students.

Prerequisites and co-requisites:

1st year lecture on the basics of interaction and the interaction and communication track as part of the professional development in medicine track (2x45mins.).

Recommended optional programme components:

Descriptions of doctor's practice situations produced during the course are used in teaching in Public health.

Recommended or required reading:

Lecture and other material in Optima.

Assessment methods and criteria:

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

Grading:

Pass/fail

Person responsible:

Päivi Lindholm

080103A: Psychiatry, 12 - 14 op

Voimassaolo: 01.01.2009 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Veijola, Juha Martti

Opintokohteen kielet: Finnish

Voidaan suorittaa useasti: Kyllä

ECTS Credits:

ECTS credits 12.0

Language of instruction:

Finnish language

Timing:

S7-S8, 4th year, August and January

Learning outcomes:

To provide basic facts on psychiatric diseases and treatment, particularly in primary health care. Students are able to identify common mental disorders and know how to treat them in adult patients, in accordance with the Treatment Recommendations (psychotherapy, psychopharmacology) in primary and specialist level health care settings. Students can identify severe mental disorders in adolescents, adults and elderly patients and be able to send the patients to the psychiatric emergency and psychiatric care, involuntarily if necessary. The student can identify patients with psychosis and those patients at risk of suicide or violent acts.

Contents:

Major psychiatric illnesses in adults and adolescents: their acute care and further treatment. Examining a psychiatric patient. Nosology, diagnostics and treatment of the most common psychiatric diseases. Psychiatric legislation and forensic psychiatry. Psychopharmaceutical treatment. Psychotherapy and its applications. Clinical psychology. Psychosomatics. Substance abuse. Adolescent psychiatry; identification of mental disorders in adolescence, (such as psychoses, depression and eating disorders), treatment principles. Psychiatry among elderly people. Doctor-patient interaction, team work, management, coping with a physician's profession.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lectures covering various themes in psychiatry (psychiatric epidemiology, schizophrenia and other psychoses, depression, anxiety disorders, substance use disorder, perinatal mental disorders, psychiatry in health care center, adolescent psychiatry etc.). Besides lectures, the teaching consists mainly of group teaching, several seminars and also clinical practice which includes following clinical work in psychiatric units on emergency duty. There is a final written examination. Question time and feedback, including questionnaire in Optima. The student has to understand and speak Finnish fluently in order to be able to participate in the course.

Target group:

Fourth year medical students.

Prerequisites and co-requisites:

Pervious medical studies has to be completed.

Recommended optional programme components:

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

Recommended or required reading:

Lönnqvist J, et al., *Psykiaatria*. Kustannus Oy Duodecim, Helsinki, 2014. Material from lectures, seminars and group education. Other recommended reading: Evidence based treatment (Käypähoito)-guidelines in psychiatry

and adolescent psychiatry (for example www.terveysportti.fi), Legislation, especially Mental Health Act and Decree, Child Welfare Act (www.finlex.fi-ajantasainenlainsaadanto) and Huttunen MO. Psykenlääkeopas. Kustannus Oy Duodecim, 2008, Helsinki.

Assessment methods and criteria:

Taking part to compulsory studies and practice including group studies, theme days and clinical practice. Final written examination. Question time and feedback, including questionnaire in Optima.

Grading:

The evaluation scale for the final examination is 0-5 (and in the intranet Optima: pass/fail). The best grading is 5.

Person responsible:

Professor Pirkko Riipinen

Working life cooperation:

In the course is included clinical practise period lasting one week.

040104A: Psychology, 4 - 4,5 op

Opiskelumuoto: Basic Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Tuula Hurtig

Opintokohteen kielet: Finnish

ECTS Credits:

4 ECTS.

Language of instruction:

Finnish

Timing:

Autumn, C3

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 with psychological methods. Furthermore, an objective is to help future medical and dental doctor to observe their influence on the behaviour 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:

1. Lectures

The following topics will be presented: psychology as a discipline and in health care, human psychological functions, psychological information in medicine, psychological development of children and adolescents, attachment and early interaction, challenges in adulthood, psychological development in old age, family in lifespan, personality in lifespan, human behaviour, human emotions in sickness and in health, coping strategies, verbal and non-verbal interaction, motivating others, wellbeing as a student and as a doctor, recognition of one's own strengths, burnout in work. Pre-course material is available in Optima before the course.

1. Group learning

Topics for group learning are for instance traumatic crises, familial and cultural influence on behaviour of a human, psychology of old age, cognitive functions, child and adolescent psychology, patient and family in health service, hypnosis, and forensic psychology.

1. Individual scientific essay and web-based group discussion

In the end of the course student will prepare an individual scientific essay, 5 to 7 pages with references. Students may choose their subject within the following thematic topics: the socio-emotional development of children, an adolescent in doctor's appointment, enhancing psychological and cognitive performance in old age, human behaviour in sickness and in health, promoting wellbeing in students and doctors. There will be web-based platforms in Optima for every thematic topic, which are designed for group discussion.

Mode of delivery:

Contact teaching with web-based tutorials

Learning activities and teaching methods:

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

Target group:

Medical and dental students on C 3 course.

Prerequisites and co-requisites:

-

Recommended optional programme components:

-

Recommended or required reading:

Contents of the lectures, pre-course material.

Assessment methods and criteria:

Individual scientific essay

Grading:

Excellent, Good, Fail

Person responsible:

University Lecturer

Working life cooperation:

-

Other information:

Contact person

University Lecturer Tuula Hurtig, tuula.hurtig@oulu.fi

043027P-02: Psychology for Medical Students: Group learning with tutorial, 0 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Basic Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Tuula Hurtig

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

043027P-03: Psychology for Medical Students: Individual scientific essay with web-based group learning, 0 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Basic Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Tuula Hurtig

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

043027P-01: Psychology for Medical Students: Lectures, 0 op

Voimassaolo: 01.08.2016 -

Opiskelumuoto: Basic Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Tuula Hurtig
Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

040104A-05: Psychology, assignment, 3 op

Voimassaolo: 01.08.2017 -
Opiskelumuoto: Basic Studies
Laji: Partial credit
Vastuuyksikkö: Medicine
Arvostelu: 1 - 5, pass, fail
Opettajat: Tuula Hurtig
Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

040104A-04: Psychology, small group teaching, 1 op

Voimassaolo: 01.08.2017 -
Opiskelumuoto: Basic Studies
Laji: Partial credit
Vastuuyksikkö: Medicine
Arvostelu: 1 - 5, pass, fail
Opettajat: Tuula Hurtig
Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

080427A-03: Public Health, 5 op

Voimassaolo: 01.08.2015 -
Opiskelumuoto: Intermediate Studies
Laji: Partial credit
Vastuuyksikkö: Medicine
Arvostelu: 1 - 5, pass, fail
Opettajat: Markku Timonen
Opintokohteen kielet: Finnish

ECTS Credits:

5,0 ECTS credits/ 134 hours of work

Language of instruction:

Finnish

Timing:

C 10, the course unit is held in the spring semester.

Learning outcomes:

The student is familiar with the main examination and management strategies used in general practice, and understands the role which the probability of disease has for the selection of a management strategy.

The student gains experience in: management of a range of clinical problems which present to primary care; coordination and organization of treatment; and working using a patient-centred approach.

The student gains insight into: disease prevention and health promotion in paediatric, antenatal-care and school-based health care settings; main examination and treatment strategies in general practice; issuing expert statements in matters of social security system, rehabilitation and employment; time management and coordination of clinical work in primary care; multidisciplinary team work.

Contents:

Theoretical learning of the "key principles" of general practice. Practical learning in different areas of general practice: scheduled and acute appointment at the health centre; antenatal- and maternity-, paediatric-, family-planning- and school services, inpatient care on the health care centre wards, and inpatient care on long-term wards, community care. Principal skills in e-Health.

Mode of delivery:

Blended teaching.

Learning activities and teaching methods:

Lectures 7,5 h including independent work 7,5 h. E-health theme day.

Group work for four days (32 hours). Critical appraisal of evidence; independent work 7 h.

Two-week practical training in health care centres (74 hours).

Target group:

Medical students.

Prerequisites and co-requisites:

All earlier studies in the curriculum of basic medical education.

Recommended optional programme components:

No alternative course units.

Recommended or required reading:

Recommended literature: Kumpusalo E, Ahto M, Keinänen-Kiukaanniemi S, Kosunen E, Kunnamo I, Lohi J (toim.): Yleislääketiede, Kustannus Oy Duodecim, Karisto Oy Hämeenlinna 2005.

Assessment methods and criteria:

The assessment of the course unit is based on the learning outcomes of the course unit

Attending to all compulsory teaching

The assessment of the learning outcomes: The final examination during the sixth year of medical education.

Grading:

The course unit utilizes verbal grading scale "pass/ fail "

The final examination during the sixth year of medical education utilizes a grading scale pass/fail

Person responsible:

Markku Timonen, professor of general practice

Working life cooperation:

Yes, during the two-week practical training in health centres

080427A-02: Public Health, 1 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Markku Timonen

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS credits

Language of instruction:

Finnish

Timing:

The fourth year (C8), spring semester

Learning outcomes:

Upon completion of the course, the student:

- becomes aware of his/her own automatic and unknown reactions in her/his communication with patients
- knows how to use family oriented methods and gains competence in interprofessional working methods in primary care settings
- gains confidence in discussing about difficult issues with patients and their family members

Contents:

Communication training: lectures and small group sessions.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lecture and small group sessions.

Target group:

The students from medicine

Prerequisites and co-requisites:

Interviewing and examining patients, C4

Patient-centered communication, C6

Recommended or required reading:

Potilas, perhe ja perusterveydenhuolto. Pekka Larivaara, Sirpa Lindroos, Taina Heikkilä (ed.)

Kustannus Oy Duodecim 2009

Yleislääketiede, Kumpusalo E, Ahto M, Eskola K, Keinänen-Kiukaanniemi, S, Kosunen E, Kunnamo I, Lohi J (toim) Kustannus Oy Duodecim 2005,

Mustajoki, P., Saha, H. & Sane, T. (ed.): Potilaan tutkiminen. Kustannus Oy Duodecim, Saarijärvi 2016.

Assessment methods and criteria:

Attending to all compulsory teaching: lecture, small-group sessions.

Grading:

Pass/fail

Person responsible:

Professor of general practice Markku Timonen

Working life cooperation:

No.

Other information:

This course is linked with communication and leadership tracks.

080427A-04: Public Health 4, 8 - 9 op

Voimassaolo: 01.01.2016 -

Opiskelumuoto: Intermediate Studies

Laji: Partial credit

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

ECTS Credits:

9,0 ECTS credits

Language of instruction:

Finnish

Timing:

The sixth year (CXI-XII), autumn and spring semester

Learning outcomes:

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

- describe factors affecting morbidity on individual and population level
- diagnose and treat common diseases
- uncover patient's experience of her/his disease and find out patient's own relation to her/his illness
- act as an expert in preventive medicine in primary care
- apply health promoting and disease preventing methods on individual, family and population level
- function as a member in interprofessional team and benefit from the expertise of other team members
- manage time in patient practice

Contents:

Supervision of health professionals, insurance in medicine, *military medicine?*, health legislation, child welfare policlinic, medical certificates, patient with multiple issues in primary health care, patient care in primary health care in light of medical guidelines, critical evaluation and practical use of research in primary health care. Health centre practice.

Mode of delivery:

Face-to-face teaching. One week practical training in health centers.

Learning activities and teaching methods:

Lectures, seminars and small group teaching. One week practice period in health centers.

Target group:

The students from medicine.

Recommended or required reading:

Yleislääketiede, Kumpusalo E, Ahto M, Eskola K, Keinänen-Kiukaanniemi, S, Kosunen E, Kunnamo I, Lohi J (toim) Kustannus Oy Duodecim 2005; Laki potilaan asemasta ja oikeuksista 17.8.1992/785; Laki terveydenhuollon ammattihenkilöistä 28.6.1994/559; Sosiaali- ja terveysministeriön asetus potilasasiakirjojen laatimisesta sekä niiden ja muun hoitoon liittyvän materiaalin säilyttämisestä. 99/2001; SosTMA lääkkeen määräämisestä 726/2003; L sähköisestä lääkemääräyksestä 2.2.2007/61; a SosTMA sähköisestä lääkemääräyksestä 25.6.2008/485.

Assessment methods and criteria:

Written examinations. Participation in seminars and small group teaching and practical period in health centers.

Grading:

The final examination is an OSCE –examination having five questions. Each question utilizes verbal grading scale “pass/ fail “. To pass the exam student has to pass each questions. The final grading scale is also pass/fail.

Person responsible:

Professor of general practice Markku Timonen

Working life cooperation:

- Yes, the course includes one week practical period in the health center.

081421A: Public Health, 3rd period, 1 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

ECTS Credits:

1 ECTS credits

Language of instruction:

Finnish

Timing:

The third year (C6), spring semester

Learning outcomes:

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

- meet patient discreetly and appropriately
- perform independently the patient-centered communication;
- describe the importance of reflection in the communication.

Contents:

Communication training: lecture (1,5 hours), small group teaching.

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lecture and small group teaching.

Target group:

The students from medicine

Prerequisites and co-requisites:

Interviewing and examining patients, C6

Recommended or required reading:

Yleislääketiede, Kumpusalo E, Ahto M, Eskola K, Keinänen-Kiukaanniemi, S, Kosunen E, Kunnamo I, Lohi J (toim) Kustannus Oy Duodecim 2005, soveltuvilta osin;

Mustajoki, P., Saha, H. & Sane, T. (ed.): Potilaan tutkiminen. Kustannus Oy Duodecim, Saarijärvi 2016.

Assessment methods and criteria:

Attending to all compulsory teaching: lecture, small-group work.

Grading:

Pass/fail

Person responsible:

Professor of general practice Markku Timonen

Working life cooperation:

No.

Other information:

This course is closely connected to Communication-track.

040116A: Public health science, 5 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Tiina Ikäheimo

Opintokohteen kielet: Finnish

ECTS Credits:

5.0 ECTS credits

Language of instruction:

Finnish/English

Timing:

The sixth year, autumn semester, C11

Learning outcomes:

The course is structured based on the interaction between the general population and individuals. Understanding the state of health of the population and factors related to it is necessary, for cost-efficient and effective treatment of patients, appropriate professional orientation, as well as rational decision-making. Respectively, knowing the state of an individual/patient and applying holistic and effective care increases wellbeing and reduces the burden of health care at the population level. The objective of the course is that students understand the population-based approach and close connection with clinical work, identify how public health science is associated with the practical work of a medical doctor and know how to apply it in their own work. The more specific learning objectives are to understand the specific features of population health, enable critical examination and interpretation of epidemiologic research, understand the framework of health economy as a part of cost-accounting of health care, gain knowledge of the principles and systems related to insurance medicine and rehabilitation, as well as legislation the obliges health care practitioners. One objective is also that a student will receive an overview of the global public health challenges, and how these are reflected in the health status of the Finnish population.

Contents:

Lectures and theme days:

- Epidemiology of diseases
- Fundamentals of health economics
- Rehabilitation
- Health promotion and disease prevention
- Health policy
- Health sociology
- Health care legislation
- Global health
- Public health science and the work of a medical doctor
- Insurance medicine

Seminars:

- Topics including major health threatening environmental and lifestyle risk factors, diseases and preventive measures related to public health theme

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lectures, theme days, seminar work

Target group:

The students from medicine.

Recommended optional programme components:

The course is linked to C1 – Public health and multiprofessional collaboration (Fundamentals of public health science), C4 – Epidemiology and Environmental health, and Environment, Lifestyle and Health (ELH) track.

Recommended or required reading:

Koskenvuo K. (toim) Sairauksien ehkäisy. Duodecim 2003, soveltuvilta osin; Terveystieteiden tutkimuskeskus 1326/2010. Kauhanen ym. (2013) Kansanterveystiede. Sanoma Pro Oy, 320s.; Terveystieteiden tutkimuskeskus 30.12.2010/1326.

Assessment methods and criteria:

Written examinations. Participation in seminars, small group works, theme days and practical training module at a primary health care centre.

Grading:

Final grade of public health course will consist of final written exam and seminar assessment. Seminar work is assessed as a pass/fail. The best seminar work (written and oral presentation) from each seminar is selected by the group of supervisors and awarded with 3 additional points in the final exam. Final examination of public health comprises 3-4 questions, 2.5–10 points each. At least 10 points are required for passing the examination.

Person responsible:

Docent Tiina Ikäheimo

080205A: Pulmonary diseases, 3 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Riitta Kaarteenaho

Opintokohteen kielet: Finnish

ECTS Credits:

3 ECTS credits / 80 hours of work

Language of instruction:

Finnish

Timing:

The course is held in the autumn and spring semesters, during the 4th year (C7-8)

Learning outcomes:

Upon completion of the course, the student will be able to diagnose and treat the most common pulmonary conditions on the level of primary health care. These include asthma, chronic obstructive pulmonary disease (COPD), prolonged cough, obstructive sleep apnea and respiratory infections, in which the diagnostics, treatment, follow-up and estimation for the need for specialist care assessment should be possessed by the student. Basic principles of the diagnostic and treatment of acute and chronic respiratory failure, interpretation of spirometry and PEF, arrangement of smoking cessation, evaluation of pleural diseases and pleural effusion, the most common occupational lung diseases, and interstitial and fibrotic lung diseases as well as palliative treatment of respiratory symptoms are aimed to be possessed. The student should be able to enter the essential facts of the patient having a respiratory disease or condition when composing a referral to a special health care clinic.

Contents:

The respiratory examination, chronic obstructive pulmonary disease, asthma, lower respiratory tract infections, obstructive sleep apnea of adults, pulmonary tumors, interstitial and rare lung diseases, pleural diseases, respiratory failure, occupational lung diseases, smoking cessation and palliative care of lung diseases/symptoms are covered from a general practitioner's point of view.

Mode of delivery:

Face-to-face teaching

Lectures

Web-based learning

Learning activities and teaching methods:

Various teaching and learning methods are used in the course:

There are lectures, small group and bedside lessons on the respiratory ward and at the outpatient department and theme-days as well as examinations in the beginning, in the meantime and at the end of the course. The main focus will be on the most common lung diseases, which will be taught not only in lectures but also in small group and bed-side lessons by utilizing problem and case based learning.

Lectures and preliminary exercises 16 h, preliminary examination in the beginning of the course 2 h (attendance is compulsory), small group classes 2 h on the respiratory ward (compulsory), small group practice at the respiratory outpatient clinic 4 h (compulsory), theme days 8 h (compulsory), intermediate examinations on the topics of the theme days (compulsory), final examination 2h (compulsory), web-based learning (voluntary), self-study about 50 h.

Target group:

Medical students, C7-C8

Prerequisites and co-requisites:

Student must have completed interviewing and examining patients - course

Recommended optional programme components:

The course is performed simultaneously with other studies of the fourth year.

Recommended or required reading:

Textbook:

Kaarteenaho R, Brander P, Halme M, Kinnula V. Keuhkosairaudet – Diagnostiikka ja hoito (Duodecim 2013, First Edition, in Finnish)

Käypä hoito –recommendations (in Finnish): Asthma, Acute Respiratory Failure, COPD, Lower Respiratory Track Infections (adults), Lung Cancer, Tobacco Dependence and Smoking Cessation and Sleep Apnea.

Web-courses: Pulmonary function tests, Smoking cessation (Duodecim), Tuberculosis (Duodecim).

Assessment methods and criteria:

Attendance in the compulsory small group teaching, the theme days and the examinations. The preliminary and intermediate examinations of the course must be passed before the participation in the final examination.

Grading:

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

The final grade consist of the sum of the points in the intermediate and final examinations:

36-40 # 5, 32-35 # 4, 28-31# 3, 24-27 # 2, 20-23 # 1

The maximal score is 10 points in the intermediate examinations and the examination is failed, if the student gets less than 50% of the total score. There are three questions in the final examination, each counts for 10 points.

The completement of voluntary web-based courses may raise the final grade in borderline cases.

Person responsible:

Professor Riitta Kaarteenaho

Working life cooperation:

Small group classes on the respiratory ward and at the outpatient department as well as the practical periods of the internal medicine course are to apply the theoretical knowledge to practice in authentic environment.

081803A: Radiation and its safe use, 1,5 op

Voimassaolo: 02.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Miika Nieminen

Opintokohteen kielet: Finnish

ECTS Credits:

1,5 ECTS

Language of instruction:

Finnish

Timing:

The course unit is held in the second year, C3

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, radiation use in medicine.

Mode of delivery:

Lectures

Learning activities and teaching methods:

Lectures, exam

Target group:

The students from medicine

Grading:

Pass/fail

Person responsible:

Professor Miika Nieminen

Other information:

The course is statutory radiation protection education in medical training.

080803A: Radiology I, 3,5 - 5 op

Voimassaolo: 02.08.2012 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Tervonen, Osmo Antti

Opintokohteen kielet: Finnish

ECTS Credits:

3,5 ECTS credits /93 hours of work

Language of instruction:

Tuition shall be arranged in Finnish.

Timing:

The course unit is held during the autumn and spring semester of the third year of medical studies.

Learning outcomes:

Radiology 1

Upon completion of this first curricular unit of radiology, student should be able to understand the principle of justification of radiological studies. Additionally student should have competence to explain the most important indications for radiological studies and principles of radiological modalities, including nuclear medicine. After completing the unit, student should master basic image interpretation skills of radiographs and know the most common findings of these examinations.

Contents:

General introduction to radiology (techniques) and indications, principle of justification, emergency radiology, musculoskeletal radiology, thoracic radiology, abdominal radiology, neuroradiology and nuclear medicine and molecular imaging.

Mode of delivery:

The mode of delivery for the course unit is face-to-face teaching.

Learning activities and teaching methods:

The implementation methods of the course vary.

Interactive lectures consist of 32 hours. There will be 20 hours of guided small group teaching events (image interpretation, Image acquisition [x-ray], Ultrasound anatomy, Emergency duty, Ultrasound clinical surveillance) and c. 40 hours of studying privately or in a group.

Target group:

Target group are the 3rd year medical students (MD).

Prerequisites and co-requisites:

Prerequisite for participation to the course unit is the completion of preclinical studies (first 2 years of medical school)

Recommended optional programme components:

There are no alternative courses.

Recommended or required reading:

Books: Either, Roberto Blanco Sequeiros et al (Editors): *Kliininen radiologia* [in Finnish] or Mettler, FA (Editor): *Essentials of Radiology*

100-tärkeintä rtg-kuvaa (National teaching image base): Distributed through university Optima online

Assessment methods and criteria:

This course unit utilizes online multiple choice exam assessment.

Grading:

The course unit utilizes passed/failed grading scale. The grade will not be given until all the obligatory teaching courses are completed.

Person responsible:

Osmo Tervonen, Professor

Jaakko Niinimäki, Professor

Working life cooperation:

No

080813A: Radiology II, 2 op

Voimassaolo: 01.08.2014 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Jaakko Niinimäki, Tervonen, Osmo Antti

Opintokohteen kielet: Finnish

ECTS Credits:

2 ECTS credits / 53 hours of work

Language of instruction:

Tuition shall be arranged in Finnish.

Timing:The course unit is held in the autumn semester of 6th year.**Learning outcomes:**

Upon completion of this second curricular unit of radiology, the student should be able to take the principle of justification in account while ordering radiologic studies. Student should master the indications and methods for selected investigations in radiology within general practices clinical context. After the study unit, student should master also the basics of interpretation of radiographs and recognizes the typical findings.

Contents:

Musculoskeletal radiology, thoracic radiology, abdominal radiology, neuroradiology, urogenital radiology, interventional radiology and pediatric radiology.

Mode of delivery:

The mode of delivery for the course unit is face-to-face teaching.

Learning activities and teaching methods:

The implementation methods of the course vary.

Lectures consist of 18 hours. There will be 10 hours of guided small group teaching events (image interpretation and Ultrasound anatomy) c. 25 hours of studying privately or in a group (ultrasound facility available for self-learning).

Target group:Target groups are 6th year medical students (MD).**Prerequisites and co-requisites:**

Prerequisite for participation to the course unit is the completion of Radiology I course.

Recommended optional programme components:

There are no alternative courses.

Recommended or required reading:

Books: Either, Roberto Blanco Sequeiros et al (Editors): *Kliininen radiologia* [in Finnish] or Mettler, FA (Editor): *Essentials of Radiology*

100-tärkeintä rtg-kuvaa (National teaching image base): Distributed through university Optima online.

Assessment methods and criteria:

This course unit utilizes exam assessment.

Grading:

The course unit utilizes a numerical grading scale 1-5. In the numerical scale zero stands for a fail. The grade will not be given until all the obligatory teaching courses are completed.

Person responsible:

Osmo Tervonen, Professor

Jaakko Niinimäki, Professor

Working life cooperation:

No.

902007Y: Scientific Communication, 1,5 op

Voimassaolo: 01.08.1995 -

Opiskelumuoto: Language and Communication Studies

Laji: Course

Vastuuyksikkö: Languages and Communication

Arvostelu: 1 - 5, pass, fail

Opettajat: Eva Braidwood

Opintokohteen kielet: English

Leikkaavuudet:

ay902007Y Scientific Communication (OPEN UNI) 1.5 op

Proficiency level:

B2/C1

Status:

This course is compulsory for students who have chosen English. An alternative course is 903008Y German.

Required proficiency level:

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

ECTS Credits:

1,5 ECTS credits

Language of instruction:

English

Timing:

Students in the degree program of
o medicine: 4th year fall/autumn term
o dentistry: 3rd year spring term

Learning outcomes:

Having completed the course students will be able to

- use the English language for professional and academic communication in their own field (doctor-patient communication & doctor-doctor consultations),
- communicate fluently and accurately and express opinions and demonstrate their knowledge of the field (medical conferences and forums),
- summarize texts on professional and academic topics in their own field,
- give a presentation on a professional or academic topic relating to their own interest in medicine.

Students wishing to develop their writing skills, may choose, as an alternative, **the course in medical writing. Having completed this course, students will be able to**

- understand and follow the conventions of a research article in medicine,
- use grammatical patterns that are stylistically appropriate for research articles and other types of medical communication,
- use general scientific vocabulary and field specific terminology effectively.

Contents:

-

Mode of delivery:

Contact teaching

Learning activities and teaching methods:

-

Target group:

Students in the degree programs of medicine, dentistry, and wellness technology

Prerequisites and co-requisites:

-

Recommended optional programme components:

902006Y Reading for Academic Purposes

Recommended or required reading:

Information will be provided at the beginning of the course.

Assessment methods and criteria:

Assessment is based on active participation in classroom activities, completion of home assignments and presentations completion of writing assignments.

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

Grading:

The evaluation scale is 1-5.

Person responsible:

Eva Braidwood

Working life cooperation:

-

Other information:

Medical students **sign up** for the course in **WebOodi**. Information on the time and place of the classes will be provided in [Optima](#) and WebOodi.

Dentistry students sign up at their departments.

080712A: Surgery I, 16 - 24 op

Voimassaolo: 01.08.2005 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Juvonen, Tatu Sakari

Opintokohteen kielet: Finnish

ECTS Credits:

16 ECTS/428 hours of work

Language of instruction:

The tuition shall be arranged in Finnish.

Timing:

During third year.

C 5-6

Learning outcomes:

The students will be made familiar with surgical thinking, working in the first aid clinic, in the operating room and surgical ward. They will learn: 1) How to speak to and examine a surgical patient, 2) The diagnostics of surgical diseases, 3) The basics of surgical care, and 4) The most common surgical procedures at public health care level.

Contents:

Theoretical part :

The basics in General surgery, Gastroenterological surgery, Urology, Orthopedics and Traumatology and in Thoracic and Vascular surgery.

Practical part:

Supervised and independent clinical examination and planning of treatment strategy, the surgical rounds in different surgical divisions, the seminar days, the surgical wound care, teaching in OR, teaching in the surgical out-patients clinic and the practice in surgical wards.

Mode of delivery:

The tuition will be implemented as blended teaching (mainly face-to-face teaching, but there might be some web-based teaching).

Learning activities and teaching methods:

Lessons from different field of surgery, seminar days concerning important surgical topics, the group teachings of specific topics, clinical practices in wound care, teaching in the operating theatres, practice and teaching in surgical out-patients clinics. Preoperative care of the surgical patient.

The practice at surgical wards (both in University hospital and in some Central hospital of the Northern Finland) includes clinical examination of 6 surgical patients and the practice in operating theatres assisting in 3 operative procedures.

Contact teaching 214 h and independent teaching 214 h.

Target group:

This course of surgery is focused for medical students in the clinical phase of their studies.

Prerequisites and co-requisites:

The required prerequisite is the completion of the following courses prior to enrolling for the course unit:

040201A Anatomy

040103A Medical biochemistry and molecular biology

040106A Pharmacology and Toxicology

000119A Microbiology

040112A Physiology

Recommended optional programme components:

The other medical courses planned to be performed at the same time are as follows: Internal medicine, pathology, radiology, clinical chemistry and anesthesiology.

Recommended or required reading:

Textbooks:

Roberts, Alhava, Höckerstedt, Kivilaakso: Kirurgia. Kustannus Oy Duodecim. Helsinki. 2nd ed. 2010.

Rokkanen, Slätis, Alho, Ryöppy, Huittinen: Traumatologia. Kandidaattikustannus. Helsinki. 7th ed. 2010.

Rokkanen, Tervo, Avikainen: Käytännön ortopediaa, 2003.

Taari, K., Aaltoluoma, S., Nurmi, M., Parpala, T., Tammela, T. (eds.). 2013. Urologia. Duodecim. 3rd ed.

Lecture material and other materials too.

Recommended textbooks:

Leppäniemi, A., Ala-Opas, M., Haapiainen, R., Kemppainen, E., Lepäntalo, M., Pettilä, V., Sipponen, J. (eds.). 2006. Päivystyskirurgian opas.

Louhimo, I., Peltonen, J., Rintala, R. 2000. Louhimon lastenkirurgiaa. 2nd ed. Kandidaattikustannus Oy.

Höckerstedt, K., Färkkilä, M., Kivilaakso, E., Pikkarainen, P. (eds.). 2007. Gastroenterologia ja hepatologia.

Ilkka Kivirinta, Markku Järvinen; Ortopedia, 2012, Kandidaattikustannus

Assessment methods and criteria:

Participating in the group teaching, seminar days and training in surgical wards and operating rooms, propedeutic test, intermediate test I, reports of clinical examinations of surgical patients, assisting in 3 surgical operations, service at the surgical emergency room (3 times and OR (1 time). Contact teaching approximately 214 hours and independent work approximately 214 hours.

Grading:

The course unit utilizes a numerical grading scale from 1 to 5. In the numerical scale zero stands for a fail. The course grades are according to the criteria of the exam Surgery I (intermediate exam of Surgery). Passing the intermediate exam requires a score which is half of the total amount of scores.

Person responsible:

Professor Tatu Juvonen and professor Jyrki Mäkelä

Working life cooperation:

Yes.

The course of surgery includes one week surgical ward practice in OYS or other hospitals in Northern Finland and one week (four days) of practice in operation rooms of OYS.

Other information:

The final exam of Surgery will be held during the fourth year. The total score of the exam of Surgery (C5-8) is according to the score of the final exam of Surgery and this can be increased by the total scores of the intermediate exam of Surgery (Surgery I) and of Abdominal Surgery.

080714A: Surgery II, 1 - 8 op

Voimassaolo: 01.08.2010 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Juvonen, Tatu Sakari

Opintokohteen kielet: Finnish

ECTS Credits:

8 ECTS

Language of instruction:

Finnish.

Timing:

During fourth year

C 7- C 8

Learning outcomes:

The students will be made familiar with surgical thinking, working in the first aid clinic, in the operating room and surgical ward. They will learn: 1) How to speak to and examine a surgical patient, 2) The diagnostics of surgical diseases, 3) The basics of surgical care, and 4) The most common surgical procedures at public health care level.

Contents:

Pediatric surgery, Orthopedic, Thoracic and Vascular surgery, General surgery, Hand surgery and Plastic surgery and Urology.

Mode of delivery:

The tuition will be implemented as blended teaching (mainly face-to-face teaching, but there might be some web-based teaching).

Learning activities and teaching methods:

Lessons from different field of surgery, seminar days concerning important surgical topics, the group teachings of specific topics, clinical practices in wound care, teaching in the operating theatres, practice and teaching in surgical out-patients clinics. Preoperative care of the surgical patient.

The practice at surgical wards (both in University hospital and in some Central hospitals of Northern Finland) includes clinical examination of 6 surgical patients and the practice in operating theatres assisting in 3 operative procedures.

Target group:

This period is for medical students in the clinical phase of their studies.

Prerequisites and co-requisites:

The required prerequisite is the mainly completion of the following courses prior to enrolling for the course unit: Surgery 1

Recommended optional programme components:

The course units that are recommended for completion simultaneously: Internal medicine, pathology and anesthesiology.

Recommended or required reading:

Textbooks:

Roberts, Alhava, Höckerstedt, Kivilaakso: Kirurgia. Kustannus Oy Duodecim. Helsinki. 2nd ed. 2010.

Rokkanen, Slätis, Alho, Ryöppy, Huittinen: Traumatologia. Kandidaattikustannus. Helsinki. 7th ed. 2010.

Rokkanen, Tervo, Avikainen: Käytännön ortopediaa, 2003.

Taari, K., Aaltoluoma, S., Nurmi, M., Parpala, T., Tammela, T. (eds.). 2013. Urologia. Duodecim. 3rd ed.

Lecture material and other materials too.

Recommended textbooks:

Leppäniemi, A., Ala-Opas, M., Haapiainen, R., Kemppainen, E., Lepäntalo, M., Pettilä, V., Sipponen, J. (eds.). 2006. Päivystyskirurgian opas.

Louhimo, I., Peltonen, J., Rintala, R. 2000. Louhimon lastenkirurgiaa. 2nd ed. Kandidaattikustannus Oy.

Höckerstedt, K., Färkkilä, M., Kivilaakso, E., Pikkarainen, P. (eds.). 2007. Gastroenterologia ja hepatologia.

Rokkanen, Tervo, Avikainen. 2003. Käytännön ortopediaa, 2003.

Assessment methods and criteria:

Taking part into the group teaching events, seminar days, final examination, reports of examinations of surgical patients, assisting in surgical operations, practices in surgical wards and surgical operative units and in emergency room.

Grading:

The course unit utilizes a numerical grading scale from 1 to 5. In the numerical scale zero stands for a fail. The course grades are according to the criteria of the final exam of course of Surgery II. Passing the final exam requires a score which is half of the total amount of scores.

The total score of Surgery (C5-8) is according to the score of the final exam of Surgery and this can be increased by the total scores of the intermediate exam of Surgery (Surgery I) and of Abdominal Surgery.

Person responsible:

Professor Tatu Juvonen and professor Jyrki Mäkelä

Working life cooperation:

Yes.

The course of surgery includes one week surgical ward practice in OYS or other hospitals in Northern Finland.

Other information:

No other information

080723A: Surgical operations-optional course, 1 op

Voimassaolo: 01.08.2008 -

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish**ECTS Credits:**

2 ECTS credits /54 hours of work

Language of instruction:

The tuition shall be arranged in Finnish and only some lectures shall be given in English.

Timing:

During sixth year, in the end of the autumn semester

C 11(-12)

Learning outcomes:

Upon completion of the course, the student will have more confident in tissue handling when performing small surgical operations at the primary health care; treatment, revision and suturing techniques of the deep wounds and easy extensor tendon repair and some useful plastias (v-y and z-plasty). The student will have opportunity to practice useful clinical skills like, application of the pleura-drain, application of the urinary catheter and stabilizing the multi-trauma patient for transport.

Contents:

Training of the surgical skills needed in the primary health care

- Suturing techniques
- Revision of the wound
- Minor subcutis operation to the patient
- Stabilizing the multi-trauma patient to be ready for a transport to the central hospital, as a simulation
- Luxations of the joint and clinical examination
- Scopia practicing; recto-, sigmoideos-, gastroscopy
- Application of the catheter and application of the cystofix
- Life saving procedures

Mode of delivery:

Face-to-face teaching

Learning activities and teaching methods:

Lectures 8 hours

Guided practical training 13 hours

Practical training with patients 1,5 hours

Simulation training 3 hours

Training with the cadaver 1,5 hour

Self-study 27 hours and 7 hours of the independent work is done as on-line work

Target group:

Total of 12 students can be included into the course unit.

Prerequisites and co-requisites:

The required prerequisite is the completion of the following courses prior to enrolling for the course unit: Surgery 1 and Surgery 2

Recommended optional programme components:

No

Recommended or required reading:

The lesson material, which will be given during the course unit: the course unit is mainly practical training. The lectures held during the course will be available in Optima.

Assessment methods and criteria:

Obligatory face-to-face studies.

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

Grading:

Pass/ fail

Person responsible:

Professor Tatu Juvonen and professor Jyrki Mäkelä

Teachers of the course:

Clinical teachers Maarit Valkealahti and Jukka Palm

Working life cooperation:

No

Other information:

No other information

080001Y: Treatment of critically ill patient and patient safety, 4 - 5 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Medicine

Arvostelu: 1 - 5, pass, fail

Opettajat: Alahuhta, Seppo Matias

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS

Language of instruction:

Finnish

Timing:

The sixth year, C11-12

Learning outcomes:

The students will be motivated to refresh his or her knowledge in recognition, diagnostic and initial management of the critically ill patient. The student knows the basics of the patient triage and is motivated to continuous learning and training in emergency medicine. The students will be motivated to refresh his or her skills in communication, team working, leadership, hand-over, treatment of the critically ill patient in a multidisciplinary environment, and knowledge in trauma psychotherapy and patient safety.

Contents:

Recognition, assessment and treatment of critically ill patient. Triage, leadership, situation awareness, communication, hand-over patient data, patient safety and trauma psychotherapy.

Mode of delivery:

Blended teaching.

Learning activities and teaching methods:

OSCE-examination on recognition and initial treatment of the critically ill patient

Multidisciplinary simulation teaching for small groups

OPTIMA-examination

Lectures

Feed-back on examination

Initiative learning

Seminar days

Target group:

For the students of the sixth year.

Prerequisites and co-requisites:

The required prerequisite is the completion of the following courses prior to enrolling for the course unit:

Anesthesiology 1 plus preliminary examination.

Recommended optional programme components:

No.

Recommended or required reading:

Given during the course.

Assessment methods and criteria:

Taking part actively to the obligatory studies. Passive participation may results in rejection.

Grading:

pass/fail

Person responsible:

Professor Seppo Alahuhta

Working life cooperation:

No.

Other information:

No other information.