



Course Regime

Course: **Pathophysiology**

Study Programme: **Medicine**

Year of the Course: 3

Semester: Winter & Summer

Course type: Compulsory

Number of ECTS credits: 10

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Participating Organisational Units (Departments and Institutes):
Institute of Pathophysiology ULFM

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A. General part

1. Course objectives

Students obtain the ability to understand the causes and mechanisms of diseases and pathologic processes in human beings on the basis of physiological and biochemical dysfunctions in the body. During practicals, seminars and problem-based learning they acquire the competence to use their knowledge for understanding the signs and symptoms of diseases, their course and complications and to grasp possible bidirectional interactions between the pathological processes in the oral cavity and in other parts of the body. They are provided with a rational basis to pay special attention to and to be aware of possible complications when performing dental work in different patients. Students know how to define diseases and basic divisions within the disease states encompassed in the course content. They understand the pathophysiological mechanisms of cause and development of disease states which leads to understanding the basic principles of diagnosis, treatment and prevention of diseases and possible interactions between systemic diseases and diseases in the oral cavity.

Students use their knowledge and understanding to further study and master the clinical courses and for later professional work with patients in their field of dental medicine. They learn the importance of understanding the mechanisms of diseases for rational approach to the patient and for disease prevention and get a holistic insight on dental patients. They develop the ability of abstract pathophysiologic thinking about diseases from the viewpoint of causes and mechanisms. They obtain the ability to explain their viewpoint and convictions in professional discussions and get used to team work.

2. Comprehensive outline of the course organisation

The course takes two semesters (i.e. called winter and summer semester) and is organised as lectures, PBL seminars and practical work. Attendance is mandatory for presentation of PBL seminars and practical work.

2.1. Lectures

Lectures enable the student to better understand course exam topics that are not discussed during PBL seminars or practical work.

2.2. PBL Seminars

Each student has to prepare one seminar based on a clinical case and present it to his fellow students; preparation and rehearsal of a seminar will be conducted by an academic mentor from the Institute of Pathophysiology.

The student's seminar presentation will be assessed with a pass or fail grade. Each student selects one from a list of offered topics.

Students can choose to present their seminar during the winter or summer semester.

2.3. Practical work

Topics covered in the practical work are (Inflammation, Metabolic disturbances, Respiratory disturbances Bronchoconstriction-Asthma, Circulatory disturbances - Bleeding and shock and Pain.).

3. Description of on-going assessment of knowledge and skills

3.1. Assessment of PBL seminar

Oral examination of the student's seminar topic presentation, graded with a pass or fail.

3.2. Assessment of practical work

Two written MCQs examinations at the start (5 MCQs, exam duration 5 min) and end (10 MCQs, exam duration 20 min) of each practical work, graded from 0 to 5 and from 0 to 10 points respectively. Each correctly answered MCQ is awarded 1 point, there are no deductions for incorrect answers.

3.3. Partial examinations – colloquiums

Students take two colloquiums with ten MCQs (exam duration 20 min), each colloquium is evaluated from 0 to 10 points. Colloquium topics are announced 4 weeks in advance, colloquium dates are published at the start of the academic year. Each correctly answered MCQ is awarded 1 point, there are no deductions for incorrect answers.

4. Required conditions for the final examination (Course Exam)

Compulsory eligibility conditions for course exam are: (a) a pass grade for presentation of the seminar topics; and (b) a minimum number of points accumulated from practical work examinations and colloquiums (i.e. 57 or more points from a total of 105).

Students that accumulated less than 35 points from interim examinations have to enrol into the course for a second time.

Students that accumulated between 35 and 62 points from interim examinations have to sit an additional exam with 10 MCQs and get a minimum of 6 points out of 10 to be eligible for the course exam.

Students that accumulated 88 points or more from interim examinations are exempt from the written part of the course exam. This exemption is valid only for the first attempt to pass the course exam.

5. Final assessment and examination of knowledge and skills (Course Exam)

The final course exam is in compliance with the REGULATIONS FOR ASSESSMENT OF KNOWLEDGE AND SKILLS FOR THE UNIFORM MASTER'S STUDY PROGRAMMES OF MEDICINE AND DENTAL MEDICINE.

Students that accumulated 63 points or more from interim examinations and achieved a pass grade from seminar presentation are eligible to take the course exam.

Students that accumulated 89 points or more from interim examinations are exempt from the written part of the course exam. This exemption is valid only for the first attempt to pass the course exam.

The course exam has two parts a written (30 MCQs, exam duration 60 min) and an oral (presentation of three topics, exam duration between 15 to 60 min per candidate). Student's knowledge is graded at the end of the oral exam.

Each correctly answered MCQ at the written part of the course exam is awarded 1 point, there are no deductions for incorrect answers. To be able to proceed to the oral part of the course exam, the student has to accumulate at least 18 points out of 30 at the MCQs test. On the third attempt, the student can proceed to the oral part of the course exam even if he or she accumulated less than 18/30 points at the MCQs test.

6. Other provisions

Article 34. applies to interim and final, course exams.

Students with special needs can be granted up to 50% extra time to finish their interim or final course exams.

7. Fundamental study material and Supplement reading

7.1. Course literature

Course material (copies of lectures and relevant journal papers) will be provided to students on time for interim and final course exams.

Core Literature (available at the Central Medical Library)

- Ivan Damjanov: Pathophysiology

Additional Literature (electronic access provided by the Central Medical Library):

- SJ McPhee: Pathophysiology of Diseases
- Guyton/Hall: Textbook of Medical Physiology
- Harrison: Principles of Internal medicine - Pathophysiology chapters

8. Exam topics

8.1. list of examination topics.

- Acute and chronic renal failure
- Alcoholism
- Anemia
- Arrhythmia
- Asthma
- Atherosclerosis
- Bleeding
- Breathing disorders and respiratory failure
- Burns
- Carcinogenesis and cancerous cell
- Cardiac valve diseases and shunts
- Changes in plasma proteins
- Cough and dyspnea
- Crush syndrome
- Dehydration - Disorders of water metabolism and Na
- Diabetes
- Disorders due to changes in air pressure (altitude sickness, cesium disease)
- Disorders of Ca and P metabolism
- Disorders of consciousness (hypoglycemia, hepatic encephalopathy, uremia)
- Edema
- Electrical damage
- Gallstones
- Gastrointestinal disorders (vomiting, diarrhea, constipation, ileus)
- General stress response
- Headache
- Heart failure
- Hepatic tests
- Hereditary diseases (cystic fibrosis, phenylketonuria, gout)
- Hypertension
- Hyperthermia
- Hypoglycemia
- Hypotension
- Hypothermia
- Hypoxia and cyanosis
- Increased intracranial pressure
- Inflammation
- K⁺ changes in plasma

- Obesity
- Pain
- Pathophysiology of liver (acute necrosis, jaundice, alcoholic liver disease and cirrhosis)
- Pathophysiology of neuromuscular junction
- Pathophysiology of paralysis
- Pathophysiology of respiratory diseases (COPD, pneumonia, pulmonary edema, ARDS)
- Pathophysiology of suprarenal gland
- PH disorders of body fluids
- Pneumothorax
- Radiation illness
- Reactive oxygen compounds
- Shock
- Starvation
- Thrombosis and hemorrhagic diathesis
- Thyroid pathophysiology
- Ulcer

9. Other information