**Syllabus**

**Health promotion and protection I**

**Subject type:** compulsory

**Year of studies/ semester:** 4/ WS, SS

**Scope of the study subject:** WS ½, SS 03

**Hours:** 78 WS, 52 SS

**Credits:** 4

**Form of teaching:** lecture, seminars, practicals

**Method of verification of study results:** credit

**Additional student requirements:** 80% attendance

**Subject guarantor:** prof. MUDr. Dana Müllerová, Ph.D.

**Teachers:** prof. MUDr. Dana Müllerová, doc. MUDr. Libuše Čeledová, Ph.D., Doc. MUDr. Aleš Kroužecký, Ph.D. ,MUDr. Vendulka Machartová, Ph.D., Prof. MUDr. Petr Pazdiora, CSc.

**Subject syllabus:** Epidemiology, Nutrition and Diet Therapy, Sports Medicine, Balneology, Rehabilitation, Occupational Diseases, Public Health Medicine, Social Medicine and Assessment Medicine, Public Health. Primary Care. Social Gerontology.

**Learning objectives of the course:** [*https://lms.lfp.cuni.cz/course/view.php?id=202#section-1*](https://lms.lfp.cuni.cz/course/view.php?id=202#section-1)

<http://www.lfp.cuni.cz/oddeleni/63-klinika-pracovniho-lekarstvi.html>

<http://www.lfp.cuni.cz/oddeleni/29-ustav-hygieny-a-preventivni-mediciny.html>; http://www.lfp.cuni.cz/oddeleni/99-ustav-socialniho-a-posudkoveho-lekarstvi.html

**Epidemiology**

**Academic year 2024/2025**

**General Medicine – year IV**

**Guarantor: prof. MUDr. Petr Pazdiora CSc.**

**PRACTICALS (26 hours):**

General epidemiology, selected terminology, working methods

Methods of disinfection and sterilization

Nosocomial infections

Alimentary infections and intoxications

Vector-borne infections, animal injuries and contact with animal biological material

Vaccination
Viral hepatitis

Disease caused by HIV

Coronavirus diseases – SARS, MERS, covid-19
Epidemiological news

**CONDITIONS FOR CONTROLLING PARTICIPATION IN lessons AND CONDITIONS TO GAIN THE CREDIT:**

Attendance will be checked during each practical lesson

The condition to gain the credit is at least 85% participation in practical classes (it means absence of 4 hours from 26 hours of practical classes) and successful final credit written online test from Epidemiology after fulfilment of attendance in 4th year. The test contains 30 questions, both single and multiple choice. I tis possible to get a total of 30 points from the test. To successfully complete the test students need 22,5 points - 75%. The time limit to complete the test is 18 minutes. There is no limit to the number of attempts. The test dates will be at least once a week during the winter exam period, in the summer exam period until the end of June, then in September. The test will be available in Moodle always on the same link.

Knowledge required for credit test – listed in Moodle.

**STUDYING RESOURCES:**

Bakoss P.: Compendium of Epidemiology. Comenius University Bratislava 1999

Mandal B.K., Wilkins, E.G.L., Dunbar, E.M., Mayon-White, R.T.: Lecture notes on Infectious Diseases. Blackwell Science Ltd. 1996

PowerPoint presentations

Materials for lessons in Moodle

**FINAL STATE EXAM IN SIXTH YEAR OF STUDY: Will be not**

**Sports Medicine**

**Academic year 2024/2025**

**General Medicine – year IV**

**Guarantor: assoc. MUDr. Aleš Kroužecký, Ph.D.**

**LECTURES (2 x 3 hours - 6 blocks of 45 minutes):**

**Concept of the exercise and sports medicine.**

History of exercise medicine. Definition of terms - sports medicine, exercise medicine.

Why become a sports physician? What will be my career path?

How to become a sports physician in Czech Republic?

**Sports medical examination**

When is and when is not a sports medical examination not necessary? Current legislation. Who orders and requires the examination? Who pays for the examination?

The requirements and specifics of a sports physician examination. Specifics of the medical history and physical examination during a sports medicine examination.

Laboratory examination. Anthropometry. Conclusion and outcomes of the physical medicine examination.

What can (and should) we do in addition to the mandatory components of the sports physical examination?

**Physical activity and cardiovascular system**

Blood pressure during exercise, sport and arterial hypertension.

Athletic heart syndrome.

The most common cardiac disorders associated with sport.

Exercise and sport in cardiovascular disease.

Current recommendations for sports cardiology and physical activity in patients with cardiovascular disease.

Method of performing and evaluation of cardiac exercise stress testing.

**Physical activity and sport in diabetic and obese patients**

Metabolic changes during exercise in diabetic patients, differences in glycaemic response to different types of exercise.

Physical activity in type 2 diabetic patients, treatment with exercise in patients with type 2 diabetes.

Physical activity in type 1 diabetic patients, specifics and current options for adjusting the treatment regimen in the athlete with type 1 diabetes.

Movement as a necessary part of obesity treatment.

**Stress diagnostics in athletes and non-athletes**

Indications and contraindications.

Conditions to perform a stress test.

Spiroergometry.

Lactate stress test.

Other options for stress testing.

**Physical activity as therapy and as a cause of health problems**

Movement as a means of protecting and promoting health.

Movement as a means of treatment - the concept of prehabilitation and support for other therapies.

Excessive movement as a cause of disease (overtraining syndrome).

**PRACTICALS (2 X 2 hours)**

**Practical exercise 1:**

Practice performing a sports medicine examination.

Medical history - its specifics in an athlete.

Clinical examination.

Spirometry.

Performance of resting and stress ECG - technical specifics.

Evaluation of constitution and body composition (training of caliperation, bioimpedance examination).

Medical report, completion and confirmation of the "Medical certificate of fitness for physical education and sport".

**Practical exercise 2:**

 Spiroergometry training.

 Lactate test training.

 Handgrip and more.

**E-SEMINARS (6 x 2 hours):**

1. Physiological adaptation to short- and long-term sports load.

2. Physiology and pathophysiology of physical activity in a high temperature environment. Therapeutic measures in overheated athletes. Heat and cold hardening.

3. Physiology and pathophysiology of staying at high altitude, high-altitude medicine. Physiology and pathophysiology of diving, diving medicine.

4. Nutrition in sport. Doping.

5. Respiratory diseases and sport.

6. Physical activity in cancer prevention and cancer patients.

**REQUIREMENTS FOR GAINING CREDIT:AT THE END OF THE SEMESTER:**

1. 100% participation in practicums, monitored by signatures at the completion of each practicum.
2. View of all recorded e-learning lectures on Moodle.
3. Successful completion of the final test at the end of the semester (the test will be common for the subjects of sports medicine, rehabilitation and balneology and will include questions from all three disciplines together). The test will be implemented on PC by logging in via Moodle, 20 questions, 3 answer options, only one answer correct, the criterion for successful completion of the test is 15 correctly answered questions out of 20.)

**FINAL STATE EXAM IN SIXTH YEAR OF STUDY: Will be not**

**STUDYING RESOURCES:**

Lectures.

E-learning portal of Department of Sports Medicine and Active Health Sciences on Moodle (E-seminars).

Textbook: Exercise Physiology, W. D. McArdle, LIPPINCOTT WILLIAMS & WILKINS, 2014.

**Balneology**

**Academic year 2024/2025**

**General Medicine – year IV**

**Guarantor: M.D. Ladislav Špišák, CSc.**

**Goal:**

The student recognizes the basic characteristics of balneology and balneotherapy, information on existing legislation on natural healing resources, indications and contraindications according to the valid indication list. Specifically, student will be acquainted with the methodology of spa treatment of individual groups of the diseases. Specific case reports will be presented during the E- Seminar.

**Lectures (2 x 3 hours):**

Definition of balneology, basic concepts, natural healing resources.

Spa treatment, definition of spa procedure and its traditional way of administration.

Specifics of spa in the Czech Republic and in the world, the effects of balneology on the body, the rehabilitation treatment in the spa.

General balneology (indications and contraindications of spa treatment).

Balneotherapy of musculoskeletal system.

Balneotherapy of heart and circulatory diseases.

Balneotherapy of respiratory diseases.

Balneotherapy of digestive system diseases.

Balneotherapy of urinary tract diseases.

Ballneotherapy as part of a comprehensive treatment of cancer

Balneotherapy of metabolic diseases

Balneotherapy of nervous system diseases

Balneotherapy of gynecological diseases

Balneotherapy of psychiatric diseases

Balneotherapy of dermatological diseases

Specifics of balneotherapy of children and adolescents.

**E-Seminar (1 x 2 hours):**

Balneotherapy case reports of patients with digestive tract diseases, diabetes mellitus in children and adults age, respiratory diseases, Long Covid - 19 conditions

**Conditions of credit:**

1. View of recorded e-learning lecture on Moodle.

2. Successful completion of the final test at the end of the semester (the test will be common for the subjects of sports medicine, rehabilitation and balneology and will include questions from all three disciplines together). The test will be implemented on PC by logging in via Moodle, 20 questions, 3 answer options, only one answer correct, the criterion for successful completion of the test is 15 correctly answered questions out of 20.)

**FINAL STATE EXAM IN SIXTH YEAR OF STUDY: Will be not**

**STUDYING RESOURCES:**

Lectures, E-learning portal Moodle

**Rehabilitation**

**Academic year 2024/2025**

**General Medicine – year IV**

**Guarantor: MUDr. Andrea Kunschová**

**LECTURES (2 x 3 hours - 6 blocks of 45 minutes):**

**Basics of rehabilitation** – definition, basic concepts, history

**The role of a rehabilitation physician**

**Physiotherapy** – definition, basic concepts

**Occupational therapy** – definition, basic concepts

**Basics of clinical examination in rehabilitation** – muscle tone, posture, walking, basic movement stereotypes

**Rehabilitation in selected clinical fields** – neurology, orthopedics, pneumology and internal medicine

**Modalities/ electrotherapy** – indications and contraindications

**Prosthetics and orthotics**

**PRACTICALS (1 X 2 hours)**

**Practical exercise : Examination procedures in rehabilitation**

* Anamnesis
* Clinical examination
* Setting a rehabilitation plan / treatment

**E-SEMINARS (3 x 2 hours):**

1. Electrotherapy in practice.

2. Spasticity and its treatment.

3. Back pain – diagnosis and treatment.

**REQUIREMENTS FOR GAINING CREDIT:AT THE END OF THE SEMESTER:**

1. 100% participation in practicums, monitored by signatures at the completion of each practicum.
2. View of all recorded e-learning lectures on Moodle.
3. Successful completion of the final test at the end of the semester (the test will be common for the subjects of sports medicine, rehabilitation and balneology and will include questions from all three disciplines together). The test will be implemented on PC by logging in via Moodle, 20 questions, 3 answer options, only one answer correct, the criterion for successful completion of the test is 15 correctly answered questions out of 20.)

**FINAL STATE EXAM IN SIXTH YEAR OF STUDY: Will be not**

**STUDYING RESOURCES:**

Lectures.

E-learning portal on Moodle (E-seminars).

**Occupational Diseases**

**Academic year 2024/2025**

**General Medicine – year IV**

**Guarantor: MUDr. Vendulka Machartová, Ph.D.**

**The aim** of the subject is to familiarize students with the basics of the field of Occupational Medicine, not only with the issue of assessing health fitness for work, but also with highly specialized issues related to the diagnosis, treatment and compensation of occupational diseases in the Czech Republic. Both of these areas are connected to a number of legislative regulations, with which students will also become familiar. Part of the practice will also be the assignment of independent tasks, which students must complete in order to receive credit. At the end of the study block, students take a knowledge verification test in the 4th year to get a credit.

**Lectures in the 4th grade (2x3 hours)**

Introduction to the field of Occupational Medicine

Assessment of health fitness for work

Work in healthcare and its risks.

Occupational diseases, their diagnosis, treatment and compensation.

The most common occupational diseases in the Czech Republic.

New occupational diseases in the Czech Republic.

**Practical exercises in the 4th grade ( 3x2 hours)**

Standard procedures for the examination of a patient with regard to the assessment of medical fitness for work.

Complementary investigation methods from the point of view of risk factors in the workplace.

Assessment of the workplace from the point of view of available job categorization.

Standard procedures when examining a patient with regard to a possible occupational disease.

Complementary examination methods from the point of view of clinical diagnosis in occupational diseases.

Assessment of the workplace in comparison of the work history and the statement of the KHS.

Case reports.

**Studying materials:**

MOODLE

**State final exam**

Questions from Occupational medicine will be part of the State Final Examination of the subject Health Promotion in the 5th year.

**Credit requirements**

Attendance 100 %.

**Social Medicine and Assesment Medicine**

**Academic year 2024/2025**

**General Medicine – year IV**

**Guarantor: doc. MUDr. Libuše Čeledová, Ph.D.**

**LECTURES: (1x3 hours)**

Lecture: Introduction to the fields of social medicine and assessment medicine

At the introductory lecture, students will receive basic information about the activities of the field of General Practical Medicine (GPM).

**STUDYING RESOURCES:**

Čeledová,L., Holčík,J. Social Medicine. An Introduction to New Public Health. Praha: Karolinum. 2019

**STATE FINAL EXAM IN THE 5TH YEAR OF THE STUDY:**

Questions from Social Medicine and Assesment Medicine will be part of the State Final Examination of the subject Health Promotion in the 5th year.

The main aim of this study subject is to inform medical students about the system and organization of health care, the provision of health care, the development of health care, and the social determinants of health. It also aims to enhance their understanding of health and disease and their determinants. Students will obtain information about the health care system and social services, the activities of the field of General Practical Medicine (GPM), and the cooperation between primary care, ambulatory care, and hospital care. Additionally, students will gain basic knowledge of gerontology and the history of medicine. Practical training involving the simulation of old age will help students understand some of the problems associated with ageing.

**Seminars**

* **Introduction to the study subject**. Social medicine and Public health. Theories of health and disease. Determinants of health and possibilities of how to affect them.
* **World Health Organization.** Meaning, activity, programs.
* **History of medicine.** Important personalities and discoveries in the history of medicine from the ancient times to the present.
* **Demography and its meaning for health care**. Health status of population, methods of study, aims and meaning of its study. Heath status indicators.
* **Institute of Health Information and Statistics**. International Classification of Disease and Related Problems.
* **Systems of health care** in the Czech Republic and the world.
* **Health literacy.** Health education.
* **Organization of health care.** Therapeutic preventive care (methods, parts, rules, provision). Ambulatory and hospital care. Primary care. Prevention and regular check-ups.
* **Social gerontology.** Issues of old age and aging of individuals and populations. Health and social problems in old age. Long-term care. Palliative care. Principles and possibilities. Practical simulation of old age (geriatric simulator).

Resources:

Čeledová,L., Holčík,J. Social Medicine. An Introduction to New Public Health. Praha: Karolinum. 2019

Other resources: Moodle

**Credit requirements**

Attendance 80 %.

**Public Health Medicine**

**Academic year 2024/2025**

**General Medicine – year IV**

**Guarantor: Prof. MUDr. Dana Müllerová, Ph.D.**

**LECTURES** (4x3hours - 12 blocks of 45 minutes):

Knowledge of the discussed topics will be verified in tests in the 5th year.

**INTRODUCTION TO PUBLIC HEALTH AND PREVENTIVE MEDICINE**

Public health. Determinants of health. Health protection and promotion. Assessment of the health status of the population. Current health priorities and fundamental goals of public health. Primary and secondary prevention of non-communicable chronic diseases: Cardiovascular and cancer diseases. Community health programs and their methodologies and examples.

**ASSESSMENT OF DIETARY HABITS AND METHODS OF EVALUATION OF NUTRITIONAL STATUS**

Monitoring of nutritional habits in the population: National food supply – food balance sheets, method of inventory analysis of dietary record, food-frequency questionnaires, surveys of food budgets in households, chemical analysis of double portion technique. Examination of the nutritional status and estimation of the risk of malnutrition in children and adults.

**HEALTH SAFETY AND FOOD QUALITY**

Food safety (EU and Czech legislation, risk analysis, supervisory authorities, RASF). Safe / quality food. Foreign substances in food (contaminants, additives). Alimentary diseases (alimentary infections, toxo-infections, food poisoning). Their management and prevention.

**GENERAL AND COMMUNAL HYGIENE**

Long-term sustainable development as an integrative part of preventive efforts for a healthy society and environment. Three pillars. Climate change, Agenda 21- Agenda 2030 selected UR goals, examples of good practice, sustainable development methods at the individual level. Factors of global pollution and their monitoring and management. Their health risks and impacts. Air: sources of pollution, air pollution limits, urban and rural environment, current situation.

**COMPULSORY SEMINARS** - 4th year

**NUTRITION** 4. year. - 3x2 hours - compulsory seminars

**NUTRITION AND HEALTH**

Nutritional composition of the diet. Energy balance and human energy need. Importance of macronutrients (lipids, carbohydrates, proteins), micronutrients (vitamins, minerals), phytoprotective substances and water in human nutrition. Their sources, manifestations of deficit, excessive intake and imbalance. Effect of nutrition on the intestinal microbiome. Food - its intake, digestion and absorption of nutrients, metabolism and excretion.

**DIETARY RECOMMENDATIONS**

General dietary recommendations (WHO, national), food-based dietary guidelines, recommendations in the form of nutritional standards. - nutritional recommended doses. Nutrition during the periods of life: during pregnancy and breastfeeding, during prenatal developments, in infants, toddlers. Nutrition of younger and older children. Nutrition during adolescence. Nutrition of adult men and women of productive age. Nutrition for seniors. Main nutritional ways in the prevention of non-communicable diseases. Mediterranean diet. DASH diet. Low carbohydrate diets. Vegetarian diets.

**CLINICAL NUTRITION**

Diet system. Characteristics of the main diets. Diets for persons with malnutrition, obesity, diabetes mellitus and other metabolic diseases, food allergies and intolerances, cardiovascular diseases, renal diseases, gastrointestinal diseases, cancer, critically ill patients, terminally ill patients.

**STUDYING RESOURCES:**

Textbook: https://www.bookport.cz/kniha/public-health-and-preventive-medicine-8495/

(https://cuni.primo.exlibrisgroup.com/view/action/uresolver.do?operation=resolveService&package\_service\_id=13563139030006986&institutionId=6986&customerId=6985&VE=true)

Moodle course: https://lms.lfp.cuni.cz/course/view.php?id=281

**STATE FINAL EXAM IN THE 5TH YEAR OF THE STUDY:**

Questions from Public Health, Preventive Medicine and Nutrition and Diet Therapy will be part of the State Final Examination of the subject Health Promotion in the 5th year.