
Course title: LABORATORY DIAGNOSTICS

ECTS credit allocation (and other scores): 2

Semester: spring

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Medical and health sciences

Language: English

Number of hours per semester: 50

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Type of classes: classes and lectures

Substantive content

CLASSES: 1. Specimen collection /systems/ 2. Urine as a diagnostic material 3. Full blood count, ESR /hematology/ 4. Diagnosis of coagulation system 5. Water and electrolyte balance and acid-base balance 6. Serology 7. The use of POCT devices and a description the organisation of cooperation between laboratory and specialist clinics or famili medicine clinic and dandling of FFS patients Seminars: I. 1. Laboratory diagnostics of the liver diseases a. the function of the liver b. laboratory tests connected with the function of the liver c. changes of the laboratory tests results in liver diseases 2. Laboratory diagnostics of CSF II. 1. Laboratory diagnostics of the pancreas diseases: a. the function of the pancreas b. laboratory tests connected with the function of pancreas c. changes of the laboratory tests results in pancreatic diseases 2. Laboratory diagnostics of the genital system disease (ovaries, testicles, prostate). III. 1. Laboratory diagnostics of the thyroid disease: a. the function of the thyroid b. laboratory tests connected with the function of the thyroid c. changes of the laboratory tests results in the thyroid diseases 2. Laboratory diagnostics of cardiovascular system. IV. 1. Laboratory diagnostics of the urinary system: a. the function of the urinary system b. laboratory tests connected with the urinary system c. changes of the laboratory tests results in urinary system disease 2. Laboratory diagnostics of body fluid. V. 1. Laboratory diagnostics of the endocrine system (the hypothalamus, the pituitary gland) a. the function of the endocrine system b. laboratory tests connected with the endocrine system c. changes of the laboratory tests results in the endocrine system disease 2. Laboratory diagnostics of the bone diseases.

LECTURES: 1. Place of laboratory diagnostics in the health care system
2. Effect of pre-analytical variability on laboratory results. Types of laboratory errors.
3. Effects of drugs on the results of laboratory tests, therapeutic monitoring of drugs.
4. Laboratory tests in an emergency.
5. Diagnostic separations in older people. Separations in the neonatal peripheral blood results.

Learning purpose: To acquire knowledge on the collection and handling of diagnostic material, avoidance of pre-laboratory errors, acquire practical skills on collection and correct handling of the material, acquire the ability to perform tests used by patients (e. g. glucometry, INR determination), use of lab results. in the patient's diagnosis.

On completion of the study programme the graduate will gain:

Knowledge: W1 - (E.W39.) types of biological materials used in laboratory diagnostics and principles of sampling for research; (E.W40.) theoretical and practical foundations of laboratory diagnostics; (E.W41.) possibilities and limitations of emergency laboratory tests;

Skills: U1 - (E.U24.) interpret laboratory results and identify the causes of deviations from the reference values; (E.U28.) collect and secure material for tests used in laboratory diagnostics;

Social Competencies: K1 - (K.5.) perceiving and recognizing one's own limitations and self-assessing educational deficits and needs;

Basic literature: 1) Hubbard J.D., "A concise review of clinical laboratory science", wyd. Williams&Wilkins, 2010 ; 2) Stedman, Stedman's medical dictionary, wyd. Williams & Wilkins, 2005 ; 3) Berkow C., The Merck manual of diagnosis and therapy, wyd. Berkow, 2005

Supplementary literature:

The allocated number of ECTS points consists of:

- Contact hours with an academic teacher: 50
- Student's independent work: 5