

Odessa National Medical University
Faculty of Medicine No. 1
Department of Occupational Pathology and Functional
Diagnostics

Course syllabus
Basics of clinical and laboratory diagnostics

Amount	4 credits of 120 hours
Semester, year of study	2 year of study, 4 semester
Days, time, place	Oleksandr Mykhailovych Ignatiev, Honored Worker of Science and Technology of Ukraine, Doctor of Medicine, Professor, Head of the Department of Occupational Pathology and Functional Diagnostics
Teacher(s)	Doctor of Medicine, HWof ST, Prof. O.M. Ignatiev
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Workplace	Department of Occupational Diseases and Functional Diagnostics, Sudnobudivna str., 1
Consultations	Consultations: face-to-face Wednesdays 13.00-14.00 Online: Tuesday, Thursday 13.00-14.00

COMMUNICATION

Communication with graduate students is carried out through face-to-face meetings. When switching to distance learning, communication is carried out using the Microsoft teams program. Skype, Zoom, Telegram, WhatsApp.

COURSE ANNOTATION

Subject of discipline study

The subject of study of the educational discipline "Fundamentals of clinical and laboratory diagnostics" is the method of research organization, interaction of laboratory personnel and clinical departments, personalization of research depending on the gender and age characteristics of the patient, etiology and pathogenesis of the disease, prescribed therapy of the most common diseases.

Course prerequisites and post-requisites (Place of the discipline in the curriculum)

The discipline is based on the study of "Medical Chemistry" (stud.), "Biological and Bioorganic Chemistry" (stud.), "Medical and Biological Physics" (stud.), "Pathological Physiology" (stud.), "Pathological Anatomy" (stud.), "Pharmacology" (stud.), "Hygiene and Ecology" (stud.), "Organization and Economics of Health

Care" (stud.), "Internal Medicine" (stud.), "Surgery" (stud.), "Physiology" (stud.), "Dermatology and venereology" (stud.), "Narcology" (stud.), "Obstetrics and gynecology" (stud.), "Traumatology and orthopedics" (stud.), etc. and establishes the basics of conducting scientific research with the aim of applying knowledge in the process of further education in graduate school and in professional activity.

The purpose of the course

The purpose of studying "Fundamentals of clinical and laboratory diagnostics" is to master the complex of knowledge, skills, and abilities of rational and safe for human health conducting laboratory research, which should increase the efficiency and/or prevent unwanted effects of diagnostic, therapeutic, expert measures, contribute to planning and execution own research, as well as for solving significant problems in the field of professional activity, science, related to the rational use of laboratory diagnostic methods.

Course objectives

1. To give PhD candidates knowledge about prescribing a patient's laboratory examination, using laboratory research data in preclinical diagnostics, conducting differential diagnostics, monitoring treatment, and forecasting the development of the most common diseases.;
2. Provision of knowledge about diagnostic procedures that are most often used in the practice of clinical laboratories;
3. Providing knowledge to PhD candidates about the principles of building diagnostic search algorithms for the most frequent pathological conditions and clinical syndromes, as well as requirements for conducting research within evidence-based medicine.

Expected results

According to the requirements of the educational and scientific programs of specialties, the discipline ensures that graduate students acquire the following competencies:

- integral:

The ability to solve complex problems, conduct independent original scientific research and carry out pedagogical, professional, research and innovation activities in the field of medicine and pharmacy.

- general:

1. The ability to improve and develop one's own intellectual and general cultural level.

2. Ability to work autonomously, respecting research ethics, academic integrity and copyright.
3. Skills for finding, processing and analyzing information from various sources.
4. Ability to communicate and work in a professional environment and with representatives of other professions in a national and international context.
5. The ability to identify, pose and solve problems, the ability to generate new ideas.
6. The ability to evaluate and ensure the quality of performed works.
7. Ability to plan and manage time.

- *special (professional, subject):*

1. Deep knowledge and systematic understanding of the subject area according to the direction and topic of scientific research in the field of medicine and pharmacy of future professional activity in the field of higher medical and pharmaceutical education.
2. Ability to determine the need for additional knowledge in the field of scientific research, formulate research questions, generate scientific hypotheses in the field of medicine and pharmacy.
3. Ability to develop and manage scientific projects in the field of medicine and pharmacy.
4. The ability to choose methods and criteria for evaluating researched phenomena and processes in the field of medicine and pharmacy in accordance with the goals and objectives of the scientific project.
5. Possession of modern methods of scientific research.
6. The ability to conduct a correct analysis and generalization of the results of scientific research.
7. Ability to interpret opportunities and limitations of research, its role in society.
8. Introduction of new knowledge (scientific data) into the educational process and health care practice.
9. Publicizing the results of scientific research in oral and written form in accordance with national and international standards.
10. Organize and implement pedagogical activities in higher medical education, manage the scientific and pedagogical (scientific) team.

COURSE DESCRIPTION

Forms and methods of education.

The course is taught in the form of lectures (20 hours), seminar classes (40 hours), as well as through the organization of independent work of graduate students (60 hours); only 4 credits (120 hours).

The teaching of the selective educational discipline "Fundamentals of clinical and laboratory diagnostics" at seminars is provided by methodical developments for

each class, visual teaching aids for each class (presentations, video lectures), the department's information resource, and structured skill control algorithms.

Independent work in the study of a selective academic discipline is ensured by methodical developments for independent work, visual teaching aids (video lectures, presentations), information resource of the department, topics of independent work, structured algorithms of skill control.

The final control is not conducted, the study of the discipline ends with a credit at the last seminar.

Control methods:

- entrance and final knowledge level control tests on the topic of the seminar;
- oral answer to questions based on the material of the current topic;
- solving typical and atypical clinical situational problems;
- control of practical skills;
- balance

The study of the discipline is implemented on the basis of the following teaching methods:

- according to the dominant teaching methods (verbal, visual);
- blitz survey;
- solving creative problems;
- drawing up graphic schemes;
- group discussions on problem situations;
- performance of written tasks;
- individual control interview;
- logical exercises;
- business games;
- situational tasks;
- performance of individual studies;
- problematic teaching method;
- "brain storm"

Course content

Topic 1. Clinical laboratory diagnostics as a discipline.

Topic 2. Principles of laboratory research

Topic 3. Organization of laboratory work

Topic 4. General clinical research

Topic 5. Biochemical research

Topic 6. Microbiological research

Topic 7. Genetic research

Topic 8. Laboratory examination in emergency conditions

Topic 9. Formation of algorithms for examination of organs and systems

Topic 10. Conducting research in accordance with the requirements of evidence-based medicine

List of recommended literature

Main (basic):

1. Lapovets L.E., Lebed G.B., Yastremska O.O. Clinical laboratory diagnostics: textbook. - All-Ukrainian specialized publishing house "Medytsyna", 2019. - 472 p.: 32 colors. incl.

2. Tanasiychuk I.S., Lunyova H.G., Zavadetska O.P., Oliynyk O.A., Kryvenko E.O., Kolyadintsev V.V. Training and assessment of the competence of the personnel of clinical and diagnostic laboratories in accordance with the requirements of international standards: monograph. Kyiv, 2019. - 71 p.

3. Anemias [electronic educational and methodological manual] / T.T. Fedorova, H.G. Lunyova, E.O. Kryvenko, O.A. Oliynyk, L.I. Sergienko, O.P. Zavadetska - 2017.

Additional:

4. Guidelines for the lectures, practical trainings and IWS./ composed by The Department of occupational diseases and functional diagnosis, 2020.

Information resources

5. Official website of the Ministry of Health of Ukraine <https://moz.gov.ua>

6. Website of the All-Ukrainian Association of Laboratory Diagnostics <http://acclmu.org.ua>

EVALUATION

Current control is carried out at seminar classes in accordance with the formulated tasks for each topic. When evaluating educational activity, preference is given to standardized methods control: oral survey, structured written works, discussions, role-playing games, reports. When mastering each topic for the current one educational activity, the student is given grades on a 4-point scale traditional scale. Current performance is calculated as an average the current score, i.e. the arithmetic average of all scores obtained by the graduate student (gainer) of grades on a traditional scale, rounded up to 2 (two) marks after the decimal point, for example 4.75.

Assessment of current discipline control:

The meaning of the "**excellent**" grade: the graduate student shows special creative abilities, is able to independently acquire knowledge, without the help of a

teacher finds and processes the necessary information, knows how to use acquired knowledge and skills to solve problems, is able to produce innovative ways of solving problems, convincingly argues answers.

The value of the grade "**good**": the graduate student is fluent in the studied volume material, applies it in practice, solves exercises and problems freely in standard situations, independently corrects the mistakes made.

The value of the rating is "**satisfactory**": the graduate student is able to master a significant amount part of the theoretical material, but mainly in a reproductive form, demonstrates knowledge and understanding of the main provisions, with the help of the teacher can analyze educational material, correct errors.

The value of the assessment is "**unsatisfactory**": the graduate student has mastered the material at the level individual fragments that make up a small part of the educational material.

Only those graduate students who do not have the final certification are admitted academic debt and have an average score for the current academic year activity at least 3.00.

Forms and methods of final control

The final control in the discipline "Fundamentals of clinical and laboratory diagnostics" is a credit.

Individual work

Assessment of independent work of graduate students and applicants, which provided in the topic along with classroom work, is carried out during current control of the topic in the corresponding classroom session, as well as on final control (exam).

COURSE POLICY

Deadlines and Rescheduling Policy

Tasks must be completed on time according to the deadline. For untimely completing the task, the graduate student receives an unsatisfactory grade. If the acquirer of higher education was absent from classes for any reason, then practice is carried out within the deadlines set by the teacher in accordance with the "Regulations on the organization of the educational process at ONMedU" (link to the regulations on the university's website <https://onmedu.edu.ua/wp-content/uploads/2020/01/osvitnijproces.pdf>). Rearranging is carried out in accordance with the approved schedule.

Academic Integrity Policy

The policy of the educational component is based on the principles of the academic one integrity (link to the regulations on the university's website <https://onmedu.edu.ua/wp-content/uploads/2020/07/polozhennja-prodobrochesnist.pdf>) and is determined by the system of requirements that the teacher presents to the applicant when studying the educational component:

- independent performance of educational tasks, tasks of the current and final control of learning results (for persons with special educational needs, this requirement is applied taking into account their individual needs and capabilities);
- links to sources of information in the case of using ideas, developments, statements, information.

Attendance and Tardiness Policy

Attendance and work are required to obtain a satisfactory grade in classroom classes (lectures and seminar classes). The lateness of the graduate student allowed for no more than 10 minutes.

The use of mobile devices is permitted in class with permission teacher

Behavior

The following values should be cultivated while in the audience: respect for colleagues; tolerance for others; receptivity and impartiality; argumentation of agreement or disagreement with the opinion of other participants in the discussion, as well as one's own opinion; respecting the dignity of the opponent's personality during communication; compliance with the ethics of academic relationships.