

COURSE PROGRAM

Syllabus

1. General information

Full name	Specialized therapeutic practice
Full official name of a higher education institution	Sumy State University
Full name of a structural unit	Academic and Research Medical Institute. Кафедра внутрішньої та сімейної медицини
Author(s)	Kyrychenko Nataliia Mykolaivna
Cycle/higher education level	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
Duration	one semester
Workload	5 ECTS, 150 hours. For full-time course 100 hours are working hours with the lecturer (100 hours of seminars), 50 hours of the individual study.
Language(s)	English

2. Place in the study programme

Relation to curriculum	Compulsory course available for study programme "Medicine"
Prerequisites	Prerequisites for studying this educational component include successful completion of clinical disciplines during the 3rd–5th years of study, as well as nursing practice and therapeutic-oriented clinical medical practice.
Additional requirements	There are no specific requirements
Restrictions	There are no specific restrictions

3. Aims

The aim of the educational component is to develop and improve students' clinical reasoning and practical competencies through participation in simulation-based training that replicates real clinical situations in Internal Medicine and through bedside teaching. Particular emphasis is placed on teamwork, clinical decision-making, patient safety, and compliance with the principles of medical ethics and deontology.

4. Contents

Module 1. Specialized Therapeutic Practice 1. Management of patients with acute coronary

syndrome and myocardial infarction in outpatient and inpatient settings. 2. Development of practical skills in the differential diagnosis of angina pectoris, cardialgia, and acute chest pain. 3. Management of patients with hypertensive crisis, including cases complicated by acute left ventricular failure. 4. Enhancement of practical skills in the management of patients with cardiac arrhythmias and conduction disorders (paroxysmal tachycardia, atrial fibrillation, and atrioventricular blocks). 5. Mastering contemporary algorithms for the diagnosis and treatment of emergency allergic conditions, particularly anaphylaxis. 6. Development of practical skills in the management of patients with gastroesophageal reflux disease, gastritis, functional dyspepsia, and peptic ulcer disease. 7. Management of patients with chronic pancreatitis, acute cholecystitis, cholangitis, and cholelithiasis. 8. Enhancement of practical skills in the management of patients with ulcerative colitis and autoimmune liver diseases. 9. Development of diagnostic and therapeutic algorithms for patients with acute kidney injury, glomerulonephritis, nephrolithiasis, and infected hydronephrosis. 10. Practising the management of patients with endocrine emergencies, particularly hypoglycaemic coma. 11. Mastering contemporary approaches to the management of patients with rheumatologic disorders, including rheumatoid arthritis, gout, ankylosing spondylitis, systemic sclerosis, and IgA vasculitis (Henoch–Schonlein purpura). 12. Development of practical skills in the management of patients with degenerative musculoskeletal disorders, particularly knee osteoarthritis (gonarthrosis). 13. Management of patients with respiratory diseases, including community-acquired pneumonia, chronic obstructive pulmonary disease (COPD), severe asthma exacerbation, and Mycoplasma pneumonia. 14. Enhancement of practical skills in the diagnosis and management of patients with haematological disorders, including multiple myeloma, chronic lymphocytic leukaemia, and vitamin B12 deficiency anaemia. 15. Development of laboratory and instrumental investigation plans for therapeutic patients using evidence-based clinical guidelines and protocols. 16. Development of skills in prescribing pharmacological and non-pharmacological therapies in accordance with current standards of evidence-based medicine. 17. Practising algorithms for primary and secondary prevention of internal medicine conditions, as well as assessment of prognosis and patients' work capacity. 18. Final assessment: evaluation of practical skills in the management of therapeutic patients in simulated clinical settings using standardized assessment criteria.

5. Intended learning outcomes

After successful completion of the internship, a student will be able to:

LO1	Independently identify, analyze, and apply current clinical guidelines and integrate knowledge acquired from different clinical disciplines to solve clinical problems.
LO2	Formulate a preliminary diagnosis based on the assessment of the results of patients' physical examinations.
LO3	Demonstrate skills in history taking, clinical examination, and interpretation of diagnostic findings for establishing a diagnosis, taking into account patients' age-related characteristics.
LO4	Formulate a final clinical diagnosis based on the evaluation of laboratory and instrumental investigation results.
LO5	Interpret the results of laboratory and instrumental diagnostic methods.
LO6	Identify the leading clinical syndrome, justify the severity of the disease, and diagnose emergency conditions.

LO7	Determine the principles and approaches to the management and treatment of patients with various diseases.
LO8	Apply appropriate recommendations regarding work, rest, and nutritional regimens in accordance with the clinical diagnosis and current standards of care.
LO9	Demonstrate the ability to rapidly assess a patient's condition, determine appropriate management strategies, and provide emergency medical care in urgent situations in accordance with current clinical protocols under time-constrained conditions.
LO10	Develop skills in planning and coordinating the provision of medical care and evacuation of casualties during emergency situations.
LO11	Demonstrate practical skills in performing medical procedures according to the clinical situation and healthcare setting while adhering to professional standards.
LO12	Assess patients' functional status and complete the required medical documentation accordingly.
LO13	Organize anti-epidemic and preventive measures aimed at preventing the spread of infectious diseases among the population.
LO14	Implement preventive measures against infectious diseases at the population level.
LO15	Develop and apply approaches to safe behavior in the context of occupational hazards and professional risks.
LO16	Plan and implement immunoprophylaxis measures, including vaccination activities.

6. Role in the achievement of programme learning outcomes

Programme learning outcomes:

For 222 Medicine:

PO1	Demonstrate comprehensive knowledge of the structure of professional activity. Be able to carry out professional activities that require continuous updating and integration of knowledge. Assume responsibility for professional development and engage in lifelong learning with a high degree of autonomy.
PO4	Identify and recognize the leading clinical symptoms and syndromes (according to List 1); using standard methods and based on the patient's medical history, physical examination findings, and knowledge of human organs and systems, establish a preliminary clinical diagnosis of diseases (according to List 2).
PO5	Collect patient complaints and medical history, assess psychomotor and physical development, evaluate the condition of organs and body systems, and interpret laboratory and instrumental findings to assess diagnostic information (according to List 4), taking into account the patient's age
PO6	Establish a final clinical diagnosis by making evidence-based decisions and analyzing subjective and objective clinical data, additional examination results, and differential diagnostic findings, while adhering to relevant ethical and legal standards under the supervision of a clinical mentor in healthcare settings (according to List 2).

PO7	Prescribe and interpret additional (mandatory and optional) diagnostic methods, including laboratory, functional, and/or instrumental investigations (according to List 4), for patients with diseases affecting organs and body systems to perform differential diagnosis of diseases (according to List 2).
PO8	Determine the leading clinical syndrome or the factors underlying the severity of a patient's condition (according to List 3) by making evidence-based decisions and assessing a person's condition in any circumstances, including healthcare settings, out-of-hospital environments, emergency situations, combat conditions, field settings, and situations involving limited information and time constraints.
PO9	Determine the nature and principles of treatment (conservative or surgical) for patients with diseases (according to List 2), taking into account the patient's age and healthcare setting, including medical evacuation stages and field conditions. Make evidence-based decisions according to established algorithms and standard treatment protocols and justify individualized recommendations when deviations from standard treatment schemes are required, under the supervision of a clinical mentor.
PO10	Determine the appropriate work, rest, and nutritional regimen based on the final clinical diagnosis, adhering to ethical and legal standards and using evidence-based decisions according to established algorithms and standard approaches.
PO14	Determine management strategies and provide emergency medical care for urgent conditions (according to List 3) within limited time frames in accordance with current clinical protocols and treatment standards.
PO15	Organize the provision of medical care and medical evacuation measures for civilians and military personnel during emergencies and armed conflicts, including field conditions.
PO17	Perform medical procedures (according to List 5) in healthcare facilities, at home, or in occupational settings based on a preliminary clinical diagnosis and/or the patient's condition, making evidence-based decisions and adhering to ethical and legal standards.
PO18	Assess functioning, limitations in daily activities, and the duration of disability, completing the relevant documentation in healthcare settings based on disease characteristics, clinical course, occupational factors, and other relevant information. Maintain medical records for individual patients and population groups in accordance with regulatory requirements.
PO19	Plan and implement systems of anti-epidemic and preventive measures aimed at preventing the occurrence and spread of diseases among the population.
PO20	Analyze the epidemiological situation and implement mass and individual, general and targeted preventive measures against infectious diseases.
PO24	Ensure an appropriate level of individual safety (for oneself and those under one's care) in the event of typical hazardous situations within the scope of professional activities.

PO29	Plan, organize, and implement specific preventive measures against infectious diseases, including those provided under the National Immunization Schedule, covering both mandatory and recommended vaccinations. Manage vaccine stocks and organize additional vaccination campaigns, including immunization activities.
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7. The role in the development of program competencies

For 222 Medicine:

PC1	GC1. Ability to think abstractly, analyze, and synthesize information.
PC2	GC2. Ability to learn and acquire contemporary knowledge.
PC3	GC3. Ability to apply knowledge in practical situations.
PC4	GC4. Knowledge and understanding of the subject area and comprehension of professional activity.
PC5	GC5. Ability to adapt and act in new situations.
PC6	GC6. Ability to make well-founded decisions.
PC7	GC7. Ability to work effectively in a team.
PC8	C8. Ability to engage in interpersonal interaction.
PC9	GC12. Determination and persistence in accomplishing assigned tasks and fulfilling undertaken responsibilities.
PC10	GC15. Ability to preserve and promote moral, cultural, and scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place within the general system of knowledge about nature and society, and its role in the advancement of society, technology, and innovation; ability to use various forms of physical activity for active recreation and maintaining a healthy lifestyle.
PC11	PC1. Ability to collect medical information about a patient and analyze clinical data.
PC12	PC2. Ability to determine the necessary range of laboratory and instrumental investigations and evaluate their results.
PC13	PC3. Ability to establish preliminary and clinical diagnoses.
PC14	PC4. Ability to determine appropriate work and rest regimens in the treatment and prevention of diseases.
PC15	PC5. Ability to determine nutritional recommendations in the treatment and prevention of diseases.
PC16	PC6. Ability to determine the principles and approaches to the treatment and prevention of diseases.
PC17	PC7. Ability to diagnose emergency conditions.
PC18	PC8. Ability to determine management strategies and provide emergency medical care.
PC19	PC9. Ability to carry out medical evacuation measures.

PC20	PC10. Ability to perform medical procedures and manipulations.
PC21	PC11. Ability to solve medical problems in new or unfamiliar environments with incomplete or limited information, taking into account aspects of social and ethical responsibility.
PC23	PC13. Ability to implement sanitary-hygienic and preventive measures.
PC24	PC14. Ability to plan and implement preventive and anti-epidemic measures against infectious diseases.
PC25	PC15. Ability to assess work capacity and conduct disability evaluation.
PC26	PC16. Ability to maintain medical records, including electronic documentation.
PC27	PC18. Ability to analyze the activities of physicians, departments, and healthcare institutions, ensure the quality of medical care, and improve the efficiency of healthcare resource utilization.
PC28	PC20. Ability to conduct epidemiological and medical-statistical studies of population health and process social, economic, and medical information.
PC29	PC21. Ability to communicate one's knowledge, conclusions, and arguments on healthcare issues and related topics clearly and unambiguously to both professionals and non-professionals, including students.
PC30	PC24. Commitment to ethical principles when working with patients and laboratory animals.

8. Learning activities

LA1	Analysis and discussion of clinical cases (Case-Based Discussions, CBD)
LA2	Simulation-based practice of clinical skills and management algorithms
LA3	Performance of individual and team-based clinical scenarios
LA4	Development of communication skills (doctor–patient, doctor–family, and interprofessional team interaction)
LA5	Working with virtual patients and digital simulation platforms
LA6	Independent preparation and use of educational and information resources
LA7	Debriefing and reflective analysis of simulation outcomes

9. Teaching methods

Provides learning through:

TM1	Case-based learning
TM2	Problem-based learning
TM3	Self-study
TM4	Team Based Learning
TM5	Experimental training
TM6	Mobile learning

Teaching of the course is carried out using modern educational technologies, including simulation-based, scenario-based, and case-based learning methods, which ensure the integration of theoretical knowledge with practical training. The educational process involves practising clinical skills and management algorithms in simulated settings, performing individual and team-based scenarios, analyzing clinical cases, and developing communication competencies in doctor–patient interactions and within healthcare teams. Particular emphasis is placed on adherence to the principles of medical ethics and deontology, fostering a culture of patient safety, and promoting professional responsibility. Learning takes place in a safe educational environment that enables students to practise clinical actions without risk to patients and encourages open discussion of errors. The use of virtual patients and digital platforms contributes to the development of digital literacy.

10. Methods and criteria for assessment

10.1. Assessment criteria

National scale	Rating scale
5 (Excellent)	$170 \leq RD \leq 200$
4 (Good)	$164 \leq RD < 169$
4 (Good)	$140 \leq RD < 163$
3 (Satisfactory)	$127 \leq RD < 139$
3 (Satisfactory)	$120 \leq RD < 126$
2 (Fail)	$70 \leq RD < 119$
2 (Fail)	$0 \leq RD < 69$

10.2 Formative assessment

	Description	Deadline, weeks	Feedback
FA1 Observation with structured feedback during skills performance and simulation activities	This is a formative assessment method based on direct observation by the instructor of the student performing practical clinical skills or participating in a simulation scenario, followed by timely, structured, and constructive feedback. Its purpose is to correct actions during the learning process, reinforce appropriate clinical algorithms, develop reflective thinking, and improve professional competencies in a safe educational environment.	Throughout the duration of the course.	Feedback is timely, specific, objective, and constructive. It focuses on the analysis of students' performance, reinforces effective practices, and provides clear recommendations for the improvement of clinical skills and professional behaviour.

FA2 Structured debriefing with self-assessment and peer assessment	Feedback is structured, reflective, and bidirectional (provided by both the instructor and peers). It is based on the analysis of specific actions performed during the simulation, incorporates self-assessment and peer assessment, and is aimed at increasing awareness of errors and reinforcing appropriate clinical decision-making.	Throughout the duration of the course, following the completion of each simulation scenario.	Structured, reflective, and bidirectional (provided by both the instructor and peers), based on the analysis of specific actions performed during the simulation, incorporating self-assessment and peer assessment.
FA3 Checklists for the Assessment of Clinical Reasoning and Patient Interaction	Structured, criterion-referenced, and objective, based on comparing students' performance with predefined steps of the clinical algorithm. It clearly identifies completed and omitted components and provides specific recommendations for improving clinical reasoning, communication skills, and professional performance. Description: This standardized formative assessment tool records students' performance of specific steps of a clinical algorithm, the accuracy of clinical decision-making.	Throughout the duration of the course.	Structured, reflective, and bidirectional (provided by both the instructor and peers), based on the analysis of specific actions performed during the simulation, incorporating self-assessment and peer assessment.
FA4 Automated Assessment of Scenario Performance (Performance Analytics within the Platform)	Immediate, objective, data-driven, and analytical. Feedback is generated based on digital performance indicators, including decision accuracy, adherence to clinical algorithms, response time, and the number of errors. It is presented in the form of structured reports or dashboards with clearly visualized performance indicators and specific recommendations for further improvement.	Throughout the duration of the course, during activities involving virtual patients.	Immediate, objective, data-driven, and analytical. It is generated based on digital performance indicators (decision accuracy, adherence to clinical algorithms, response time, and number of errors) and presented in the form of structured reports or d

10.3 Summative assessment

	Description	Deadline, weeks	Feedback
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SA1 Differential Credit in the OSCE Format (Objective Structured Clinical Examination)	An Objective Structured Clinical Examination (OSCE) conducted using standardized checklists designed to assess students' clinical skills, adherence to clinical algorithms, clinical reasoning, and communication competencies in simulated clinical settings.	At the final session of each module.	The assessment outcome is generated based on the checklist scores obtained at each OSCE station and reflects the level of achievement in clinical skills performance, application of clinical algorithms, and communication with patients and team members
SA2 Assessment of Practical Skills in Simulated Settings Using Standardized Criteria	This assessment involves an objective evaluation of students' clinical and procedural skills in a simulated environment using standardized checklists and rating scales. These instruments ensure transparency, reproducibility, and comparability of assessment results and allow evaluation of the accuracy of procedural performance, adherence to clinical algorithms, and patient safety practices.	Assessed during each content module.	Provides a clear determination of the level of performance for each individual skill and identifies areas requiring further improvement.
SA3 Knowledge Assessment Using the KROK Examination Format	Assessment of students' theoretical knowledge and clinical reasoning through standardized multiple-choice test items modeled on real clinical situations. This method ensures objectivity, validity, and comparability of results and enables evaluation of students' ability to analyze clinical data and make diagnostic and therapeutic decisions in accordance with current clinical guidelines and medical protocols.	Conducted during each module	Based on quantitative indicators of test performance, reflecting the level of knowledge acquisition and clinical reasoning and identifying areas requiring further improvement.

Form of assessment:

Form of assessment:

	Points	Можливість перекладання з метою підвищення оцінки
The first semester of teaching	200 scores	
SA1. Differential Credit in the OSCE Format (Objective Structured Clinical Examination)	100	
2. Differential Credit in the Internal Medicine OSCE Format (Objective Structured Clinical Examination)	100	No
SA2. Assessment of Practical Skills in Simulated Settings Using Standardized Criteria	80	
2. Виконання практичних навччок терапевтичного спрямування	80	No
SA3. Knowledge Assessment Using the KROK Examination Format	20	
Крок терапевтичного спрямування	20	No

Students are eligible for the final credit provided they have successfully completed all assessment activities and obtained at least 60% of the maximum possible number of points.

11. Learning resources

11.1 Material and technical support

MTS1	Information and Communication Systems
MTS2	Library Resources and Educational Archives Library collections and archives of radiographs, spirometers, electrocardiograms, coronary angiograms, computed tomography scans, and laboratory investigation results.
MTS3	Computers, Computer Systems, and Networks
MTS4	Medical Equipment Spirometer, peak flow meters, nebulizer, electrocardiograph, stadiometer, weighing scales, measuring tape, sphygmomanometer, stethoscope, glucometer, and oro- and nasogastric tubes.
MTS5	Software Software supporting distance learning, online surveys, virtual laboratories, virtual patients, computer graphics development, and other educational activities.
MTS6	Simulation Room Equipment Simulation mannequins and models, medical training simulators, an Ambu bag (bag-valve-mask resuscitator), and a urinary bladder catheterization simulator with a set of urinary catheters.

Learning resources and teaching aids are provided by the clinical training facilities, including the Simulation Center of the Educational and Scientific Medical Institute of Sumy State University.

11.2 Information and methodical support

Essential Reading	
1	Harrison's Principles of Internal Medicine [Електронний ресурс]. Vol.1. — 21st ed. — New York : McGraw Hill, 2022. — 3855 p.

2	Summary of European recommendations on nephrology [Електронний ресурс] : study guide / I. O. Moiseyenko, V. G. Psareva, L. N. Prystupa et al.; edited by L. N. Prystupa. — Sumy : Sumy State University, 2023. — 163 p. https://essuir.sumdu.edu.ua/handle/12
Supplemental Reading	
1	Skills in Rheumatology [Електронний ресурс] / ed.: H. Almoallim, M. Cheikh. — Singapore : Springer, 2021. — 566 p. — License: CC BY 4.0. https://library.oapen.org/handle/20.500.12657/46098 Т.3 / С. Ралстон, Я. Пенман, М. Стрекен, Р. Гобсон; наук. ред. пер.: І. Скрипник, О. Курята, Л. Соколова та ін. — пер. 23-го англ. вид. — Київ : Медицина, 2021. — 642 с.
2	Case History in Internal Medicine [Текст] : tutotial / I. M. Skrypnyk, G. S. Maslova, T. V. Lymanets etc. ; ed. : I. M. Skrypnyk. — 2nd ed. — Lviv : Marchenko T.V., 2024. — 202 p.
3	Psarova V.H., Kochuieva M.M., Gogunska I.V., Kyrychenko N.M., Kochuiev G.I., Cherkashyna A.L., Ivanova D.O. INFLUENCE OF PREDIABETES ON CARDIOVASCULAR REMODELING INDICATORS IN HYPERTENSIVE PATIENTS WITH OBESITY [Електронний ресурс] = Вплив предіабету на показники серцево-судинного ремоделювання у гіпертензивних пацієнтів із ожирінням / V. H. Psarova, M. M. Kochuieva, I. V. Gogunska // Східноукраїнський медичний журнал. — 2024. — Т. 12, № 4. — Р. 877-885.
4	Methodological instructions for practical classes on the subject "Internal medicine" (module 3 "Modern practice of internal medicine", module 4 "Emergencies in internal medicine clinic" [Електронний ресурс] : for the stud. of spec. 222 "Medicine" / H. A. Fadieieva, V. G. Psareva, L. N. Prystupa, Kyrychenko N. M., Pogorielova O. S., Orlovskiy O. V., Dudchenko I. O. etc. — Sumy : Sumy State University, 2023. — 95 p.

12. Bases

The specialized clinical practice may be based at a structural unit of Sumy State University that provides opportunities for students to acquire practical professional skills and develop discipline-specific competencies, including the Simulation Center of the Educational and Scientific Medical Institute.

13. Policies

13.1 Academic Integrity Policy

Participants must complete all tasks identified in the internship program independently. Reporting for passing the internship should not contain plagiarism, facts of fabrication, falsification, cheating. During the internship period, manifestations of other types of academic dishonesty determined by the Academic Integrity policy are also unacceptable. If a supervisor reveals violations of academic integrity of students during the practice, he has the right to conduct one of the following actions:

- to reduce by up to 40% points received during the fulfillment of internship assignments;
- to give recommendations for a retake of submitted internship assignments with a decrease by up to 25% of received points;
- do not count the results of the internship without giving the right to revise them;
- appoint a retake with a decrease by up to 15% of received points;
- refuse to retake of internship

13.2 Політика щодо використання інструментів штучного інтелекту при виконанні завдань

Політика використання інструментів штучного інтелекту (ChatGPT, Tome тощо) оголошується викладачем на початку курсу.

The instructor will outline the policy governing the use of artificial intelligence tools (such as ChatGPT, Tome, and similar applications) at the beginning of the course.

Несанкціоноване використання інструментів штучного інтелекту є порушенням академічної доброчесності.

13.3 Політика щодо використання матеріалів з джерел відкритого доступу

When using materials from open-access sources for the preparation of assignments stipulated by the syllabus and course regulations, students must adhere to the conditions of the applicable Creative Commons licenses governing the use of copyrighted works.

13.4 Attendance policy

Attendance to the internship base is mandatory. Supervisors from an enterprise (organization, institution) determine a student's schedule of stay at the internship base.

13.5 Deadline and recompilation policy

Deadline and recompilation policy

13.6 Assessment appeals policy

The results of the internship assessment are subject to appeal. For this, a student must submit a request to a director/dean on the day of certification or after announcing the results, but no later than the next working day.

An appeal commission is established by the order of a director/dean. The appeal commission's decision may change the grade in the event of violations revealed during the attestation.