**FacultY MEDICINE Nr.1**

**STUDY PROGRAM 0910.1 MEDICINE**

**DEPARTMENT OF internal medicine, GERIATRICS AND**

**OCCUPATIONAL MEDICINE**

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| --- | --- |
| APPROVEDat the meeting of the Commission for Quality Assurance and Evaluation of the Curriculum in Medicine/Pharmacy/ DentistryMinutes No.\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_Președinteassoc. prof., PhDHPădure Andrei\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (signature) | APPROVEDat the Council meeting of the Faculty \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Minutes No.\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_Dean of Faculty \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_assoc. prof., PhDHPlăcintă Gheorghe \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (signature) |
| APPROVEDapproved at the meeting of the chair\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Minutes No.\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_Head of discipline, univ. prof, PhDHBodrug Nicolae \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (signature) |

**SYLLABUS**

DISCIPLINE **Geriatics**

**Integrated studies / Cycle I, License**

Tipe of course: **Compulsory**

Syllabus developed by the group of authors:

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Chişinău, 2024

1. **INTRODUCTION**
* General presentation of the discipline: place and role of the discipline in the formation of the specific competences of the professional / specialty training program

Geriatrics is the branch of internal medicine that studies the pathological aspects of aging processes. Geriatrics is a compulsory discipline of the university education program that implements fundamental knowledge such as anatomy, human physiology, pathophysiology, pharmacology in elderly patients, needed for clinical activity. Elderly are an important segment of the total population worldwide. They have a more immunological, metabolic, vascular, and bone fragility than young adults. This expresses the importance of geriatrics in the general medical practice of the physician. The geriatric discipline has a program of training for future specialists.

The beneficiaries will study the most important aspects of geriatrics such as notions of geriatrics and gerontology, physiological and pathological human aging, demographic data and the world and national socio-economic aspects of the elderly population, geriatrics from the context of other specialties, theories of aging, the criteria of aging, geriatric syndromes, etc.

Such way, the student acquires practical skills for geriatric patient assessment, interpretation of clinical and laboratory assessment, establishing a geriatric diagnosis and appropriate treatment for the elderly.

* Mission of the curriculum (aim) in professional training

The purpose of the curriculum is to provide theoretical and practical support by cultivating skills, habits and attitudes for practical medicine as an important part in maintaining the health and quality of life of the elderly.

* Language (s) of the discipline: Romanian, Russian, English.;
* Beneficiaries: students of the 6th year students, faculty of Medicine II.
1. **MANAGEMENT OF THE DISCIPLINE**

|  |  |
| --- | --- |
| Code of discipline | **S.11.O.095** |
| Name of the discipline | **Geriatrics** |
| Person(s) in charge of the discipline | **Head of discipline - professor, doctor, PhDH****Nicolae Bodrug** |
| Year  | **VI** | Semester/Semesters | **XI** |
| Total number of hours, including: | **60** |
| Lectures | **10** | Practical/laboratory hours | **10** |
| Seminars | **10** | Self-training | **30** |
| Form of assessment | **CD** | Number of credits | **2** |

1. **TRAINING AIMS WITHIN THE DISCIPLINE**

# At the end of the discipline study the student will be able to:

# at the level of knowledge and understanding:

# - to know the importance of geriatrics, the particularities and conceptual problems of geriatrics in a multidisciplinary context;

# - to know the principles of determining the geriatric diagnosis in the elderly patient;

# - to know the elderly autonomy, objective examination, laboratory examinations and clinical features on organ systems;

# - acquire knowledge in the direction of complex geriatric examination, interpretation of geriatric scores and definition of geriatric syndromes, aging criteria, theories of aging;

# - to develop clinical thinking; deciphering and interpreting the results of clinical and laboratory assessment in the geriatric patient, establishing the presumptive clinical diagnosis, establishing and justifying the necessary investigation plan, differential diagnosis and differentiation criteria of the existing pathologies;

# - to know to prescribe individual treatment, etiological and symptomatic treatment in elderly patients;

# - to know principles of geriatric pharmacotherapy (pharmacokinetics, pharmacodynamics, drug actions, pharmacological accidents, drugs associations, geriatric iatrogenic pathology, frequent side reactions, etc.);

# - to know the practical apllication of recommendations for elderly patients (diet, physical regimen, specific medication).

# at the application level:

- to distinguish the specific features of pathologies in geriatric patient, the complex geriatric assessment in the context of different medical conditions, the evaluation of geriatric problems and the degree of dependence;

- to obtain the necessary skills to perform specific geriatric scores and their correct interpretation;

- use the knowledge gained in the study process by strengthening, enriching and implementing in clinical practice.

# at the integration level:

- to address the clinical importance of geriatrics, national and international geriatric problems;

- be competent to evaluate their own knowledge in the field of geriatrics and gerontology;

- be prepared for the evaluation of a geriatric patient in the context of different specialities;

- be able to apply the knowledge in later clinical practice.

1. **PROVISIONAL TERMS AND CONDITIONS**

The 6th year student requires the following:

* knowledge of the teaching language;
* knowledge of different semiotic systems (scientific language, graphic and computer language);
* digital skills (using the Internet, processing documents, presentations);
* communication and teamwork skills;
* qualities – tolerance, compassion, autonomy, team spirit, responsibility, punctuality.
1. **THEMES AND ESTIMATE ALLOCATION OF HOURS**

***Lectures, practical hours/ laboratory hours/seminars and self-training***

| No.d/o | ТHEME | Number of hours |
| --- | --- | --- |
| Lectures  | Practical hours | Self-training |
|  | Aging. Demographical data and socio-economical aspects. Definitions of geriatrics and gerontology. | 2 | 4 | 6 |
|  | Aging criteria. Geriatric diagnosis. The approach and evaluation of old patient. | 2 | 4 | 6 |
|  | Neurological changes in the elderly. Confusion, dementia and depression in elderly patients. | 2 | 4 | 6 |
|  | Frailty and falls in elderly. | 2 | 4 | 6 |
|  | Principles of geriatrics pharmacotherapy. | 2 | 4 | 6 |
| **Total** | **10** | **20** | **30** |

1. **PRACTICAL TOOLS PURCHASED AT THE END OF THE COURSE**

Mandatory essential practical tools are:

* to know the correct interpretation of laboratory examinations of the elderly
* to apply the formulation of the gerontological diagnosis through the prism of existing polypathologies
* to integrate the association of gerontological diagnosis with clinical diagnosis, after obtaining clinical and paraclinical data needed for it
* to know the neuro-psychic changes of the elderly (macroscopic, histological, neurochemical, vascular)
* to know the specific changes of the intellectual performances depending on aging process
* to know the conduct tactics of the geriatric patient of the confusing condition, indicating the necessary informative investigations
* to apply the concept of fragility in the context of gerontological diagnosis
* to define the notion of falls in the elderly
* to know the correlation between aging and the ability to maintaining balance and gait
* to know the pharmacological particularities in senescence
* to know the mechanisms of absorption, distribution, metabolism, excretion of drugs in the elderly
* to know the action of the used drug groups in geriatrics
* to interpret possible pharmacological accidents in the elderly.
1. **OBJECTIVES AND CONTENT UNITS**

| **Objective** | **Content units** |
| --- | --- |
| **Theme (chapter) 1. Aging. Demographical data and socio-economical aspects. Definitions of geriatrics and gerontology.** |
| * To define: the notion of geriatrics and gerontology, the definition of aging, geriatrics - interdisciplinary branch
* To know demographic data and socio-economic aspects of the elderly population, historical data, the way of conducting and organizing the geriatric service in the Republic of Moldova
* To know the classification according to age groups, mechanisms of aging, biological and chronological age, physiological and chronological aging, delayed and accelerated aging
* To demonstrate the theories of aging, the evolutionary and involutive segment of life
* Apply the acquired knowledge to the questioning and assessment of geriatric patients
* To integrate general knowledge into geriatric practice
 | 1. The notion of geriatrics and gerontology.

Geriatrics - interdisciplinary branch.1. Demographic data and socio-economic aspects of the elderly population, the implementation of the geriatric service in the Republic of Moldova.
2. Mechanisms of aging.

Classification of age groups.1. Theories of aging.
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| **Theme (chapter) 2. Aging criteria. Geriatric diagnosis. The approach and evaluation of old patient.** |
| * To define the criteria of physiological aging
* To know the way of aging of different organs and internal organ systems
* To know the autonomy of the elderly, the approach and assessment of the elderly patient, the biological age assessment scale, the formulation of the gerontological diagnosis
* To demonstrate the way of collecting anamnestic data, the specifics of performing the objective examination, the semiological and clinical specifics on organ systems
* To know the correct interpretation of laboratory examinations in the elderly
* To apply the formulation of the gerontological diagnosis from the perspective of existing polypathologies
* To integrate the association of gerontological diagnosis with clinical diagnosis, after obtaining the necessary clinical and paraclinical data.
 | 1. Aging criteria.
2. Complex geriatric evaluation of the elderly patient.
3. The clinical and laboratory examination of the geriatric patient. Results interpretation.
4. Gerontological diagnosis in the context of polypathologies.
 |
| **Theme (chapter) 3. Neurological changes in elderly. Confusion, dementia and depression in elderly patients.** |
| * To know neurological changes (microscopic, macroscopic and vascular)
* To know the specific changes in intellectual performance depending of aging
* To define the notion of confusion
* To know the causes, clinical symptoms and laboratory assessment of confusion
* To demonstrate the mechanisms of confusion progress
* To know predisposing factors of confusion
* To establish the differential diagnosis of confusion and diagnostic criteria
* To know the clinical manifestations and management of confusion
* To integrate all the knowledge for establishing the correct treatment for confusion
* To define the notion of dementia
* To know the classification of dementia
* To demonstrate the etiology of Alzheimer dementia
* To know the clinical manifestations and laboratory assessment of Alzheimer dementia
* To demonstrate geriatric assessment in elderly patients with dementia
* To know the diagnostic criteria and management of dementia
* To demonstrate the roles of risk factors in the development of the dementia
* To know the differential diagnostic of dementia and confusion
* To integrate all the knowledge for establishing the treatment for dementia
* To define the notion of depression
* To know the causes and the clinical symptoms of depression
* To know types of depression
* To demonstrate geriatric assessment in elderly patients with depression
* To integrate all the knowledge for establishing the treatment for depression
 | 1. The characteristic neuro-psychological changes of the elderly.

Intellectual performances characteristic of the elderly. The cultural, psychoaffective and sensory context in the elderly patient.1. Confusional state in geriatric practice.

The causes of confusion in the elderly and the physiopathological mechanisms. Predisposing and precipitating factors in confounding.Differential diagnosis of confusional state. Evaluation of the geriatric patient in a state of confusion. The necessary paraclinical examinations in the confusional state. Treatment of confusion.3. Dementia in the elderly patient.Classification and etiology of dementia.Clinical picture of the elderly patient with dementia.Differential diagnosis of dementias.Differential diagnosis of dementia and confusional state.Assessment of the patient with dementia in geriatric practice.Treatment of dementia in the elderly.4. Depressive conditions in the elderly.Etiology of depression in the elderly.The clinical picture of depression in the elderly.Evaluation of the geriatric patient with depression.Types of depression in the elderly patient.Treatment applied to the elderly with depression. |
| **Theme (chapter) 4. Frailty and falls in the elderly.** |
| * To define notion of frailty
* To know the causes of frailty
* To demonstrate the geriatric assessment in elderly patients with frailty syndrome
* To define the notion of falls
* To know the causes of falls (neurological, cardiovascular, iatrogenic, metabolic)
* To know the risk factors of falls
* To evaluate living conditions of patients with falls (furniture, bathrooms)
* To evaluate the predictor factors of falls
* To study the potential consequences of falls (traumatic, psychological, psychological consequences)
* To integrate all the knowledge for necessary treatment for elderly patients after falls
* To interpret the medical and social assessment of the elderly with risk of falling
* To apply the gained knowledge in clinical activity
 | 1. Frailty – the general approach to geriatric patients.

Multidimensional interpretation of frailty in geriatrics.Geriatric assessment of frail patients.2. The notion of falls in the elderly.The specific peculiarities of gait and balance interpretation.Causes of falls in the elderly.Determinants of falls.Clinical examination of the elderly after a fall.The environment of the elderly prone to falls.Recurrence of falls, predictive factors.Consequences of falls.Specific treatment and management tactics of the patient with falls.Psychosocial assessment of the elderly at risk of falls. |
| **Theme (chapter) 5. Principles of geriatrics pharmacotherapy.** |
| To know the pharmacological particularities of senescence* + - To know the mechanisms of absorption, distribution, metabolism, excretion of drugs in the elderly
		- To know the action of drugs used in geriatrics
		- To interpret possible pharmacological accidents in the elderly
		- To know the terms of overdose and iatrogenic pathology
		- To know the most common side effects seen in the elderly patient (neurological, cardiovascular and digestive side effects)
		- To know the general principles of geriatric pharmacotherapy
		- To know the aspects of non-pharmacological therapy
* To know the therapy against aging process (vitamin therapy, metabolic stimulants, antioxidants, immunomodulators)
* To demonstrate the particularities of geriatric pharmacotherapy in some classes of drugs (beta-blockers, cardiac glycosides, antiarrhythmics, antihypertensives, diuretics, antibiotics)
* To apply knowledge in clinical case demonstration
 | 1. Pharmacological characteristics in the elderly.

Pharmacokinetics and pharmacodynamics in the elderly.1. Pharmacological accidents in geriatrics.

Secondary side effects reported in geriatric practice.1. The aspects of pharmacotherapy in geriatrics, non-pharmacological therapy, and therapy used to inhibit the aging process.
2. The classes of drugs used in the geriatric department.
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1. **PROFESSIONAL (SPECIFIC (SC), TRANSVERSAL COMPETENCES (TC) AND STUDY FINalities**
* **Professional competences (PC)**
* **PC1**.Knowledge of the specific particularities of the organization and functioning of the body of elderly.
* **PC2**.Carrying out various practical tasks and applying theoretical knowledge in complex geriatric assessment.
* **PC3**.Development of the investigation plan, diagnosis, differential diagnosis, treatment and rehabilitation for the elderly patient with polypathologies, interdisciplinary collaboration.
* **PC4**.Development of the establishment plan and confirmation of a gerontological diagnosis based on the complex geriatric examination.
* **PC5**.Planning, coordinating and carrying out health promotion activities and preventive measures to improve the quality of life of the elderly in the Republic of Moldova.
* **PC6**.Knowledge and evaluation of the organization of geriatric system at national level.
* **Transversal competences (TC)**
* **TC1**.Applying the responsible attitude towards the scientific, didactic, curative field, in order to maintain discipline and organize the program in the process of training specialists in the medical field.
* **TC2**.Carrying out the activities and exercising the specific roles of teamwork in various medical institutions.
* **TC3**.Promoting the spirit of initiative, dialogue, cooperation, positive attitude and respect for others, empathy, altruism and continuous improvement of one's own activity;
* **TC4**.Objective self-assessment, communication, problem solving, presentation skills, emotional intelligence.
* **TC5**.Involvement in various projects and extracurricular activities.
* **TC6**.Development of analytical thinking, problem solving and result orientation.
* **Study finalities**
* To know the fundamental characteristics of geriatrics and gerontology and the role of geriatrics in the context of internal medicine.
* To know and apply in practice the clinical examination of the geriatric patient, the complex geriatric examination, the inter-preparation of the paraclinical examination changes in the geriatric department.
* To know the particularities of the algorithm of clinical diagnosis and gerontological diagnosis of the elderly patient with polypathologies.
* To be able to argue the application of the etiological, pathogenetic and symptomatic treatment to the geriatric patient.
* To use clinical reasoning in order to assess geriatric scores, large geriatric syndromes at the vortex.
* To be able to systematize and correctly interpret the results of the clinical and paraclinical examination, the argumentation of the presumptive diagnosis.
* To be competent for the use of knowledge in the direction of explaining the physiological and pathological processes of aging, the assessment of biological age.
* To be competent in the use of information and communication technologies in order to obtain information in the scientific field.
* To be competent to present himself in relation to the strategies of prophylaxis of polypathologies in the elderly.
* To be stimulated for the accumulation and enrichment of the acquired knowledge.

**Note. Discipline finalities** (are deduced from the professional competences and the formative valences of the informational content of the discipline).

1. **STUDENT'S SELF-TRAINING**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Expected product  | Implementation strategies | Assessment criteria | Implementation terms |
| 1. | Report | Analysis of bibliographic sources on the topic of the report.•Analysis, systematization and synthesis of information on the proposed topic.•Compilation of the report in accordance with the requirements in force and its reporting. | The way to systematize and analyze the material, the information obtained through individual activity.- The agreement of the information with the proposed theme. | During the course |
| 2. | Preparation of clinical case | How to choose, describe and present the case study.-Analysis and interpretation of the etiological causes, the results of laboratory and paraclinical investigations, the treatment scheme in the case study.- Exposure to the prognosis of the assessed case. | Analysis, synthesis, generalization of data obtained through individual investigation.-Formation of a knowledge algorithm based on the conclusions obtained.-Correlation of the clinical case investigation scheme in accordance with the requirements of the clinical protocols. | During the course |

1. **METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-ASSESSMENT**
* **Teaching and learning methods used**

When teaching the Discipline of Geriatrics, various didactic methods and procedures are widely used, with the aim of effective acquisition and achievement of the objectives proposed in the didactic process, such as: lecture, practical lesson, conversation, explanation, debate, problematization, simulation of situations, working methods in groups and individually, the study of curriculum documents and the bibliography.

Depending on the study process, various types of course sessions are applied, such as: introductory courses, synthesis courses, basic courses, debates, which develop and promote among students motivation, mobility, specialization, familiarization.

The practical lessons are aimed at: at the patient's bedside, with the aim of clinical and geriatric examination, discussing patients with polypathologies, interpreting clinical and paraclinical investigations, establishing treatment tactics; involving students in clinical case presentations of elderly patients with various polypathologies; practical lessons take place in an interactive manner, communication, development of practical skills.

* **Applied teaching strategies/technologies** (specific to the discipline)

Exposition, interactive lecture, heuristic conversation, problematization, brainstorming, group work, individual study, work with textbook and scientific text, debate, solving problem situations, interactive listening.

* **Methods of assessment** (including the method of final mark calculation)

**Current:**

• application of docimological tests,

• solving situational problems

• analysis of clinical case studies

**Final: EXAM**

**The final mark** will consist of the average mark (part 0.3), individual work (part 0.2), differentiated colloquium (part 0.5).

**Method of mark rounding at different assessment stages**

|  |  |  |
| --- | --- | --- |
| Intermediate marks scale (annual average, marks from the examination stages) | National Assessment System | ECTS Equivalent |
| **1,00-3,00** | **2** | **F** |
| **3,01-4,99** | **4** | **FX** |
| **5,00** | **5** | **E** |
| **5,01-5,50** | **5,5** |
| **5,51-6,0** | **6** |
| **6,01-6,50** | **6,5** | **D** |
| **6,51-7,00** | **7** |
| **7,01-7,50** | **7,5** | **C** |
| **7,51-8,00** | **8** |
| **8,01-8,50** | **8,5** | **B** |
| **8,51-8,00** | **9** |
| **9,01-9,50** | **9,5** | **A** |
| **9,51-10,0** | **10** |

The average annual mark and the marks of all stages of final examination (test, oral) - are expressed in numbers according to the mark scale (according to the table), and the final mark obtained is expressed in number with two decimals, which is transferred to student’s record-book.

*Absence on examination without good reason is recorded as "absent" and is equivalent to 0 (zero). The student has the right to have two re-examinations.*

*Students who have an average mark lower than 5 or did not recover the absences, are not admitted to the final exam.*

1. **RECOMMENDED literature:**
2. *Compulsory:*
3. ȘORIC, G., POPESCU, A., LUPAȘCU-VOLENTIR, F., NEGARĂ, A. Managementul diagnostic contemporan a fragilității vârstnicului. Recomandări metodice. Chișinău, 2021, 56p.
4. Hazzard's Geriatric Medicine and Gerontology, Sixth Edition (Principles of Geriatric Medicine & Gerontology), 2009.

*B. Additional*

1. Negară A. și coautorii/ Compendium de geriatrie / Chișinău, 2014.