

**MINISTRY OF HEALTH OF UKRAINE  
ODESSA NATIONAL MEDICAL UNIVERSITY**

Department of Pharmacy Organization and Economy  
with post-diploma specialization

**APPROVED**  
Vice-rector for scientific and pedagogical work  
  
Eduard BURYACHKIVSKY  
September 1<sup>st</sup>, 2024



**WORK PROGRAM IN THE DISCIPLINE**

**PHARMACEUTICAL AND MEDICAL COMMODITY SCIENCE**

**Level of higher education:** second (master's degree)

**Field of knowledge:** 22 "Health care"

**Specialty:** 226 "Pharmacy, industrial Pharmacy"

**Educational and professional program:** "Pharmacy, industrial pharmacy"

The working program is compiled on the basis of the educational and professional program "Pharmacy, industrial pharmacy" for the training of specialists of the second (master's) level of higher education in the specialty 226 "Pharmacy, industrial pharmacy" of the field of knowledge 22 "Health care", approved by the Academic Council of ONMedU (minutes No. 10 dated 27/06/2024).

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The working program was approved at the meeting of the Department of Pharmacy Organization and Economy with post-diploma specialization  
Minutes No. 1 dated August 29, 2024.

Head of the department



Oksana BIELIAIEVA

(signature) (First Name Surname)

Approved by the guarantor of  
the educational and professional program



Liana UNHURIAN

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Approved by the subject cycle methodical commission for pharmaceutical disciplines of ONMedU  
Minutes No. 1 dated August 30, 2024.

Head of the subject cycle methodical commission

for pharmacy's disciplines of ONMed



Natalia FIZOR

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Revised and approved at the meeting of the department \_\_\_\_\_

Minutes No. \_\_\_ of "\_\_\_" \_\_\_\_\_ 20\_\_

Head of Department \_\_\_\_\_

(signature) (First Name Surname)

Revised and approved at the meeting of the department \_\_\_\_\_

Minutes No. \_\_\_ of "\_\_\_" \_\_\_\_\_ 20\_\_

Head of Department \_\_\_\_\_

(signature) (First Name Surname)

## 1. Description of the discipline:

| Name of indicators  | Field of knowledge, specialty, specialization, level of higher education   | Characteristics of the discipline                        |
|---|--|--|
| Total number of:<br>Credits of ECTS: 3<br>Hours: 90<br>Content modules: 3 | Branch of knowledge<br>22 «Health care»<br><br>Specialty<br>226 "Pharmacy, Industrial pharmacy"<br><br>Level of higher education second (master's) | <i>Full-time education</i><br><i>Elective discipline</i> |
|   |  | <i>Year of training: 5</i>                               |
|   |  | <i>Semester: IX</i>                                      |
|   |  | <i>Lectures (0 hours)</i>                                |
|   |  | <i>Seminars (0 hours)</i>                                |
|   |  | <i>Practical classes (30 hours)</i>                      |
|   |  | <i>Lab classes (0 hours)</i>                             |
|   |  | <i>Independent work (60 hours)</i>                       |
|   |  | <i>including individual assignments (0 hours)</i>        |
|   |  | <i>Final control – test</i>                              |

## 2. 2. The Purpose and Objectives of the Discipline, Competencies, and Program Learning Outcomes.

**Purpose:** Acquisition of knowledge by a higher education seeker and formation of professionally oriented competencies in the field of pharmacy, knowledge of regularities of changes in the economic parameters of the company's activity, abilities and skills in the application of methods and tools for justifying economically effective management decisions.

**The tasks of the discipline** are the following:

- to plan and control the firm's financial resources. It deals with finding out various sources for raising funds for the firm.

- **General (GC):**

GC 1. Ability to think abstractly, analyze and synthesize, learn and be modernly educated.

GC 5. The ability to evaluate and ensure the quality of the work performed.

GC 9. Ability to use information and communication technologies.

GC 10. The ability to act socially responsibly and consciously.

GC 13. Ability to show initiative and entrepreneurship.

GC 14. Ability to adapt and act in a new situation.

GC 16. The ability to conduct experimental research at the appropriate level.

- **Special (SC):**

SC 1. Ability to integrate knowledge and solve complex pharmacy problems in broad or multidisciplinary contexts.

SC 2. The ability to collect, interpret and apply data necessary for professional activity, research and implementation of innovative projects in the field of pharmacy.

SC 3. Ability to solve pharmacy problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.

SC 13. The ability to organize the activities of the pharmacy to provide the population, health care institutions with medicines and other products of the pharmacy assortment and to implement appropriate reporting and accounting systems in them, to carry out product analysis, administrative record keeping taking into account the requirements of pharmaceutical legislation.

SC 14. The ability to analyse and forecast the main economic indicators of the activity of pharmacies, to calculate the main taxes and fees, to form prices for medicines and other products of the pharmacy assortment in accordance with the current legislation of Ukraine.

SC 15. The ability to conduct an analysis of socio-economic processes in pharmacy, forms, methods and functions of the system of pharmaceutical provision of the population and its components in global practice, indicators of the need, effectiveness and availability of pharmaceutical care in terms of medical insurance and reimbursement of the cost of medicines.

SC 18. The ability to organize and carry out general and marketing management of assortment, product and innovation, price, sales and communication policies of pharmaceutical market subjects based on the results of marketing research and taking into account market processes at the national and international levels, manage risks in the pharmaceutical supply system.

**Program learning outcomes (PLO):**

PLO 1. To carry out professional activities in social interaction based on humanistic and moral principles; identify future professional activities as socially significant for human health.

PLO 2. Apply knowledge of general and special disciplines in professional activities.

PLO 5. To assess and ensure the quality and efficiency of activities in the field of pharmacy.

PLO 21. Calculate the main economic indicators of the activity of pharmacies, as well as taxes and fees. To form all types of prices (wholesale, sale, purchase and retail) for medicines and other goods of the pharmacy range.

**As a result of studying the academic discipline, the student of higher education must:**

**Know:**

- focus of managerial economics and the importance of managerial economics in decision making
- contributions and limitations of economic analysis in business decision making
- fundamental concepts of managerial economics
- Scope of Managerial economics
- elasticity of demand and measure units
- utility of demand forecasting
- promotional elasticity of demand
- law of demand
- shifts in demand curve
- cross elasticity of demand
- book-keeping and Accounting
- users of Accounting
- advantages of Accounting
- limitations of Accounting
- basic Accounting concepts

**Be able to:**

- calculate financial indicators (coefficients) of the enterprise by groups of liquidity, solvency, turnover, profitability, etc.;
- analyse the actually achieved indicators and justify managerial decisions regarding their improvement.
- determine the financial stability of the enterprise based on the preliminary aggregation of balance sheet items;
- conduct a vertical and horizontal analysis of assets and liabilities of the company's balance sheet
- organize the process of evaluating the achievements and efficiency of the enterprise as a whole and its individual units;
- identify and determine the target values of the key parameters of the enterprise and its specific divisions;
- use effective tools and measures of economic management

- form a motivational mechanism of economic management of the enterprise,
- use tools for balancing personal (employee), collective (unit) and general economic goals and economic interests.

### 3. Content of the Discipline

#### Topic 1. Introduction to Economical Management of Companies.

Definition, Nature and Scope of Managerial Economics. Demand Analysis: Demand Determinants, Law of Demand and its exceptions. Elasticity of Demand: Definition, Types, Measurement and Significance of Elasticity of Demand. Demand Forecasting, Factors governing demand forecasting, methods of demand forecasting.

#### Topic 2. Key Measures and Relationships of Managerial Economics.

Revenue, Cost, and Profit. Economic Versus Accounting Measures of Cost and Profit. The Impact of Price Changes. Marginal Analysis. Marginal Analysis in Business and Microeconomics

#### Topic 3. Demand and Pricing

Theory of the Consumer: Definition, Meaning, Objective. Determinants of Demand. Modeling Consumer Demand. Forecasting Demand. Elasticity of Demand. Consumption Decisions in the Short Run and the Long Run. Price Discrimination

#### Topic 4. Cost and Production

Key concepts and principles from microeconomics that guide its organization and production activities to improve profitability and be able to compete effectively. Average Cost Curves. Long-Run Average Cost and Scale. Economies of Scope and Joint Products. Marginal Revenue Product and Derived Demand. Marginal Cost of Inputs and Economic Rent

#### Topic 5. Economics of Organization

Reasons to Expand an Enterprise. Classifying Business Expansion in Terms of Value Chains. Horizontal Integration. Vertical Integration. Transfer Pricing. Employee Motivation. Manager Motivation and Executive Pay

#### Topic 6. Financial Accounting & Financial Analysis

Introduction to Financial Accounting & Financial Analysis: Accounting concepts and Conventions. Financial Analysis: Analysis and Interpretation of Liquidity. Ratios: Activity Ratios, and Capital structure Ratios and Profitability ratios.

#### Topic 7. Markets & New Economic Environment

Types of competition and Markets, Features of Perfect competition. Monopoly and Monopolistic Competition. Business: Features and evaluation of different forms of Business Organization: Sole Proprietorship, Partnership, Joint Stock Company, Public Enterprises and their types. New Economic Environment: Changing Business Environment

### 4. The Structure of the Discipline

| Names of topics  | Number of hours |           |          |                   |             |     |
|--|-----------------|-----------|----------|-------------------|-------------|-----|
|  | Total           | including |          |                   |             |     |
|  |                 | lectures  | seminars | practical classes | Lab classes | ISW |
| Topic 1. Introduction to Economical Management of Companies.     | 12              | -         | -        | 4                 | -           | 8   |
| Topic 2. Key Measures and Relationships of Managerial Economics. | 12              | -         | -        | 4                 | -           | 8   |
| Topic 3. Demand and Pricing                                      | 12              | -         | -        | 4                 | -           | 8   |
| Topic 4. Cost and Production                                     | 12              | -         | -        | 4                 | -           | 8   |

|  |           |   |   |           |   |           |
|--|-----------|---|---|-----------|---|-----------|
| Topic 5. Economics of Organization                 | 14        | - | - | 4         | - | 10        |
| Topic 6. Financial Accounting & Financial Analysis | 16        | - | - | 6         | - | 10        |
| Topic 7. Markets & New Economic Environment        | 12        | - | - | 4         | - | 8         |
| <b>Total hours</b>                                 | <b>90</b> | - | - | <b>30</b> | - | <b>60</b> |

## 5. Topics of Lectures / Seminars / Practical Classes/ Laboratory Classes

### 5.1. Topics of lectures

Lectures are not provided.

### 5.2. Topics of seminar classes

Seminar classes are not provided.

### 5.3. Topics of practical classes

| No  | Topic name  | hours     |
|-----|---|-----------|
| 1.  | Topic 1. Practical class 1. The scope of managerial economics. Microeconomic Concepts.              | 2         |
| 2.  | Topic 1. Practical class 2. Demand Analysis: Demand Determinants, Law of Demand and its exceptions. | 2         |
| 3.  | Topic 2. Practical class 3. Revenue, Cost, and Profit Functions                                     | 2         |
| 4.  | Topic 2. Practical class 4. Marginal Analysis in Business and Microeconomics                        | 2         |
| 5.  | Topic 3. Practical class 5. Determinants of Demand: Definition, Shifters                            | 2         |
| 6.  | Topic 3. Practical class 6. Microeconomic models of consumer demand                                 | 2         |
| 7.  | Topic 4. Practical class 7. Marginal Revenue Product (MRP)  | 2         |
| 8.  | Topic 4. Practical class 8. Marginal Cost of Inputs and Economic Rent                               | 2         |
| 9.  | Topic 5. Practical class 9. Business Expansion, types, advantages and disadvantages                 | 2         |
| 10. | Topic 5. Practical class 10. Manager Motivation and Executive Pay                                   | 2         |
| 11. | Topic 6. Practical class 11. Management indicators, incentives, motivation                          | 2         |
| 12. | Topic 6. Practical class 12. Financial Accounting & Financial Analysis                              | 2         |
| 13. | Topic 6. Practical class 13. Activity Ratios: Definition, Formula, Uses, and Types                  | 2         |
| 14. | Topic 7. Practical class 14. Profitability Ratios: Definition, Common Types, and Using              | 2         |
| 15. | Topic 7. Practical class 15. Activity Ratios, Capital structure Ratios and Profitability ratios.    | 2         |
|     | <b>Total</b>  | <b>30</b> |

### 5.4. Topics of laboratory classes

Laboratory classes are not provided.

## 6. Independent Student Work

| No | Title of the topic / types of assignments        | hours     |
|----|--|-----------|
| 1. | Topic 1. Preparation for practical classes 1-2   | 8         |
| 2. | Topic 2. Preparation for practical classes 3-4   | 8         |
| 3. | Topic 3. Preparation for practical class 5-6     | 8         |
| 4. | Topic 4. Preparation for practical classes 7-8   | 10        |
| 5. | Topic 5. Preparation for practical classes 9-10  | 8         |
| 6. | Topic 6. Preparation for practical classes 11-13 | 10        |
| 7. | Topic 7. Preparation for practical classes 14-15 | 8         |
|    | <b>Total</b>                                     | <b>60</b> |

## 7. Teaching methods

Practical classes: Methods by the presentation and perception of information :

- Verbal: narrative, explanation, conversation, instruction, discussion, debate, discussion of problem situations, situational learning.
- Visual: illustration (including multimedia presentations), demonstration, method of direct observation, presentation of the results of own research.
- Practical: assignments; training tasks

**Independent work** in the study of the academic discipline is ensured methodological developments for independent work, visual teaching aids (video lectures, presentations), information resources of the department, topics of independent work

## 8. Forms of Control and Assessment Methods (including criteria for evaluating learning outcomes)

**Current control:** oral survey, control written works, evaluation of reports, evaluation of activity in the class, testing (pen-and-paper or computerized), evaluation of required skills

**Final control:** test.

### Evaluation of the current educational activity in a practical class:

1. Evaluation of theoretical knowledge on the topic of the class:
  - methods: survey, solving a situational clinical problem;
  - the highest grade available is 5, the lowest passing grade is 3, the failing (unsatisfying) grade is 2.
2. Evaluation of practical skills on the subject of the lesson:
  - methods: standardized and include control of vocabulary, grammar, and communication skills;
  - the highest grade available is 5, the lowest passing grade is 3, and the failing (unsatisfying) grade is 2.

### Current Evaluation Criteria at Practical Classes

| Rating | Evaluation criteria   |
|--------|---|
| "5"    | The higher education (HE) student is fluent in the material required, can perform the tasks provided for in the program successfully; has demonstrated creative abilities in understanding and using educational program material and the ability to update and replenish knowledge independently                     |
| "4"    | The HE student has demonstrated complete knowledge of the educational program material, successfully performs the tasks provided by the program, has mastered the basic literature recommended by the program, but makes minor mistakes, which are eliminated by the student him/herself when a tutor points them out |
| "3"    | The HE student does not have sufficient knowledge but knows the fundamental curriculum material to the extent necessary for further education and subsequent work in the profession; makes some mistakes in the answers, but has the necessary knowledge to overcome the mistakes made under the guidance of a tutor  |
| "2"    | The HE student does not acquire knowledge of program material, makes fundamental mistakes in the assignments provided by the program  |

Credit is given to the applicant who completed all tasks of the work program of the academic discipline, took an active part in practical classes and has an average current grade of at least 3.0 and has no academic debt.

Assessment is carried out: at the class before the beginning of the examination session. The credit score is the arithmetic mean of all components according to the traditional four-point scale and has a value that is rounded according to the statistics method with two decimal places after the decimal point.

## 9. Distribution of points, obtained by the student

The obtained average score for the academic discipline for applicants who have successfully

mastered the work program of the academic discipline is converted from a traditional four-point scale to points on a 200-point scale, as shown in the table:

**Table of Converting the Traditional Grades into the Multi-Point Grading Scale**

| <b>National Grade</b> | <b>200-Point Grading Scale</b> |
|-----------------------|--------------------------------|
| Excellent ("5")       | 185 - 200                      |
| Good ("4")            | 151 - 184                      |
| Satisfactory ("3")    | 120-150                        |
| Unsatisfactory ("2")  | Below 120                      |

A multi-point scale (200-point scale) characterizes the actual success of each applicant in learning the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is performed by the information and technical department of the University.

According to the obtained points on a 200-point scale, the achievements of the applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of students from the educational component who are studying in the same course of the same specialty, according to the points they received.

The ECTS scale is a relative-comparative rating, which establishes the applicant's belonging to the group of better or worse among the reference group of fellow students (faculty, specialty). An "A" grade on the ECTS scale cannot be equal to an "excellent" grade, a "B" grade to a "good" grade, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" according to the ECTS scale do not coincide with the limits of grades "5", "4", "3" according to the traditional scale. Acquirers who have received grades of "FX" and "F" ("2") are not included in the list of ranked acquirers. The grade "FX" is awarded to students who have obtained the minimum number of points for the current learning activity, but who have not passed the final examination. A grade of "F" is given to students who have attended all classes in the discipline, but have not achieved a grade point average (3.00) for the current academic activity and are not admitted to the final examination.

Applicants who study in one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

**Converting the Traditional Grade and the Sum of Points on the ECTS Scale**

| <b>Evaluation on the ECTS scale</b> | <b>Statistical indicator</b> |
|-------------------------------------|------------------------------|
| A                                   | Top 10% students             |
| B                                   | The next 25% students        |
| C                                   | The next 30% students        |
| D                                   | The next 25% students        |
| E                                   | The next 10% students        |

**10. Methodological Support**

- Working program of the discipline
- Syllabus
- Guidelines for practical classes
- Guidelines for independent student work
- Multimedia presentations
- Tests for current control

**11. Recommended literature**

**Required:**

1. Principles of Managerial Economics/ The open university of Hong Kong. 106 p.
2. Principles of Microeconomics: an Open Text by Douglas Curtis and Ian Irvine Base. Text Revision History. Current Revision: Version 2020 - Revision A. URL:



[https://laecon1.lyryx.com/textbooks/CURTIS\\_PRIN\\_MIC\\_1/marketing/CI-Principles-of-Microeconomics-2020A.pdf](https://laecon1.lyryx.com/textbooks/CURTIS_PRIN_MIC_1/marketing/CI-Principles-of-Microeconomics-2020A.pdf)

3. Principles of Macroeconomics: an Open Text by Douglas Curtis and Ian Irvine Base. Text Revision History. Current Revision: Version 2020 - Revision A. URL: [https://laecon1.lyryx.com/textbooks/CURTIS\\_PRIN\\_MAC\\_1/marketing/CI-Principles-of-Macroeconomics-2020A.pdf](https://laecon1.lyryx.com/textbooks/CURTIS_PRIN_MAC_1/marketing/CI-Principles-of-Macroeconomics-2020A.pdf)

**Additional:**

1. Borshch V.I. Health economics: methodological recommendations for the students. Odessa national medical university. Odessa: printing South, 2018. 128 p.

2. Economic and Business Management/ Edited by Xiaoxia Huang, Feng Zhang. China, 2022. 58 p.

3. Fundamentals of economics and management: study notes. The Institute of Cost Accountants of India, 2014. 336 p.

4. Van Horne, James C. Fundamentals of financial management / James C. Van Horne, John M. Wachowicz. 13th ed., 2018. 719 p.

### 13. Electronic Information Resources

1. Business management and organization/ Global innovative leadership module. URL: <https://ec.europa.eu/programmes/erasmus-plus/project-result-content/9a1c8bee-11f3-48f0-8e25-c86b14cf445a/Business%20Management%20And%20Organization%20Booklet.pdf>

2. Economics for pharmaceutical management. URL: <https://msh.org/wp-content/uploads/2013/04/mds3-ch10-pharmoeconomics-mar2012.pdf>

3. Prokopova O. Management reporting of pharmaceutical enterprises. SCIENTIA FRUCTUOSA. 2023. 112-120. 10.31617/1.2023(149)09. URL: [https://www.researchgate.net/publication/371828257\\_Management\\_reporting\\_of\\_pharmaceutical\\_enterprises](https://www.researchgate.net/publication/371828257_Management_reporting_of_pharmaceutical_enterprises)

4. State Employment Service: website. URL: <http://www.dcz.gov.ua/>

5. State Statistics Service of Ukraine: website. URL: <http://www.ukrstat.gov.ua/>

6. Economy of Ukraine: website. URL: <http://www.economukraine.com.ua/>

7. Economy of Ukraine (political and economic journal): website. URL: [https://journals.ua/business/ekonomka\\_ukraini/](https://journals.ua/business/ekonomka_ukraini/)

8. Electronic journal "Effective Economy" URL: <http://www.economy.nayka.com.ua>

9. Ministry of Economic Development and Trade of Ukraine: website. URL: <http://www.me.gov.ua/>

10. Normative-directive documents of the Ministry of Health of Ukraine: website. URL: <http://mozdocs.kiev.ua>

11. Pharmacy weekly: website. URL: <https://www.apteka.ua/>

12. Health economics. URL: <https://www.healtheconomics.com/>

13. Journal of Health Economics. URL: <https://www.journals.elsevier.com/journal-of-health-economics>