

**Odessa National Medical University**  
**Faculty of Medicine №2**  
**Department of Biophysics, Informatics and Medical Equipment**

**Syllabus course**  
**European standard of computer literacy**

<b>Amount</b>	90 hours, 3 credits
<b>Semester, year of study</b>	4th semester, 2nd year
<b>Days, time, place</b>	The time and place (number of the lecture hall, auditorium, laboratory, studio, etc.) of the discipline is determined in accordance with the approved schedule.
<b>Teacher (s)</b>	Full Prof. Godlevsky LS, M.D., Head of Department Assoc. Prof. Zhumatiy PG, Ph.D Assoc. Prof. Mandel OV, Ph.D Assoc. Prof. Matsko OM, Ph.D Assoc. Prof. Ponomarenko AI, Candidate of Medical Sciences Senior Lecturer Marchenko SV Senior Lecturer Pribolovets TV Senior Lecturer Tatarchuk TV Senior Lecturer Bidnyuk KA, Candidate of Medical Sciences
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<b>Workplace</b>	Department of Biophysics, Informatics and Medical Equipment, Olgiivska Str 2

<b>Consultations</b>	<p><i>Face-to-face consultations</i> : Thursday from 15:00 to 17:00; Saturday from 9:00 to 12:00</p> <p><i>Online consultations:</i> By prior arrangement with the teacher.</p>
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## **COMMUNICATION**

Communication with students can be done via e-mail, social networks, telephone, face-to-face meetings.

## **COURSE ANNOTATION**

**The subject of** study of the discipline "European standard of computer literacy" are information processes involving the use of a personal computer.

### **Prerequisites and postrequisites of the course:**

The discipline "European Standard for Computer Literacy" is based on the school course of computer science and lays the foundations for the study of the disciplines "Medical Informatics" and "Information Technology in Dentistry".

**The purpose of the course** . The course involves the formation and development of basic competence in accordance with the requirements of European and international certification programs (ECDL and ICDL) in the field of information and communication technologies (ICT) to ensure the rational use of modern office software.

**The main objectives** of the discipline "European standard of computer literacy" are:

- formation and development of a system of knowledge, skills and abilities necessary for the effective use of modern general-purpose programs;

- acquaintance of students with the role of new ICT in professional activity, with prospects of development of computer equipment;

- development of the ability to independently master software for various purposes and update and integrate the acquired knowledge.

**Expected results.** Competences and learning outcomes, the formation of which is facilitated by the discipline (relationship with the

normative content of training of higher education seekers, formulated in terms of learning outcomes in the Standard of Higher Education).

According to the requirements of the Standard of Higher Education, the discipline "European Standard for Computer Literacy" provides students with the acquisition of competencies, as a student must:

**know: the** field of use of modern information and communication technologies (including cloud); methods and algorithms for designing, developing and using information databases; areas of application of computer technology and the possibility of modern software for the organization of educational and scientific activities, in the preparation of reports and the implementation of electronic document management; general and special applications for solving professional problems; methods of system analysis

**be able to:** use information and communication to solve professional problems related to information exchange, collection, analysis, processing and presentation of results; design, develop and use information databases; to use computer technologies for the organization and maintenance of own educational and scientific activity, in preparation of reports and realization of electronic document circulation to use the general and special applied programs for the decision of professional problems; apply methods of systematic analysis to medical and financial data;

**have:** skills to use modern means of information and communication technologies in professional activities; skills to adapt information databases to the tasks

## **COURSE DESCRIPTION**

### ***Forms and methods of teaching***

The course will be presented in the form of lectures (16 hours), seminars (34 hours), organization of independent work of students (40 hours).

### ***The content of the discipline***

### **Thematic plan of practical (seminar) classes**

1. Introduction to an elective course. Modern information technologies and trends in their development. Basic concepts of information technology application in healthcare ..
  2. Personal computer hardware and software.
  3. Text editors for creating and editing text documents
  4. Spreadsheets for data processing and analysis
  5. Database management systems for data processing and analysis.
  6. Basics of preparation of publications for data presentation.
  7. Organization of joint work with documents. Development of a collective project.
  8. Programs for working with graphics and video.
  9. Creation, publication and support of web resources.
  10. Information technology in education.
- Only 30

### **Thematic plan of independent work of students**

1. Principles of operation and structural and logical scheme of PC construction.
2. Basic and system software. Operating Systems. Operating system installation and configuration.
3. The use of styles in the preparation of documents. Cross-references, table of contents, subject indexes. Import and exchange operations with other software
4. Creating tables, formatting cells, building graphs and charts in a spreadsheet environment.
5. Principles of construction and scope of databases. Basic concepts of database creation. Data representation models. Relational data model. Organization of information in tables.
6. Creation of forms and reports in the DBMS environment
7. Principles of construction and scope of publication preparation programs.
8. Software for organizing joint work on the project. Cloud technologies.
9. The main elements of the program interface for working with two-dimensional and three-dimensional graphics. Animation of 3D objects. Video images: formats, saving, editing.

## 10. Presentation of medical information on the Internet by means of web presentations

A total of 60

### Recommended literature

#### *Basic:*

1. Intermediate Physics for Medicine and Biology / Russell K. Hobbie (Author), Bradley J. Roth. — 5th ed. — Springer Science+Business Media, 2015. — ISBN-13: 978-3319126814, ISBN-10: 3319126814
2. Compendium of Biophysics / Andrey B. Rubin First © 2017 Scrivener Publishing LLC ISBN:9781119160250 |Online ISBN:9781119160281 |DOI:10.1002/9781119160281

#### **Additional:**

1. Biophysics: An Introduction / Roland Glaser. Springer-Verlag Berlin Heidelberg, 2012. ISBN 978-3-642-25212-9
2. Physics in Biology and Medicine - 5th Edition / Paul Davidovits. Academic Press, 2018. ISBN: 9780128137178
3. Membrane Structural Biology With Biochemical and Biophysical Foundations 2nd Edition / Mary Luckey, San Francisco State University, 2014 ISBN: 9781107030633
4. Biophysics: Tools and Techniques / Betty Karasek. East West Books, 2017. ISBN-13: 978-1632385444. ISBN-10: 1632385449

#### **Online resources:**

1. <https://info.odmu.edu.ua/chair/biophysics/files/428/en> (Methodic resources of the department)
2. <http://amphu.org> (Medical Physics in Ukraine)
3. <http://uamedphys.blogspot.com> (Books on Medical Physics)
4. <http://iopscience.iop.org/0031-9155> (Journal of Physics in Medicine and Biology)
5. <http://mednavigator.net> (Medical search engine)
6. <https://physicsworld.com/c/medical-physics> (Information resources of medical and biological physics)
7. <http://iomp.org> (International Organization of Medical Physics)
8. <https://aapm.org/default.asp> (Website of the American Association of Physicists in Medicine)
9. <https://aapm.onlinelibrary.wiley.com/journal/24734209> ((Journal «Medical Physics»))
10. <https://efomp.org> (Website of the European Federation of Medical Physicists)
11. <https://www.facebook.com/AmericanMedicalAssociation/> (American Medical Association)

## EVALUATION

The university uses various forms of control of classes in a particular discipline (oral, written, combined, testing, practical skills, etc.). The results of students' academic performance are presented in the form of assessment on the national scale, 200-point and ECTS scale and have standardized generalized criteria for assessing knowledge:

*National scale:*

- the grade **"excellent" is given** to the student who systematically worked during a semester, showed during examination various and deep knowledge of a program material, is able to successfully carry out tasks which are provided by the program, has mastered the maintenance of the basic and additional literature, has understood interrelation of separate sections of discipline. importance for the future profession, showed creative abilities in understanding and using educational material, showed the ability to independently update and replenish knowledge; level of competence - high (creative);

- a grade of **"good" is given** to a student who has shown full knowledge of the curriculum, successfully completes the tasks provided by the program, mastered the basic literature recommended by the program, showed a sufficient level of knowledge in the discipline and is able to independently update and update during further study and professional activity; level of competence - sufficient (constructive-variable);

- the grade **"satisfactory" is given** to the student who has shown knowledge of the basic educational program material in the volume necessary for the further training and the subsequent work on a profession, copes with performance of the tasks provided by the program, has made separate mistakes in answers on examination and at performance of examination tasks, but has the necessary knowledge to overcome mistakes under the guidance of a researcher; level of competence - average (reproductive);

- the grade **"unsatisfactory" is given** to the student who did not show sufficient knowledge of the basic educational program material, made fundamental mistakes in performance of the tasks provided by the program, cannot without knowledge of the teacher to use knowledge at the further training, failed to master skills of independent work; level of competence - low (receptive-productive).

The final control in the form of tests is evaluated on a two-point scale:

- grade **"credited"** is given to a student who has completed the curriculum of the discipline, has no academic debt; level of competence - high (creative);

- the grade **"not credited"** is given to a student who has not fulfilled the curriculum of the discipline, has an academic debt (average score below 3.0 and / or absences); level of competence - low (receptive-productive).

*The multi-point scale* characterizes the actual success of each student in mastering the discipline. Conversion of the traditional grade from the discipline to 200-point is performed by the information and computer center of the university program "Contingent" according to the formula:

***average grade point average (current / discipline) x 40***

national grade	points
«5»	185 - 200
«4»	151 - 184
«3»	120 - 150

*The ECTS rating scale* evaluates the achievements of students in the discipline who study in one course of one specialty, in accordance with the points obtained by them, by ranking, namely:

ECTS	Statistical indicator
"A"	The best 10% of students
"B"	The next 25% of students
"C"	The next 30% of students
«D»	The next 25% of students
"E"	The last 10% of students

The ECTS scale establishes the student's belonging to the group of the best or worst among the reference group of classmates (faculty, specialty), ie his rating. When converting from a multi-point scale, as a rule, the limits of grades "A", "B", "C", "D", "E" do not coincide with the limits of grades "5", "4", "3" on the traditional scale. Grade "A" on the ECTS scale cannot be equal to grade "excellent", and grade "B" - grade "good" and so on.

Students who have received grades "Fx" and "F" ("2") are not included in the list of ranked students. Such students automatically receive a score of "E" after reassembly.

The grade "Fx" is given to students who scored the minimum number of points for the current educational activity, but who did not pass the final 30 control. Grade "F" is given to students who have attended all classes in the discipline, but did not score a grade point average (3.00) for current educational activities and are not admitted to the final control.

Criteria for assessing the current performance of students should be reflected by the departments in the work programs in the disciplines, indicating a clear structure of student receipt in the assessment class.

## **COURSE POLICY**

### **Deadline and recompilation policy:**

Deadlines and transfers are set by the dean's office.

### **Attendance and lateness policy :**

In the absence of the student in class or when he is late, the student receives a mark n / b (was not), which requires further practice in the prescribed manner.

### **Mobile devices**

During practical classes, the use of a smartphone, tablet or other device for storing and processing information is allowed only with the permission of the teacher.

The use of mobile devices and their accessories is strictly prohibited during any form of control.

**Behavior in the audience:** observance of silence among students at lectures, exceptions - students' questions to the teacher regarding the explanation of the material; working discussion atmosphere in practical classes during the survey; adherence to the ethics of academic relations.