



# **MEDICAL UNIVERSITY – PLOVDIV**

## **FACULTY OF PHARMACY**

### **SYLLABUS**

### **IN**

### **INFORMATION TECHNOLOGY**

**Approved by the Department Council, Protocol №109/28.10.2024**

**Confirmed by the Faculty Council, Protocol №??/29.10.2024**

## INFORMATION TECHNOLOGY

### Syllabus

| Discipline             | Final exam/ semester | According to the Faculty of Pharmacy curriculum of MU-Plovdiv Academic hours |          |             |                | ECTS | Academic hours in semester |   |             |   |
|------------------------|----------------------|--|----------|-------------|----------------|------|----------------------------|---|-------------|---|
|                        |                      | I semester   |          | II semester |                |      | I semester                 |   | II semester |   |
|                        |                      | Auditorium   | Lectures | Practices   | Non-auditorium |      | L                          | P | L           | P |
| Information Technology | II                   | 30   | 15       | 15          | 39             | 2,5  |                            |   | 1           | 1 |

**DISCIPLINE:**

Information Technology

**TYPE OF DISCIPLINE ACCORDING TO THE UNIFORM STATE**

**REQUIREMENTS:**

Compulsory

**LEVEL OF QUALIFICATION:**

Master

**FORMS OF TRAINING:**

Lectures, seminars, self-training

**YEAR OF TRAINING:**

First

**DURATION OF TRAINING:**

One semester

**ACADEMIC HOURS:**

15 academic hours of lectures, 15 academic hours of seminars

**TECHNICAL EQUIPMENT APPLIED IN THE TRAINING:**

Multimedia presentations, discussions, demonstrations of software products, development of specific assignments, preparation for theoretical testing.

**FORMS OF EVALUATION:**

Continuous assessment, testing, developing of coursework/projects.

**EVALUATION CRITERIA:**

Forms average of continuous assessment of the theory test and practical coursework.

**ASPECTS OF EVALUATION CRITERIA:**

True, complete, and accurate development of questions asked and true test solving.

**SEMESTER EXAM:**

Yes (Continuous assessment by a theoretical test and course work, ending with a discussion of forming the final grade).

**STATE EXAM:**

No.

**LECTURER:**

Professor of Mathematics

**DEPARTMENT:**

Medical Physics and Biophysics

**ANNOTATION**

The course "Information Technology" is secondary course for the specialty and enables the acquisition of knowledge and skills necessary for the future master-pharmacists in the field of Information Technology. This includes the basic topics such as: Word processing with MS WORD – formatting paragraphs, documents, tables and graphics; Spreadsheets processing with MS EXCEL – workbooks, fields, customization, summarizing and analysis of data; Developing webpages with HTML – structure and formatting of the document using hyperlinks, graphics and sections; Making a presentation with POWERPOINT – design, characteristics of slides, text and visualization, target group, implementation.

**BASIC AIMS OF THE DISCIPLINE**

Acquisition of knowledge and skills to apply modern Information Technology as a tool for developing text documents, processing and analysis of data, websites and communication. The main objective of the educational process in this course is the knowledge of the basic theoretical facts about Information Technology in the areas of the communication services, the word-processing, working with tables and creation of websites, as well as an assimilation of new methods for the development of practical assignments in this field by the most common modern software. The particular objectives are the acquisition of the skill and the expertness with regard to:

- Own layout of a paragraph in Word
- Formatting of Word documents
- Tables in Word
- Graphics in Word
- Workbooks and worksheets in Excel
- Working with fields in Excel
- Customization in Excel

- Control worksheets in Excel
- Data summary in Excel
- Data analysis in Excel
- Structure and formatting of HTML document
- Usage of hyperlinks in HTML
- Inserting of graphics in HTML
- Usage of sections in HTML
- Design of presentation in PowerPoint
- Characteristics of slides
- Requirements to the text and visualization
- Working out and implementation.

## **EXPECTED RESULTS**

After the training completion, students must have the following knowledge and skills:

- be able to create a structured Word document with specific formatting and use of tables and illustrations
- create and use the main features of Excel spreadsheets, and in particular to be able to monitor, analyze and summarize data
- be able to create basic web pages with HTML, using hyperlinks, illustrations and sections
- be able to create presentations with a stylish and appropriate design
- to know how presentations should be made to an audience

## **LECTURES**

### **I. Word processing with MS WORD**

1. Layout of paragraph
  - 1.1. Sort of paragraphs in tables
  - 1.2. Sort of text in columns
2. Formatting documents
  - 2.1. Creating and applying styles formats
  - 2.2. Structuring the document levels and numbers
  - 2.3. Drawing on elements
  - 2.4. References
    - 2.4.1. Contents
    - 2.4.2. List of items labelled
    - 2.4.3. Indexes
    - 2.4.4. List of citations, references, etc.
  - 2.5. Footnotes
  - 2.6. Hyperlinks
  - 2.7. Bookmarks and links
  - 2.8. Forms creation and protection
  - 2.9. Management sections
  - 2.10. Working with a master document and subdocuments
3. Tables

- 3.1. Creation
- 3.2. Calculation table
- 4. Graphic images
  - 4.1. Creation
  - 4.2. Processing Picture and ClipArt
  - 4.3. Processing Shape
  - 4.4. Processing SmartArt
  - 4.5. Processing Chart
  - 4.6. Processing WordArt
- II. Spreadsheets with MS EXCEL
  - 1. Workbooks and Worksheets
    - 1.1. General principles of working with spreadsheets
    - 1.2. Editing spreadsheets
    - 1.3. Spreadsheets – merging data, templates
  - 2. Working with areas
    - 2.1. Named data fields in formulas
      - 2.1.1. Names for cell constants and formulas
      - 2.1.2. Valid names
      - 2.1.3. Create name a cell or area
      - 2.1.4. Create name formula or constant
      - 2.1.5. Change the reference to the name
      - 2.1.6. Labels of rows and columns of links
    - 2.2. Built-in functions for search and reference
      - 2.2.1. Function ADDRESS
      - 2.2.2. Function INDEX
      - 2.2.3. Function LOOKUP
      - 2.2.4. Function HLOOKUP
      - 2.2.5. Function VLOOKUP
      - 2.2.6. Function INDIRECT
  - 3. Customize
    - 3.1. Own menus and buttons on ribbon
    - 3.2. Macros
      - 3.2.1. Macro command
      - 3.2.2. Functional macro
  - 4. Controls in worksheets
    - 4.1. Control input
    - 4.2. Identifying dependencies in formulas
    - 4.3. Localization and debugging
  - 5. Summary of data
    - 5.1. Sort
      - 5.1.1. Types of data sorting
      - 5.1.2. Recommendations sorting

- 5.1.3. Types of sorting one criterion, second criterion, based on several criteria, own layout
- 5.2. Filters with relation AND, with relation OR for different columns, with relation OR for one column, with relation AND for one column, with searching initial character, with searching text, with calculated criteria
- 5.3. Intermediate results in lists and fields
  - 5.3.1. Basic steps
  - 5.3.2. One level of intermediate results
  - 5.3.3. Nested levels of intermediate results
- 6. Data Analysis
  - 6.1. Pivot tables, charts and reports
  - 6.2. Forecast analysis «What-If»
  - 6.3. Scenario
- III. Development of web page with HTML
  - 1. History and overview
  - 2. Structure and document formatting
    - 2.1. Structure of the document
    - 2.2. Instructions and attributes
    - 2.3. Narrative Head
      - 2.3.1. Tutorial Title
      - 2.3.2. Instruction Meta
      - 2.3.3. Instruction Base
    - 2.4. Executable portion Body
    - 2.5. Text Formatting
  - 3. Use of hyperlinks
    - 3.1. Another HTML document
    - 3.2. Another document other than an HTML document
    - 3.3. To another position in the same document
    - 3.4. To the position of another document
    - 3.5. To another protocol
  - 4. Include graphics
    - 4.1. Types computer graphics screen and vector
    - 4.2. Instruction IMG
  - 5. Use of the sections (Frames)
    - 5.1. Causes
    - 5.2. Creation
      - 5.2.1. Instruction FRAMESET
      - 5.2.2. Instruction FRAME
      - 5.2.3. Combined Sections
      - 5.2.4. Connections in sections
- IV. Preparing a presentation with POWERPOINT
  - 1. Introduction
  - 2. Making presentation

- 2.1. Compose slides
- 2.2. Using consistency. Match colors
- 2.3. Using contrast
- 2.4. Apply brilliance
- 2.5. Requirements for the text
- 2.6. Taking Home Message
- 2.7. Adding images, animations and media
- 2.8. Target and content
3. Giving a presentation to an audience

## **PRACTICES**

### **I. Word processing with MS WORD**

1. Layout of paragraph
  - 1.1. Sort of paragraphs in tables
  - 1.2. Sort of text in columns
2. Formatting documents
  - 2.1. Creating and applying styles formats
  - 2.2. Structuring the document levels and numbers
  - 2.3. Drawing on elements
  - 2.4. References
    - 2.4.1. Content
    - 2.4.2. List of items labelled
    - 2.4.3. Indexes
    - 2.4.4. List of citations, references, etc.
  - 2.5. Footnotes
  - 2.6. Hyperlinks
  - 2.7. Bookmarks and links
  - 2.8. Forms creation and protection
  - 2.9. Management sections
  - 2.10. Working with a master document and subdocuments
3. Tables
  - 3.1. Creation
  - 3.2. Calculation in table
4. Graphic images
  - 4.1. Creation
  - 4.2. Processing Picture and ClipArt
  - 4.3. Processing Shape
  - 4.4. Processing SmartArt
  - 4.5. Processing Chart
  - 4.6. Processing WordArt

### **II. Spreadsheets with MS EXCEL**

1. Workbooks and worksheets
  - 1.1. Editing spreadsheets
  - 1.2. Spreadsheets merging data, templates

2. Working with areas
    - 2.1. Named data fields in formulas
    - 2.2. Built-in functions for search and reference
  3. Customize
    - 3.1. Own menus and buttons on ribbon
    - 3.2. Macros
      - 3.2.1. Macro command
      - 3.2.2. Functional macro
  4. Controls in worksheets
    - 4.1. Control input
    - 4.2. Identifying dependencies in formulas
    - 4.3. Localization and debugging
  5. Summary of data
    - 5.1. Sort
    - 5.2. Filters according to different criteria
    - 5.3. Interim results in lists and fields
  6. Data analysis
    - 6.1. Pivot tables, charts and reports
- III. Development of web pages with HTML
1. Structure and document formatting
    - 1.1. Structure of the document
    - 1.2. Instructions and attributes
    - 1.3. Instruction Head
    - 1.4. Executable portion Body
    - 1.5. Text Formatting
  2. Use of hyperlinks
    - 2.1. Another HTML document
    - 2.2. Another document other than an HTML document
    - 2.3. To another position in the same document
    - 2.4. To the position of another document
    - 2.5. To another protocol
  3. Include graphics
  4. Use of the sections (Frames)
- IV. Preparing a presentation with POWERPOINT
1. Making presentation
    - 1.1. Composition of slides
    - 1.2. Requirements to the design
    - 1.3. Requirements for the text
    - 1.4. Adding images, animations and media
    - 1.5. Target and content
  2. Giving a presentation to an audience

## BIBLIOGRAPHY

1. **M. Manev.** *Information Technology. Lecture Notes for Specialty of Pharmacy*, 2020.
2. **M. Manev, H. Manev.** *Test of Information Technology for Specialty of Pharmacy*, Medical University – Plovdiv (online educational resources, 1.05.2021) – <https://mu-plovdiv-app.azurewebsites.net/course/view.php?id=706>

Other textbooks and manuals for students, non-specialists in information technology from different universities, as well as ordinary users in different sections can be used to some extent: word processing with Word, working with Excel spreadsheets, creation of HTML pages and preparing PowerPoint presentations.

## CONSPECTUS

### I. Word processing with MS WORD

1. First paragraph layout: sorting paragraphs in tables, sorting of text in columns
2. Formatting documents: creation and implementation of style formats, structured document levels and numbering, labelling items
3. Format documents: directories (content list of labelled items, indexes, list of citations, references, etc.), footnotes
4. Formatting documents: hyperlinks, bookmarks and links, forms creation and protection
5. Format documents: management sections work with a master document and subdocuments
6. Tables: creation, calculations in Table
7. Graphic images: creating, processing Picture and ClipArt, processing Shape
8. Graphic images: creating, processing SmartArt, processing Chart, processing WordArt

### II. Spreadsheets with MS EXCEL

1. Workbooks and Worksheets: general principles of working with spreadsheets, spreadsheets, spreadsheets merging of data, models (templates)
2. Working with fields: Named data fields in formulas names for cell constants and formulas valid names, creating name a cell or area
3. Handling areas: Named data fields in formulas creating name formula or constant change of the reference to the name tags of rows and columns of links
5. Working with areas: integrated search and reference functions ADDRESS, INDEX, LOOKUP, HLOOKUP, VLOOKUP, INDIRECT
3. Customize Excel own menus and buttons with stripes, macros (macro command, functional macro)
4. Control in the worksheets: control of the input data, identifying dependencies in formulas, tracking and debugging
5. Summary of Data: Sorting types of data sorting, recommendations sorting, sorting types (one criterion second criterion, based on several criteria, Own arrangement)

6. Summarizing the data: filters with relation AND, with relation OR for different columns, with relation OR for one column, with relation AND for one column, with searching initial character, with searching text, with calculated criteria
7. Intermediate results in lists and fields: basic steps one level of intermediate results, nested levels of intermediate results
8. Analysis of data: pivot tables, charts, and reports; forecast analysis "What-If", scenario

### III. Development of web pages with HTML

1. The language HTML: history and overview of the structure of the document, instructions and attributes
2. Structure and formatting of HTML document descriptive part Head instructions Title, Meta, Base
3. Structure and format of the HTML document, and executive part Body, text formatting
4. Use of Hyperlinks: to another HTML document; another document other than an HTML document; to another position in the same document; to the position of another document; to another protocol
5. Include graphics in HTML document: Types of computer graphics screen and vector instruction IMG
6. Use of sections (frames): Causes, creating instruction FRAMESET, instruction FRAME, combined sections, links sections

### IV. Preparing a presentation with POWERPOINT

1. The application for multimedia presentations POWERPOINT
2. Making presentation and requirements to their structure, layout, contents
3. Conducting a presentation to an audience