UNIVERSITY OF NOVI SAD
FACULTY OF MEDICINE

Study program: Doctoral Academic Studies in Biomedical Sciences

Name of the subject: INFORMATION TECHNOLOGY IN MEDICINE

Teacher(s): Daniela T. Marić, Nina R. Brkić Jovanović

Status of the subject: elective

Number of ЕСПБ points: 5

Condition: -

Goal of the subject

The main aims of Information Technology in Medicine course are to learn to work in certain software packages and online programs used in research, as well as to get acquainted with information systems and information technology used in biomedicine and in scientific research.

Outcome of the subject

Knowledge: basic information on health, hospital and other information systems; expert systems; artificial intelligence; databases; information and communication technologies relevant to biomedicine, health and biomedical sciences; quality standards (ISO); online communication and learning.

*Skills***:** work on computers, especially word processing programs and databases (Word, Excel); presenting scientific research (PowerPoint, Prezi); working with computer programs for statistical analysis (SPSS, Statistics); introducing students to the possibilities of online programs for data processing, data storage and data acquisition; training students to create a database according to the needs of scientific research work (defining and entering variables); enabling students to independently search databases and electronic sources of information and literature in electronic form; introducing students to the basics of ISO standards; introducing students to the basics of telemedicine and distance learning.

Content of the subject

Theoretical lectures

1. Medical informatics. 2. Health information systems. 3. Hospital information systems. 4. Pharmaceutical information system and pharmacoinformatics 5. Laboratory information systems. 6. Expert systems. 7. Artificial intelligence and neurocomputers in biomedicine. 9. Biomedical scientific informatics 8. Library information systems 9. Application of information technology for creating and searching databases 10. Searching the library information system Google, Medline, Web of Science, Scopus, etc. Search full text databases. 11. Citation analyzes evaluation of scientific work, evidence-based practice, meta-analysis based on published research results. 12. Information technology in the science. 13. Application of information and communication technology in certain biomedical scientific fields. 14. Information technologies in the field of medical documentation management, personal electronic records, hospital software 15. Quality and importance of variables' selection 16. Creating and selecting databases 17. Telemedicine 18. Application of information technology in diagnostics. 19. Application of information technology in treatment 20. Quality standardization 21. Opportunities for online teaching and distance learning 22. Writing a seminar paper, Vancouver rules and citing used literature, Power point presentations, Oral presentations and presentation of research results

Practical lectures

1. Basics of computer technology, computer networks, Windows, organization of data on the computer and within the network 2. Word processing and fast typing 3. Presentation of data and scientific research using various programs 4. Application of information technology for creating and searching Excel and Acess databases 5. Finding and searching information online
6. Computer programs for statistical analysis 6. Searching library information system Google Scholar, Google Book, Medline, Web of Science, Scopus etc. Search full-text databases (electronic journals and electronic books). 7. Citation analyzes, finding citations, evaluation of scientific work based on published research results. 8. Vancouver rules and citation of used literature. 9. Power point and making presentations. 10. Information systems - seminar paper

Recommended literature

Obligatory

1. Educational material from theoretical and practical classes
2. Hovenga EJ, Kidd MR, Garde S, editors. Health informatics: an overview. Ios Press; 2010. https://books.google.rs/books?hl=en&lr=&id=eckD3fSrPagC&oi=fnd&pg=PR1&dq=medical+informatics+overview&ots=wuI70Jn0sT&sig=o5mx8Icv7bD3GmckxzD2RAByt80&redir_esc=y#v=onepage&q=medical%20informatics%20overview&f=false
3. Microsoft 365 available at https://support.office.com/en-us/office-training-center

Number of active classes	**Theory:** 60	**Practice:** 45

Methods of delivering lectures

Lectures. Practical work in a computer classroom. Presentation of information systems and ready-made software packages. Work in specific software packages. Online search of databases and electronic sources of information.
Evaluation of knowledge (maximum number of points 100) activity during the theoretical lectures: 15 activity during the practical lectures: 15 projects: 30 colloquium: 20s seminar paper: 20