Level: bachelor	
Course title: Information in Biochemistry (IB-603)	
Status: elective	
ECTS: 5	
Requirements: none	

Learning objectives

To provide students with practical skills, essential for the following courses, related to chemical and biochemical literature and databases searching, data recording, analysis and presentation, writing of biochemistry-related texts, and application of computers in collection, systematization, analysis and presentation of information and results.

Learning outcomes

After completing the course, student is able to (1) use online resources to find information and literature relevant to a given topic, (2) demonstrate ability to systematically collect and record information and results, and present them in tables and charts, (3) prepare texts based on literature search or analysis results, and present them orally, (4) apply IT in data analysis and graphical representation, drawing chemical formulae, mathematical formulae etc., (5) present information (chemical names and formulae, mathematical formulae, physical values, taxonomic terms etc.) in a correct manner.

Syllabus

Theoretical instruction

Sources of chemical, biochemical and medicinal information – journals, indexing services, databases. Ethics in information use. Results management – lab notes, softwares for data organization, basics of statistics, tables and charts. Presenting results – preparation of reports, posters, presentations. Chemical and scientific literacy – SI guidelines, IUPAC rules, binomial nomenclature, scientific terms etymology and adoption. Softwares for drawing chemical structures, macromolecules, cell structures, metabolic pathways, lab apparatus, mathematical formulae, diagrams. Preparing essay and thesis – organization, citing.

Practical instruction

Literature search using online services, creating personal archive (Mendeley software). Familiarization with chemical, biochemical etc. databases. Familiarization with softwares for information organization (OneNote, TreeDBNotes) and results analysis (Origin, Excel). Analysis and graphical representation of different types of information. Familiarization with softwares for preparation of texts and presentations (Word, PowerPoint). Familiarization with specialized softwares for drawing chemical structures, macromolecules, cell structures, metabolic pathways, apparatuses (ChemSketch, ChemBioDraw, ChemWindow etc.), math formulae (MathType). Discussion of essays and presentations – common errors and improvement possibilities.

Weekly teaching load				Other:
Lectures: 2	Exercises: 2	Other forms of teaching:	Student research:	