Course Unit Descriptor

Study Programme: Bachelor Academic Studies in Biochemistry
Course Unit Title: Information in Biochemistry
Course Unit Code: IB-603
Name of Lecturer(s): Associate professor Dejan Orčić
Type and Level of Studies: Bachelor of Science Degree
Course Status (compulsory/elective): elective
Semester (winter/summer): winter
Language of instruction: English
Mode of course unit delivery (face-to-face/distance learning): Face-to-face
Number of ECTS Allocated: 5
Prerequisites: none
Course Aims: 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: *Theory* 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. *Practice* 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.
Required Reading: 1. Maizell RE, How to Find Chemical Information: A Guide for Practicing Chemists, Educators, and Students, John Wiley

& Sons, Inc, New York, USA.

2. Currano JN, Roth DL (2014) Chemical information for chemists, RCS Publishing, Cambridge, UK

3. Wright H, Introduction to Scientific Visualization, Springer Science+Business Media, LLC, UK.

Weekly Contact Hours:	**Lectures:** 2	**Practical work:** 2

Teaching Methods: Lectures, auditory exercises, computer exercises, seminar, e-learning (OERs)

Knowledge Assessment (maximum of 100 points): 100

Pre-exam obligations	points	**Final exam**	points
Active class participation	5	practical exam	60
Practical work	15		
Seminar(s)	20		