

FACULTY OF CHEMISTRY

SUBJECT CARD**Name of subject in Polish** Informatyka stosowana**Name of subject in English** Applied informatics**Main field of study (if applicable):** Biosciences**Specialization (if applicable):** Bioinformatics**Profile:** ~~academic~~ / ~~practical~~***Level and form of studies:** 1st/ 2nd level, ~~uniform magister studies*~~, full-time / ~~part-time~~***Kind of subject:** obligatory / ~~optional~~ / ~~university-wide~~***Subject code** W03BSS-SM2005L**Group of courses** ~~YES~~ / ~~NO~~*

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)			60		
Number of hours of total student workload (CNPS)			100		
Form of crediting (Examination / crediting with grade)			Crediting with grade		
For group of courses mark (X) final course					
Number of ECTS points			4		
including number of ECTS points for practical classes (P)			4		
including number of ECTS points corresponding to classes that require direct participation of lecturers and other academics (BU)			2,8		

*delete as not necessary

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. None

SUBJECT OBJECTIVES

C1 Familiarizing students with basics of Unix environment

C2 Teaching students the basic algorithms and numerical methods

C3 Familiarizing students with concepts of procedural and object-oriented programming

SUBJECT EDUCATIONAL EFFECTS

...

relating to skills:

PEU_U01 Student is able to use a programming environment to develop a program

PEU_U02 Student is able to design and implement an algorithm for the common numerical methods

PEU_U03 Student is able to effectively use the procedural and object-oriented methods in programming

...

relating to social competences:

PEU_K01 – uznaje znaczenie wiedzy w rozwiązywaniu problemów informatycznych

PROGRAMME CONTENT		
Laboratory		Number of hours
Lab 1	Organization of course and conditions for passing the course. Basic Unix commands.	4
Lab 2	BASH scripting. Resource management. Queueing systems	8
Lab 3	Using the programming environment. Writing and executing programs. Conditional expressions. Loops.	8
Lab 4	Simple and complex types of data. Objects. Functions and methods.	8
Lab 5	Commonly used numerical algorithms.	16
Lab 6	Applications of programming in biochemistry and biotechnology	12
Lab 7	End credit	4
	Total hours	60
TEACHING TOOLS USED		
N1.Multimedia presentation N2.Specialized computer software N3.Gamification		

EVALUATION OF SUBJECT LEARNING OUTCOMES ACHIEVEMENT

Evaluation (F – forming during semester), P – concluding (at semester end)	Learning outcomes code	Way of evaluating learning outcomes achievement
F1	PEU_W01-W03, PEU_K01	Partial tests (max 4 pts)
P1	PEU_U01-U03, PEU_K01	Final assignment (max 6 pts)
P (F1+P1) 2.0, if P < 50% pts 3.0, if P = 51-59% pts 3.5, if P = 60-69% pts 4.0, if P = 70-79% pts 4.5, if P = 80-89% pts 5.0, if P = 90-99% pts 5.5, if P = 100% pts		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] "Python Programming for Biology: Bioinformatics and Beyond", Tim J. Stevens, Wayne Boucher, Cambridge University Press; 1 edition (April 6, 2015) ISBN-13: 978-0521720090

[2]

[3]

[4]

SECONDARY LITERATURE:

[1]

[2]

[3]

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

Bartłomiej Szyja, PhD, DSc, Eng. b.m.szyja@pwr.edu.pl