

STUDIA II LEVEL, MAGISTERSKIE (4 sem)
DIRECTION: BIOTECHNOLOGY

2017/2018

 Specialty: **Bioinformatics** (Prof. A. Sokalski)

Sem.	complementary engineering	I	II	III	
Godz.	26h/30 ECTS/2E	24h / 30 ECTS / 2E	24h / 30 ECTS / 2E	24h / 30 ECTS / 1E	
26	Electives I 2w(2 ECTS)				
25					
24	Chemical informatics 2l (2 ECTS)	Bioprocess project 2p (3ECTS)	Introduction to multimedia in biotechnology 1l (1 ECTS)	Economics and organization of industrial biotechnology 2w (3 ECTS)	
23			Principles of business 2w (3 ECTS)		
22	Environment protection 2w (2 ECTS)	Theoretical chemistry 2w+2l (4 +2) ECTS	Rational drug design 2w (3 ECTS)	Computational genomics	
21				1w+1l (1+1 ECTS)	
20	Introduction to materials science and engineering 2w (2 ECTS)			Molecular modeling	Genetic engineering in analytics and diagnostics 3l (2 ECTS)
19					
18	Technical safety 1w (3 ECTS)	Molecular dynamics 2w +2c (4 + 2) ECTS	1w +2l + 1s (2 + 2 + 1) ECTS	Philosophy of science and technology 1w (2 ECTS)	
17	Technical drawing 2L (2 ECTS)			Mathematical methods in design and analysis of experiment 1w (1 ECTS)	
16					Graduate laboratory II 14l (10 ECTS)
15	Recycling of materials 2w (2 ECTS)			Instrumental drug analysis 1w + 2l (2 + 2) ECTS	
14		Networks and workstations with UNIX system 2l (2 ECTS)			
13	Biotechnology with introduction to industrial microbiology	Bioinformatics 2w +2l (4 + 2) ECTS	Methodology of experimental research 2w (3 ECTS)		
12	2w + 1p (2 + 1 ECTS)			Bionanotechnology	2w + 1s (3 + 1) ECTS
11					
10	Fundamentals of chemical technology 2w +2p (2+2 ECTS)			Applied informatics 4l (4 ECTS)	Retrieval of scientific information 1l (1 ECTS)
9		Advanced programming and numerical methods 2l (2 ECTS)			
8					
7		Foreign language II 3c (2 ECTS)	Graduate laboratory I 4l (4 ECTS)		
6	Measurements in chemical equipment 1w + 2l (2 + 2 ECTS)				
5		Foreign language I 1c (1 ECTS)		Graduate seminar and thesis preparation 1s (10 ECTS)	
4	Introduction to chemical engineering				
3					
2					
1	2w + 1c (2 + 2 ECTS)				
Sem.	complementary engineering	I	II	III	

 Allowable deficit of ECTS credits after each semester **15** credits

Electives I: CHC020054w Fundamentals of physical chemistry 2w 2ECTS,
BTC020013w Molecular biology 2w 2ECTS
TCC020024w Basic unit processes in chemical technology 2w 2ECTS