Zachodniopomorski Uniwersytet Technologiczny w Szczecinie

Faculty of Food Sciences and Fisheries

Field of study	Aquaculture and Fisheries		
Mode of study	stationary	*Level*	first cycle
Graduate's qualification	inżynier		
Fields of science	agricultural sciences		
Disciplines of science	animal science and fisheries (100%)		
Educational profile	general academic		
Module			
Course unit	**Chemistry**		
Code	WNOZIR/AQF/S1/		
Field of specialisation			
Administering faculty	Department of Aquatic Bioengineering and Aquaculture		
ECTS	4.0	*ECTS (forms)*	4.0
Form of course credit	examination	*Language*	english
Electives		*Elective group*	

Form of instruction	*Cod*	*Semester*	*Hours*	*ECTS*	*Weight*	*Credit*
laboratory course	L	2	30	2.0	0.50	credits
lecture	W	2	30	2.0	0.50	examination

Leading teacher	Nędzarek Arkadiusz (Arkadiusz.Nedzarek@zut.edu.pl)
Other teachers	Tórz Agnieszka (Agnieszka.Torz@zut.edu.pl)

Prerequisites	
W-1	The basic knowledge of fundamental and inorganic chemistry, matematics as well as basic safety rules

Module/course unit objectives	
C-1	Consolidation by students of issues in the field of chemistry, necessary for use in other major subjects.

Course content divided into various forms of instruction		*Number of hours*
T-L-1	Regulations of the chemical laboratory. Health and Safety rules. Presentation of laboratory equipment and devices.	4
T-L-2	Qualitative analysis - detection of cations and anions.	6
T-L-3	Chemical preparation. Efficiency of reaction of synthesis.	8
T-L-4	Titration analyses (acidimetry, alkalimetry, redoxometry).	6
T-L-5	Instrumental analysis – UV-VIS spectrophotometry	6
T-W-1	Periodic table of elements: structure of the system, element names, basic information placed in the periodic table.	2
T-W-2	Classification and naming rules for inorganic and organic compounds.	3
T-W-3	Chemical reactions: recording, balancing, type of reaction (synthesis reactions, analysis, exchange, neutralization, redox, dissociation, hydrolysis).	5
T-W-4	Defining the size of matter - mol. The use of mole in the description of chemical reactions. Stoichiometric calculations.	5
T-W-5	Ionic equilibria. Definition of acids and alkali. Exponent of H+ ion concentration (pH).	5
T-W-6	Calculation of solution concentrations (percentage, molar, normal).	10

Student workload - forms of activity		*Number of hours*
A-L-1	Participation in classes (lab)	30
A-L-2	Preparation for practical classes	10
A-L-3	Development of results	10
A-L-4	Writing of class reports	10
A-W-1	Participation in lectures	30
A-W-2	Preparation for exam	20
A-W-3	Individual literatury studies	10

Teaching methods / tools	
M-1	Lecture
M-2	Discussion
M-3	Labs

Evaluation methods (F - progressive, P - final)		
S-1	P	Writen exam (lecture)
S-2	P	Continuous assessment: lab reports and activity (labs)

Designed learning outcomes	Reference to the learning outcomes designed for the fields of study	Reference to Learning Outcomes for qualifications at PQF 6, 7 or 8	Reference to learning outcomes for qualifications at level 6 or 7 that enable acquiring engineering competences	Course objectives	Course content	Teaching methods	Evaluation methods
Knowledge							
AQF_1A_B08_W01 The student knows the rules for naming chemical compounds; understands the principles of recording chemical reactions and the rules for converting different concentrations of solutions.	AQF_1A_W01	P6S_WG	P6S_WG	C-1	T-L-1 T-L-2 T-L-3 T-L-4 T-L-5 T-W-1 T-W-2 T-W-3 T-W-4 T-W-5 T-W-6	M-1 M-2 M-3	S-1 S-2
AQF_1A_B08_W02 The student knows the principles of laboratory work, knows the principles of instrumental analysis.	AQF_1A_W01	P6S_WG	P6S_WG	C-1	T-L-1 T-L-2 T-L-3 T-L-4 T-L-5	M-2 M-3	S-2
Skills							
AQF_1A_B08_U01 The student is able to use laboratory equipment. The student can write chemical reaction equations, calculate solution concentrations, plan and conduct experiments.	AQF_1A_U08	P6S_UW	P6S_UW	C-1	T-L-1 T-L-2 T-L-3 T-L-4 T-L-5 T-W-1 T-W-2 T-W-3 T-W-4 T-W-5 T-W-6	M-1 M-2 M-3	S-2
Social competences							
AQF_1A_B08_K01 Students are able to cooperate and work in a group also as a team leader and have understading the need of lerning	AQF_1A_K01 AQF_1A_K03	P6S_KK P6S_KO P6S_KR		C-1	T-L-1 T-L-2 T-L-3 T-L-4 T-L-5	M-2 M-3	S-1 S-2

Outcomes	Grade	Evaluation criterion
Knowledge		
AQF_1A_B08_W01	*2,0*	
	3,0	Min. 50% of scoring
	3,5	
	4,0	
	4,5	
	5,0	
AQF_1A_B08_W02	*2,0*	
	3,0	Min. 50% of scoring
	3,5	
	4,0	
	4,5	
	5,0	
Skills		
AQF_1A_B08_U01	*2,0*	
	3,0	Positive grades of lab reports
	3,5	
	4,0	
	4,5	
	5,0	
Other social competences		
AQF_1A_B08_K01	*2,0*	
	3,0	Positive grades of lab reports
	3,5	
	4,0	
	4,5	
	5,0	

Required reading

1. Harvey D., Modern analytical chemistry, McGraw-Hill Companies inc., open acess, 2000

2. C.E. Housecroft, A.G. Sharpe, Inorganic Chemistry, Pearson Education Limited, Edinburgh, UK, 2001

3. J.E. McMurry, Fundamentals of Organic Chemistry, Brooks/Cole Cengage Learning, Belmont Ca, USA, 2007, 7th