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	**Matematics with basics of statistics**
Code	WNOZIR/AQF/S1/
Field of specialisation	
Administering faculty	Department of Commodity Science, Quality Assessment, Process Engineering and Human Nutrition

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
lecturing course	A	1	30	2.0	0.50	credits
lecture	W	1	30	2.0	0.50	examination

Leading teacher	Strzelczak Agnieszka (Agnieszka-Strzelczak@zut.edu.pl)
Other teachers	

Prerequisites

W-1	Basic knowledge of mathematics
W-2	Basic knowledge of probability calculus

Module/course unit objectives

C-1	Acquiring knowledge in basics of mathematics and statistics
C-2	Practical use of mathematical and statistical concepts

Course content divided into various forms of instruction		Number of hours
T-A-1	Rational numbers, Geometrical representations, Irrational number, Real number represented as point on aline — Linear Continuum. Acquaintance with basic properties of real number	4
T-A-2	Derivative - its geometrical and physical interpretation. Sign of derivative-Monotonic increasing and decreasing functions. Relation between continuity and derivability. Differential - application in findingapproximation.	4
T-A-3	Evaluation of definite integrals. Working knowledge of double integral.	4
T-A-4	Basic statistic	2
T-A-5	Probability	4
T-A-6	Testing of normality of data distribution	2
T-A-7	Parametric and non-parametric testing of hypotheses	4
T-A-8	Pearson's correltion, Spearman's rank correlation	2
T-A-9	Linear regression analysis	4
T-W-1	Differential calculus	4
T-W-2	Geometrical application of differential calculus	2
T-W-3	Integral Calculus	4
T-W-4	Multiple Integrals	4
T-W-5	Probability and theoretical distributions	4
T-W-6	Testing of hypothesis	6
T-W-7	Correlation and regression	4
T-W-8	Statistical quality control	2

Student workload - forms of activity		Number of hours
A-A-1	Classes attendance	30
A-A-2	Literature study	15
A-A-3	Consultation with lecturer	14

Student workload - forms of activity		Number of hours
A-W-1	Participation during lectures	30
A-W-2	Individual literature studies	5
A-W-3	Preparation to an exam	20
A-W-4	Development of knowledge	5

Teaching methods / tools	
M-1	Interactive lecture
M-2	Interactive auditory classes

Evaluation methods (F - progressive, P - final)		
S-1	F	Inter-term exams (2)
S-2	P	Exam

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_B06_W01 Basics of advanced math and statistics	AQF_1A_W01	P6S_WG	P6S_WG	C-1 C-2	T-A-1 T-A-2 T-A-3 T-A-4 T-A-5 T-A-6 T-A-7 T-A-8 T-A-9	T-W-1 T-W-2 T-W-3 T-W-4 T-W-5 T-W-6 T-W-7 T-W-8	M-1 M-2	S-1 S-2
Skills								
AQF_1A_B06_U01 Ability to perform statistical analyses on experimental data	AQF_1A_U08 AQF_1A_U22	P6S_UO P6S_UW	P6S_UW	C-2	T-A-1 T-A-2 T-A-3 T-A-4 T-A-5 T-A-6 T-A-7 T-A-8 T-A-9	T-W-1 T-W-2 T-W-3 T-W-4 T-W-5 T-W-6 T-W-7 T-W-8	M-1 M-2	S-2
Social competences								
AQF_1A_B06_K01 Student is able to analyze results of statistical data	AQF_1A_K01 AQF_1A_K04 AQF_1A_K05	P6S_KK P6S_KR		C-1 C-2	T-A-1 T-A-2 T-A-3 T-A-4 T-A-5 T-A-6 T-A-7 T-A-8 T-A-9	T-W-1 T-W-2 T-W-3 T-W-4 T-W-5 T-W-6 T-W-7 T-W-8	M-1 M-2	S-1 S-2

Outcomes	Grade	Evaluation criterion
Knowledge		
AQF_1A_B06_W01	2,0	
	3,0	Basic knowlegde of math and statistics
	3,5	
	4,0	
	4,5	
	5,0	
Skills		
AQF_1A_B06_U01	2,0	
	3,0	Ability to perform basic mathematical calculations and statistical analyses
	3,5	
	4,0	
	4,5	
	5,0	

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Other social competences		
AQF_1A_B06_K01	2,0	
	3,0	Basic ability to analyze mathematical and statistical calculations
	3,5	
	4,0	
	4,5	
	5,0	

Required reading
1. Robert Nisbet, John Elder IV, Gary Miner, Statistical analysis and data ining application, Elsevier, 2009

Supplementary reading
1. Tim Garry, Ibrahim Wazir, Mathematics Analysis and Approaches for the IB Diploma Standard Level, 2019