SYLLABUS – A COURSE DESCRIPTION

I. General information

1. Course name: – **Statistics (introduction to R)**
2. Course code – **15-STAT-EL-11**
3. Course type (compulsory or optional) – **compulsory**
4. Study programme name – **English Linguistics: Theories, Interfaces, Technologies**
5. Cycle of studies (1st or 2nd cycle of studies or full master's programme – **1st cycle**
6. Educational profile (general academic profile or practical profile) – **general academic**
7. Year of studies – **2BA**
8. Type of classes and number of contact hours – **30 h practical classes**
9. Number of ECTS credits: – **3**
10. Name, surname, academic degree/title, email address of the course lecturer / other teaching staff – **Dr. Kamil Kaźmierski, kamil.kazmierski@amu.edu.pl**
11. Language of instruction: **English**
12. Online learning - yes (partially / fully) / no : **yes (fully)**

*please underline course coordinator's name

II. Detailed information

1. Course aim (aims)

   The aim of this course is to let students acquire the knowledge and skills of statistical analysis in the R statistical programming environment, with a focus on fitting and interpreting linear models.

2. Pre-requisites in terms of knowledge, skills and social competences (if relevant)
   High-school level math skills are reqired.
3. Course learning outcomes (EU) in terms of knowledge, skills and social competences and their reference to study programme learning outcomes:

Course learning outcome symbol (EU)	On successful completion of the course and validation of its learning outcomes, a student:	Reference to study programme learning outcomes
15-STAT_01	Understands and can compute descriptive st atistics.	K_W02 K_U05
15-STAT_02	Can select and apply statistical methods appropiate to the data.	K_W07 K_U03 K_U08 K_U09 K_K04
15-STAT_03	Can program in the R statistical environment to the extend relevant for typical data analysis.	K_W07 K_U03 K_U05 K_U09
15-STAT_04	Can select and make plots showing typical relationships between data.	K_U03 K_U03 K_U09
15-STAT_05	Undetstands and can uuse basic statistical concepts.	K_W04 K_U07 K_K04
15-STAT_06	Has the readiness to apply the knowledged gaind as well as the ability to cooperate with research, educational and industry institutions.	K_K05

4. Learning content with reference to course learning outcomes (EU)

Course learning content:	**Course learning outcome symbol(s) (EU)**
The role of statistics in language studies.	15-STAT_02 15-STAT_05
Types of variables.	15-STAT_02
Working with R and RStudio: variables, data structures, syntax, packages	15-STAT_03
Descriptive statistics: measures of central tendency and variance, correlations	15-STAT_01 15-STAT_05
Basic plots	15-STAT_03 15-STAT_04
Basics of data transformation, filtering, and sorting	15-STAT_03
Programing: scripts, project organization	15-STAT_03
Distributions, sampling, parameters, samples vs. populations	15-STAT_02 15-STAT_03 15-STAT_05
Hypothesis testing: null hypothesis, Type I and Type II errors, test statistics, statistical power, effect size, interpreting the *p-value*, describing test results	15-STAT_02 15-STAT_05
Tests for categorical variables: binomial logistic regression (vs chi-squared test)	15-STAT_01 15-STAT_02 15-STAT_05
Comparing means: Linear regression with categorical predictors (vs.t-test)	15-STAT_02 15-STAT_05
Verufying model assumptions	15-STAT_02 15-STAT_05
Linear regression: simple vs. Multiple regression, interactions, centering and standardizing variables, measures of model fit	15-STAT_02 15-STAT_04 15-STAT_05

5. Reading list

Gries, Stefan Th. 2013. *Statistics for linguistics with R. A Practical introduction*. Berlin: de Gruyter.

Levshina, Natalia. 2015. *How to do linguistics with R. Data exploration and statistical analysis*: John Benjamins.

Navarro, Daniel. 2018. *Learning statistics with R: A tutorial for psychology students and other beginners*. (Version 0.6). Sydney: University of New South Wales.

Winter, Bodo. 2019. Statistics for linguists: An introduction using R. New York: Routledge.

Woods, Anthony, Paul Fletcher i Arthur Hughes. 1986. *Statistics in language studies*. Cambridge: Cambridge University Press.

III. Additional information

1. Teaching and learning methods and activities to enable students to achieve the intended course learning outcomes (please indicate the appropriate methods and activities with a tick and/or suggest other methods.)

Teaching and learning methods and activities	✔
Lecture with a multimedia presentation	✔
Interactive lecture	✔
Problem-based lecture	✔
Discussions	
Text-based work	
Case study work	✔
Problem-based learning	✔
Educational simulation / game	
Task-solving learning (e.g.: calculation, artistic, practical tasks)	✔
Experiential work	
Laboratory work	
Scientific inquiry method	✔
Workshop method	
Project work	✔
Demonstration and observation	
Sound and/or video demonstration	
Creative methods (e.g.: brainstorming, SWOT analysis, decision tree method, snowball technique, concept maps)	
Group work	✔
I Other – please specify	
…	

2. Assessment methods to test if learning outcomes have been achieved (please indicate with a tick the appropriate methods for each LO (EU) and/or suggest different methods)

Sposoby oceniania	Symbole EK dla modułu zajęć/przedmiotu					
	15-STA T_01	15-STA T_02	15-STA T_03	15-STA T_04	15-STA T_05	15-STA T_06
Written exam						
Oral exam						
Open book exam						
Written test						
Oral test						
Multiple choice test	✓	✓			✓	
Project						
Essay						
Report						

Individual presentation						
Practical exam (performance observation)			✓	✓	✓	
Portfolio	✓	✓	✓	✓		
Other (please specify)						
…						

3. Student workload (ECTS credits)

Activity types		Mean number of hours spent on each activity type
Contact hours with the teacher as specified in the study programme		30
Students' self-study*	Preparation for classes	10
	Reading for classes	20
	Essay / report / presentation / demonstration preparation, etc.	
	Project preparation	10
	Term paper preparation	
	Exam preparation	
	Other (please specify) - Practice – coding in the console	30
	…	
TOTAL HOURS		90
Total ECTS credits for the course		3

* please indicate the appropriate activity types and/or propose different activities

4. Assessment criteria in accordance with AMU in Poznan's grading system:

Very good (bdb; 5,0): the student knows and understands the concepts of the subject very well, is able to use the tools she has learned very well
Good plus (+db; 4,5): the student knows and understands the concepts of the subject well, is able to use the tools she has learned very well, but makes small errors
Good (db; 4,0): the student knows and understands the concepts of the subject well, but makes occasional errors
Satisfactory plus (+dst; 3,5): the student knows and understands the concepts of the subject to a basic extent, is able to use the tools she has learned to a satisfactory degree, but makes mistakes
Satisfactory (dst; 3,0): the student knows and understands the concepts of the subject to a basic extent, is able to use the tools she has learned to a basic degree, but makes mistakes
Unsatisfactory (ndst; 2,0): the student does not know or understand the concepts of the subject, and isn't able to use the tools she has learned without gross errors