Subject	**Advanced Research Methods and Statistics**		
Type	Type	Semester	ECTS
	ELECTIVE (E)	2	3
Lecturer	Dr. Milaim Berisha		
Aims and Objectives	It is aimed to provide information on scientific texts, data analysis, and preparation of research reports in accordance with scientific ethical rules. Besides this, the lesson aims to increase the independence of using the computer programs for data analysis, performance evaluation, and report of the data.		
Learning Outcomes	Upon completion of this module, students shall be able to: • Explain the methods of accessing scientific information and data collection. • Examine scientific texts. • Prepare a research report in accordance with scientific ethical rules. • Apply ethical standards, software and legal restrictions. • Compose and explains the scientific research proposal. • Explain the reporting according to scientific writing rules. • Increase of the independence on computer program using during research and analysis of the data • Select the right analysis for the certain data based on the aim of the study • Apply statistical analysis • Interprets data analysis		
Content	**Week**	**Topics**	
	Syllabus presentation		
	1	**Research process** Overview and understanding the research process Ethical considerations in research	
	2	**Research Design** Understanding research questions and hypotheses Experimental, quasi-experimental, and non-experimental designs Choosing the appropriate research design for different studies Limitations and advantages of different research designs	
	3	**Sampling Methods** Understanding population, sample, and sampling frame Probability vs. non-probability sampling methods Sample size determination Bias and errors in sampling	
	4	**Data Collection Methods (Part 1)** Qualitative and quantitative methods Reliability and validity of data collection methods	
	5	**Data Collection Methods (Part 2)** Laboratory-based measurements Field-based measurements Wearable technology and its applications in data collection	
	6	**Data Analysis (Part 1)** Descriptive statistics: mean, median, mode, standard deviation, variance Inferential statistics: t-tests, ANOVA, correlation, regression Choosing the appropriate statistical test for different types of data	
	Mid-term exam – 1		
	7	**Data Analysis (Part 2)** Regression analysis Factor analysis (explanatory) Correlations	
	8	**Research Ethics** Institutional Review Board (IRB) process Informed consent and confidentiality	

		Ethical issues in sport and health sciences research Case studies and ethical dilemmas
	9	**Presenting Research Findings** Writing research reports and articles Creating effective visuals: tables, figures, graphs Oral presentations and conference posters Peer review process and publication ethics
	10	**Research Proposal Development** Components of a research proposal Writing research aims, objectives, and hypotheses Developing a research plan: timeline, budget, resources Peer review and feedback on research proposals
	11	**Publication process of the research**
	12	**Future challenges of the research methods**
	Mid-term exam – 2	

Teaching/Learning Methods	**Activity**		**Weight (%)**
	Lectures		40%
	Paper		40%
	Independent learning		10%
	Other		10%
Assessment Methods	**Methods of assessment:**		**%**
	Participation		10%
	a) Mid-term exam -1		20%
	b) Mid-term exam - 2		20%
	Research paper		50%
ECTS Workload	**Activity**	**Weekly hours**	**Workload**
	Lectures	2	24
	Lab	n/a	12
	Independent learning	n/a	29
	Examination preparation	n/a	10

Literature

- Shyamaprasad Mukherjee (2019). A Guide to Research Methodology: An Overview of Research Problems, Tasks and Methods, ISBN: 978-0-367-25620-3
- Andy Field (2016). An Adventure in Statistics: The Reality Enigma, ISBN: 978-1-4462-1045-1 (pbk)
- Andy Field (2013). Discovering Statistics Using IBM SPSS statistics. 4th edition. ISBN: 978-1-4462-4918-5 (pbk)
- Andy Field, Jeremy Miles, and Zoë Field (2012). Discovering Statistics Using R, ISBN: 978-1-4462-0045-2.
- Template of the KOSALB International Journal of Human Movements Science: https://kosalbjournal.com/index.php/pub/writingrules

Ethical standards

This course follows UBT College's Code of Ethics, requiring all students to behave accordingly. Any case of academic misconduct, including but not limited to cheating, plagiarism, or other forms of dishonesty, will lead to significant punishment such as failure of the specific assessment or the entire course, as well as further disciplinary measures in accordance with UBT College's academic integrity policies.

Contact

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