Freie Universität Bozen
Libera Università di Bolzano
Università Liedia de Bulsan

Syllabus
Course description

Course title	Research Methods and experimental design
Course code	31002
Scientific sector	STAT-01/A
Degree	Master in Tourism Management
Semester and academic year	2nd Semester 2025/2026
Year	1st study year
Credits	6
Modular	No

Total lecturing hours	36
Total lab hours	-
Total exercise hours	12
Attendance	suggested, but not required
Prerequisites	not foreseen
Course page	Course Offering - Enrolled from 2025 / Free University of Bozen-Bolzano

Specific educational objectives	The course is designed for acquiring professional skills and knowledge in the area of empirical research methods and statistics. Educational objectives: The students will be enabled to critical assessment and independent treatment of empirical research issues, including planning, data collection and statistical data analysis.

Lecturer	Prof. Alessandro Casa E-mail: alessandro.casa@unibz.it Campus Bruneck-Brunico, 3rd Floor NOI Techpark, Office Room BK NOI 3.11; Tel. +39 0471 013040 Alessandro Casa / Freie Universität Bozen
Scientific sector of the lecturer	SECS-S/01
Teaching language	English

Office hours	Timetables / Free University of Bozen-Bolzano
Lecturing assistant	To be defined
List of topics covered	• Research approach and design • Qualitative and quantitative research methods • Questionnaire design and scaling techniques • Sampling schemes • Data collection, descriptive statistics (central tendency and variability measurements) and data visualization • Introduction to statistical inference (point estimation, interval estimation and hypothesis testing) • Bivariate analysis (correlation analysis, contingency tables) • Linear regression analysis and its extension • Network analysis • Statistical programming with R software
Teaching format	Frontal lectures; Practical lectures with exercises.

Learning outcomes	Knowledge and understanding: Knowledge of the most relevant social research methods and understanding their field of application; knowledge of the most important statistical methods for data analysis; understanding their rationale, conditions of usage and their results. Applying knowledge and understanding: Designing a study, selection of appropriate method of data collection; identification of appropriate statistical method for data analysis. Making judgments: Critical reviewing of own scientific work and of original publications; interpretation of statistical analyses in the context of diverse research fields. Ability to judge the appropriateness of statistical methods. Communication skills: Ability to describe and explain research design; ability to present results of statistical analyses correctly and intelligibly. Learning skills: Ability to independently deepen their knowledge in the field of data collection, construction of measurement instruments and statistical analysis methods; familiarity with self learning tools for statistical software.

Assessment	Written exam with practical exercises, review questions and interpretation of output from statistical softwares. The

	grade of the written exam will count for the 100% of the final grade. The duration of the exam will be approximately 2 hours. *Assessment criteria are the same for both attending and non-attending students.*
Assessment language	English
Evaluation criteria and criteria for awarding marks	Assessment of **Written final exam** is based on the following criteria: • Correctness and completeness of answers. • Ability to read and interpret the data analysis output correctly. • Clarity of explanations and comments.

Required readings	Agresti, A. Statistical Methods for the Social Sciences. Pearson, 2018. For each topic, slides and exercise sheets will be provided by the professor.
Supplementary readings	James, G., Witten, D., Hastie, T., Tibshirani, R. An Introduction to Statistical Learning with Applications in R. Springer, 2013. Freely available at http://wwwbcf. usc.edu/~gareth/ISL/ Watkins, J. C., (2023) An Introduction to the Science of Statistics: From Theory to Implementation. Preliminary Edition. https://www.math.arizona.edu/~jwatkins/statbook.pdf Azzalini, A. and Scarpa, B. Data analysis and data mining: An introduction. OUP USA, 2012 Moore, D.S., McCabe G.P., Craig, B.A. Introduction to the Practice of Statistics., New York, WH Freeman, 2009.