Syllabus

Course Description

Course Title	Data Management, Analysis and Security
Course Code	30191
Course Title Additional	
Scientific-Disciplinary Sector	STAT-04/A
Language	German
Degree Course	Bachelor in Tourism, Sport and Event Management
Other Degree Courses (Loaned)	
Lecturers	Prof. Dr. Peter Alfons Schmid, PeterAlfons.Schmid@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/44766
Teaching Assistant	
Semester	Second semester
Course Year/s	3
CP	6
Teaching Hours	36 (ONLINE)
Lab Hours	-
Individual Study Hours	-
Planned Office Hours	18 (ONLINE)
Contents Summary	This course introduces key concepts and practical skills in data management, analysis, and protection, with a focus on applications in the tourism sector. Topics include data collection, storage, cleaning, and visualization; basic statistical and machine learning methods; and hands-on work with the R software for exploring and analyzing real-world tourism data. Students will also gain an understanding of legal frameworks for data protection and develop the ability to assess both the value and risks of data.
Course Topics	The topics have been chosen to equip the student with the ability to analyze data with modern analytical methods and with the

	understanding of the opportunities and risks of data: 1. Data management (collection, storing, cleaning, visualization) 2. Data analysis (basics, exploration and analysis of tourism data) 3. Data security
Keywords	Data management, data analysis, data security
Recommended Prerequisites	No prerequisites, however, it is advisable that the students have attended the courses Mathematics for Economists TSE and Statistics for TSE (or equivalents)
Propaedeutic Courses	
Teaching Format	Lectures and applications in R, group projects
Mandatory Attendance	-
Specific Educational Objectives and Learning Outcomes	ILO (Intended Learning Outcomes) ILO 1 - Knowledge and understanding ILO 1.1 The concept of uncertainty and the basic elements of probability theory. ILO 1.2 The software available for data analysis in the social sciences. ILO 1.3 Fundamentals of the concepts of uncertainty, ambiguity and robustness in the context of data analysis. ILO 1.4 Best practices and important Excel functions for data collection, processing and visualisation. ILO 1.5 The mechanisms for creating and using big data and the impact on the business environment. ILO 1.6 The monetary value of personal and business data. ILO 1.7 The concept of data security from a legislative and technical perspective. ILO 2 - Ability to apply knowledge and understanding ILO 2.1 Basic concepts that are useful for attending courses in economics, business administration and management ILO 2.2 Formally defining economic problems; finding (optimal) solutions based on existing theories and interpreting results. ILO 2.3 Use matrices to represent data and manage it for transformations and calculations. ILO 2.4 Statistical methods as useful research tools in the social sciences.

	ILO 2.5 At least one statistical application for developing simple data analysis. ILO 2.6 Use Excel for data collection, processing and visualisation. ILO 2.7 Use web services for online data analysis. ILO 2.8 Understand the basic principles of modern data analysis concepts, such as machine learning. ILO 2.9 Address data security issues in business environments. ILO 3 - Making judgements ILO 3.1 Identify the most important variables to be used in decision-making in complex situations. ILO 3.2 Report analytically and critically on information, empirical values and data in order to make appropriate business decisions. ILO 3.3 Select the most appropriate quantitative and qualitative analysis tools to support decision-making; ILO 3.4 Find necessary additional information in databases, legal documents and scientific sources; ILO 3.5 Find solutions by using logical conclusions and combining information and analytical tools ILO 4 - Communication skills ILO 4.1 Achievement of this objective is assessed by means of written examinations, group work, homework assignments, presentation of case studies and projects, and the final thesis. ILO 5 - Learning skills ILO 5.1 The ability to find up-to-date information in order to keep pace with changes in the service sector in general and in the field of tourism, sports and event management in particular; ILO 5.2 The ability to retrieve and utilise information from databases, research studies, legal texts, regulations and standards that are required in their professional life; ILO 5.3 the ability to analyse, critically evaluate and integrate data, information and experience; ILO 5.4 the ability to develop possible solutions to problems in economic and operational areas relating to those work contexts that represent potential career prospects for graduates.
Specific Educational Objectives and Learning Outcomes (additional info.)	

Assessment	The final mark for attending as well as non-attending students is based on two criteria: 1) Group project: (ILO 1-5) 40%: group project: students work in groups on a research project involving data analysis (selfchosen topic).The groups present their results with a presentation in class. The assessment is based on the work of the whole team and not marked individually. Due dates and organizational details will be communicated during lectures. 2) Final written exam: (ILO 1-5) 60%: final written exam: The exam presents questions of theoretical nature as well as exercises, to check the ability in using the analytic methods and making judgements. The duration of the exam will be 60 minutes.
Evaluation Criteria	The final mark is the weighted average between group project (40%) and the written exam (60%). Relevant for assessment of the written exam: clarity of answers, mastery of language (with respect to technical terms), concise and precise answers, knowledge and understanding of the analytical procedures, ability of applying the appropriate analytical method, proficiency to operate the software tools discussed in class, correctness of the results. Relevant for assessment of the groupwork: ability to work in a team, creativity, skills in critical thinking, ability to summarize in own words, knowledge and understanding of the analytical procedures, ability of applying the appropriate analytical method, proficiency to operate the software tools discussed in class.
Required Readings	Lecture notes (slides) will be provided. Further readings will be announced at the beginning of the course.
Supplementary Readings	A list of supplementary readings will be provided during the course.
Further Information	
Sustainable Development Goals (SDGs)	Decent work and economic growth, Responsible consumption and production, Sustainable cities and communities, Industry, innovation and infrastructure