

Course Title	Introduction to Statistical Methods			
Course Code	MBA 520			
Course Type	FOUNDATION			
Level	MASTER			
Year / Semester	Pre-Year 1 and Pre-Semester 1			
Teacher's Name	Polina Ellina/Chris Charalambous			
ECTS	6	Lectures / week	3	Laboratories / week
Course Purpose and Objectives	<p>MBA 520 is a foundation course intended for students taking master program, preparing them for practical methods for analysing data and for interpretation of research evidence across different areas of study.</p> <p>The purpose of this course is to provide students with definitions and examples of widely used concepts in statistics. It first introduces some general principles of data visualization and planning of data analysis (descriptive practice). Then, an emphasis is put on choice of appropriate standard statistical inference methods (parametric, non-parametric) for different types of data and quantification of association between variables. Finally it involves interpretation of the analysis and communication of the results.</p>			
Learning Outcomes	<p>On completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • Identify different data types • Understand the research question and the data analyses process aiming to respond to the question • Understand concepts of data analysis • Conduct statistical analysis of different types of data • Understand which statistical inference test to use for which type of data • Critically interpret and compare results from statistical analysis 			
Prerequisites		Required		
Course Content	<ol style="list-style-type: none"> 1. Statistics and the Scientific Method 2. Using Surveys and experimental Studies to Gather data 3. Data description 4. Probability and Probability Distributions 5. Inferences About Population Central Values 6. Inferences Comparing Two Population Central Values 7. Inferences About Population Variances 8. Inferences About More Than Two Population Central Values 			

	<p>9. Multiple Comparisons 10. Categorical Data 11. Linear Regression and Correlation 12. Multiple Regression and the General Linear Model 13. Interaction 14. Communicating and Documenting the Results of Analyses</p>								
Teaching Methodology	<ul style="list-style-type: none"> • Reading the course material with focus on developing understanding (why concept works, how one concept is distinguished from other, etc.); • Active involvement in learning activities: interactive lectures aiming to enable students construct their own knowledge; • Using software to allow students to visualize and interact with data; • Activity-based formative tasks and use of small groups; • 'Corrective-feedback' strategy (students are encouraged to explain solutions/answers before computing them, and look back at their answers to determine if they make sense); 								
Bibliography	<p>Essential Reading:</p> <ol style="list-style-type: none"> 1. Ott, R. Lyman, Longnecker, Michael T. (2016). An Introduction to Statistical Methods and Data Analysis, 7th Edition, Cengage. <p>Recommended Reading:</p> <ol style="list-style-type: none"> 1. Hayes, Andrew F. (2005). Statistical Methods for Communication Science, Taylor & Francis Group. 2. Field, Andy (2016). An adventure in statistics: the reality enigma. Quantitative/Statistical Research. SAGE Publications, London. 								
Assessment	<table> <tr> <td>Participation</td> <td>10%</td> </tr> <tr> <td>Midterm Exam</td> <td>30%</td> </tr> <tr> <td>Practical sessions (Workshops)</td> <td>20%</td> </tr> <tr> <td>Final Exam</td> <td>40%</td> </tr> </table>	Participation	10%	Midterm Exam	30%	Practical sessions (Workshops)	20%	Final Exam	40%
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Language	English								