Course Title	Advanced Quantitative Research Methods				
Course Code	RES700				
Course Type	Compulsory				
Level	Ph.D. (3rd Cycle)				
Year / Semester	1st Year / 1st Semester				
Teacher's Name	TBA				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	The aim of the course is to study the philosophical content of quantitative research. Also, get acquainted with advanced quantitative approaches to business related issues through the different forms and methods of research. At the same time, the course aims to make it possible for PhD students to set up research questions that require a quantitative approach, produce / collect the data they deem appropriate at any time, organize them and analyze them as much as possible using appropriate statistical analysis software packages (SPSS, STATA, AMOS). In the same way, the course aims to enable them to exploit research data, analyze them, interpret them and write their study in academic language and with sufficient scientific evidence. Finally, the course aims at developing the critical ability of PhD students to interpret and evaluate quantitative research work from the field of business related research.				
Learning Outcomes	Upon successful completion of this course students should be able to: 1. Critically analyse the theoretical and epistemological principles on which quantitative business related research is based, its role, its relationship and its differences with qualitative research approaches. 2. Evaluate and compare the characteristics of the various research examples and know/ identify the philosophy that each of them is based on. 3. Prepare research projects by selecting appropriate quantitative processes and approaches according to their research objectives and research questions. 4. Collect quantitative data using appropriate techniques and use statistical analysis packages to record, manipulate and analyse data by applying advanced statistical research methods				

	5. Analyse, evaluate and discuss dilemmas on key issues related to the application of quantitative approaches to business related research. 6. To become critical readers of business related research.		
Prerequisites	None	Co-requisites	None
Course Content	1. The nature of quantitative research - ontological, epistemological, evaluative and methodological assumptions in relation to different schools of thoughts. 2. Quantitative business related research: its role, its relation and its differences with qualitative business related research approaches. 3. Historical review of quantitative research 4. Validity, reliability and moral issues in quantitative research 5. Development of quantitative research questions 6. Design of the questionnaire 7. Research designs and appropriate methods for collecting and analysing empirical data 8. Case tests for average, percentage, and dispersion for one and two samples and confidence intervals (SPSS, STATA) 9. Investigation of parametric control conditions, statistical power, effect size and sample size. (SPSS, STATA) 10. Non-parametric statistical checks. (SPSS, STATA) 11. Correlation analysis: Correlation coefficients. (SPSS, STATA) 12. Regression analysis: simple, multiple, curvilinear, logistic. (SPSS, STATA) 13. Advanced variance analysis (ANOVA), covariance analysis (ANCOVA), multi-factorial variance analysis (MANOVA) (SPSS, STATA) 14. Factor analysis, principal component analysis. (SPSS, STATA) 15. Multidimensional scaling, clustering, discriminant analysis (SPSS, STATA) 16. Testing hypothesis about population means (t and F-tests) (SPSS, STATA) 17. Mann-Whitney U-test Goodness of fit and contingency table chi-square testing procedures. (SPSS, STATA) 18. Partial least squares. (SPSS, STATA) 19. Structural equation modelling and analysis of latent class models (AMOS) 20. Structural equation modelling: Overview and Confirmatory factor analysis. (AMOS) 21. Structural equation modelling: Testing structural equation models. (AMOS)		

<table>
<tr><td>Teaching Methodology</td><td>Face-to-Face</td></tr>
<tr><td>Bibliography</td><td>Hair, J. F, Babin, B. J., Anderson, R.E., and Black, W.C., Multivariate Data Analysis. Cengage, U.K

Laura M. O'Dwyer, James A. Bernauer, Quantitative Research for the Qualitative Researcher. Sage Publication.

Schumacker, R. E., & Lomax, R. G. A Beginner's Guide to Structural Equation Modeling. U.K.: Routledge

Keith McCormick, Jesus Salcedo, Jon Peck (With), Andrew Wheeler (With), Jason Verlen, SPSS Statistics for Data Analysis and Visualization. Wiley

Ulrich Kohler and Frauke Kreuter. Data Analysis Using Stata, Third Edition. STATA Publication

Barbara M. Byrne. Structural Equation Modeling With AMOS: Basic Concepts, Applications, and Programming, Third Edition (Multivariate Applications Series), Kindle Edition.</td></tr>
<tr><td>Assessment</td><td><table><tr><td>Examinations</td><td>60%</td></tr><tr><td>Assignments</td><td>30%</td></tr><tr><td>Class Participation and Attendance</td><td>10%</td></tr><tr><td></td><td>100%</td></tr></table></td></tr>
<tr><td>Language</td><td>English</td></tr>
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