

Course Title	Research Methodology in Medical Education				
Course Code	MDE610				
Course Type	Compulsory				
Level	Master (2 <sup>nd</sup> Cycle)				
Year / Semester	1 <sup>st</sup> year / 1 <sup>st</sup> semester				
Teacher's Name	TBA				
ECTS	10	Lectures / week	Up to 6 Teleconferences	Labs / week	N/A
Course Purpose and Objectives	<p>The course is designed to familiarize students with advanced qualitative methodological approaches of education issues. It also aims to study the philosophical underpinnings of qualitative research and of basic forms of qualitative research through the formulation of research objectives and questions, methods for collecting various types of qualitative data, organizing and analysis of data and extracting patterns and emerging issues through the use of qualitative data analysis software. At the same time, it aims to develop students' critical skills to interpret and evaluate published qualitative research papers from various fields of education. In addition the course aims at the development of students' deep understanding and appreciation of the philosophical underpinnings and main principles underlying quantitative research, and of the relation between quantitative and qualitative research paradigms. It also aims at acquainting students with various advanced statistical methods, and with how these could be exploited to investigate educational phenomena and issues. At the same time, the course aims to provide doctoral students with the knowledge and skills required to pose research questions requiring a quantitative approach, to collect data (whenever deemed necessary), to record and analyze empirical data using appropriate statistical software packages and techniques, and to interpret and present the results of a statistical analysis in a research report. Finally, the course aims to develop doctoral students' ability to critically interpret and evaluate quantitative research studies in the field of education or in the broader area of social research.</p>				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> <li>Analyse the relationship between epistemology, theory, methodology and methods in quantitative, qualitative and mixed educational research</li> </ul>				

	<ul style="list-style-type: none"> <li>• Elucidate the theoretical and epistemological principles underpinning the various approaches of qualitative research</li> <li>• Explain modern approaches to qualitative research as well as their role in improving education</li> <li>• Design qualitative research by selecting the appropriate procedures and approaches depending on research objectives and research questions that have been set</li> <li>• Collect qualitative data, organize and analyze them using qualitative data analysis software (e.g. ATLAS. ti, NVivo).</li> <li>• Identify and justify the most appropriate research approach to address an identified educational problem, issue, or knowledge need</li> <li>• Collect quantitative data with appropriate techniques and use statistical analysis software packages to record, process and analyse research data by applying advanced statistical methods</li> </ul>		
Prerequisites	None	Co-requisites	None
Course Content	<p>Epistemological conventions and epistemological paradigms of qualitative research</p> <p>Development of research questions for qualitative research (e.g., feminist approaches, post-structuralism, critical theory)</p> <p>Research design, data collection (e.g. interviews, observations, collection of archival and photographic material, videos and gain entry)</p> <p>Methodological approaches to qualitative research (case study, action research, ethnography, grounded theory, Phenomenology, etc.)</p> <p>Validity and ethical issues in qualitative research</p> <p>Approaches and strategies of analysis in qualitative research</p> <p>Using qualitative data analysis software (e.g. ATLAS. ti, NVivo)</p> <p>Issues generalizations in qualitative research</p> <p>The nature of educational research – ontological, epistemological, and methodological assumptions in relation to the various schools of thought</p> <p>Quantitative educational research: role, societal impact, similarities and differences compared to qualitative and mixed research methods</p> <p>Analyse the relationship between epistemology, theory, methodology and methods in quantitative, qualitative and mixed educational research</p>		

	<p>Historical overview of the evolution of quantitative research methods and techniques</p> <p>Issues of validity, reliability and research ethics in quantitative research</p> <p>Formulation of research questions and statistical hypotheses;</p> <p>Probability, probability models, sampling, principles of inferential statistics;</p> <p>One-sample and two-sample hypothesis testing regarding the mean, proportion, and dispersion</p> <p>Assumptions underlying parametric tests, statistical power, effect size, required sample size</p> <p>Non-parametric statistical tests;</p> <p>Correlation Analysis, Correlation Analysis Coefficients</p> <p>Regression analysis: Simple, multiple, curvilinear, logistic</p> <p>Analysis of Variance (ANOVA), Analysis of Covariance (ANCOVA), Multivariate Analysis of Variance (MANOVA)</p> <p>Factor analysis, principal component analysis</p> <p>Multidimensional scaling, clustering, discriminant analysis</p> <p>Structural equation modeling and latent class modeling</p> <p>Hierarchical linear models</p> <p>Categorical data analysis</p> <p>Meta-analysis</p> <p>Statistical software packages for recording, processing and analyzing data through the application of advanced statistical methods</p> <p>Examples of quantitative research studies published in the field of education</p>
Teaching Methodology	E-Learning
Bibliography	<p>Creswell, J. W., &amp; Guetterman, T.C. (2019) Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (6th Edition). Pearson.</p> <p>Bazeley, K. Jackson (2013). Qualitative Data analysis with NVivo. Los Angeles: SAGE Publications.</p>

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Anthony, D. (2014). *Statistics for Health, Life and Social Sciences*. BookBoon ISBN: 978-87-7681-740-4. Online: <http://www.e-booksdirectory.com/details.php?ebook=6674>

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Johnson, R. A., & Wichern, D. W. (2007). *Applied Multivariate Statistical Analysis* (6th edition). Upper Saddle River, NJ: Prentice Hall.

Rayner, J.C.W. (2016). *Introductory Nonparametrics*. Bookboon. ISBN: 978-87-403-1475-5. Available Online: <http://bookboon.com/en/introductory-nonparametrics-ebook>

Assessment	<table border="1"> <tr> <td>Assignments/Ongoing Evaluation</td> <td>50%</td> </tr> <tr> <td>Final Examination</td> <td>50%</td> </tr> <tr> <td>Total</td> <td>100%</td> </tr> </table>	Assignments/Ongoing Evaluation	50%	Final Examination	50%	Total	100%
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Final Examination	50%						
Total	100%						
Language	English						