

Course Title	Thesis I - Research methodology and Proposal Preparation				
Course Code	PHYS407				
Course Type	Compulsory				
Level	Bachelor (Level 1)				
Year / Semester	4 th / Fall				
Instructor's Name	Dr Panagiotis Paoullis				
ECTS	6	Lectures / week	3	Laboratories/week	
Course Purpose	<p>The main objective of the course is to introduce students to the methodology of scientific research and statistical analysis of research data and to comprehend the value of research in health professions. Specifically, it intends to help students produce a detailed description of the different designs of clinical and basic research and the questions they are able to answer. In addition, the aim of the course is to develop critical evaluation skills of scientific research and to cultivate the required competences for the active participation of students in research studies.</p>				
Learning Outcomes	<p>Upon completion of the course students are expected to be able to:</p> <ul style="list-style-type: none"> • Recognize the value of research methodology in physiotherapy based on scientific evidence • Understand and describe the stages of the research process in qualitative and quantitative studies • Describe and apply the rules of ethics and ethics in the conduct of research • Choose the appropriate research plan according to the type of research and research question • Choose methods sampling and use data collection and measurement tools • Know and apply practically the appropriate data analysis techniques to each type of research • Understand and apply the different ways of presenting the results of a survey and choose the most appropriate for each type of study • Demonstrate the ability to critically evaluate research papers and systematic reviews • Generate research questions about their clinical practice, design the appropriate study for their purpose, write and implement a research proposal 				

	<ul style="list-style-type: none"> Develop their ability to evaluate research data on research methodology in order to deepen and renew their knowledge in this field 		
Prerequisites	None	Co-requisites	None
Course Content	<ul style="list-style-type: none"> Introduction to research methodology: Qualitative – quantitative research, evidence-based practice Rules of ethics and ethics of biomedical research Formulation of a research question. Purpose of research, formulation of hypotheses and identification of variables Review of the articles – literature. Ways of searching for literature by electronic and printed media Types of qualitative and quantitative research projects (descriptive, comparative, correlation, experimental and other quantitative type research projects) Methods and basic principles of sampling Questionnaires and other means of data collection in qualitative and quantitative surveys, principles of reliability and validity, measurement errors Statistical programs (Excel, SPSS). Import and analyze data Interpretation of results and ways of presenting them in quantitative and qualitative studies Writing a research report - paper - poster - PowerPoint Design and writing of a research proposal (protocol) Critical evaluation of published research. Systematic review – Meta-analysis 		
Teaching Methodology	<p>Theory</p> <p>The teaching of the course includes lectures on the offer of the theoretical background. The teaching uses detailed notes with PowerPoint and material rich in images and videos. Methods such as research scenarios, interactive research methodology and statistical analysis in physiotherapy examples and discussion, Relevant material published in international scientific journals is also used to monitor the latest developments related to the subject of the course, the choice of the topic of the dissertation.</p> <p>(For more information please refer to the ‘Thesis guidelines’ guide)</p>		
Bibliography	<p><u>Textbooks</u></p> <p>Higgins JPT, Green S. (2011) Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0. The Cochrane Collaboration</p> <p>Larry Christensen, R. Burke Johnson, Lisa A. Turner. (2010) Research Methods, Design, and Analysis, 11th Edition, Allyn and Bacon</p> <p>Padgett DK. (2011) Qualitative and Mixed Methods in Public Health. SAGE Publications Ltd, London</p> <p>Saks M Allsop J. (2012) Researching Health Qualitative, Quantitative and Mixed Methods, Second Edition. SAGE Publications Ltd, London</p>		

	<p>Picardi CA, Masick KD. (2013) Research Methods Designing and Conducting Research with a Real-World Focus. SAGE Publications Ltd, London</p> <p>Marder P. Michael, (2011) Research Methods for Science. Cambridge University</p>
<p>Assessment</p>	<p><u>Continuous Assessment (50%):</u></p> <p>The assessment may include any combination of the following:</p> <ul style="list-style-type: none"> • Written and/or oral, and it consists of multiple – choice, short answer, open ended questions and/or essay questions, that align with the learning outcomes, in order to assess the theoretical knowledge gained. The questions ensure that students will demonstrate a deep understanding of the subject matter and apply their knowledge to solve problems or analyse scenarios. • Assignments and projects provide opportunities for students to apply their theoretical knowledge in practical ways. The assignments are designed in a way that require critical thinking, research, analysis, and synthesis of information. Projects can be individual, self directed learning or group-based and should align with the learning outcomes. Students are evaluated on the quality of their work, the depth of understanding displayed, and their ability to effectively communicate their ideas. Assignments and projects may be individual or group work. • Use of case studies or problem-solving exercises to assess how students can apply theoretical knowledge to real-life situations. Students are presented with scenarios that require analysis, critical thinking, and the application of theoretical concepts and they are assessed based on their ability to perform verbal presentations, viva voce examinations, identify and evaluate relevant information, propose solutions, and provide justifications for their choices. • Online quizzes or interactive assessments: Online quizzes or interactive assessments, reflective writing can be used through the Moodle platform, to create quizzes with various question formats. These assessments can be self-paced or timed, and immediate feedback can be provided to students. • Classroom discussions and debates: Students engage in classroom discussions and debates to assess their theoretical knowledge. Active participation is encouraged to hone their critical thinking skills by posing open-ended questions and facilitating dialogue. • Peer and self-assessment: Students are assigned to review and provide feedback on each other's work, encouraging them to critically evaluate their peers' understanding and provide constructive suggestions. <p>Final exam: 50%. The written final exam includes multiple choice questions, a short-written analysis of methodological problems related to physiotherapy and open-ended questions. Presentation of a research</p>

	protocol or literature review topic according to the thesis guide to the three-member committee that has been appointed.
Language	Greek / English