

Course title	Introduction to Research Methods for Medical Sciences				
Course code	PHD-101				
Course type	Required				
Level	3 rd cycle (PhD)				
Year / Semester	Year 1, Semester 1				
Teacher's name	Course Lead: Dr Nicoletta Nicolaou Contributors of course material / content: - Dr Christiana Demetriou - Prof Costas Constantinou				
ECTS	10	Lectures	1 per week	Tutorials / Workshops	0 – 1 per week
Course purpose and objectives	<p>The main objectives of the course are to:</p> <ul style="list-style-type: none"> Assess the needs for conducting a research study in the context of Medical Sciences and generate relevant and testable research questions Systematically search for evidence in the literature using the appropriate search engines and databases (e.g. PubMed Health, Cochrane Library) and critically evaluate the existing literature, identifying gaps in knowledge on topics relevant to Medical Sciences. Conduct quantitative research, by choosing the most appropriate study design, applying a suitable sampling method, performing accurate variable assessment, applying the right data analysis technique and generating and presenting results appropriately, as well as deriving relevant conclusions. Design qualitative research studies, involving participant observations, individual interviews, and focus groups for answering a research question in the context of Medical Sciences. Write up a complete research proposal and prepare a grant application for funding in national and international funding bodies. 				
Learning outcomes	<p>After completion of the course students are expected to be able to:</p> <ol style="list-style-type: none"> Identify and examine issues pertaining to Medical Sciences and assess the needs for conducting a research study to address these. Generate relevant and testable research questions in the context of Medical Sciences. Systematically search for evidence using the appropriate search engines and databases (e.g. PubMed Health, Cochrane Library). Critically evaluate the existing literature and identify and examine gaps in knowledge on topics relevant to Medical Sciences. Choose the most appropriate study design for answering specific research questions relevant to Medical Sciences. Design quantitative observational research studies for answering a research question in the context of Medical Sciences. 				



	<ol style="list-style-type: none"> 7. Design quantitative interventional research studies for answering a research question in the context of Medical Sciences. 8. Estimate sample size requirements by performing study power analysis. 9. Choose the most appropriate sampling method for a given research scenario relevant to Medical Sciences. 10. Perform accurate variable assessment for a given research scenario relevant to Medical Sciences. 11. Choose the right data analysis technique for a given research scenario relevant to Medical Sciences. 12. Perform statistical analysis and generate appropriate results for a given research scenario relevant to Medical Sciences. 13. Present study results appropriately for a given research scenario relevant to Medical Sciences. 14. Derive conclusions based on study findings. 15. Write up a complete research proposal and prepare a grant application for funding in national and international funding bodies. Demonstrate deep understanding and apply the major methodologies involved in qualitative research, relevant to social and behavioural sciences in the context of Medical Sciences. 16. Design qualitative research studies involving participant observations for answering a research question in the context of Medical Sciences. 17. Design qualitative research studies involving individual interviews for answering a research question in the context of Medical Sciences. 18. Design qualitative research studies involving focus groups for answering a research question in the context of Medical Sciences 19. Write-up a scientific article presenting original study findings relevant to Medical Sciences. 20. Perform an oral presentation on original study findings relevant to Medical Sciences 21. Communicate study results and conclusions to the media and lay audiences. 		
Prerequisites	None	Required	None
Course content	<ol style="list-style-type: none"> 1. Assessing needs for conducting a research study relevant to Medical Sciences 2. Generating research questions and systematically searching and critically evaluating the existing literature 3. Designing the appropriate quantitative study for answering a research question I: observational research 4. Designing the appropriate quantitative study for answering a research question II: interventional research 5. Estimating sample size requirements (power analysis) 6. Quantitative study conduction I: Choosing the most appropriate sampling method 		



	<ol style="list-style-type: none"> 7. Quantitative study conduction II: Performing accurate variable assessment 8. Quantitative Study conduct III: Choosing the right statistical technique and performing analysis 9. Quantitative study conduction IV: Results presentation and deriving conclusions in quantitative research 10. Writing up a research proposal and applying for funding 11. Design and analysis in qualitative research 12. Communication of results and conclusions I: article write-up 13. Communication of results and conclusions II: oral presentation 14. Communication of results and conclusions III: media and lay audiences 																																				
Teaching methodology	The teaching methodology is a mixture of taught lectures and tutorials, as well as directed self-learning.																																				
Bibliography	<p>Recommended textbooks/reading</p> <table border="1"> <thead> <tr> <th>Authors</th> <th>Title</th> <th>Edition</th> <th>Publisher</th> <th>Year</th> <th>ISBN</th> </tr> </thead> <tbody> <tr> <td>KH Jacobsen</td> <td>Introduction to Health Research Methods: A Practical Guide</td> <td>3rd</td> <td>Jones & Bartlett Learning</td> <td>2021</td> <td>978-1-2841-9763-1</td> </tr> <tr> <td>WL Hurley, CR Denegar, J Hertel</td> <td>Research Methods – A framework for Evidence-Based Clinical Practice</td> <td></td> <td>Lippincott Williams & Wilkins</td> <td>2011</td> <td>978-0-7817-9768-9</td> </tr> <tr> <td>IK Crombie</td> <td>The Pocket Guide to Critical Appraisal</td> <td></td> <td>BMJ Publishing Group</td> <td>1996</td> <td>978-0-7279-1099-8</td> </tr> <tr> <td>T Greenhalgh</td> <td>How to read a paper</td> <td>4th</td> <td>Wiley-Blackwell</td> <td>2010</td> <td>978-1-4443-3436-4</td> </tr> <tr> <td>SA Strite & ME Stuart</td> <td>Basics for evaluating medical research studies</td> <td></td> <td>Delfini Group LLC</td> <td>2013</td> <td>978-1-4909-2619-3</td> </tr> </tbody> </table>	Authors	Title	Edition	Publisher	Year	ISBN	KH Jacobsen	Introduction to Health Research Methods: A Practical Guide	3 rd	Jones & Bartlett Learning	2021	978-1-2841-9763-1	WL Hurley, CR Denegar, J Hertel	Research Methods – A framework for Evidence-Based Clinical Practice		Lippincott Williams & Wilkins	2011	978-0-7817-9768-9	IK Crombie	The Pocket Guide to Critical Appraisal		BMJ Publishing Group	1996	978-0-7279-1099-8	T Greenhalgh	How to read a paper	4 th	Wiley-Blackwell	2010	978-1-4443-3436-4	SA Strite & ME Stuart	Basics for evaluating medical research studies		Delfini Group LLC	2013	978-1-4909-2619-3
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	A Kaura	Evidence-Based Medicine: reading and writing medical papers		Elsevier Ltd	2013	978-0-7234- 3735-2	
Assessment	This pass/fail course will be assessed at the end of Semester 1 with a summative assessment comprising the submission of a research poster (80%) and an oral presentation (20%) of the poster. Formative assessment will include submission of worksheets following the workshops / tutorials (where applicable).						
Language	English						