



## UNIVERSITI TEKNOLOGI MARA

### BHS570: Research Methodology

<b>Course Name (English)</b>	Research Methodology <b>APPROVED</b>
<b>Course Code</b>	BHS570
<b>MQF Credit</b>	1
<b>Course Description</b>	The aim of the course is to interactively engage students cognitively and scientifically in areas of study design, measurement principle, measurement tools, reliability and validity of measurements, type of variables, sampling methods, and ethical issues in health sciences. Students will explore the principles of the research process from problem statement until proposal development via simulations and exercises and verbally and in writing, discuss with peers and facilitators. The designated lecture session is used to discuss common research methods related to existing principles or theories. Lecture sessions employ a mixture of lectures and active learning (self and peer discussions). The outcomes shall be assessed through a variety of tools which include the traditional paper examination, assessment, informal interviews and classroom engagement.
<b>Transferable Skills</b>	Critical thinking, autonomous learning, information management and communication skill
<b>Teaching Methodologies</b>	Lectures, Blended Learning
<b>CLO</b>	CLO1 Apply the basic principles and methods of health sciences research including disease measures, association and causation, bias and confounding in research methods CLO2 Demonstrate autonomous learning health sciences works of literature critical appraisal CLO3 Demonstrate communication skills through a proposal of valid studies in addressing health problems
<b>Pre-Requisite Courses</b>	No course recommendations
<b>Topics</b>	
<b>1. Introduction to research</b> 1.1) Definition of research 1.2) The importance of research 1.3) Types of research 1.4) The research process	
<b>2. Research proposal development</b> 2.1) Research proposal writing in general 2.2) Research proposal writing format 2.3) Bibliography writing 2.4) Introduction to citation manager software (Endnote/Mendeley) 2.5) Gantt chart writing	
<b>3. Ethical issues in research</b> 3.1) The integrity of the researcher 3.2) The protection of human rights in clinical research 3.3) The institutional review board 3.4) Elements of informed consent	
<b>4. Principles of measurement</b> 4.1) Quantification and measurement 4.2) The indirect nature of measurement 4.3) Rules of measurement	

<b>5. Methods of data collection</b> 5.1) Self report 5.2) Questionnaires 5.3) Response scales 5.4) Observation
<b>6. Introduction to questionnaire validation</b> 6.1) Measurement error 6.2) Validity and reliability 6.3) Face validity 6.4) Content validity 6.5) Construct validity 6.6) Introduction to questionnaires validation using SPSS
<b>7. Research question</b> 7.1) Selecting a topic 7.2) Developing a clinical research question (PICO) 7.3) Research objectives 7.4) Variables 7.5) Reviewing the literature 7.6) Overview of the scientific article evaluation
<b>8. Sampling</b> 8.1) Population and samples 8.2) Sampling techniques 8.3) Probability sampling 8.4) Non-probability sampling 8.5) Recruitment
<b>9. Bias and confounding</b> 9.1) Types of bias 9.2) The concept of confounding
<b>10. Qualitative study</b> 10.1) Types of qualitative study
<b>11. Observational study</b> 11.1) Cohort study 11.2) Cross-sectional study 11.3) Case-control study 11.4) Bias in a selected observational study 11.5) Evaluating causality in an observational study 11.6) Overview of the STROBE statement for reporting observational study
<b>12. Experimental design</b> 12.1) Randomized controlled study 12.2) Overview CONSORT statement 12.3) Introduction to Quasi-experimental design
<b>13. Disseminate research findings</b> 13.1) Overview of a scientific article writing

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Group Project	Preparing a research proposal	30%	CLO3
	Test	Number of tests and timing varies	30%	CLO1
	Written Report	Randomised controlled trial	20%	CLO2
	Written Report	Qualitative study	20%	CLO2

Reading List	Recommended Text	<ul style="list-style-type: none"> <li>Kumar R. 2014, <i>REsearch methodology. A step by step guide for beginners</i>, 4th Ed., SAGE</li> </ul>
	Reference Book Resources	<ul style="list-style-type: none"> <li>Portney L. G., Watkins M. P. 2000, <i>Foundation of clinical research: application to practice</i>, 2nd Ed., Prentice Hall</li> <li>Gordis L. 2009, <i>Epidemiology</i>, Elsevier Saunders Philadelphia</li> </ul>

Article/Paper List	Reference Article/Paper Resources	<ul style="list-style-type: none"> <li>Von Elm E. 2014, The strengthening the reporting of observational studies in epidemiology (STROBE): Guidelines for reporting observational studies, <i>International Journal of Surgery</i>, 12, 1495</li> </ul>
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Other References	This Course does not have any other resources
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