UNIVERSITI TEKNOLOGI MARA

CSP750: RESEARCH METHODS IN COMPUTING

Course Name (English)	RESEARCH METHODS IN COMPUTING APPROVED
Course Code	CSP750
MQF Credit	3
Course Description	This course intends to impart a basic understanding of research and research development. During the course of study students will be guided to develop the subject matter for their research. The course will cover the topics on the process of knowledge creation appropriate for computing field, research methodology, research analysis, academic writing skills and ethical research conduct
Transferable Skills	Balanced Graduate Intellectually, Spiritually and Emotionally, Systematically, Independent and Critical Thinker, Solution Provider
Teaching Methodologies	Lectures, Discussion
CLO	CLO1 Demonstrate the ethical approach of conducting research methods to interpret, create and extend knowledge in computing (A3, Valuing). CLO2 Choose an appropriate research design and methodology for a specific computing research project CLO3 Propose a research proposal that address specific computing related problem using appropriate research method/s.
Pre-Requisite Courses	No course recommendations

Topics
1. Fundamental of Research 1.1) Research concept and definition 1.2) Rigor, Relevance and Argumentation 1.3) Research Paradigm 1.4) Design Science Paradigm 1.5) Research vs. Development 1.6) Research Skills 1.7) Research Process
2. Ethics in Research 2.1) Unethical Conduct in Research 2.2) Plagiarism 2.3) Ethical Conduct for Researchers 2.4) Humane Treatment 2.5) Data Protection
3. Problem Identification and Formulation 3.1) Formulating the problem 3.2) Research Questions 3.3) Research Objectives 3.4) Hypothesis/Research propositions
4. Literature Survey 4.1) Literature Search 4.2) Literature Review
5. Research Design 5.1) Research Framework 5.2) Conceptual Framework 5.3) Theoretical Framework 5.4) Research Model 5.5) Research Approach

6. Research and Data Collection Methods 6.1) Experiment 6.2) Simulation 6.3) Survey 6.4) Case Study 6.5) Ethnography/Netnography 6.6) Interview/Focus Group 6.7) Usability and UX Evaluation Methods
7. Sampling 7.1) Concept of Sampling 7.2) Types of Sampling 7.3) Sample Size
8. Data Analysis 8.1) Statistical Analysis 8.2) Content Analysis 8.3) Thematic Analysis 8.4) Mathematical Analysis 8.5) Data Analytics
9. Academic Writing 9.1) Proposal 9.2) Thesis Writing 9.3) Ethical Issues

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Assignment	Literature Analysis (Thesis/Journal Critique)	15%	CLO1
Assignment	Problem Formulation/Topic presentation	20%	CLO2
Assignment	Concept Paper (Research Design)	25%	CLO2
Individual Project	Proposal	30%	CLO3
Presentation	Proposal	10%	CLO3

Reading List

Recommended Text

- **Carol M. Roberts 2019, *The Dissertation Journey: A Practical and Comprehensive Guide to Planning, Writing, and Defending Your Dissertation*, Third Ed., Corwin Press [ISBN: 978141297798]**
- **Creswell, J. W. and Cresswell, J. D. 2018, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Fifth Ed., Sage Publication [ISBN: 9781506386706]**
- **Wayne C. B., Gregory G. C, Joseph M. W., Joseph B, William T. F 2016, *The Craft of Research*, Fourth Ed., University of Chicago Press [ISBN: 978-022623973]**
- **Tuck, E., and McKenzie, M. 2015, *Place in Research: Theory, Methodology, and Methods*, Routledge [ISBN: 978-113863968]**
- **Leifer, L., Plattner, H. and Meinel, C. 2014, *Design Thinking Research: Building Innovation Eco-Systems*, Springer [ISBN: 9783319013]**
- **Mori, K. 2014, *Concept-Oriented Research and Development in Information Technology*, Wiley [ISBN: 978111847891]**
- **Locke, L. W., Spirduso W. W. and Silverman, S. 2013, *Proposals That Work: A Guide for Planning Dissertations and Grant Proposals*, SAGE Publication [ISBN: 978141292422]**

Article/Paper List: This Course does not have any article/paper resources

Other References: This Course does not have any other resources