



Unit Code:	BISF 1305 / BIT 03102.
Unit Title:	RESEARCH SKILLS AND DESIGN
Program(s):	BISF / BIT.
Lecturer Name:	Mr. George Wainaina.
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Consultation time:	Monday 8:00AM – 11:00AM

UNIT DESCRIPTION/ OBJECTIVES OF THE UNIT

The purpose of this course is to introduce students to research methodology from a wide range of methods, techniques, approaches, tools and writing skills relevant across the Information Technology discipline. Students will be provided with knowledge on research methodology, data collection techniques, and insights on how ethical, legal and professional issues impact research.

EXPECTED LEARNING OUTCOMES

By the end of this course, the learner should be able to:

- i). Discuss Philosophical assumptions and approaches underpinning research approaches and strategies in IT
- ii). Evaluate the research design approaches to data collection and analysis in IT related studies.
- iii). Design a quantitative and/or qualitative research study for the chosen research problem (project).
- iv). Write research proposals in IT research that includes problem statement purpose, research questions, literature review, data collection, and research design methodology.

PREREQUISITE:

None

COURSE SYLLABUS AND SCHEDULE

Week	Topic	Sub-Topic
1&2	Introduction to research	<ul style="list-style-type: none"> • Types of research • Identification of the research area • Stating the problem
3	Introduction to research	<ul style="list-style-type: none"> • Stating the purpose • Formulating the hypotheses
4	Introduction to research	<ul style="list-style-type: none"> • Literature review
5	Ethics in Research	<ul style="list-style-type: none"> • Ethical treatment of participant • Ethics and the sponsor • Researcher and team members
6	Research design	<ul style="list-style-type: none"> • Types of research design • Sample design
7	Measurement	<ul style="list-style-type: none"> • Levels of measurement • Types of variables • Validity and reliability in research
8	Research instruments	<ul style="list-style-type: none"> • Questionnaires • Interviews • Observation
9	Data analysis	<ul style="list-style-type: none"> • Data preparation and description • Descriptive statistics • Inferential statistics • Relational statistics • Correlation
10	Report writing techniques	<ul style="list-style-type: none"> • Writing a research proposal • Writing a research report
11	Revision.	
12	Revision.	
13	Revision.	

14	Final examination.	
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Mode of Delivery

The course unit will be delivered through virtual classes.

Teaching Methodology

Lectures, Group Presentations, Case studies, Library Research.

Instructional Materials and Equipment

Course texts, Handouts, Presentation slides, Computer software and hardware, online resources.

Methods of evaluation

Course Work 30%

Final Exam 70%

TOTAL 100%

Core Reading Materials for the Course

1. Grove, S. K., & Gray, J. R. (2018). *Understanding nursing research e-book: Building an evidence-based practice*. Elsevier Health Sciences.
2. Bell, E. (2022). *Business research methods*. Oxford university press.
3. Kumar, R. (2018). *Research methodology: A step-by-step guide for beginners*. Sage.

Recommended Reference Materials

1. King Ronald S (2012). *Research Methods for Information Systems*. Mercury Learning & Information
2. Briony, J.O. (2013). *Researching Information Systems and Computing*, SAGE Publications Ltd,
3. Steenkamp, A.L., McCord, S.A. (2010). Approach to Teaching Research Methodology for Information Technology. *Journal of Information Systems Education*,.

Course Journals

1. Journal of Statistics Education, ISSN: 1069-1898
2. International Journal of Quantitative and Qualitative Research Methods: ISSN: 2056-3639

E-Resources

1. Rogers, M., Pfaff, T., Hamilton, J. and Erkan, A. (2015), "Using sustainability themes and multidisciplinary approaches to enhance STEM education", *International Journal of Sustainability in Higher Education*, Vol. 16 No. 4, pp. 523-536. <https://doi.org/10.1108/IJSHE-02-2013-0018>
2. Chen, O. and Bergner, Y. (2021). I know it when I see it: employing reflective practice for assessment and feedback of reflective writing in a makerspace classroom. *Information and Learning Sciences*, Vol. 122 No. 3/4, pp. 199-222. <https://doi.org/10.1108/ILS-09-2020-0209>