JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF HEALTH SCIENCES

UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE

PUBLIC HEALTH / COMMUNITY HEALTH AND DEVELOPMENT

3RD YEAR 1ST / 2ND SEMESTER 2023/2024 ACADEMIC YEAR

MAIN/KISUMU

COURSE CODE: HCB 1301/2314

COURSE TITLE: RESEARCH METHODS

EXAM VENUE: **STREAM: (BSc. P. Health / Comm Hlth & Dev)**

DATE: **EXAM SESSION:**

TIME: 2.00 HOURS

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Instructions:

1. **Answer all the questions in Section A and ANY other TWO questions in Section B.**
2. **Candidates are advised not to write on the question paper.**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A: 30 MARKS

1. Differentiate between
   a) A concept note and proposal   (1 mark)
   b) Structured and unstructured questionnaires (1 mark)
   c) Descriptive and analytic studies (1 mark)
2. Briefly discuss THREE qualities of a good research question   (3 marks)
3. Explain briefly how conducting a literature review enables a researcher refine their statement of the problem   (3 marks)
4. Explain THREE characteristics of a good statement of the problem in a proposal   (3 marks)

5. Briefly discuss the significance of internal validity in a research study   (3 marks)
6. Distinguish between target population and study population   (3 marks)
7. Briefly describe confidentiality as an ethical rule in research   (3 marks)

8. Prepare an outline of a timeline of a research proposal   (3 marks)

9. Distinguish between categorical and continuous variables and give an example of each   (3 marks)

10. List THREE characteristics of a conceptual framework   (3 marks)

SECTION B: 40 MARKS

1. List and explain steps of a scientific inquiry. For each step give an example   (20 marks)
2. a. Probability sampling is generally preferred in comparison to non-probability sampling. Discuss.
                                                                                    (10 marks)

   b. Compare and contrast Stratified and Quota sampling techniques, and show how each can be used for data collection   (10 marks)

3. a) Explain THREE factors that a researcher should consider before selecting an appropriate method for data collection   (6 marks)

   b) Explain how you will ensure validity and reliability of your data collection tools (14 marks)

4. An investigator wants to assess whether smoking is a risk factor for pancreatic cancer. Electronic medical records at a local hospital will be used to identify 50 patients with pancreatic cancer. One hundred patients who are similar but free of pancreatic cancer will also be selected. Each participant's medical record will be analyzed for smoking history

   a) Identify, giving reasons the type of study proposed above   (4 marks)

   b) Indicate its specific strengths and weaknesses   (4 marks)

   c) Explain THREE potential biases in this study   (6 marks)

   d) Using the figures presented above, construct a properly labeled 2x2 table   (4 marks)

e) What is the appropriate effect measure for this type of study? Explain   (2 marks)

Jaramogi Oginga Odinga University of Agriculture and Technology

School of Health Sciences

Research Methods Course Outline

Sept – Dec Semester 2023

LECTURER: Mrs. Grace Kwamboka

CONTACT: gkmogire@gmail.com; Tel: 0723 675531

HCB 2314   Research Methods

Purpose: To provide students with the knowledge of the different types of research conducted in Health Sciences. In addition, students will learn how to design research studies, and apply their gained knowledge to the development of a research proposal.

Learning Outcomes

At the end of these lectures the student will be able to acquire an understanding of:

1. The many different types of research designs.
2. Research ethics.
3. How to develop a research proposal.
4. How to write a research proposal.
5. How to present a research proposal to peers.

Course Content

Lesson 1   Introduction; definition of terms in research

Lesson 2   Philosophical aspect of scientific research and innovation and the methods and nature of science, including their application in biological science

Lesson 3   Preliminary review of state of scientific knowledge and literature survey of sample topics in biological science;

Lesson 4   Different types of biological studies: Cross-sectional, vertical or prospective and follow up, retrospective cohort, time-series, case-report, case-series, case-control, controlled exposure, monitoring and surveillance

Lesson 5   Assessment

Lesson 6   Research proposal formulation including generation of hypotheses, study objectives and laying out research plans and questionnaires

Lesson 7   Resources required: personnel, budgeting and seeking for research funds support and collaboration

Lesson 8   Units of measurements and scientific calculation used in biomedical research and practice

Lesson 9   Data analysis, interpretation, reporting, publication and references.

Lesson 10   Assessment

Lesson 11   Seminar presentation and analysis.

Lesson 12   Revision

Teaching methods: The course is based on lectures, tutorials and discussions.

Instructional material and Equipment: Chalk/ whiteboard markers and board, handouts

Assessment: End of semester examination – 70%, Continuous Assessment Tests- 20%, Assignmets- 10%

CORE TEXTBOOK

C. R. Kothari (2004); *Research Methodology: Methods and Techniques*; New Age International (P) Ltd. ISBN; 978-81-224-2488-1

FURTHER READING

Willis Yuko Oso and David Onen (2011) *Writing Research Proposal and Report: A handbook for begginers*. The Jomo Kenyatta Foundation. ISBN; 9966-22-716-4

Abel Mugenda (2011); *Social Science Research: Theory and Principles.* ARTS Press. ISBN 9966-9702-5-8