



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF HEALTH SCIENCES
UNIVERSITY EXAMINATION FOR MASTER OF PUBLIC HEALTH
1st YEAR 2nd SEMESTER 2023/2024 ACADEMIC YEAR
KISUMUCAMPUS

COURSE CODE: HMP 5126

COURSE TITLE: EPIDEMIOLOGIC METHODS

EXAM VENUE:

DATE:

TIME: 3.00 HOURS

Instructions:

- 1. Question 1 is compulsory then answer any other 3 the questions.**

1. Answer all questions here (COMPULSORY)
 - a) State the main similarity and main difference between cohort and experimental studies (3 marks).
 - b) State the main difference between differential and nondifferential misclassification, and state which direction(s) each type of error can bias the study results (3 marks).
 - c) Describe the situations in which it is desirable to conduct a case–control study (3 marks).
 - d) Why do investigators use the odds ratio used in a case–control study (instead of the risk or rate ratio) to measure the strength of the association between an exposure and a disease? (3 marks).
 - e) State the main difference between.
 - a. Individual and community trials (1 mark)
 - b. Preventive and therapeutic trials (1 mark)
 - c. Simple and factorial trial designs (1 mark)

Answer any 3 questions

2. How does bias impact the validity and generalizability of epidemiological studies? Discuss strategies for mitigating different types of bias (15 marks).
3. Define and distinguish between random error and systematic error in epidemiological studies. Describe how each can impact the interpretation of study results (15 marks).
4. Both P-values and confidence intervals (CIs) serve as tools for evaluating evidence in research, but they offer different perspectives and interpretations. Discuss their strengths and limitations in drawing sound conclusions. (15 marks).
5. Distinguish between association and causation in epidemiology research and outline Hills guidelines for determining causality (15 marks).
6. Discuss confounding and how it can be controlled in the design stage and analysis stage (15 marks).