

College of Micronesia – FSM

COURSE OUTLINE COVER PAGE**Title:** Health Research Methodology**Department No.** PH 211

Course Description: This course introduces students to research as an essential tool to create new knowledge and to develop proper utilization of existing knowledge in health and health care services. The course covers the basic concepts and principles in the classic quantitative approach, which looks at disease causation and patterns in the communities. It also addresses the qualitative approach, which looks at social aspects and individual behaviour as factors determining people's health and disease status. Instructions on how to construct a mixed methods research design will also be presented. Other important issues related to health research, including literature review, ethical considerations, and writing strategies will be discussed.

Course Prepared By: Dr Hien Do Cuboni**Campus:** National

	Hours per Week		No. of Week		Total Hours		Semester Credits
Lecture	3	x	16	=	48	=	3
			Total Semester Credits				3

Purpose of Course:

Degree Requirement

X

Degree Elective

Certificate

Other

Prerequisite:

PH 111 or Instructor's permission

Signature, Chairperson, Curriculum Committee_____
Date Approved by Committee_____
Signature, President, COM-FSM_____
Date Approved by President

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COURSE OUTLINE**I. LEARNING OUTCOMES****A. Program Learning Outcomes:**

1. Recognize, describe, discuss and research about the basic public health science facts and principles;
2. List, discuss and demonstrate the essential public health functions and their interrelationships at community and district level;
3. Describe, discuss and research adult, children and family health issues;
4. Discuss and demonstrate an understanding and practice of some generic public health competencies;
5. Demonstrate proper public health skills for public health practice in the community as a national public health officer;
6. Discuss and demonstrate community and cultural sensitivity in the health care environment;
7. Describe, discuss and research the determinants and problems of the health of adults, children and families;
8. Demonstrate proper cardio-pulmonary resuscitation (CPR), first aid techniques, and other healing and patient care abilities;
9. Demonstrate the ability and discuss how to make a community diagnosis based on the determinants of health in a community;
10. Identify and demonstrate good public health practice;
11. Have had work experience at a public health facility at community and national levels.

B. Course Learning Outcomes:

Upon completion of the course students will be able to:

1. Develop a research proposal on a health-related issue
 - 1.1 Understand the broad picture of the research planning and management
 - a) Define *research*
 - b) List and describe categories of research
 - c) Explain the scientific foundations of research
 - d) Have an overall framework for study designs
 - 1.2 Undertake a literature review on an identified research topic
 - a) Explain the purpose of literature reviews
 - b) Propose relevant and researchable topics
 - c) Use various literature review techniques, such as computerized databases, library resources, abstracting studies, etc.
 - d) Identify appropriate design technique(s) for the literature review of a given research topic
 - e) Describe the common models and styles for writing literature reviews

- 1.3 Be familiar with the different writing strategies and possible ethical considerations in health research
 - a) Describe different research proposal formats used in qualitative, quantitative, and mixed methods research
 - b) Know how to write the *Introduction* part
 - c) Know how to write the *Purpose Statement*
 - d) Know how to write the *Research Questions and Hypothesis*
 - e) Describe and explain the use of *Theory*
 - f) Discuss the *definitions, limitations* and *significance* of each study method
 - g) Identify ethical issues anticipated in problem statement, purpose statement and research questions, data collection, data analysis and interpretation, writing and disseminating the results, of the proposed research undertaking.

2. Understand basic principles of and steps in undertaking a quantitative, a qualitative, and a mixed methods research
 - 2.1 Understand the principles and methods used in conducting a quantitative research
 - a) Explain the experimental and observational research strategies, their methods of work, their advantages and limitations
 - b) Explain the different kinds of descriptive studies
 - c) Explain the major analytical strategies; the comparison of these strategies; and the choice of a relevant strategy
 - d) Describe the components of a survey
 - e) Describe the components of an experimental study
 - f) List and explain the common threats to validity
 - g) Design a questionnaire for a population survey
 - h) Explain the basic concepts of descriptive statistics
 - i) Describe the main methods of presenting and interpreting health-related data
 - j) Propose the data presentation methods that would be best used in a prospective research proposal to present findings
 - k) Explain the concepts of probability, correlation and regression, and of some nonparametric tests commonly used in quantitative research
 - l) Outline the structure of a report of the research findings
 - 2.2 Understand the principles and methods used in conducting a qualitative research
 - a) Describe the characteristics of qualitative research
 - b) Outline the different strategies of inquiry in qualitative research
 - c) Define the role of researchers
 - d) Describe the basic steps in data collection and recording
 - e) Discuss some of the most basic methods of data analysis and interpretation
 - f) List and discuss possible factors that may affect the validity and accuracy of study findings
 - g) Outline the structure of a report of the research findings
 - 2.3 Understand the principles and methods used in conducting a mixed methods research
 - a) Describe the main components and nature of mixed methods research
 - b) List the main types of mixed methods strategies

- c) List the criteria for choosing a certain strategy, its implementation and integral characteristics
- d) Identify alternative strategies and models in mixed methods research
- e) Describe the basic steps in data collection, analysis and validation of results
- f) Outline the structure of a report of the research findings

II. COURSE CONTENTS

A. Introduction to research: research and scientific methods

- 1) Research: concepts and categories
- 2) Scientific foundations of research
- 3) Framework of study designs
- 4) Research planning and management

B. Review of the literature

- 1) Why do literature reviews
- 2) Techniques for literature reviews
- 3) Writing literature reviews: basic models and styles

C. Writing strategies and ethical considerations

- 1) Research proposal formats:
 - a) Qualitative proposal: qualitative constructivist/ interpretivist format; qualitative advocacy/ participatory format
 - b) Quantitative format
 - c) Mixed methods format
- 2) Writing the Introduction:
 - a) Its importance and the importance of the study
 - b) Its model
- 3) Writing the purpose statement
 - a) Significance and meaning of a purpose statement
 - b) Examples on how to write the purpose statement for each type of research:
 - Qualitative method: phenomenology studies, case studies, ethnographic studies, grounded theory studies;
 - Quantitative method: published survey studies, dissertation survey studies, experimental studies
 - Mixed methods: convergent strategy of enquiry, sequential strategy of inquiry
- 4) Write the Research Questions and Hypothesis
 - a) Qualitative research: central questions for ethnology and case studies
 - b) Quantitative research: a *null* hypothesis, nondirectional and directional hypothesis, descriptive and inferential questions
 - c) Mixed methods research: what types of questions to combine and how best to combine
- 5) The use of Theory
 - a) Quantitative theory-use: definition, forms, replacement, model of writing

- b) Qualitative theory-use: variation, location and patterns
- c) Mixed methods theory-use: examples of a transformative-emancipatory mixed methods study
- 6) Definitions, limitations and significance of each study method
 - a) Definition of research terminology
 - b) Delimitations and limitations encountered
 - c) Significance of the proposed study
- 7) Ethical issues anticipated in each step of the proposed research

D. Quantitative methods

- 1) Review of the experimental versus observational strategies, their methods of work, their advantages and limitations
- 2) Review of descriptive studies:
 - a) Case series
 - b) Community diagnosis or needs assessment
 - c) Descriptive cross-sectional studies
 - d) Community surveys
 - e) Ecological descriptive studies
- 3) Review of analytical strategies:
 - a) Case-control studies
 - b) Cohort studies (prospective and retrospective)
 - c) Analytical cross-sectional studies
- 4) Survey method plans:
 - a) Survey design
 - b) Choice of population and sample size
 - c) Survey instruments
 - d) Variables to be surveyed
 - e) Data analysis methods
- 5) Experimental method plan:
 - a) Participants or subjects: selection strategies
 - b) Variables
 - c) Instrumentation and materials
 - d) Threats to validity - their potential impact on study procedure and statistical analysis

E. Questionnaire design

- 1) Concept, types and purposes of questionnaires
- 2) Factors to be considered in questionnaire design
- 3) Questionnaire format:
 - a) Type of questions, language and wording style
 - b) Forms of structured questions, length, layout and sequencing of questions
 - c) Editing and coding
 - d) Reliability and validity/ consistency checks
- 4) Auxiliary activities:
 - a) Pretesting a questionnaire
 - b) Training of interviewers

- c) Call-backs (repeat visits)
- d) Editing and coding

F. Review of descriptive statistics: methods for presenting and interpreting health-related data, some statistical concepts

- 1) Data presentation method
- 2) Tables, graphs and charts: how they work, when to use and for what kind of data
- 3) Probability: fundamentals, additional rule, multiplication rule, probability through simulations, counting
- 4) Correlation and regression: variation and prediction intervals, multiple regression, modeling
- 5) Nonparametric statistics: Sign test, Wilcoxon signed-ranks tests for matched pairs, Wilcoxon rank-sum test for two independent samples, Kruskal-Wallis test, rank correlation, runs test for randomness

G. Qualitative methods

- 1) Characteristics of qualitative research
- 2) Strategies of inquiry
- 3) Role of researchers
- 4) Data collection procedures: basic steps and data collection forms
- 5) Data recoding procedures: basic steps and methods
- 6) Basic methods of data analysis and interpretation
- 7) Validity and accuracy of study findings

H. Mixed methods procedures

- 1) Components and characteristics of mixed methods research
- 2) Criteria for choosing this research strategy, its implementation and integral characteristic
- 3) Alternative strategies and models in mixed methods research
- 4) Data collection, analysis and validation procedures
- 5) Structure of a report on research findings

III. TEXTBOOK

Creswell JW. (2008) Research Design: Qualitative, Quantitative and Mixed Methods Approaches, 3rd Edition or most recent edition. Sage Publication Inc. (ISBN-13: 978-1412965576)

IV. REFERENCE MATERIALS

- 1. The World Health Organization. (2001) Health Research Methodology, 2nd Edition or most recent edition. WHO, WPRO. (ISBN-13: 978-9290611578)
- 2. Brink H., Walt CVD. (2005) Fundamental of Research Methodologies for Health-care Professionals, 2nd Edition or most recent edition. Juta Academic. (ISBN-13: 978-0702166808)

3. Hulley SB., et al. (2007) Designing Clinical Research, 3rd Edition or most recent edition. Wolters Kluwer Health – Lippincott Williams & Wilkins. (ISBN-13: 978-0781782104)
4. Triola MF. (2007) Elementary Statistics using Excel, 3rd Edition or most recent edition. Addison-Wesley. (ISBN-13: 978-0321365132)

V. REQUIRED COURSE MATERIALS

Prescribed textbook. Furthermore, perusal of reference materials is encouraged.

VI. INSTRUCTIONAL MATERIALS/ EQUIPMENT AND COST FOR THE COLLEGE:

There is no special instructional material/ equipment required for this course.

VII. METHODS OF INSTRUCTION:

1. Lectures: in-class lectures, followed by group discussions and activities relevant to the topics presented.
2. Group presentations: students' presentations on selected readings and on the final research proposal.

VIII. EVALUATION:

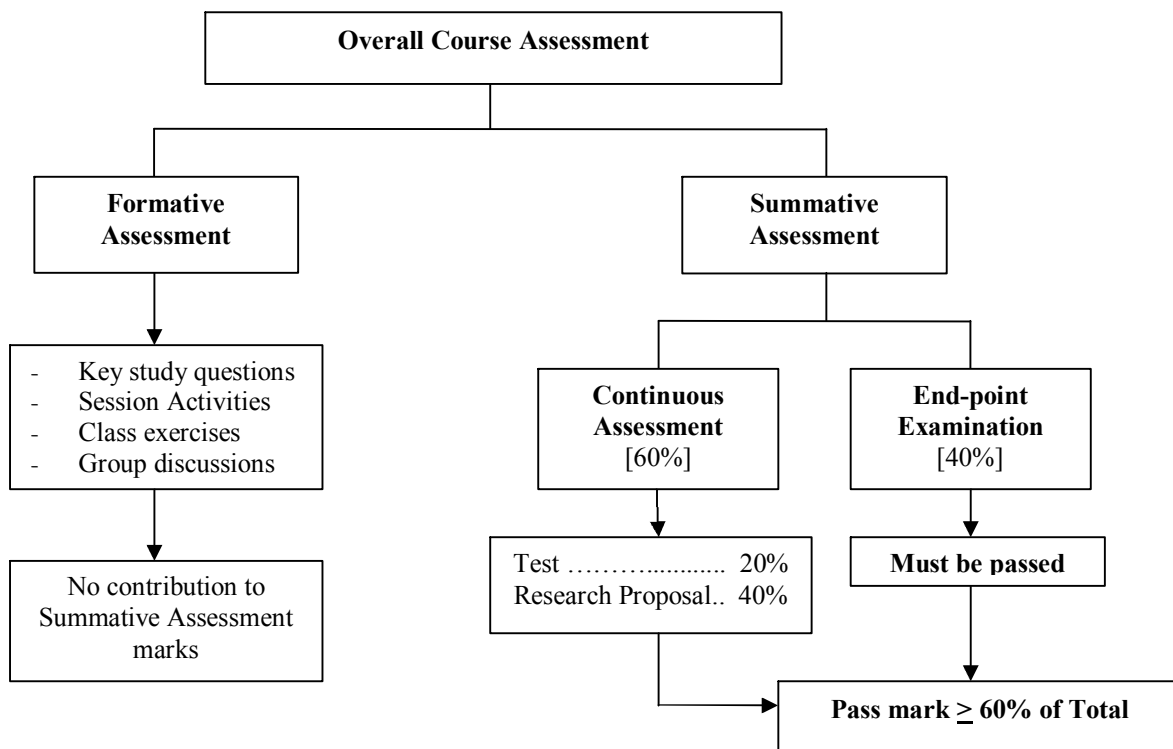
A. Grading scheme: there are two components: Formative and Summative Assessment.

☞ **Formative Assessment:** This type of assessment evaluates how students progress in class. With feedback from the Instructor, the student would be able to answer these questions: *Am I doing well in class? What have I missed? What should I concentrate more on?* This assessment will take the form of tests and quizzes, with or without prior notice.

☞ **Summative Assessment:** This type of assessment implies that the marks a student gets contribute towards the final grade. For this course, this assessment consists of the following:

1. **Continuous Assessment (60%):** comprises 1 written Test and 1 Research Proposal which contributes 20% and 40% to the total course assessment, respectively.
2. **Final Exam (40%):** a 3-hour written paper, at the end of the course.

The Assessment is illustrated in the following diagram:



B. Grading system

Grade	Percentage	Outcome
A	90-100%	Superior
B	80-89%	Above Average
C	70-79%	Average
D	60-69%	Passing
F	Below 60%	Failure

IX. CREDIT-BY-EXAMINATION

None.

X. ATTENDANCE POLICY

As per college policy.

XI. ACADEMIC HONESTY POLICY

As per college policy.