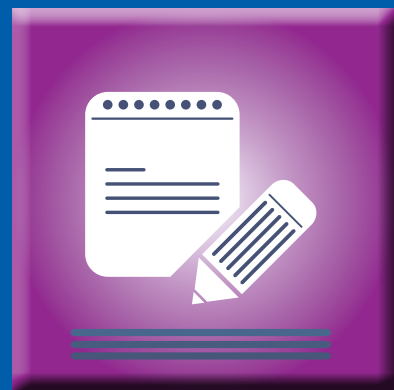


The African Field Epidemiology Network
LABORATORY TRAINING COURSE
Curriculum Handbook



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FROM THE AMERICAN PEOPLE



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Competency Statements

GOAL: To build a critical mass of health and laboratory professionals that is adequately knowledgeable in appropriate laboratory and disease control methods; these professionals should act as change agents to institute better methods of laboratory practice in the context of disease control. They should use their positions to influence better involvement of laboratories in support to disease control in the context of primary health care

Expected Competencies

To develop a cadre of laboratory professionals and laboratory linked managers that has the skills to

1. Apply basic epidemiological methods in assessing the determinants of disease, as a basis for instituting strategies to control disease in communities
2. Participate and contribute to the detection, investigation, information dissemination in disease outbreak situations as a basis for designing appropriate interventions for their control
3. Conduct Case Based and Laboratory Backed surveillance, and thereby contribute to the strengthening of Public Health Surveillance for the control of epidemic prone diseases
4. Apply the rationale and processes involved in conducting basic and additional laboratory procedures for the detection of disease causing agents
5. Institute and promote safety, quality control and quality assurance in Public Health laboratories in their areas of responsibility
6. Manage laboratories and laboratory logistics in the context of public health and disease control
7. Design, develop and implement basic laboratory information and communication procedures related to the control of disease
8. Design of questionnaires and data entry interfaces, create of databases, analyse and interpret results from epidemiological investigations and routinely collected information using Epi-Info Software

UNIT 1: INTRODUCTION TO EPIDEMIOLOGY

SESSION 1: BASIC EPIDEMIOLOGICAL CONCEPTS

SESSION OUTLINE

Time Required: 2 Hours

❑ *Learning Objectives*

1. Define and explain the meaning of epidemiology
2. Outline key epidemiologic concepts related to occurrence of disease
3. Discuss the importance of epidemiology
4. Explain the different classifications of epidemiology

❑ *Session Topics*

- 1.1 DEFINITION AND MEANING OF EPIDEMIOLOGY
- 1.2 BASIC EPIDEMIOLOGIC CONCEPTS
- 1.3 USES AND METHODS OF EPIDEMIOLOGY
- 1.4 CLASSIFICATION OF EPIDEMIOLOGY

❑ *Detailed Outline*

- 1.1 DEFINITION AND MEANING OF EPIDEMIOLOGY
 - a. What is epidemiology?
 - b. Clinical practice vs. epidemiology
 - c. History of epidemiology
- 1.2 BASIC EPIDEMIOLOGIC CONCEPTS
 - a. Key relationships in epidemiology
- 1.3 USES AND METHODS OF EPIDEMIOLOGY
 - a. Basic epidemiology methods
 - b. Uses of epidemiology
- 1.4 CLASSIFICATION OF EPIDEMIOLOGY
 - a. Descriptive epidemiology
 - b. Analytical epidemiology
 - c. Experimental epidemiology

❑ *Methods*

Lecture, brainstorming, question and answer

❑ *Teaching Resources*

LCD; laptop computer, hand-outs, news print, markers, chalk

❑ *Assessment*

Participation

SESSION 2: MEASURES OF DISEASE FREQUENCY

SESSION OUTLINE

Time Required: 2 Hours

Learning Objectives

1. Justify the need to measure events
2. Distinguish between rates, ratios and proportions in measuring disease
3. Apply incidence and prevalence in measuring morbidity in populations
4. Outline measures of mortality and other health related events

Session Topics

- 2.1 BACKGROUND TO MEASURING EVENTS
- 2.2 RATES, RATIOS AND PROPORTIONS
- 2.3 MEASURES OF DISEASE OCCURRENCE
- 2.4 MEASURES OF MORTALITY AND OTHER HEALTH EVENTS

Detailed Outline

- 2.1 BACKGROUND TO MEASURING EVENTS
 - a. What is involved in measuring events?
 - b. Why measure events?
- 2.2 RATES, RATIOS AND PROPORTIONS
 - a. Ratios
 - b. Proportions
 - c. Rates
- 2.3 MEASURES OF DISEASE OCCURRENCE
 - a. Prevalence and incidence
 - b. Special types of incidence
- 2.4 MEASURES OF MORTALITY AND OTHER HEALTH EVENTS
 - a. Mortality rates
 - b. Ratios and proportions
 - c. Other health related events

Methods

Lecture, brainstorming, question and answers, demonstration

Teaching Resources

LCD, laptop computer, hand-outs, news print, markers

Assessment

Participation

SESSION 3: CASE STUDIES IN EPIDEMIOLOGICAL METHODS

SESSION OUTLINE

Time Required: 2 Hours

❑ *Learning Objectives*

1. Demonstrate the use of incidence and prevalence in measuring disease
2. Demonstrate the application of time, place and person measures in describing events

❑ *Session Topics*

- 3.1 DETERMINING INCIDENCE AND PREVALENCE
- 3.2 TIME, PLACE AND PERSON CONSIDERATIONS

❑ *Detailed Outline*

- 3.1 DETERMINING INCIDENCE AND PREVALENCE
 - a. Definition and sources of data on incidence and prevalence
 - b. Characterizing incidence over time
- 3.2 TIME, PLACE AND PERSON CONSIDERATIONS
 - a. Characteristics of those affected
 - b. Risk factors

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

Hand-outs, case study, news print, markers, chalk

❑ *Assessment*

Participation and group reports

UNIT 2: ROLE OF THE LABORATORY IN OUTBREAK INVESTIGATIONS

SESSION 1: PRINCIPLES OF DISEASE AND OUTBREAK OCCURRENCE

SESSION OUTLINE

Time Required: 2 Hours

☐ *Learning Objectives*

1. Describe some explanatory concepts for the emergence of outbreaks in communities
2. Differentiate between point source epidemics and propagated epidemics

☐ *Session Topics*

- 1.1 BASIC CONCEPTS IN DISEASE OCCURRENCE
- 1.2 NATURE OF DISEASE OUTBREAKS

☐ *Detailed Outline*

- 1.1 BASIC CONCEPTS IN DISEASE OCCURRENCE
 - a. Descriptions of disease occurrence
 - b. Priority diseases
 - c. The “endemic stability” concept
- 1.2 NATURE OF DISEASE OUTBREAKS
 - a. Definition and classification of outbreaks
 - b. Epidemic curves

☐ *Methods*

Lecture, brainstorming, group discussion, demonstration

☐ *Teaching Resources*

LCD, laptop computer, hand-outs, news print, markers

☐ *Assessment*

Participation in session

SESSION 2: OUTBREAK INVESTIGATIONS

SESSION OUTLINE

Time Required: 2 Hours

❑ *Learning Objectives*

1. Define outbreak investigations and explain the necessary preparations
2. Outline the steps involved in outbreak investigations
3. Discuss the role of the laboratory at the different stages of outbreak investigations

❑ *Session Topics*

- 2.1 BACKGROUND TO OUTBREAK INVESTIGATIONS
- 2.2 STEPS IN OUTBREAK INVESTIGATION
- 2.3 LABORATORY SUPPORT DURING OUTBREAKS

❑ *Detailed Outline*

- 2.1 BACKGROUND TO OUTBREAK INVESTIGATIONS
 - a. Definition and meaning
 - b. Approach to investigation
- 2.2 STEPS IN OUTBREAK INVESTIGATION
 - a. Steps in investigating an outbreak
- 2.3 LABORATORY SUPPORT DURING OUTBREAKS
 - a. The role of the laboratory in the different stages of outbreak investigations

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print

❑ *Assessment*

Participation in sessions

SESSION 3: COMMUNICATION AND INFORMATION SHARING DURING AN OUTBREAK

SESSION OUTLINE

Time Required: 4 Hours

Learning Objectives

1. Discuss the importance of communication in outbreaks
2. Discuss the key considerations for communicating in emergencies

Session Topics

- 3.1 BACKGROUND TO COMMUNICATION
- 3.2. COMMUNICATING INFORMATION IN AN EMERGENCY

Detailed Outline

- 3.1 BACKGROUND TO COMMUNICATION
 - a. Definition and rationale
 - b. Intended audience and techniques
- 3.2. COMMUNICATING INFORMATION IN AN EMERGENCY
 - a. Rationale for communicating in emergency
 - b. Factors that affect communication during an outbreak
 - c. Best practices in outbreak communication
 - d. Targeting communication to the audience

Methods

Lecture, brainstorming

Teaching Resources

LCD, laptop computer, hand-outs, news print

Assessment

Participation in sessions

SESSION 4: REPORT WRITING IN OUTBREAK INVESTIGATIONS

SESSION OUTLINE

Time Required: 2 Hours

❑ *Learning Objectives*

1. Justify the importance and relevance of outbreak investigation reports
2. Discuss the rationale, content and application of the different outbreak reports

❑ *Session Topics*

- 4.1 IMPORTANCE OF OUTBREAK FIELD INVESTIGATIONS REPORT
- 4.2 REPORTING FORMATS AND RELEVANCE

❑ *Detailed Outline*

- 4.1 IMPORTANCE OF OUTBREAK FIELD INVESTIGATIONS REPORT
 - a. Rationale of reporting
 - b. Type of outbreak investigation reports and when reporting is recommended
 - c. Writing investigations objectives
- 4.2 REPORTING FORMATS AND RELEVANCE
 - a. The notification report
 - b. The preliminary field investigation report
 - c. The interim field investigation report
 - d. The final investigation report

❑ *Methods*

Lecture, brainstorming, case studies and exercises

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print

❑ *Assessment*

Group work and reports

UNIT 3: LABORATORY BASED SURVEILLANCE SYSTEMS AND NOTIFIABLE DISEASES

SESSION 1: PUBLIC HEALTH SURVEILLANCE

SESSION OUTLINE

Time Required: 4 Hours

☐ *Learning Objectives*

1. Describe the meaning and importance of public health surveillance
2. Outline the basic principles of public health surveillance
3. Discuss the role of the laboratory in surveillance
4. Describe the requirements for reporting of notifiable diseases

☐ *Session Topics*

- 1.1 DEFINITION AND MEANING OF PUBLIC HEALTH SURVEILLANCE
- 1.2 BASIC PRINCIPLES OF DISEASE SURVEILLANCE
- 1.3 ROLE OF LABORATORY IN SURVEILLANCE
- 1.4 NOTIFIABLE DISEASES AND REQUIREMENTS FOR REPORTING

☐ *Detailed Outline*

- 1.1 DEFINITION AND MEANING OF PUBLIC HEALTH SURVEILLANCE
 - a. Definition of surveillance
 - b. Types of surveillance
 - c. Rationale and uses of surveillance
- 1.2 BASIC PRINCIPLES OF DISEASE SURVEILLANCE
 - a. Components
 - b. Setting up a surveillance system
 - c. Attributes of a good surveillance system
- 1.3 ROLE OF LABORATORY IN SURVEILLANCE
 - a. Complementary tasks of the laboratory in disease surveillance
 - b. The laboratory in detection of disease agents
- 1.4 NOTIFIABLE DISEASES AND REQUIREMENTS FOR REPORTING
 - a. Priority diseases for surveillance
 - b. Integrated disease surveillance

☐ *Methods*

Lecture, brainstorming, case studies

☐ *Teaching Resources*

LCD, laptop computer, hand-outs, news print, markers

☐ *Assessment*

Participation in sessions

SESSION 2: PRACTICAL APPLICATIONS IN DETECTION OF NOTIFIABLE DISEASES

SESSION OUTLINE

Time Required: 2 Hours

☐ *Learning Objectives*

1. Describe the characteristics and rationale of different reporting forms used in surveillance of notifiable diseases
2. Analyse data to derive surveillance information for decision making

☐ *Session Topics*

- 2.1 REVIEW OF DATA SYSTEMS AND FORMS
- 2.2 PRACTICAL ON SURVEILLANCE

☐ *Detailed Outline*

- 2.1 REVIEW OF DATA SYSTEMS AND FORMS
 - a. Case-based reporting forms
- 2.2 PRACTICAL ON SURVEILLANCE
 - a. Case study on surveillance

☐ *Methods*

Lecture, brainstorming, case studies

☐ *Teaching Resources*

LCD, laptop computer, hand-outs, news print

☐ *Assessment*

Participation in Brainstorming sessions, group work reports

UNIT 4: PRINCIPLES OF LABORATORY METHODS

SESSION 1: MICROSCOPY AND CULTURE TECHNIQUES

SESSION OUTLINE

Time Required: 4 Hours

❑ *Learning Objectives*

1. Outline the different techniques used in microscopy
2. Outline the different techniques used in laboratory culturing

❑ *Session Topics*

- 1.1 MICROSCOPY AND RELATED TECHNIQUES
- 1.2 CULTURE AND RELATED TECHNIQUES

❑ *Detailed Outline*

- 1.1 MICROSCOPY AND RELATED TECHNIQUES
 - a. Microscopy
 - b. Staining techniques
 - c. Higher microscopic techniques
- 1.2 CULTURE AND RELATED TECHNIQUES
 - a. Cultivation techniques
 - b. Virus isolation and related techniques

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print

❑ *Assessment*

Participation in sessions

SESSION 2: FURTHER LABORATORY METHODS

SESSION OUTLINE

Time Required: 4 Hours

❑ *Learning Objectives*

1. Summarise the key approaches to serology to detect antibodies
2. Describe and evaluate the ELISA technique
3. Describe and evaluate the agglutination and precipitation techniques
4. Mention some molecular techniques used in advanced laboratories
5. Describe commonly used serological techniques

❑ *Session Topics*

- 2.1 SEROLOGICAL TESTS FOR DETECTION OF ANTIBODIES
- 2.2 THE ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA)
- 2.3 AGGLUTINATION AND PRECIPITATION TESTS
- 2.4 MOLECULAR TECHNIQUES
- 2.5 SEROLOGICAL TESTS FOR SPECIFIC AGENTS

❑ *Detailed Outline*

- 2.1 SEROLOGICAL TESTS FOR DETECTION OF ANTIBODIES AND OTHER CONSIDERATIONS
 - a. Types of serological tests for detection of antibodies
 - b. Detection of IgM antibody
 - c. Limitations of serological tests
 - d. Specimens
- 2.2 THE ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA)
 - a. The principle underlying ELISA
 - b. Different applications of ELISA
- 2.3 AGGLUTINATION AND PRECIPITATION TESTS
 - a. Agglutination tests
 - b. Precipitin tests
- 2.4 MOLECULAR TECHNIQUES
 - a. Background to molecular techniques
 - b. PCR principle
 - c. Demonstration of viruses and inclusion bodies
- 2.5 SEROLOGICAL TESTS FOR SPECIFIC AGENTS
 - a. Bacterial serological tests
 - b. Enteric pathogens
 - c. Rapid diagnostic serological tests

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print

❑ *Assessment*

Participation in sessions

SESSION 3: VALIDITY AND RELIABILITY OF LABORATORY TESTS

SESSION OUTLINE

Time Required: 4 Hours

Learning Objectives

1. Explain the importance of validating the tools used in epidemiological measurements
2. Employ sensitivity and specificity in validating epidemiological measurements
3. Illustrate the importance of reliability in epidemiological measurements

Session Topics

- 3.1 VALIDITY OF LABORATORY TESTS
- 3.2 RELIABILITY OF LABORATORY TESTS

Detailed Outline

- 3.1 VALIDITY OF LABORATORY TESTS
 - a. Background: Why validate tests?
 - b. Validity of measurements: Sensitivity and specificity of tests
 - c. Validity of measurements: Predictive value of tests
- 3.2 RELIABILITY OF LABORATORY TESTS
 - a. Definition of reliability
 - b. Intra-subject and intraobserver variation

Methods

Lecture, brainstorming, case studies

Teaching Resources

LCD, laptop computer, hand-outs, news print, markers

Assessment

Exercise on validity

UNIT 5: LABORATORY BIOSAFETY, QUALITY CONTROL AND QUALITY ASSURANCE

SESSION 1: SAFETY IN THE LABORATORY

SESSION OUTLINE

Time Required: 2 Hours

❑ *Learning Objectives*

1. Discuss the safety precautions and their rationale in the laboratory
2. Discuss the different types of bio-hazards one may be exposed to in the laboratory
3. Propose ways of preventing laboratory bio-hazards in locality working environments

❑ *Session Topics*

- 1.1 SAFETY PRECAUTIONS IN THE LABORATORY
- 1.2 LABORATORY BIOHAZARDS

❑ *Detailed Outline*

- 1.1 SAFETY PRECAUTIONS IN THE LABORATORY
 - a. Universal or standard precautions
 - b. Develop personal safe work habits
 - c. Sharps and waste containers: Do's and don'ts
- 1.2 LABORATORY BIOHAZARDS
 - a. Levels of laboratory biohazards
 - b. Precautions in handling hazards
 - c. Lab chemical hazards
 - d. Accidents in the laboratory

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print

❑ *Assessment*

Evaluation test

SESSION 2: QUALITY CONTROL AND QUALITY ASSURANCE IN THE LABORATORY

SESSION OUTLINE

Time Required: 2 Hours

Learning Objectives

1. Discuss the meaning and importance of quality in the laboratory
2. Describe the ingredients of a laboratory quality system

Session Topics

- 2.1 MEANING AND IMPORTANCE OF QUALITY
- 2.2 THE LABORATORY QUALITY SYSTEM

Detailed Outline

- 2.1 MEANING AND IMPORTANCE OF QUALITY
 - a. Definition and meaning of quality
 - b. Importance of quality?
- 2.2 THE LABORATORY QUALITY SYSTEM
 - a. Definition and benefits of a laboratory quality system
 - b. Characteristics of a good laboratory quality system

Methods

Lecture, brainstorming, case studies

Teaching Resources

LCD, laptop computer, hand-outs, news print, markers

Assessment

Participation in session

UNIT 6: LABORATORY MANAGEMENT

SESSION 1: PRINCIPLES OF MANAGEMENT I

SESSION OUTLINE

Time Required: 2 Hours

❑ *Learning Objectives*

1. Define management and outline its basic functions
2. Sketch and explain the ingredients of the planning cycle
3. Outline the salient issues in human resource management
4. Outline the salient considerations in time management

❑ *Session Topics*

- 1.1 OVERVIEW OF MANAGEMENT
- 1.2 OVERVIEW OF PLANNING
- 1.3 OVERVIEW HUMAN RESOURCE MANAGEMENT
- 1.4. TIME MANAGEMENT

❑ *Detailed Outline*

- 1.1 OVERVIEW OF MANAGEMENT
 - a. Definition, meaning and characteristics
 - b. Functions of management
 - c. Skills of a manager
- 1.2 OVERVIEW OF PLANNING
 - a. Introduction to planning
 - b. The planning cycle
- 1.3 OVERVIEW HUMAN RESOURCE MANAGEMENT
 - a. Importance of human resources
 - b. Key considerations in human resource management
- 1.4. TIME MANAGEMENT
 - a. Personal time
 - b. Organizational time

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print, markers

❑ *Assessment*

Participation in sessions

SESSION 2: PRINCIPLES OF MANAGEMENT II

SESSION OUTLINE

Time Required: 2 Hours

❑ *Learning Objectives*

1. Describe the features of a workplan and a budget
2. Describe the characteristics of supervision in management
3. Discuss important considerations in communication within an organisation
4. Outline key considerations in managing change and conflicts

❑ *Session Topics*

- 2.1 WORK PLANS AND BUDGETING
- 2.2 SUPERVISION
- 2.3 COMMUNICATION AND MEETINGS
- 2.4 MANAGING CHANGE AND CONFLICTS

❑ *Detailed Outline*

- 2.1 WORK PLANS AND BUDGETING
 - a. Work plans
 - b. Budgeting
- 2.2 SUPERVISION
 - a. Supervision
 - b. Approaches to supervision
 - c. Types of supervision
 - d. Problems in supervision
- 2.3 COMMUNICATION AND MEETINGS
 - a. Communication
 - b. Meetings
- 2.4 MANAGING CHANGE AND CONFLICTS
 - a. Managing change
 - b. Conflict resolution

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print, markers

❑ *Assessment*

Group exercise

SESSION 3: LABORATORY LOGISTICS MANAGEMENT AND CONTROL

SESSION OUTLINE

Time Required: 4 Hours

❑ *Learning Objectives*

1. Outline the features of a laboratory logistics management system
2. Outline the functions of the laboratory logistics cycle and information management system
3. Describe in detail the key considerations in laboratory inventory management

❑ *Session Topics*

- 3.1 THE LABORATORY LOGISTICS MANAGEMENT SYSTEM
- 3.2 THE LOGISTICS CYCLE AND INFORMATION MANAGEMENT SYSTEM
- 3.3 LABORATORY INVENTORY MANAGEMENT

❑ *Detailed Outline*

- 3.1 THE LABORATORY LOGISTICS MANAGEMENT SYSTEM
 - a. Definition and purpose
 - b. Types of distribution systems system
 - c. Determining the value of products
- 3.2 THE LOGISTICS CYCLE AND INFORMATION MANAGEMENT SYSTEM
 - a. The logistics cycle
 - b. Benefits of good logistics management
 - c. Laboratory Logistics management Information System (LMIS)
- 3.3 LABORATORY INVENTORY MANAGEMENT
 - a. Definition and importance of inventory management
 - b. Importance of inventory control
 - c. Effective inventory management
 - d. Key considerations in inventory management
 - e. Laboratory store keeping
 - f. General laboratory procedures
 - g. Keeping track of products in the laboratory store

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print, markers

❑ *Assessment*

Participation in sessions

SESSION 4: PRACTICAL SESSION ON LOGISTICS MANAGEMENT

SESSION OUTLINE

Time Required: 2 Hours

Learning Objectives

1. Describe the key characteristics of documents commonly used in stock control
2. Demonstrate the use of a stock card in stock analysis and control

Session Topics

- 4.1 DOCUMENTS USED IN LABORATORY LOGISTICS MANAGEMENT
- 4.2 PRACTICAL SESSION ON STOCK CONTROL

Detailed Outline

- 4.1 DOCUMENTS USED IN LABORATORY LOGISTICS MANAGEMENT
 - a. Documents and their purpose
 - b. Conducting a physical count
 - c. The laboratory register
- 4.2 PRACTICAL SESSION ON STOCK CONTROL
 - a. Characteristics of the stock card
 - b. Application of the stock card in stock control

Methods

Lecture, brainstorming, case studies

Teaching Resources

LCD, laptop computer, hand-outs, news print

Assessment

Participation in sessions, group exercises and reports

UNIT 7: LABORATORY INFORMATION AND DATA MANAGEMENT

SESSION 1: INTRODUCTION TO INFORMATION SYSTEMS AND DATA MANAGEMENT

SESSION OUTLINE

Time Required: 2 Hours

❑ *Learning Objectives*

1. Define and describe the characteristics of information systems
2. Outline some key concepts in data management
3. Demonstrate the basic characteristics of computers

❑ *Session Topics*

- 1.1 INFORMATION SYSTEMS
- 1.2 CONCEPTS OF DATA MANAGEMENT
- 1.3 BASICS OF COMPUTERS

❑ *Detailed Outline*

- 1.1 INFORMATION SYSTEMS
 - a. Activities of an information system
 - b. Information systems literacy
- 1.2 CONCEPTS OF DATA MANAGEMENT (MANUAL AND COMPUTER)
 - a. Meaning of data management
 - b. Data collection and entry
 - c. Data editing
- 1.3 BASICS OF COMPUTERS
 - a. Parts of a computer
 - b. Computer hardware and software
 - c. Starting and closing the computer

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print, computers

❑ *Assessment*

Pre-test; post-test; course evaluation

SESSION 2: LAUNCHING MICROSOFT WORD

SESSION OUTLINE

Time Required: 4 Hours

❑ *Learning Objectives*

1. Demonstrate the key functions and features of MS Word
2. Apply MS Word in preparing text documents

❑ *Session Topics*

- 2.1 APPLICATION OF MS WORD
- 2.2 PRACTICAL SESSION

❑ *Detailed Outline*

- 2.1 APPLICATION OF MS WORD
 - a. Some applications of MS Word
 - b. Navigating through MS Word
- 2.2 PRACTICAL SESSION
 - a. Practical in using MS Word
 - b. Using MS Word to write a problem statement

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print, computers

❑ *Assessment*

Group reports (problem statement)

SESSION 3: LAUNCHING MICROSOFT EXCEL

SESSION OUTLINE

Time Required: 4 Hours

❑ *Learning Objectives*

1. Demonstrate the key functions and features of MS Excel
2. Apply MS Excel in preparing databases

❑ *Session Topics*

- 3.1 BASIC METHODS IN MS EXCEL
- 3.2 PRACTICAL SESSION ON MS EXCEL

❑ *Detailed Outline*

- 3.1 BASIC METHODS IN MS EXCEL
 - a. Excel menus, workbooks and worksheets
 - b. Creating a database in MS Excel
 - c. Presenting data graphically
- 3.2 PRACTICAL SESSION ON MS EXCEL
 - a. Practical in using MS Excel

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print, computers

❑ *Assessment*

Participation in sessions

SESSION 4: LAUNCHING MICROSOFT POWERPOINT

SESSION OUTLINE

Time Required: 2 Hours

❑ *Learning Objectives*

1. Demonstrate the key functions and features of MS PowerPoint
2. Apply MS PowerPoint in preparing presentations

❑ *Session Topics*

- 4.1 BASICS OF MS POWERPOINT
- 4.2 PRACTICAL SESSION

❑ *Detailed Outline*

- 4.1 BASICS OF MS POWERPOINT
 - a. Getting started
 - b. Preparing a PowerPoint presentation
- 4.2 PRACTICAL SESSION
 - a. Practical in creating PowerPoint presentations

❑ *Methods*

Lecture, brainstorming, case studies

❑ *Teaching Resources*

LCD, laptop computer, hand-outs, news print

❑ *Assessment*

Exercise in creating a PowerPoint presentation

SESSION 5: PROJECT

SESSION OUTLINE

Time Required: 12 Hours

❑ *Learning Objectives*

1. Prepare and present a concept for a field project
2. Demonstrate skills through implementation of the project
3. Prepare and present a feedback report on implementation of the project

❑ *Session Topics*

- 5.1 FIELD WORK
- 5.2 FEEDBACK

❑ *Detailed Outline*

- 5.1 FIELD WORK
 - a. Selecting and preparing a project framework
 - b. Other considerations in selecting interventions
- 5.2 FEEDBACK
 - a. The feedback report

❑ *Methods*

Lecture, brainstorming

❑ *Teaching Resources*

News print, markers, hand-outs

❑ *Assessment*

Project concepts sheet including workplan, feedback report on implementation

UNIT 8: USING EPI-INFO TO MANAGE LABORATORY INFORMATION

SESSION 1: INTRODUCTION TO EPI-INFO SOFTWARE

SESSION OUTLINE

Time Required: 6 Hours

□ *Learning Objectives*

1. Outline the characteristics and uses of the Epi-Info menu
2. Design and create questionnaires and data entry interfaces using Epi-Info
3. Demonstrate how to enter data using Epi-Info

□ *Session Topics*

- 1.1 GETTING STARTED–THE EPI-INFO MENU
- 1.2 DESIGNING QUESTIONNAIRES AND DATA ENTRY INTERFACES
- 1.3 ENTERING DATA

□ *Detailed Outline*

- 1.1 GETTING STARTED – THE EPI-INFO MENU
 - a. Opening Epi-Info
 - b. Components of the Epi-Info menu
- 1.2 DESIGNING QUESTIONNAIRES AND DATA ENTRY INTERFACES–THE MAKE VIEW
 - a. Accessing “Make View”
 - b. Opening a project
 - c. Creating questionnaires
- 1.3 ENTERING DATA
 - a. Launching “Enter Data”
 - b. Entering the data

□ *Methods*

Lecture, brainstorming, case studies

□ *Teaching Resources*

LCD, laptop computer, hand-outs, news print

□ *Assessment*

Participation in sessions

SESSION 2: ANALYSING DATA USING EPI-INFO

SESSION OUTLINE

Time Required: 6 Hours

Learning Objectives

1. Analyse data using Epi-Info, to derive descriptive statistics on the characteristics of health related events
2. Test the association between variables to discern relationships between factors and disease, using Epi-Info
3. Summarise and present findings from data analysis in narrative reports

Session Topics

- 2.1 DESCRIBING THE EPIDEMIC BY TIME, PLACE, AND PERSON
- 2.2 ANALYZING THE RISK FACTORS

Detailed Outline

- 2.1 DESCRIBING THE EPIDEMIC BY TIME, PLACE, AND PERSON
 - a. Analyze data frequency
 - b. Graphs: displaying data in a bar graph
 - c. Work with graph files
 - d. Analyze means of a single variable
 - e. Grouping numerical data
 - f. Graphs: Displaying data in a histogram (epidemic curve)
- 2.2 ANALYZING THE RISK FACTORS
 - a. Analyzing the probability that one data variable is associated with another
 - b. Save analysis output
 - c. Summary of findings from the analysis: A case study

Methods

Lecture, brainstorming, case studies

Teaching Resources

LCD, laptop computer, hand-outs, news print, computers

Assessment

Participation in sessions

