

Mississippi Valley State University
Natural Sciences and Environmental Health
Course Syllabus

Course: EH 533, Epidemiology
Office hours: MWF, 2:00-2:50pm
T, 10:00-10:50, 11:00-11:50
R, 10:00-10:50, 11:00-11:50
Phone: (662)-254-3394
Location: STC 2202

Instructor: Dr. Swatantra Kethireddy (a.k.a.: Dr. Reddy)

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Required Text: Epidemiology for Public Health Practice, fifth edition by Robert H. Friis and Thomas A. Sellers, Jones and Bartlett learning.

Recommended Text: GIS and Public Health, 2nd edition by Ellen K. Cromley and Sara McLafferty.

Credit Hours: 3

Description: This course serves as an introduction to epidemiology and provides approaches to solving public health issues. An introductory chapter put the perspective in a broad context and introduces the discipline. Later chapters discuss how a disease is transmitted and acquired, and measures of disease surveillance in accessing the frequency of transmission. Students study the topics on morbidity and mortality, natural history of disease in terms of quantitative terms. While introducing the use of epidemiology to identify the cause of disease, students also study the case-control, cohort, and cross-sectional studies, and the use of results to study the risk. Associations and casual relationships of disease with risk factors will be discussed as well. Later sections of course address the applications of epidemiology on health events and issues, and use of epidemiology to evaluate the effectiveness of health services. Lastly, application of epidemiology in designing and evaluating a public policy will also be discussed, and an array of ethical and professional issues in conducting epidemiological studies and results will be discussed as well. Also, the applications of Geographical Information Systems in epidemiology and public health will be discussed. Where ever needed, data from the textbook and external sources on epidemiology will be applied in the course.

Learning objectives:

1. Understand the epidemiologic methods and study design and the place of epidemiology in medicine and disease investigation.
2. Learn to work on complex data sets of disease and risk factors.
3. Study epidemiological terminology and topics to apply statistical techniques and understand the issues.

Course outcomes: A successful student

1. Should be able to assess the adequacy of the design and conduct of reported studies and the validity of the conclusions reached in published articles.
2. Ask and answer questions on complex epidemiological problems.
3. Challenge issues of 21st century epidemiology.

MVSU's Environmental Health Core Competencies

1. **Assessment**

- 1A. Information Gathering: The capacity to identify sources and compile relevant and appropriate information when needed, and the knowledge of where to go to obtain the information.
- 1B. Data analysis and Interpretation: The capacity to analyze data, recognizes meaningful test results, interpret results, and present the results in an appropriate way to different types of audiences.
- 1C. Analyzes and synthesizes data to enhance decision making for the practice of environmental health.

2. Management

- 2A. Problem Solving: The capacity to develop insight into and appropriate solutions to environmental health problems.
- 2B. Organizational Knowledge and Behavior: The capacity to function effectively within the culture of the organization and to be an effective team player.
- 2C. Identifies organizational and community stakeholders, concerns, and assets.
- 2D. Project Management: The capacity to plan, implement, and maintain fiscally responsible programs and projects using skills and prioritize projects across the employee's entire workload.
- 2E. Computer/Information Technology: The capacity to use information technology as needed to produce work products.
- 2F. Reporting, Documentation, and Record-Keeping: The capacity to produce reports to document actions, keeps records, and informs appropriate parties
- 2G. Collaboration: The capacity to form partnerships and alliances with other individuals and organizations to enhance performance on the job.

3. Communication

- 3A. Educate: The capacity to use the environmental health practitioner's front-line role to effectively educate the public on environmental health issues and the public health rationale for recommendations.
- 3B. Communicate: The capacity to effectively communicate risk and exchange information with colleagues, other practitioners, clients, policy-makers, interest groups, media, and the public through public speaking, print and electronic media, and interpersonal relations.
- 3C. Marketing: The capacity to articulate basic concepts of environmental health and public health and convey an understanding of their value and importance to clients and the public.

4. Ethics

- 4A. Ability to make good decisions daily, which protect public health and promote public's trust in environmental health profession.
- 4B. Ability to apply ethical and legal guidelines in protecting the environmental health.

5. Flexibility

Ability to adapt to the rapidly changing field of environmental health practice, new technologies, changing laws, emerging environmental threats, and fiscal limitations.

6. Dedication

Ability to practice the skills daily in local, state, and federal agencies; industry and private practice.

This course meets the following EH core competencies presented in the table.

Objective /outcome	MVSU's EH core competency	EHAC core competency	Evaluation
Understand the epidemiologic methods and study design and the place of epidemiology in medicine and disease investigation.	1A,1B, 1C, 2E, 4A, 4B, 5, 2F, 2G,	Gen. EH, Spe. EH, Analytic skills, Research methods, Natural Sciences, Risk assessment, communication, management. Communication skills	Weekly assignments, Homework, Tests
Learn to work on complex data sets of disease and risk factors.	1B, 1C, 3B, 2E,	Analytic skills, Statistical skills, Research methods, Epidemiology,	Weekly assignments, Homework, Written tests,
Study epidemiological terminology and topics to apply statistical techniques and understand the issues.	1A, 2E, 2F, 1B, 1C,	Epidemiology, statistical skills, Analysis skills, Gen. EH, Spe. EH.	Weekly assignments, Homework, Written tests,
Should be able to assess the adequacy of the design and conduct of reported studies and the validity of the conclusions reached in published articles.	2D, 2C, 2F, 2G, 3A, 3B,	Gen. EH, Spe. EH, Analytic skills, Research methods, Natural Sciences, Risk assessment, communication, management. Communication skills	Weekly assignments, Homework, Written tests,
Ask and answer questions on complex epidemiological problems.	3A, 2E, 4A, 4B, 1A, 1B.	Gen. EH, Spe. EH, Analytic skills, Research methods, Natural Sciences, Risk assessment, communication, management. Communication skills	Weekly assignments, Homework, Written tests,

Course work:

- Chapter 1 History and Scope of Epidemiology
- Chapter 2 Practical Applications of Epidemiology
- Chapter 3 Measures of Morbidity and Morality Used in Epidemiology
- Chapter 4 Descriptive Epidemiology: Person, Place, Time
- Chapter 5 Sources of Data for Use in Epidemiology
- Chapter 6 Study Designs: Ecologic, Cross-Sectional, Case-Control
- Chapter 7 Study Designs: Cohort Studies

- Chapter 8 Experimental Study Designs
- Chapter 9 Measures of Effect
- Chapter 10 Data Interpretation Issues
- Chapter 11 Screening for Disease in the Community
- Chapter 12 Epidemiology of Infectious Diseases
- Chapter 13 Epidemiologic Aspects of Work and the Environment
- Chapter 14 Molecular and Genetic Epidemiology
- Chapter 15 Social, Behavioral, and Psychosocial Epidemiology
- Chapter 16 Epidemiology as a Profession

<u>Criteria for grading</u>	<u>% of final grade</u>
Midterm examination	30
Final examination	40
Tests	15
Assignments and Home works	15

Grading scale

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
Below 60%	F

Academic integrity

Full responsibility is placed on the students from the content and integrity of all academic work submitted in the form of quizzes and examinations. Copying another person’s work or portions of it is a violation of academic integrity and will be handled according to Mississippi Valley State University policy.

Make-up policy

No makeup tests will be given except in cases of an immediate family member’s death or personal illness in which the proper documentation must be presented to the instructor. A valid excuse slip should be submitted upon return to class. Makeup tests and quizzes must be taken no later than the second-class meeting after the test date or during the same week when test or quizzes are given. If tests are not taken within the allotted time frame, the grade will be ZERO and there will be NO EXCEPTION.

Cell Phones All cell phones must be turned off or switched to vibration mode before entering the class to avoid interrupting instructor and fellow students. Penalty will be assessed if students fail to comply. Cell phones cannot be used during quizzes or exams.

Service for students with disabilities (SSD)

Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If you feel you are eligible to receive accommodations for a covered disability (mental, physical, psychiatric, learning, vision, hearing, etc.) and would like to request it for this course, you must be registered with the Services for Students with Disabilities (SSD)

program administered by University College. It is recommended that you visit the Disabilities office located inside the EMAP Computer Lab in the Technical Education (IT) building to register for the program at the beginning of each semester. For more information or to schedule an appointment, please contact Mr. Billy Benson, Jr. via phone or email at 662-254-3005 or billy.benson@mvsu.edu.

NOTE: Violation of academic integrity will be handled according to the Mississippi Valley State University policy.

****This document doesn't constitute a contract with the university, it contains guidelines. Please be advised that the contents of this course syllabus are subject to change at the discretion of the instructor.*