

King Saud University
College of Applied Medical Sciences
Department of Community Health Sciences

CHS 334 – Epidemiology I
First Semester 1436/ 1437

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Course Description:

This course provides the students with the principles and concepts of epidemiology science including the definition, background and history of epidemiology. The course describes different uses and applications of epidemiology. It will focus on epidemiological approach to defining and measuring the occurrence of health-related states in populations, identify the modifiable environmental factors and encourages the application of epidemiology to the prevention of disease and the promotion of health, evaluate the effectiveness and efficiency of health care, describe the common causes of death, disease and disability in the community and diseases prevention and control.

Objectives

At the end of the course, the students will able to:

- Describe the basic principles and concepts of epidemiology.
- Identify the uses and applications of epidemiology.
- Explain the natural history of disease and principles of disease prevention.
- Describe epidemiological approach to define and measure the occurrence of health-related states in populations.
- Identify the modifiable environmental factors and encourages the application of epidemiology to the prevention of disease and the promotion of health.
- Evaluate the effectiveness and efficiency of health care.
- Describe the common causes of disease, disability and death in the community.
- Describe the difference type of epidemiologic studies.
- Describe the concepts of the screening.
- Describe the components of the infectious disease process and the mechanisms of transmission of infections.
- Define the communicable diseases and how to prevent and control.
- Explain the epidemiology prevention and control of communicable diseases.

Course contents

1. Introduction to epidemiology
 - a. Definition and background
 - b. History of epidemiology
 - c. Uses and applications
 - d. The scope of epidemiology
 - e. Achievement in epidemiology
2. Epidemiologic orientation to health and disease
 - a. Health and disease
 - b. Natural history of disease
 - c. Levels of prevention
3. Epidemiologic Concepts
 - a. Epidemiologic triad
 - b. Agent, host and environment.
 - c. Multiple causation of disease.
 - d. Epidemic versus endemic disease.
 - e. Classification of disease.
4. measurement of morbidity and mortality
 - a. Sources of data in epidemiology
 - b. Rates , ratios , and proportions
 - c. Morbidity frequency rates
 - Incidence
 - Prevalence
 - Disability
 - d. Mortality frequency rates
 - Adult mortality rates
 - Maternal mortality rates
 - Child mortality rates
 - Infant mortality rates
5. Epidemiologic studies
 - a. Descriptive epidemiologic studies
 - b. Analytic epidemiologic studies
 - c. Experimental studies
 - Principles
 - Types
 - Ethical issues

6. Epidemiology and prevention of non- communicable diseases
 - a. Scope of prevention
 - b. Levels of prevention
 - c. Primordial prevention
 - d. Primary prevention
 - Population strategy
 - High risk individual strategy
 - e. Secondary prevention
 - f. Tertiary prevention
 - g. Non- communicable diseases
 - Diabetes
 - Hypertension
 - Cancer
7. screening in the detection of diseases
 - a. Definition of screening
 - b. Type of screening
 - c. Criteria for screening
 - d. Principles underlying screening program
8. Epidemiology Prevention and Control of Communicable Diseases
 - a. Definition and levels of disease occurrence
 - b. Components of the infectious disease process
 - c. Mechanisms of transmission of infections
1. Principles of Prevention and control.

Assessment Tools:

Total Marks = 100 Marks; distributed as follows:

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| • In-class quizzes / assignments | 30 Marks |
| • Mid-Term Exam | 30 Marks |
| • Comprehensive Final Exam | 40 Marks |

Readings:

Friis, Robert H. Epidemiology 101 (Essential Public Health) Jones & Bartlett Learning; 1 edition (March 16, 2009)