

Theoretical and practical courses

Ilam University of Medical Sciences

Introduction of the course: Epidemiology of the second semester of the academic year 2020-2021

School: Health Department: Epidemiology

Course and degree: Public Health

Day, time and place: Monday 8 to 10 o'clock

Number and type of unit (theoretical): 2 theoretical units

Name of the person in charge of the course (teacher): Dr. Reza Pakzad

Prerequisite courses: -

Office address: School of Health

Phone and call days: -

General purpose of the lesson:

The general purpose of this course is to acquaint students with the principles and concepts of epidemiology and its use in designing studies.

Specific or partial objectives of the course:

- Provide a comprehensive definition of epidemiology
- State the goals of epidemiology and its applications
- Describe the concept of descriptive and analytical epidemiology
- List the ways of disease transmission, prevention, types and principles
- Name and classify the types of epidemiological studies
- Explain the characteristics and application of descriptive and analytical studies
- Explain the characteristics of cross-sectional studies and how to design it
- Explain the characteristics of case-control studies and cohort studies

- Describe the concept of disease severity and explain the factors influencing the severity of the disease
- Describe the components of the infection transmission chain
- Describe sources and reservoirs in the epidemiology of communicable diseases
- Explain the direct and indirect ways of disease transmission
- Describe the process of becoming infected from the stage of infection to the onset of the disease
- Describe the triangle model and its components in epidemiology
- Explain the types of pathogens, the environment, and the host of the epidemiology
- Describe the multivariate model, the wheel, in epidemiology and explain their application
- Familiarize yourself with the concept of amount, ratio, and quota in epidemiology
- Describe raw indicators (raw mortality - raw birth) and explain how to calculate them
- can explain. (NMR) and Neonatal Mortality (IMR) Infant mortality rates
- Define an epidemic and list the stages of reviewing and controlling an epidemic
- Familiarize yourself with the characteristics of a shared source epidemic, progressive epidemic, and epidemic curve
- Define screening and explain the important features of a screening test with an example
- Describe the validity of a screening test and its components
- Calculate positive and negative predictive values in screening tests and interpret the results
- Know the indicators and rates of diseases and how to calculate and use them

Student duties (student homework during the semester):

Active participation in the class

The main sources of the lesson:

- Gordis Epidemiology, Authors: David Celentano, Moises Sklo; Translators: Dr. Hossein Sabbaghian, Dr. Kourosh Holakouee Naeini, And Dr. Shahrzad Nematollahi
- Malek Afzali Hossein, Majdzadeh Seyed Reza, Fotouhi Akbar, Tavakoli Saman. Methodology of applied research in medical sciences. 2004. Tehran University of Medical Sciences Publications.
- Epidemiology: beyond the basics. Moyses Szklo, F. Javier Nieto. Description: Fourth edition.

Teaching methods + teaching aids used:

Navid University site and virtual classroom

Methods and time of assessment and evaluation of the student and the bar related to each evaluation:

| Method | Score | Date | Time |
|----------------------------|-------|-----------------|-------|
| Do homework | 2 | During semester | 16-18 |
| Active attendance at class | 2 | During semester | |
| End of semester exam | 16 | | |

Lesson rules and expectations from students:

- Participate in class discussions
- Attend class on time
- Absence of more than 3 sessions (3 sessions of absence will be affected in the score)

Schedule and predicted contents of each theory session

| Session | Topic | Necessary preparation of students before the start of the class |
|---------|--|---|
| 1 | Introduction, assessment of students' awareness, explanation of course objectives, how to present the course and type of student evaluation. History, definition, epidemiology cycle, epidemiological thinking and epidemiological science, goals of epidemiology, application of epidemiology. | ----- |
| 2 | Specific definitions - Definition of epidemic and its types, how to deal with the epidemic | Study previous topics |

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| | and identify the causes | |
| 3 | Infection process, sources of infection, methods of transmission, pattern of disease. Introduction of triangle model, wheel model, fish bone model and causality network | |
| 4 | Generalities of epidemiological studies, descriptive studies, ecological-cross-sectional studies | |
| 5 | Generalities of Group Studies - Generalities of Intervention Studies | |
| 6 | Generalities of case-control-cross-sectional studies | |
| 7 | Amount - Ness - Proportion - Chance - Odds Ratio - Risk Ratio - Amount Ratio - Attributable Risk | |
| 8 | Amount - Ness - Proportion - Chance - Odds Ratio - Risk Ratio - Amount Ratio - Attributable Risk | |
| 9 | Types of indicators and rates in health, resources to achieve these indicators | |
| 10 | Random errors - distortion - distortion | |
| 11 | Screening criteria for a disease - susceptibility - specificity - positive and negative predictive value - the effect of prevalence on predictive value | |
| 12 | AIDS-HIV | |
| 13 | Influenza - Hepatitis | |
| 14 | Crimean Congo hemorrhagic fever - measles and rubella | |
| 15 | Presenting students | |