

## Theoretical and practical courses-Illam University of Medical Sciences

Introduction of the course: Application of epidemiology in the health system of the second semester of the academic year 2020-2021

School: Health Department: Epidemiology

Course and degree: Master of Epidemiology

Day, time and place: Saturday 10 to 12

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 public health.

### **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 epidemiology and its types of studies
- Explain the characteristics and application of descriptive and analytical studies including case-control, cross-sectional, cohort, and randomized clinical trials.
- Define screening and explain the important features of a screening test with an example. Be able to explain the validity of the screening test, including positive and negative predictive value.
- Types of errors (explain random, regular and confusing)
- Explain the burden of disease, its components, its calculation, and the software used to calculate it.
- Explain the quality of life, its components, its calculation, and the software used to calculate it
- Describe the DALY index
- Describe the QALY index
- Describe inequality in full
- Learn to use statistical models thoroughly

-Explain standardization methods (direct and indirect) in full

**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, 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.
- Teutsch, Steven and Churchill, R. Elliott. Principles and Practices of Public Health Surveillance, 2nd. Oxford Press, 2000 Second 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	5	During semester	10-12
Active attendance at class	2		
End of semester exam	13	End of semester	

**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)

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, Epidemiological Cycle, Epidemiological Thinking and Epidemiological Science, Objectives of Epidemiology, Application of Epidemiology	
2	Generalities of epidemiological studies and types of studies (descriptive-analytical-cross-sectional, cohort-case-	Study previous topics

	randomized clinical trial)	
3	Generalities of epidemiological studies and types of studies (descriptive-analytical-cross-sectional, cohort-case-randomized clinical trial)	
4	Rate - Ratio- Proportion - Chance - Random Ratio - Risk Ratio - Rate Ratio - Attributable Risk - Their Confidence and Interpretation Limits	
5	DALY DISEASE LOAD INDICATORS - Methods and software for its calculation	
6	QALY quality of life indicators - methods and software for its calculation	
7	Types of errors (random errors - bias - distortion) and their control - effect interaction	
8	Standardization (direct and indirect) and practical work	
9	Use of statistical models in epidemiology (linear regression - logistics - Poissen - Cox)	
10	Use of statistical models in epidemiology (linear regression - logistics - Poissen - Cox)	
11	Inequality and Injustice - Types of Calculation Methods - Practical Work to Calculate Them	
12	Inequality and Injustice - Types of Calculation Methods - Practical Work to Calculate Them	
13	(Demographic and Health Survey: DHS) in Iran	
14	Presenting students	