Theoretical and practical courses-Ilam University of Medical Sciences

* Introduction to the course: Biostatistics methods 1

 * First / second / summer semester

* School: Health

* Department: Epidemiology Department

* Course Name and Number: Biostatistics Methods 1

 * Field and Degree: Master of Epidemiology

* Day and time: Monday 10-12

* Venue: Virtual

* Number and type of unit (theoretical / practical): 2

* Prerequisite courses: None

* Name of the person in charge of the course (course instructor): Dr. Kourosh Sayeh Miri

 * Phone and contact days: 2235700

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General purpose of the lesson:

1- Familiarity of students with the application of statistics in medical sciences, method of data collection, classification and analysis

2. Acquiring skills in using basic biostatistics methods using a statistical software

* Specific or partial objectives of the lesson: The specific objective is better to be written behaviorally (the behavioral objective has an audience, behavioral verb, degree and criteria of the conditions

1. The student is familiar with common methods of describing data.

2. The student can calculate the central indicators and dispersion and explain their application.

3. The student can explain Bayesian probability law and its application in screening (specificity, sensitivity, positive and negative predictive value).

4. The student can calculate the probability density function, mathematical expectation (for one variable, sum and difference of two variables, and independence and correlation).

5- The student can calculate probability distributions (uniform, binomial, Poisson and normal).

6- The student can explain the sampling methods, central limit theorem, estimation and how to calculate the sample size.

7- The student can make hypotheses related to comparing an average or ratio with a fixed number, comparing two means and two variances.

8. The student can perform non-parametric Mann-Whitney, Chi-square and Wilcoxon tests.

9- The student can analyze the data using statistical software.

* Main resources of the course Main resources (by observing the principles of source writing and giving an address for their preparation, including library, bookstore, Internet ...)

1- Book: Statistical methods and health indicators: Compiled by Dr. Kazem Mohammad, Dr. Hossein Malek Afzali and Vartex Naha Patian, 7th edition, Tehran, Chapter 8-1

2. Applied Biostatistics and Research Method by Dr. Kourosh Sayeh Miri Chapter 1 to Chapter 10

3- Principles and methods of Daniel's biostatistics - translated by Seyyed Mohammad Taghi Ayatollah

4- Principles of Razner Biostatistics-Translated by Hamid Haqqani

4-Statistics for research. Shirly Dowdy and Stanly Wearden

* Teaching method + teaching aids used:

Lecture based on problem solving method and teacher supervision over students' work

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

Method	Score	Date	Time
writing test	8		10-12

Lesson rules and expectations from students:

Absence of more than three sessions will result in deletion.

Schedule for presenting the curriculum of biostatistics methods 1 first semester / second 2020-2021

Session	Time	Topic	Lecturer
1	10.30-12.30	Reminders of descriptive statistics	Dr. sayamiri
2		Exam from undergraduate statistics and bug fixes	
3		The concept of probability, Bayesian probability and its application in screening (specificity, sensitivity, positive and negative predictive value)	
4		Probability density function, mathematical expectation (for one variable, sum and difference of two variables and independence and correlation	
5		Probability distributions (uniform, binomial, and Poisson)	
6		normal distribution	
7		Sampling methods, central limit theorem - estimation of mean and ratio - determination of sample size	
8		midterm exam	

9		The concept of hypothesis testing and statistical testing and error of the first and second types - calculating the error of the first and second types	
10		Some important statistical tests (mean difference and ratio test with fixed number, difference between two means and ratio, comparison of variances	
11		Chi-square and McNemar square test	
12		Nonparametric tests: Symbol test -	
13		Mann-Whitney, & Wilcoxon Test	
14		(Practical work with software) SPSS	
15		(Practical work with software) SPSS	
16		(Practical work with software) SPSS	
17		End of semester exam	