Theoretical course plan form - Ilam University of Medical Sciences

School: Health

 Introduction to the lesson:-

Department: Biostatistics

Course Title: Biostatistics of students' field of study: Health Professional

prerequisite courses: General Mathematics 2

Event Place: School of Health

 in charge of the course (teacher): Hojjat Sayadi

Number of units: 3 (2 theoretical units 1 practical unit)

Teaching time:34 theoretical hours,34 practical hours

Degree of students: Bachelor Email address:

 Sayyadi-h@medilam.ac.ir

1. **The general purpose of the lesson**:

 Familiarity of students with descriptive statistics and inferential statistics in medical sciences and health research

2**. Student examination resources**:

1. Applied Statistics and Research Methods, Fourth Edition, Dr. Kourosh Saye Miri, Ilam University of Medical Sciences, 2016.

2. Statistical methods and health indicators, Dr. Kazem Mohammad

3. Simple SPSS guide, Kirkpatrick

3. **How to evaluate a student during the course**:

Method	Score	Date	Time	How to evaluate
Regular student attendance at	5	Semester length	Scheduled training hours	Absenteeism attendance list
Do homework	20	Semester length	Scheduled training hours	Problem solving and assignments provided
class End of semester exam	75	The time set by the faculty training	Scheduled training hours	Virtual test

4. **Student assignments during the course:**

• Regular attendance at class sessions based on the weekly and semester schedule provided by the training

• Perform homework and exercises provided and present them in class

• Participate in the end-of-semester exam session according to the schedule provided and answer the questions on time

5. **Teaching methods and teaching aids used**

In the form of lectures, questions and answers and problem solving and slides and instructional videos along with video instruction will be SPSS software.

6. **Lesson rules and expectations from students**

1- Attending on time based on the set time in the classroom

2- Observance of training and disciplinary regulations

3- Studying the contents of the previous session and preparing to attend the class

4- Solving problems and assignments presented at home and answering on the appointed date

5- According to the educational regulations, unjustified absence in the final exam will be considered as a score of zero and justified absence will cause the removal of that course.

Schedule for presenting the biostatistics-occupational health curriculum for the second semester of the academic year 2020-2021

session	Specific Objectives (Outline)	Special Behavioral Goals The student should be able to at the end of each session	lecturer	Necessary preparation of students before the start of the class
1	Definition of statistics and its importance in medical sciences and health	- Be familiar with the role and importance of statistics in medical and health sciences. - Familiar with the types of observations and measurement scales and can distinguish between them. Explain the methods of collecting information	Hojjat Sayadi	===========
2	Calculation of central indices and dispersion with example	Can understand the concept of mean, median and fashion in health data. Understand the concepts of dispersion and its indicators	=	knowing the contents of the previous session

		(amplitude, interquartile range, variance, standard deviation and coefficient of variation) and the application of each. Obtain numerical values of indicators for a data set.		
3	probability	Understand the concept of probability and the principles of probability. - Be familiar with the basic rules of probability and identify its applications.	=	knowing the contents of the previous session
4	Familiarity with binomial and Poisson distributions and their application	Be familiar with the concepts and applications of binomial and Poisson distributions. - obtained the mean and variance of these distributions. Be familiar with the application of these two discrete distributions in practical matters.	=	knowing the contents of the previous session
5	Familiarity with normal distribution	Be familiar with the concepts and importance of normal distribution. Be familiar with the mean and variance of this distribution. Be familiar with the application of normal distribution in practical matters.	=	knowing the contents of the previous session
6	Statistical inference and familiarity with census and sampling	Be familiar with the concept of census, community and sample Understand possible sampling methods and identify the appropriate applications of each.	=	knowing the contents of the previous session
7	Familiarity with the central limit theorem and its applications	-Understand the concept of central limit theorem with an example - Use this theorem to solve problems related to probability	=	knowing the contents of the previous session
8	Familiarity with statistical estimation 1	Use the central limit theorem to calculate the point and distance estimates of quantitative variables. - Using the appropriate formula, calculate the required sample size.	=	knowing the contents of the previous session
9	Familiarity with statistical estimation 2	Use the central limit theorem to calculate the point and distance estimation of qualitative variables. - Using the appropriate formula,	=	knowing the contents of the previous session

		calculate the required sample size.		
10	Familiarity with the concept of hypothesis testing	Familiar with the philosophy of statistical hypothesis tests and Fisher method	=	knowing the contents of the previous session
11	Familiarity with hypothesis testing	- The concepts of error of the first and second types and the power of statistical tests are familiar - Know the steps of testing the hypothesis correctly.	=	knowing the contents of the previous session
12	Familiarity with the sample hypothesis test	- Perform a hypothesis test for the average of a community and draw conclusions. Take the hypothesis test for the proportion of a community and draw conclusions.	=	knowing the contents of the previous session
13	Familiarity with the two-sample hypothesis test	- Perform the hypothesis test for the means of the two communities and draw conclusions. - Perform the hypothesis test for the ratios of the two communities and conclude.	=	knowing the contents of the previous session
14	Familiarity with paired t-test	Understand the concepts of dependent variables - Learn the process of paired t-test using a practical example and draw the necessary conclusions.	=	knowing the contents of the previous session
15	Familiarity with correlation analysis	Calculate the correlation of Pearson and Spearman between two quantitative traits - Identify the applications of each of the correlation coefficients.	=	knowing the contents of the previous session
16	Familiarity with simple linear regression	Recognize the linear relationship between quantitative variables - Write the regression line equation and calculate and interpret its coefficients.	=	knowing the contents of the previous session