Course Syllabus

One: Basic Information

Faculty	
Name of the Faculty	Faculty of Nursing
Department	Nursing
Semester	2nd Semester
Year	2020-2021
Course	
Course Title	Biostatistics in Nursing
Course No.	٠٨٠١٢٨٦
Credit Hours	3 hours
Prerequisite	None
Instructor	
Name	Dr. Islam Al-Oweidat
Office No.	258D
Extension	1774
Email	ioweidat@zu.edu.jo
Office Hours*	Sunday, Tuesday, Thursday 10:00-12:00
Class Time	Sunday, Tuesday, Thursday 8:00-9:00

*** All office hours are held virtually via (MS Teams).**

Two: Course Description

This course is intended to provide an overview of the basic statistical concepts used throughout nursing research. A brief introduction about the basic concepts of epidemiology is also provided. Students are required to learn many new terms and concepts including the foundation necessary for the understanding of basic statistical terms and concepts and the role that statisticians play in promoting scientific discovery of evidence. Application of various parametric statistics (i.e. t test, Z test, ANOVA, correlation, and regression) is practiced in this course. Students are expected to be active members in nursing research in the future.

Course Title: Biostatistics **Course No.: 0801286**

Course Objectives:

1. Define the major concepts of epidemiology and its impact on the heath care systems.
2. Identify the basic concepts of biostatistics including the definition of measurement and measurement scales, and the general features of statistical analysis.
3. Apply descriptive statistics into numerical datasets including frequency distribution, measures of central tendency, and measures of dispersion.
4. Use some basic probability concepts such as views of probability, and elementary properties of probability, to describe the distribution of data in selected variables.
5. Utilize various applications of probability distribution such as the normal distribution.
6. Establish a statistical inference through using statistical estimation in different ways such as confidence interval.
7. Conduct properly various statistical procedures such as independent t-test, analysis of variance, and correlation.
8. Demonstrate how concepts of biostatistics are used in the literature, nursing research and evidence-based practice.
9. Select appropriate statistical methods in situations of evidence-based practice.
10. Interpret results of data analysis and statistical tables in a variety of contexts.
11. Distinguish between statistical and clinical significance.

Four: Intended Learning Outcomes

1. **Knowledge & Understanding**

- Describe the epidemiological approach in defining and measuring the occurrence of health related states in populations.
- Identify basic technical procedures in biostatistics.
- Identify commonalities and differences between various statistical approaches.

2. **Cognitive & Intellectual Skills**

- Recognize the importance of each statistical concept in interpreting and analyzing numerical data.

- Analyze obtained data through selecting the appropriate method of statistics based on the predetermined assumptions.
- Formulate the outcome criteria of statistical analysis based in the nature of provided data and variables.

3. Professional skills

- Use the findings of statistical analysis to update the current knowledge of nursing science.
- Demonstrate effective understanding of analysis such data that may infer to the current nursing care.
- Develop awareness of issues related to conducting accurate and appropriate statistical procedures in the health care sciences.

4. Transferable Skills

- Demonstrate ability to integrate the principles of biostatistics in health care system including the development of nursing practice.
- Demonstrate ability to reflect such statistical finding in the light of heath care.
- Evaluate the appropriateness of such statistical procedure conducted in the clinical field and identify its meaning in the professionals roles.

Five: Course Calendar

Day	Credit Hour	Intended Learning Outcomes	Topic(s)	Teaching Procedure	Learning Activities	Learning Platform
21/2	1	All are applied	**Introduction to the course**	-Lecturing with active participations. -Problem solving. -Cooperative learning.	Participation & Discussion	MS Teams
23/2	1	All are applied	**Definition, scope, and uses of**	-Lecturing with active	Participation &	MS Teams

			epidemiology Recent developments in epidemiology Health status of populations	participations -Problem solving -Cooperative .learning	Discussion	
25/2	1	All are applied	**Measuring health and disease** Definition of health and disease Measuring disease frequency Population at risk Comparing disease occurrence	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
28/2	1	All are applied	**Introduction to biostatistics** Some Basic Concepts Measurement and Measurement Scales	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
2/3	1	All are applied	**Descriptive Statistics** The Ordered Array Frequency Distributions	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
4/3	1	All are applied	Measures of Central Tendency Measures of Dispersion	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
7/3	1	All are applied	-Lecturing with active participations -Problem solving -Cooperative .learning	-Lecturing with active participations -Problem solving -Cooperative learning.	Participation & Discussion	MS Teams
9/3	1	All are	-Lecturing with	-Lecturing	Participation	MS

		applied	active participations -Problem solving -Cooperative .learning	with active participations -Problem solving -Cooperative .learning	& Discussion	Teams
11/3	1	All are applied	-Lecturing with active participations -Problem solving -Cooperative .learning	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
14/3	1	All are applied	**Evaluation of measurement tools**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
16/3	1	All are applied	**Probability Distributions** Probability Distributions of Discrete Variables The Binomial Distribution Continuous Probability Distributions The Normal Distribution Normal Distribution	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
18/3	1	All are applied	**Application**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
21/3	1	All are applied	**Inferential Statistics** Hypothesis Testing: Finding Relationships in Data	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams

23/3	1	All are applied	**Inferential Statistics** Hypothesis Testing: Finding Relationships in Data	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
25/3	1	All are applied	**Inferential Statistics** Hypothesis Testing: Finding Relationships in Data	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
28/3	1	All are applied	**Inferential Statistics:** Hypothesis testing. One-sample t-test.	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
30/3	1	All are applied	**Inferential Statistics:** Hypothesis testing. One-sample t-test.	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
1/4	1	All are applied	**Inferential Statistics:** Hypothesis testing. One-sample t-test.	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
4/4	1	All are applied	**Statistical power Independent Samples t-test**: Comparing the Means of two Groups	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
6/4	1	All are applied	**Statistical power Independent Samples t-test**: Comparing the Means of two	-Lecturing with active participations -Problem solving	Participation & Discussion	MS Teams

			Groups	-Cooperative .learning		
8/4	1	All are applied	**Statistical power Independent Samples t-test**: Comparing the Means of two Groups	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
11/4	1	All are applied	**Revisions Applications Midterm Exam**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
13/4	1	All are applied	**Revisions Applications Midterm Exam**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
15/4	1	All are applied	**Revisions Applications Midterm Exam**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
18/4	1	All are applied	**One-Way ANOVA:** Comparing the Means of Three or More Unrelated Groups	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
20/4	1	All are applied	**One-Way ANOVA:** Comparing the Means of Three or More Unrelated Groups	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
22/4	1	All are applied	**Application**	-Lecturing with active participations	Participation & Discussion	MS Teams

				-Problem solving -Cooperative .learning		
25/4	1	All are applied	**One-Way ANOVA:** Comparing the Means of Three or More Unrelated Groups	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
27/4	1	All are applied	**One-Way ANOVA:** Comparing the Means of Three or More Unrelated Groups	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
29/4	1	All are applied	**Application**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
2/5	1	All are applied	**Correlation Coefficients**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
4/5	1	All are applied	**Application**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
6/5	1	All are applied	**Revision**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
9/5	1	All are	**Correlation**	-Lecturing	Participation	MS

		applied	**Coefficients**	with active participations -Problem solving -Cooperative .learning	& Discussion	Teams
11/5	1	All are applied	**Application**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
18/5	1	All are applied	**Revision**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
20/5	1	All are applied	**Multiple Linear regression Analysis**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
23/5	1	All are applied	**Application**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
27/5	1	All are applied	**Revision**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
30/5	1	All are applied	**Multiple Linear regression Analysis**	-Lecturing with active participations -Problem solving -Cooperative	Participation & Discussion	MS Teams

				.learning		
1/6	1	All are applied	**Application**	-Lecturing with active participations -Problem solving -Cooperative learning.	Participation & Discussion	MS Teams
3/6	1	All are applied	**Revision**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams
6/6	1	All are applied	**Revision**	-Lecturing with active participations -Problem solving -Cooperative .learning	Participation & Discussion	MS Teams

Six: Evaluation Methods and Mark Distribution

Method	Grade	Date	Platform	Assignment
Midterm Exam	%٣٥	Fixed by the Department	MS Teams	**MCQs**
Participation, Presentation, Attendance…etc	%١٥	During Semester	MS Teams	-
Final Exam	%٥٠	Fixed by the Department	MS Teams	**MCQs**

Seven: Texts, Readings, Materials

Textbook: - Heavey, E. (2019). Statistics for nursing: A practical approach. Jones & Bartlett Publishers.
Supplementary Textbook/ Material(s): - Wagner III, W. E. (2016). Using IBM® SPSS® statistics for research methods and social science statistics. Sage Publications.
Equipment: Internet Connection, Laptops, and Webcams

Course Title: Biostatistics **Course No.: 0801286**

Eight: Course Policy and Responsibilities

- **All the interactive sessions are held on MS Teams.**
- **All assignments and exams are held on the Moodle.**
- **The student shall abide by the time assigned to any assignment on the Moodle.**
- **The student is held responsible to attend the class on time.**
- **The student is responsible to look presentable during the virtual meetings.**
- **The student is entitled to interact and actively participate during the virtual class.**
- **All the University regulations are applicable in terms of class attendance, absence, and exams.**
- **The student should maintain a high level of academic integrity; plagiarism and cheating in exams are punishable in accordance with the University's laws and regulation.**

Approval	Name	Date	Signature
Department Head			
Dean			