Course Specification
(Bachelor)

Course Title:	**Biostatistics for Nursing**
Course Code:	**STA 1115**
Program:	**Bachelor of Science in Nursing**
Department:	**Medical and Surgical Nursing**
College:	**Nursing**
Institution:	**Imam Mohammad Ibn Saud Islamic University**
Version:	**2024 – V1**
Last Revision Date:	**27/08/2025**

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A. General information about the course

1. Course Identification

1. Credit hours: (.....)					
2 (2 Lectures, 0 Lab, 0 Tutorial)					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (Level 1 / Year 1)					
4. Course General Description:					
This course represents an introduction to the field and provides definitions of statistics, biostatistics, data, variable and data types. This course enables students to differentiate between different types of data, variables, sampling methods, and data collection methods. Specific topics include measurement of central tendency and variability in date; sampling distribution; methods of perfuming inference on population means and proportions via sampling data; statistical hypothesis testing and its application; and biomedical indicators. While there are many computational elements to the course, the emphasis is on interpretation and concepts.					
5. Pre-requirements for this course (if any):					
None					
6. Co-requisites for this course (if any):					
None					
7. Course Main Objective(s):					
• Introducing basic principles and concepts of statistics in general and biostatistics in particular; • Applying these principles in practical cases to solve and foresee medical problems based on set of medical data; • Interpreting the medical data under a statistical study.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	***Traditional classroom***	30	100%
2	***E-learning***	0	0
3	Hybrid • Traditional classroom • E-learning	0	0
4	***Distance learning***	0	0%

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	0
3.	**Field**	0
4.	**Tutorial**	0
5.	**Others (specify)**	0
Total		30

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	**Explain the concept of biostatistics, its importance in nursing and health sciences, and its applications in evidence-based practice.**	**K1**	Interactive Lecture using audiovisual Materials, Group Discussions, Brain Storming	**Direct:** Theory Paper Exam, Quizzes, Contribution and Participation.
1.2	**Identify different types of data, levels of measurement, and appropriate methods for organizing and displaying data.**	**K1**	Interactive Lecture using audiovisual Materials, Group Discussions, Brain Storming	**Direct:** Theory Paper Exam, Quizzes, Contribution and Participation.
2.0	**Skills**			
2.1	**Differentiate between various types of data, variables, sampling methods, and data collection techniques.**	**S1**	Interactive Lecture using audiovisual Materials, Group Discussions, Problem-Based Learning.	**Direct:** Theory Paper Exam, Quizzes, Contribution and Participation.
2.2	**Apply descriptive statistics (measures of central tendency, variability, distribution) to summarize datasets**	**S1**	Interactive Lecture using Audiovisual Materials, Group Discussions, Problem-Based Learning.	**Direct:** Theory Paper Exam, Quizzes, Contribution and Participation.
2.3	**Perform hypothesis testing procedures including Z-test, t-test, and tests for comparing group means**	**S1**	Interactive Lecture using audiovisual Materials, Group Discussions, Hands-on Activities, Practical Exercises, Reviewing Selected articles.	**Direct:** Theory Paper Exam, Quizzes, Contribution and Participation, Home Assignments.
2.4	**Construct correlation and regression analyses to evaluate relationships between variables.**	**S5**	Interactive Lecture using audiovisual Materials, Demonstration, Hands-on Activities, Practical Examples and Applications.	**Direct:** Theory Paper Exam, Quizzes, Home Assignments.
2.5	**Use Softwares to perform statistical statistical data analysis and interpretation.**	**S6**	Demonstration, Computer-based Exercises, Real-world Applications.	**Direct:** Theory Paper Exam, Quizzes, Home Assignments.
3.0	**Values, autonomy, and responsibility**			
3.1	**Generate academic honesty, responsibility, and collaboration during group tasks and discussions.**	**V1**	Group Projects, Collaborative Learning, Peer Interaction.	**Direct:** Peer Evaluation, Instructor Observation

C. Course Content

No	List of Topics	Contact Hours
0.	**Course Orientation and Discussion of the Course Specifications**	**0.5**
1.	**Chapter 1:** Evidence-Based Practice in Nursing, or Why Do I Need to Take Statistics?	**0.5**
2.	**Chapter 2:** Statistical Essentials I: Types of data	**1.5**
3.	**Chapter 3:** Statistical Essentials II: Measurements	**1.5**
4.	**Chapter 4:** Organizing and Displaying Data	**6**
5.	**Chapter 5:** Descriptive Statistics	**6**
6.	**Chapter 6:** Hypothesis Testing	**3**
7.	**Chapter 7:** Tests for Comparing Group Means	**3**
8.	**Chapter 8:** Corrrelation and Regression Analysis	**4**
9.	**Chapter 9:** Statisitical Analysis using Statistical Softwares	**4**
Total		**30**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	**Contribution and Participation**	**Week 1-15**	**10%**
2.	**Quizzes**	**Week 1-15**	**10%**
3.	**Home Assignments**	**Week 13-14**	**10%**
4.	**Midterm Theory Paper Exam**	**Week 7-8**	**20%**
5.	**Final Theory Paper Exam**	**Week 16-17**	**50%**

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	**Kim M. J. Mallory C. & Valerio T. D. (2022). Statistics for evidence-based practice in nursing (Third). Jones & Bartlett Learning (Main Reference).**
Supportive References	1. ***Rossi R. J. (2022). Applied biostatistics for the health sciences (Second). John Wiley & Sons.*** 2. ***Heavey E. (2019). Statistics for nursing: a practical approach (Third). Jones & Bartlett Learning.*** 3. ***Triola M. F. & Roy J. (2019). Biostatistics for the biological and health sciences (Second edition Global). Pearson.*** 4. ***Vexler A. & Hutson A. D. (2018). Statistics in the health sciences: theory applications and computing. Chapman & Hall/CRC.***
Electronic Materials	• Electronic library, which can be used off-campus by students using their own ID and password

	• Blackboard learning management system, which can be used off-campus by students using their own ID and password • The Journal of Biostatistics and Epidemiology, Journal of Biostatistics and Epidemiology (tums.ac.ir) • Journal of Biometrics & Biostatistics Open Access (Journal of Biometrics and Biostatistics - Open Access Journals (hilarispublisher.com) • YouTube Channel: Biostatistics https://www.youtube.com/@biostatisticsIBL • YouTube Channel: Biostatistics Resource Channel https://www.youtube.com/@tacappaert • YouTube Channel: BiostatisticsMCW https://www.youtube.com/@BiostatisticsMCW • YouTube Channel: BioStatistics https://www.youtube.com/@biostatistics6181 • Instats Website: STATISTICS AND DATA SCIENCE SEMINARS • https://instats.org/?source=googleads&gclid=CjwKCAiA2fmdBhBp EiwA4CcHzUit3lMl1XF2S-TVNtKhCI1k5J-fW1CgGdThlstLtq_Dgy-eSupmjxoCoz0QAvD_BwE
Other Learning Materials	Statistical Analysis Software

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	**Classrooms/Lecture Halls, with a seating capacity of at least thirty (30) students, proper air-conditioned and lightening.**
Technology equipment (projector, smart board, software)	• **Desktop Computer, with internet connection Data Show/ LCD projector** • **Smart Board** • **Blackboard Ultra Collaborate** • **SafeAssign Plagiarism Prevention Tool** • **Statistical Analysis Software**
Other equipment (depending on the nature of the specialty)	**None**

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	**Faculty / Students**	**Indirect**
Effectiveness of Students assessment	**Faculty / Students**	**Indirect**
Quality of learning resources	**Faculty / Students**	**Indirect**

Assessment Areas/Issues	Assessor	Assessment Methods
The extent to which CLOs have been achieved	**Faculty**	**Direct**
Other (Quality of teaching and learning)	**Peer Reviewer**	**Indirect**

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**MATHEMATICS AND STATISTICS DEPARTMENT COUNCIL**
REFERENCE NO.	**2/1447**
DATE	**05/03/1447 (28/08/2025)**