Faculty of Medicine

Major: Doctor of Medicine

Academic Year: 2023/2024

Subject: Biostatistics

Course Syllabus

Student's Copy

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1. Course information:

Theory		Practical	
Course Title:	Biostatistics	**Course Title:**	-
Course Code:	1002140	**Course Code:**	-
Co-Requisite:	None	**Co-Requisite:**	-
Prerequisite:	None	**Prerequisite:**	-
Course Credit Hours:	3	**Course Credit Hours:**	-
Class Location:	Lecture rooms	**Class Location:**	-
Department:		Basic Medical Sciences	
Final Qualification:		Doctor of Medicine	

2. Instructor Contact Information:

Coordinators:	Dr. Ghazi Sharkas (Section 1, 3) Dr. Ragaa Shawky (Section 2, 4)
Instructors:	Dr. Ghazi Sharkas (Section 1, 3) Dr. Ragaa Shawky (Section 2, 4)
Email:	RagaaEl-Masry@isums.edu.jo ghazisharkas@isums.edu.jo
Office:	
Office Hours:	According to each instructor schedule

3. Course Description:

Biostatistics deal with important principles of biostatistics in medical practice and research as well as the necessary knowledge, and skills that will enable students to choose the best summary measure for data and to deal effectively with health-related/biological data through employing the basic statistical methods according to the data type.

4. Resources Available to Students:

a. Course syllabus.
b. Course handouts.
c. Textbooks:
   - Lecture notes on medial statistics, Latest Edition, Aviva Petrie, Blackwell Scientific publication.
   - Statistics Principles and Methods, 3rd Edition, R. A. Johnson and G. K Bhattacharyya, 2014, John Wiley, New York, USA.
d. Lecture hall (air conditioned, well illuminated, smart screen, Intranet).
e. Library with learning resources.

5. Teaching Methods:

a. Interactive Lectures
b. Online meeting.
c. Tutorial and Group discussion.
d. Problem solving exercises.
e. Self-study.

6. Intended Learning Outcomes (ILOs):

Upon successful completion of this course students will be able to …

1. Identify biostatistics: role and importance in medicine as well as variables and their types.
2. Describe population and different types of samples.
3. Discuss descriptive statistics and data summarization using: numerical measures, tables, graphs, and correlation.
4. Explain the probability: principles and applications.
5. Describe the screening tests, and their pillars: sensitivity, specificity, and predictive values.
6. Discuss inferential statistics and the basic steps for testing hypothesis.
7. Select the proper test of significance according to type of data and descriptive statistics.
8. Discuss the measurements of health: population pyramid, vital statistics.

7. Course Policies:

To be explained to students at the first meeting:

1. Attendance Policies:

A. Attendance Policy (absences and tardiness for a traditional course):

a. Students must attend all classes of this course.
b. Any student with an absence of 15% of the classes of any course, will be illegible to sit for the final exam and will result in a failing grade being assigned in this course.
c. Excused absences include documented illness, deaths in the family, and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have valid excuses. Consideration will also be given to students whose dependent children experience serious illnesses.
d. Students with a legitimate reason to miss a required activity must request an approved absence through Student Academics. Unexcused absence from a scheduled examination may result in (0 %) being assigned for that assessment. Unexcused absence from an activity for which attendance is may be considered an issue of Professionalism.
e. Any student who arrives late will not be allowed to attend the class and will be marked absent.

B. Exam Attendance:

a. A student who is more than 10 minutes late will not be permitted to submit the exam.
b. A student who is late more than 30 minutes will not be permitted to submit the final exam, and no student will be permitted to leave the exam center before the elapse of 30 minutes.

2. <u>Exams Policies:</u>

a. Students are expected to take their exams on time and as scheduled by their instructors.
b. Student who are unable to take (quiz, midterm, or final) exam due to any reason should contact their instructor immediately.
c. Make-up exams are of the responsibility of faculty committee.
d. A final exam, paper, or project is required in all courses.
e. Seminars and workshops are included in evaluation criteria.
f. Only registered undergraduate and graduate credit students are allowed to take final exams.
g. If you are unable to take the final exam at the scheduled time without any acceptable excuse, you may not be allowed to rearrange the final exam separately (Make-up).

h. If you attend the final exam and do not submit the exam sheet, or do not complete the exam for any reason, you are not allowed to complete the final exam at another time or appeal for a final make-up exam and will be assigned falling for the final exam.

i. If you do not take your final exam and did not withdraw from the course by the withdrawal deadline you will assign a failing grade for the final exam.

3. **Cheating Policies:**
Cheating is officially defined as giving or attempting to give, obtaining, or attempting to obtain, information relative to an examination or other work that the student is expected to do alone and not in collaboration with others, or the use of material or information restricted by the instructor. Plagiarism is no lesser an offense than cheating, it means repeating another's sentences as your own, adopting a particularly apt phrase as your own, paraphrasing someone else's argument as your own, and presenting someone else's line of thinking in the development of a thesis as though it were your own.

4. **Penalty for cheating and plagiarism:**
The failing grade shall be assigned for that piece of work to any students cheating or plagiarizing.

5. **Mobiles:**
Mobile phones should be kept turned off or silent while in class. Usage of mobile phones is not allowed in classes in any form (talking and/or texting).

8. Course Grading system:

Assessment Tools	Weight (100%)	Description
Midterm Exam	40%	MCQs
Final Exam	60%	MCQs
Quizzes and Assignments	0%	MCQs

9. Course Outlines/ Schedule:

Week	Topic	Chapter	Reference	Estimated number of hours	Teaching method		ILOs
					Theoretical Lectures	Practical Laboratories	
1	- Course orientation. - Introduction to medical statistics: definition, importance, and role in medicine, tools of data collection and analysis. - Variable definition, types and levels of measurement.	Overview on biostatistics		3	√	-	1
2	- Population and sample. - Sampling technique and types of samples. - Review.	Population and sample		3	√	-	2
3	- Measures of central tendency. - Review. - Measures of dispersion 1.	Descriptive statistics		3	√	-	3
4	- Measures of dispersion 2. - Measures of location. - Review.	Descriptive statistics		3	√	-	3
5	- Data summarization using tables. - Review. - Data summarization using graphs 1.	Descriptive statistics		3	√	-	3
6	- Data summarization using graphs 2.	Descriptive statistics		3	√	-	3

	- Review. - Data summarization using correlation 1.						
7	- Data summarization using correlation 2. - Review. - Review.	Descriptive statistics		3	√	-	3
8	**Mid-term exam**						
9	- Probability. - Normal curve and area under the curve. - Review.	Probability		3	√	-	4
10	- Screening tests (1). - Screening tests (2). - Review.	Screening		3	√	-	5
11	- Introduction to inferential statistics. - Testing hypothesis. - Review.	Inferential statistics		3	√	-	6
12	- P-value - Type I & Type II errors. - Significance tests.	Inferential statistics		3	√	-	6 7
13	- Measurement of health 1. - Measurement of health 2. - Review.	Measurement of health		3	√	-	8
14	**Review**						
15							
16	**Final Exam**						