

Course Overview

Course code :	GMS103
Course title:	General Statistics
Level/semester:	(First Semester)
Preceding Courses & Main Subjects	
Credit hours:2	Theoretical: 2
	Practical: -

Course Description:	يشمل هذا المقرر التعريف بعلم الإحصاء الطبي وذكر أنواع الصفات الثابتة أو المتغيرة والتي تتضمن المميزات الوصفية أو الكمية، مقاييس النزعة المركزية، ومقاييس التشتت، القواعد الأساسية للاحتتمالات، التوزيع ذو النموذجين والتوزيع الطبيعي، ودرجة الثقة للمتوسط والوسيط، والاختبارات الإحصائية المختلفة
Course objectives	<ol style="list-style-type: none"> 1. Identify and give examples of nominal, ordinal, interval-scale and ratio-scale variables and Using statistical software, graphically present the joint empirical distribution of two variables, 2. perhaps of different types and compute and interpret measures of association of these variables, perhaps 3. of different types 4. Using statistical software to understand measuring descriptive statistics. 5. Identify the population and the sample size in an epidemiological study 6. Interpret tests of simple hypotheses and confidence intervals 7. Carry out simple power analyses and sample size calculations for one- and two-sample 8. Perform basic tests on association measures arising from cross-classified nominal variables 9. Estimate and interpret the parameters in a linear regression model using statistical software 10. Estimate and interpret the parameters in a logistic regression model using statistical software 11. Interpret linear or logistic regression models presented in biomedical or epidemiologic research 12. reports from peer-reviewed journals
Out come	<ul style="list-style-type: none"> - يعرف الطرق المختلفة لتجميع البيانات. - يفسر البيانات باستخدام الجداول و الرسومات البيانية. - يوضح مميزات و عيوب الأنواع المختلفة من تمثيل البيانات. - يحسب مقاييس النزعة المركزية ومقاييس التشتت.

	<p>- يحسب المتوسط ودرجة الثقة له ويفسر نتائجه.</p> <p>- يعرف خصائص التوزيع الطبيعي و يفسره.</p> <p>- يقوم بتطبيق الاختبارات المناسبة لمجموعة البيانات لديه مثل اختبارات وكأي</p> <p>- استخدام الحاسب الآلي في تحليل البيانات الطبية.</p>
Main Teaching Strategies	<p><u>Main teaching method</u></p> <p>Modified lecture, group discussion, written assignment, internet application , Demonstration and Practical Training</p> <p><u>Main teaching aids</u></p> <p>Data show, overhead projector, slides, video & TV</p> <p>Flip chart, Models</p>
Methods of Assessments	<p><i>Participation, Attendance, Quizzes, Mid term exam, Final exam</i></p> <p><i>Practical Exam</i></p>
References	<p>Introductory Biostatistics for the Health Sciences.</p> <p>Chernick M and Friis R-</p> <p>- Presenting medical statistics from proposal to publication. Janet Peacock, 2006.</p>

توزيع المحتوى العلمي على الفصل الدراسي	
1- Chapter: Introduction:	<p>a. Definitions of Statistics, The bases of Biostatistics, Data, Quantitative Data, Qualitative Data, and Variable, Computers and Biostatistical Analysis.</p> <p>b. The Role of Statistics in Human Biology, Medicine, and Public Health with Many Examples.***</p>
2- Chapter: Data: The Nature Of Data:	<p>a. The Scale of Measurement. b. Nominal Scale (Data)</p> <p>c. Ordinal Scale (Data). d. Interval Scale (Data)</p> <p>e. Ratio Scale (Data)</p>
3- Chapter: Summarizing Data:	<p>Listing Numerical Data, Tabular presentation (Frequency Tables or Frequency Distributions and Categorical Distributions), Graphic Presentation (Bar Chart, Histogram, Frequency Polygon, Ogive, Pie Chart, and Pictogram)</p>
4- Chapter: Measures Of Location (Central Tendency):	<p>The Arithmetic Mean, the Median, the Mode, and the Weighted Mean, Comparison of the Mean, Median, and Mode (Advantages and disadvantages), Quantiles or Partition Values (Quartiles and Percentile, Percentile Ranks.</p>
5- Chapter: Measures Of Variability (Dispersion)	<p>Range, Mean Deviation, Variance, Standard Deviation, and Coefficient of Variation.</p>
6- Chapter: Probability:	<p>Necessity of Studying the Theory of Probability, Set Theory and Set Notations (Basic Notations), Objective and Subjective Probability, Counting Techniques (Multiplication principle, Tree diagram, Addition principle, Permutations, and Combinations), Rules of Probability, Calculating the Probability of an event</p>
7- Chapter: Probability Distributions:	<p>Random Variables (Discrete Random Variables and Continuous Random Variables), Probability Distributions of the</p>

	Discrete Random Variables, The Binomial Distribution, The Poisson Distribution, The Normal Distribution.
8- Chapter: Populations And Samples:	Definitions and Basic Ideas related to Populations and Samples, Random and Nonrandom Samples, Simple Random Sampling, Random Numbers and Their Uses, Sampling Finite Populations, Sampling Distributions.
9- Chapter: Hypothesis Testing And Estimation:	Introduction, Hypothesis Testing and Confidence Interval for a Population Mean, Hypothesis Testing and Confidence Interval for the Difference Between Two Population Means.
10- Chapter: Simple Linear Regression And Correlation:	Introduction, Importance of Studying Regression Analysis, Correlation Analysis, Comparative Study between Correlation Analysis and Regression Analysis, Regression Model (Y/X) [Obtaining estimates of the Parameters α and β by Least Squares Method Directly), Evaluating the Regression Equation, by Computing the Coefficient of Determination, Testing $H_a : \beta \neq 0$ with the t Statistic, The Correlation Coefficient. Testing $H_0 : \rho = 0$ with the t Statistic.

Student's 'assessment methods:	<ul style="list-style-type: none"> • Students assignment 40% • Final practical exam 12% • Final written exam 48%
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