



Sub.	Course Description – توصيف مقرر دراسي – الموضوع	الموضوع	 <b>كليات المعرفة</b> ALMAAREFA COLLEGES
Date		التاريخ	

Course Code & No	Bios101	101 احص	رقم المقرر ورمزه
Course Name	Biostatistics	الإحصاء الحيوي	اسم المقرر
Credit Hours	3 ( 3 + 0 + 0 )	( 0 + 0 + 3 ) 3	عدد الساعات المعتمدة
Pre-requisite	None	لا يوجد	المتطلب السابق

<b>General Description</b>	<b>توصيف عام</b>
<p>This course is designed to provide the students with a basic understanding of biostatistics .The course covers of descriptive statistics with concepts of dispersion ,central tendency measurements . Graphical and tabular displays are also covered . Simple inferential statistics involving probability , sampling ,confidence intervals and tests of significance are presented .Simple linear regression and correlations are also covered . Understanding concepts and rational for various methods are emphasized with use of computer statistical software(such as SPSS,EXCEL) for graph and calculations.</p>	<p>يزود هذا المقرر الطالب بالمفاهيم الأساسية للإحصاء الحيوي ابتداء من الاحصاء الوصفي والمتمثل في العرض الجدولي والبياني للبيانات وكذلك المفاهيم الاحصائية المهمة مثل مقاييس النزعة المركزية ومقاييس التشتت . كذلك يتطرق الي الاحصاء الاستدلالي بنوعيه (فترات الثقة واختبارات الفروض والانحدار الخطي البسيط والارتباط)ويركز علي المفاهيم الاساسية للطرق الاحصائية المختلفة وخاصة برامج الكمبيوتر الاحصائية مثل ( SPSS , EXCEL )</p>

<b>Course Objectives</b>
<p>Students who successfully complete this course should be able to correctly :</p> <ul style="list-style-type: none"> <li>• Describe the key features of health data .</li> <li>• Present the data graphically and numerically</li> <li>• Calculate and interpret mean , median ,mode ,range , variance , standard deviation and confidence intervals .</li> <li>• Prepare and apply tables , graphs and charts such as histograms ,scatter diagrams , pie chart and box plot .</li> <li>• Perform statistical inference such confidence intervals and test of significance .</li> <li>• Make use of computer statistical software to carry out all the calculations ..</li> </ul>

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#### Course Outlines

- Preliminary data analysis
- Definitions –variables(discrete and continuous)
  - Graphical representation of data –dot plot , box plot , bar diagrams , Histograms .
  - Frequency distribution
  - Measures of central tendency (mean – median – mode)
  - Measures of dispersions (range – mean deviation – variance – standard deviation)
  - Skewness , Kurtosis
- Probability and probability distributions :
  - Definitions , conditional probability
  - Discrete and continuous probability distributions
  - Bernoulli , binomial and poisson distributions
- Inferential Statistics:
  - Elementary sampling and sampling distributions
  - Estimation of unknown parameters
  - Test of hypothesis and significance ( comparing two means – comparing two proportions)
  - Simple linear regression and correlations.

#### Textbooks and References

- **Textbooks** : Pagano , Gauvreau . Principles of biostatistics (2<sup>nd</sup> edition)

#### References :

- Bernard Rosner- Fundamental of Biostatistics .
- Wayne Daniel. Biostatistics : A foundation for analysis in the health sciences .
- Wesley, USA, ISBN: 0-20-102477-2.