

B) Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <p>Students are expected to have knowledge of elementary probability and probability distributions; summarize data by a suitable statistic, graphical presentation of data including Box plot; ability to use the z and t tests for one and two samples. They should be able to obtain correlations between two characteristics- qualitative or quantitative. They should be able to conduct tests and draw conclusion about several hypothesis.</p>
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <p>Credit hour for the course is changed from 1+1 to 2 + 0. Some material like paired t test, non-parametric methods, chi-square for association and correlation and simple linear regression are introduced.</p>

C) Course Description (Note: General description in the form to be used for the Bulletin or Handbook should be attached)

1. Topics to be Covered		
Topic	No. of Weeks	Contact hours
Introduction to Bio-Statistics, types of data and graphical representation	1	2
Descriptive statistics: Measures of Central tendency- Mean , median, mode, Measures of dispersion-Range, Standard deviation, coefficient of variation. Calculating Measures from an Ungrouped Frequency Table Approximating Measures from Grouped Data, Box plot	2	4

Basic probability, conditional probability, concept of independence, Bayes Theorem	1.5	3
Some discrete probability distributions: cumulative probability distribution, Binomial, and Poisson -their mean and variance	2	4
Continuous probability distributions: Normal distribution, Standard normal distribution, t and chi square distributions.	2	4
Statistical inference: Point and interval estimation, Type of errors, Concept of P-value, testing hypothesis about one and two samples means and proportions including paired data – different cases under normality.	2.5	5
Nonparametric tests: Sign test, Wilcoxon signed rank, Mann Whitney tests	1.5	3
Chi-square tests of Association and measures based on Chi-square, Odds Ratio	1.5	3
Correlation and simple linear regression	1	2

2. Course components (total contact hours per semester): 30			
Lecture: 30 hours	Tutorial: 0 Hours	Practical/Fieldwork/Internship: none	Other: none

<p>3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)</p> <ul style="list-style-type: none"> On average a student will require 6 to 10 hours depending on his/her school background

<p>4. Development of Learning Outcomes in Domains of Learning For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> • A brief summary of the knowledge or skill of the course is intended to develop; • A description of the teaching strategies to be used in the course to develop that knowledge or skill; • The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<p>a. Knowledge</p>
<ul style="list-style-type: none"> • Description of the knowledge to be acquired • Data summarized by a histogram, bar chart, stem and leaf plot or a box plot. • Understanding of descriptive statistics • Basic probability and probability distributions • Testing hypothesis: z and t test; Confidence Intervals, Chi-square tests of Association and Measures based on chi-square, some Non-Parametric tests
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <ul style="list-style-type: none"> • There may be surprise quizzes in a lecture time • Home works <u>must be assigned</u> as there is no lab for the course. • One lecture may be spared for the exposure of statistical software in the lab
<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> • Short tests in the class • Home works • Tests • Final exam
<p>b. Cognitive Skills</p>
<p>(i) Cognitive skills to be developed</p> <ul style="list-style-type: none"> • Interactive discussions with students in the class and during office hours.
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> • Encouraging students for solving variety of questions.
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p>

<ul style="list-style-type: none"> • In Class presentations. • Work effectively both individually and in teams
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> • Power point presentation of lectures and display of computations by Excel • Where possible, Excel results may be displayed in the class • Communicating results of assignments through oral presentations and in written form.
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> • Individual performance. • Oral presentations weekly or/and fortnightly. • In class quizzes.
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> • Emphasizing through writing on board when power point is used.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> • Asking questions in the class and to raise questions for inspiring.
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> • Performance in solving basic numerical examples. • Evaluating the proficiency in communication, and the treatment of data skills.

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Home Works, Attendance	Regularly	10%
3	Mid-term I	6 th or 7 th	20%
4	Mid-term II	11 th or 12 th	20%
5	Final Exam	15 th or 16 th	50%

D) Student Support

1. Arrangements for availability of faculty for individual student

consultations and academic advice. (include amount of time faculty are available each week)

- Office hours 4 per week

E) Learning Resources

1. Required Text(s):

- Fundamentals of Biostatistics by Bernard A. Rosner 6th edition
Duxbury Press

http://books.google.com/books?id=9FXZZRBtVeUC&dq=biostatistics+books&printsec=frontcover&source=in&hl=en&ei=TyWhSa3vLp6I1QWk5JWJAw&sa=X&oi=book_result&resnum=14&ct=result#PPP1,M1

2. Essential References

3. Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

- Any STAT 101 and 103 books written in Arabic

4. Electronic Materials, Web Sites etc

- Search for key terms introduced in a lecture

5. Other learning material such as computer-based programs/CD, professional standards/regulations

- Excel, Minitab, SAS or SPSS if available