Course Specification

Course Title	Advanced Biostatistics	
Course Code	Tu10-6232	
Academic Year	Postgraduate students (clinical pharmacy diploma)	
Coordinator	**Prof. Dr. Nihal Salah Shihab**	
Teaching Staff	**Prof. Dr. Nihal Salah Shihab**	
Branch / Level	Diploma in clinical pharmacy	
Semester	Second semester	
Pre-Requisite	NA	
Course Delivery	**Lecture**	**14 x 2 h lectures**
	Practical	**14 X 3 h practical**
Department offering the course	Department of Public Health and community Medicine, Faculty of Medicine, Tanta University	
Department supervising the course	Department of Biochemistry, Faculty of Pharmacy, Tanta University	
Date of Approval	١٠/ ٢٠١3	

1. Course Aims

The aims of this course are to:

- Provide students who intend to pursue careers in Master of Pharmacy, management or research at local, national and/or international levels with knowledge and skills to measure health.
- Interpret medical research designs, describe population data and use statistical models for testing strength and validity.
- Qualify graduates to study hypotheses and analyze data using appropriate health indicators and risk measurements.

2. Intended Learning outcomes (ILOs)

A. Knowledge and understanding:

Upon successful completion of this course the student must demonstrate comprehensive knowledge and clear understanding of:

A1. Principles and methods of data collection and basics of biostatistics.

A2. State measurements of health (morbidity and mortality measures) to compare between populations.

A3. screening tests and parameters for data validity.

A4. research methods and sampling technique.

A5. data organization and data summarization by tabulation, graphs and statistical methods.

A6. suitable statistical tests for quantitative data (Confidence limits and Student t-test)

A7. suitable statistical tests for qualitative data (Fisher's exact test and Chi square tests)

B. Intellectual skills:

By the end of this course, the students should be able to:

B1. Differentiate measures for disease frequency both in morbidities and mortalities in the community.
B2. Interpret the normal distribution curve.
B3. Interpret the test p-value and statistical significance.
B4. Summarize and differentiate types of data and suitable statistical methods for each type.
B5. Interpret the tests of significance and the inferences obtained from such tests.

C. Professional and practical skills:

By the end of this course, the students should be able to:

C1. Apply suitable study designs and best sampling technique.
C2. Use statistics to analyze data.
C2. Construct tables and graphs.
C4. Formulate screening tests results and deduce their validity.
C5. Apply statistical and modeling skills in different types of data.

D. General and transferable skills:

By the end of this course, the students should be able to:

D1. Use information technology.
D2. Manage data resources efficiently.
D3. Learn independently with open-mindedness and critical enquiry.
D4. Work in ateam .

3. Course Contents:

Week	Topics
1	**Medical Statistics:**Types and sources of data, quantitative & qualitative, scales of measurements and screening test validity
2	**Medical Statistics:**Types and sources of data, quantitative & qualitative, scales of measurements and screening test validity
3	**Medical Statistics:**Types and sources of data, quantitative & qualitative, scales of measurements and screening test validity
4	Research methodology and Sampling: sampling types.
5	Research methodology and Sampling: sampling types.
6	Research methodology and Sampling: sampling types.
7	**Descriptive statistics:** Data summarization, tables, graphs and numerical methods

8	**Descriptive statistics:** Data summarization, tables, graphs and numerical methods
9	Normal distribution curve
10	Normal distribution curve
11	**Inferential statistics** Tests for quantitative data and qualitative data.
12	**Inferential statistics** Tests for quantitative data and qualitative data.
13	**Inferential statistics** Tests for quantitative data and qualitative data.
14	**review**

4. Teaching and Learning Methods

- Lectures: lectures halls are suitable for 100 students.
- Open discussion and problem solving.
- Power point presentation by the students.

5. Student Assessment

Assessment Method	Assessment Length	Schedule	Proportion
Written Examination	2 hours	End of semester	60%
Oral Assessment	___	After the written exam	10%
Practical Examination	45min	End of semester	30%
Semester work + Quiz	___	During semester	-----

6. List of references:

Course notes: Handout of the Department of Public Health and Community Medicine, Faculty of Medicine, Tanta university.

Essential Books:

- Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. Principles of Epidemiology in Public Health Practice: An Introduction to Applied Epidemiology and Biostatistics: Self Study Courses SS 1000. 3rd ed., Atlanta, GA 30333; 2006.
- Kuzma Jan W. Basic Statistics for the Health Sciences.1st ed., Mayfield Publishing Company; 1984.
- Peacock JL. and Peacock PJ. Oxford Handbook of Medical Statistics. Oxford university press, 2011.

Periodicals:

Eastern Mediterranean Health Journal (EMHJ)

Web sites:

www.WHO.int

7. Facilities required for teaching and learning

Computers, data show, lecture halls, white board, and library.

		Course Coordinator		Head of Department
Name		Prof. Dr. Nihal Salah Shihab		Prof. Dr. Safynaz El Saied Shalaby
Name (Arabic)		أ.د نهال صلاح شهاب		أ .د صافيناز السيد شلبي
Signature				
Date		9/2013		9/2013