



هيئة تقويم التعليم
Education Evaluation Commission

المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

Biostatistics

MTH 103



Course Specifications

Institution: Aljouf University	Date: 26/12/1438
College/Department: Deanship of Preparatory Year (College of Medicine, College of Dentistry, College of Medical Sciences, College of Pharmacy).	

A. Course Identification and General Information

1. Course title and code: Biostatistics (MTH 103)			
2. Credit hours: 3 (2+0+2)			
3. Program(s) in which the course is offered. Preparatory Year Program (If general elective available in many programs indicate this rather than list programs)			
4. Name of faculty member responsible for the course :			
5. Level/year at which this course is offered: level 2			
6. Pre-requisites for this course (if any): None			
7. Co-requisites for this course (if any) None			
8. Location if not on main campus:			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="100%"/>
b. blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments:			



B Objectives

1. What is the main purpose for this course?

Students are expected to have knowledge of Biostatistics which is an innovative field that involves the design, analysis, and interpretation of data for studies in public health and medicine. Biostatistics experts arrive at conclusions about disease and health risks by evaluating and applying mathematical and statistical formulas to the factors that impact health .also, the students are able to have knowledge of elementary probability and probability distributions. They should be able to summarize data by a suitable statistic, graphical presentation of data including Box plot, conduct hypothesis tests about one and two means and proportions and draw conclusion.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

1. There must be a well Set Library, with the Intranet and Internet Facilities for the Students, and Communication Instruments must be well installed and maintained.
2. The whole material needs to be implemented for Active Learning, with more animation, corrections and evaluation.
3. Working with students on producing quality research studies and encouraging them to do publishable work and use the Internet to search for reputable sites and good reference materials.
4. Depending on group work to solve the mixed class and track issues, some instructors tried to use the competition between students or groups as a way of evaluating students and exchange the skills between each other's.



C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

This course deals with basic knowledge of biostatistics which includes methods of bio data collection, Descriptive Statistics, Quantitative and Qualitative data, Graphic presentation. Measures of central tendency, measures of dispersion. Basic concepts of probability rules, Bayes' rule, discrete distributions: Binomial distribution. Poisson distribution, Continuous distributions: Normal distribution, Standard normal and t distributions and its applications. Confidence intervals of one and two population means and proportions. Tests of Hypothesis about means and proportions and paired data.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to Biostatistics, types of data and graphical representation	1	4
Measures of central tendency: Mean, median and mode. measures of dispersion: range, standard deviation, coefficient of variation	2	8
Calculating measures from an ungrouped frequency table, approximating measures from grouped data.	2	8
Basic concepts of probability rules, Bayes' rule	2	8
Some discrete probability distributions: cumulative probability distribution, binomial and poisson- their means and variances	2	8
Some continuous probability distributions: normal distribution, standard normal and t distributions	2	8
Point and interval estimation, types of errors and concept of p-value	2	8
Testing Hypothesis about one and two samples means and proportions including paired data – different cases under normality	2	8



2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planned	30	30				60
	Actual	30	30				60
Credit	Planned	1	2				2
	Actual	1	2				2

3. Additional private study/learning hours expected for students per week.

No

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	* describe sets of data Graphically and numerically by using techniques of mean, variance, standard deviation, correlation.	a) Discussions. b) Lectures. c) Tutorials. d) Writing assignments.	a) Direct assessment components such as quizzes, home works, major and final exams.
1.2	* identify the probability of discrete and continuous random variables, including binomial and normal distribution, and central limit theorem.	Students are encouraged to make regular visits during office hours where they can ask any questions about the course.	b) Self-assessment feedback.
1.3	* Infer base on single sample by estimating with confidence intervals.		c) Teacher



			direct Observation assessment feedback.
2.0	Cognitive Skills		
2.1	* construct experiments and conduct analysis of variance (ANOVA) tests which used to test differences between two or more means	- Discussions raised during the lecture - To encourage teamwork and how to work collectively discussed and presented in workshops for discussions and evaluation by students - The application of problem-solving and decision-making skills -Home work, Exams	Follow-up duties - quizzes - ask questions during lectures - written tests quarterly and final test. -Exams
2.2	* Analyze categorical data		
2.3	* Illustrate how to test hypothesis, inferring based on a single and two samples		
3.0	Interpersonal Skills & Responsibility		
3.1	-Illustrate how take up responsibility.	Cooperative learning - seminars	Direct observation of student behavior and attitudes. Self-evaluation by students for themselves
3.2	-Perform the work together, but should not simply copy work from each other	Lectures	
4.0	Communication, Information Technology, Numerical		
4.1	- Assess the skills to practice team work and present results.	Through duties - involved in providing classroom lectures - the use of computers and the Internet in the solution and deliver assignments and tests	Offers process - lessons using information technology design - the follow-up duties and discussed with students
4.2	- Appraise how to Use the computer skills and library.		
5.0	Psychomotor		
5.1	Not applicable	Not applicable	Not applicable



5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	First midterm exam	6 th week	15%
2	Second midterm exam	12 th week	15%
3	Assignment Problem[Activity (interactive workshops)]	Agreement in (1-15) th week	10%
4	Final Exam	After 16 th week	60%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Six office hours per week are offered to the students for academic advise; office hours are listed in the instruction schedule posted at instructor's office door.

E Learning Resources

1. List Required Textbooks

1. Biostatistics - (A Foundation for Analysis in the Health Sciences) By: WAYNE W. DANIEL, CHAD L. CROSS, 10th, 2013, ISBN 978-1-118-30279-8.
2. Biostatistics - Basic Concepts and Methodology for the Health Sciences. By: Wayne W. Daniel ,9th edition, 2016.
3. Fundamental of biostatics. By: Bernard Rosher. latest edition, 2016.

2. List Essential References Materials (Journals, Reports, etc.)

www.sciencedirect.com

www.springer.com

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

www.mathworld.com

www.mathworld.wolfram.com

www.sosmath.com



4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

Theory of probability and statistics web sites

www.mathworld.com

www.mathworld.wolfram.com

www.sosmath.com

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

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)

- The hall area must be proportional to the number of students.
- Provide enough seats for students.
- Nice Voice Instruments.

4. Computing resources (AV, data show, Smart Board, software, etc.)

Not needed.

5. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

Not needed.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

- a) Questioning of students during class
- b) Group discussion

2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

- a) Evaluation of the lecturer by department coordinator.
- b) Observations and assistance from colleagues, independent assessment of standards achieved by
- c) students, independent advice on assignment tasks,

3 Processes for Improvement of Teaching

- a) Conducting workshops given by experts on the teaching and learning methodologies
- b) Periodical departmental revisions of its methods of teaching
- c) Monitoring of teaching activates by senior faculty members
- d) Self-assessment feedback.



4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

- Check marking of student exam answer sheet by another expert staff member
- Giving students the exam key to check and compare their answers
- Providing samples of all kind of assessment in the departmental course portfolio of each course
- Check marking of a sample of examination papers or assignment tasks.

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- The course material and learning outcomes are periodically reviewed and the changes to be taken are approved in the departmental and higher councils.
- Benefit from the characterization of courses at similar universities
- Take advantage of all new teaching methods and curriculum

Name of Course Instructor: _____

Fathy Hamdi Riad

Signature: _____

Date Specification Completed: 26/12/1438

Program Coordinator: _____

Signature: _____

Date Received: _____

