Education & Training Evaluation Commission
هيئة تقويم التعليم والتدريب

NCAAA
اعتماد

2023
TPG-153

Course Specification
— (Postgraduate)

Course Title:	**Biostatistics and data interpretation**
Course Code:	373503-2
Program:	**Master's in clinical laboratory sciences:** **Molecular Diagnostics Techniques and Diagnostic hematology**
Department:	**Clinical Laboratory Sciences**
College:	**Applied medical Sciences**
Institution:	**Taif University**
Version:	**No 3**
Last Revision Date:	**18/01/2024**

Table of Contents

A. General information about the course:

1. Course Identification:

1. Credit hours: (2 hrs)

2. Course type

A.	☐ University	☐ College	☒ Department	☒ Track	
B.	☒ Required			☐ Elective	

3. Level/year at which this course is offered: (1st level/1st year)

4. Course general Description:

This course introduces clinical laboratory students to the principles of biostatistics and scientific research methods that will provide students an understanding of different study designs and statistical tests that are used for addressing research questions in the medical field.

5. Pre-requirements for this course (if any):

None

6. Pre-requirements for this course (if any):

None

7. Course Main Objective(s):

To develop student skills in using the appropriate research method and to understand the commonly used statistical tests for analyzing and interpterion of data.

2. Teaching Mode: (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2 hours /week= 30 hours/semester	100
2	E-learning	N/A	0
3	Hybrid • Traditional classroom • E-learning	N/A	0
4	Distance learning	N/A	0

3. Contact Hours: (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	N/A
3.	Field	N/A
4.	Tutorial	N/A
5.	Others (specify)……	N/A
	Total	30

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods:

Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Understand the basic concepts, terms and definitions used in health research methodology	K1	Lectures and small group discussion	Assignment
1.2	Identify the key concepts of the quantitative and qualitative research processes and data interpretation	K1	Lectures and small group discussion	Assignment
1.3	Describe the appropriate statistical methods required for a particular research design	K1	Lectures and small group discussion	Assignment
2.0	**Skills**			
2.1	Present, and summarize variables graphically and in tabulations	S2	Lectures and small group discussion	Presentation/ Assignment
2.2	Conduct simple analysis of collected data and statistically interpret findings appropriately	S2	Lectures and small group discussion	Presentation/ Assignment

Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
3.0	Values, autonomy, and responsibility			
3.1	Contribute to research findings (both quantitative and qualitative) to clinical practice	V3	Lectures and small group discussion	Presentation/ Assignment

C. Course Content:

No	List of Topics	Contact Hours
1.	Introduction	2
2.	Research methodology I: Research Question & Literature review	2
3.	Research methodology II: Research hypothesis, Efficient PubMed Search, References.	2
4.	Research method III: Research Protocol, designing studies and ethics consideration.	2
5.	Research method IV: Data processing, interpretation, and presentation.	2
6.	Group work	2
7.	Biostatistics I: Sample size, Sampling variability and populations	2
8.	Biostatistics II: Variables	2
9.	Biostatistics III: parametric and non-parametric tests	2
10.	Biostatistics IV: Descriptive Statistics, Confidence Interval	2
11.	Biostatistics V: Correlation and Regression, Chi-Square Test	2
12.	Biostatistics VI: Inferential statistics	2
13.	Biostatistics VII: Excel and Statistic software	2
14.	Presentation and discussion	2
15.	Presentation and discussion	2
Total		**30**

D. Students Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	In-class assessment (PubMed/google scholar/references)	4th	10%
2.	Written assignment (Literature review)	10th	30%
3.	In-class assessment (Excel/Statistical software)	14th	10%
4.	In-class assessment (Practice problems)	16th	20%

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
5.	Presentation (Data analysis and interpretation)	19th	30%
	Total		100%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities:

1. References and Learning Resources:

Essential References	Research methodology: Methods and techniques by C.R. Kothari
Supportive References	0
Electronic Materials	International Journal of Medical Science and Innovative Research Saudi Digital Library
Other Learning Materials	-

2. Educational and Research Facilities and Equipment Required:

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms and Laboratories
Technology equipment (Projector, smart board, software)	Data show, Blackboard and A/V
Other equipment (Depending on the nature of the specialty)	None

F. Assessment of Course Quality:

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Peer evaluators	Direct: Peer evaluation
Effectiveness of student's assessment	Students	Indirect: Questionnaire Survey at the end of each semester.
Quality of learning resources	Program Leaders /Teaching staff/ Development and accreditation committee	Indirect: Review by Department Committee
The extent to which CLOs have been achieved	Program Leaders /Teaching staff/ Development and accreditation committee	Indirect: Review course reports and program

Assessment Areas/Issues	Assessor	Assessment Methods
		annual reports by Department Committee
Other	-	-

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data:

COUNCIL /COMMITTEE	Department council
REFERENCE NO.	**06**
DATE	**21/01.2024**

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