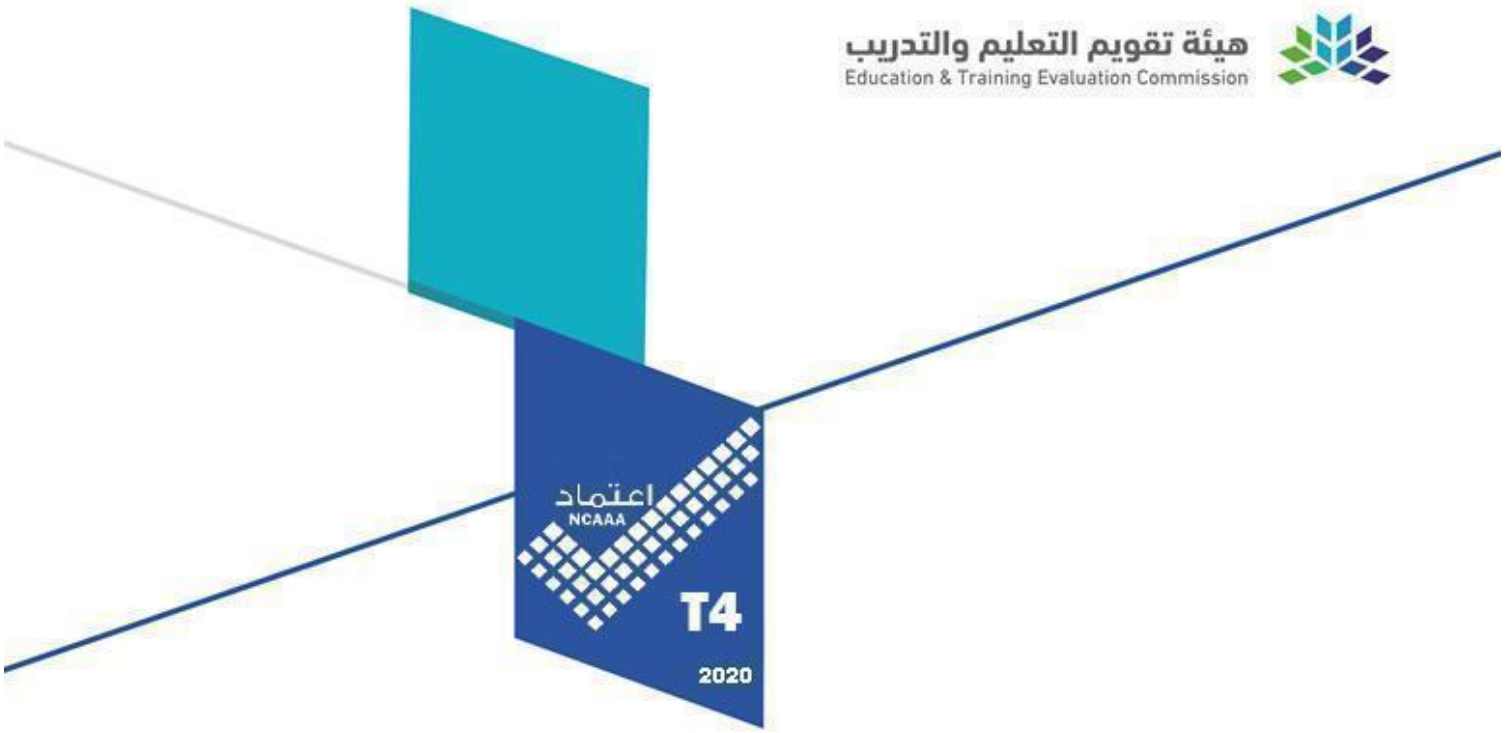
هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	**Epidemiology**
Course Code:	**BIO452**
Program:	**Bachelor of Science in Biology**
Department:	**Department of Biology**
College:	**Faculty of Science**
Institution:	**University of Tabuk**

Table of Contents

A. Course Identification

1. Credit hours: 3 (2 Theoretical + 1 Practical) hours
2. Course type **a.** University ☐ College ☐ Department ☑ Others ☐ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: Level 8/ Second semester/Fourth year
4. Pre-requisites for this course (if any)**: Immunology (BIO430)**
5. Co-requisites for this course (if any)**: None**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	2	50%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other laboratory**	2	50%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	26
2	**Laboratory/Studio**	26
3	**Tutorial**	
4	**Others** (specify)	
	Total	**52**

B. Course Objectives and Learning Outcomes

1. Course Description

- The course includes an introduction to epidemiology, key features, and applications of descriptive and analytical epidemiology, frequency measures, calculation and interpretation of ratios, proportions, etc., measuring central location and other statistical parameters, organizing epidemiological data, preparing tables, graphs, and charts, the methods of public health surveillance and investigating an outbreak.

2. Course Main Objective

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

- Identify and describe epidemiology.
- Identify methods for calculating epidemiology.
- Distinguish measures of central location and dispersion.
- Describes how to organize epidemiologic data.
- Identify process, uses, and evaluation of public health surveillance in Saudi Arabia.
- Describes how to investigate an outbreak.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding:**	
1.1	To state the basic concepts of epidemiology.	K1
1.2	To describe knowledge about applications of descriptive and analytical epidemiology.	K1
2	**Skills:**	
2.1	To calculate some epidemiological data (i.e. ratios, proportions, incidence rates, mortality rates, prevalence, and years of potential life lost) and present these data in the form of tables, charts, and graphs.	S5
2.2	To employ a calculator and some computer programs in the calculation and analysis of epidemiological data.	S4
3	**Values:**	
3.1	To work independently and as part of group	V1
3.2	To show the responsibility to solve given assignments on their own and submit them on time.	V1

C. Course Content

No	(List of Topics (Theory parts	Contact Hours
1	Introduction	2
2	Key Features and applications of descriptive epidemiology.	2
3	Key features and applications of analytical epidemiology	2
4	Frequency measures used in Epidemiology. Calculation and interpretation of ratios, proportions, incidence rates and mortality rates.	2
5	Frequency measures used in Epidemiology. Calculation and interpretation prevalence, and years of potential life lost.	2
6	Measures of central location and dispersion. Calculation and interpretation of mean, median, mode, and ranges.	2
7	Measures of central location and dispersion. Calculation and interpretation of variance, standard deviation, and confidence interval.	2
	Midterm Exam	
8	Organizing Epidemiologic data. Preparation and application of tables, graphs, and charts such as arithmetic-scale line and scatter diagram.	2
9	Organizing Epidemiologic Data. Preparation and application of tables, graphs, and charts such as pie chart, and box plot.	2
10	Public Health Surveillance. Process, uses, and evaluation of public health surveillance in KSA (I).	2
11	Public Health Surveillance. Process, uses, and evaluation of public health surveillance in KSA (II).	2
12	Investigating an Outbreak. Steps of an outbreak investigation (I).	2
13	Investigating an Outbreak. Steps of an outbreak investigation (II).	2
	Final Exam	
	Total	**26**

.No	(List of Topics (Laboratory parts	Contact Hours
1	Introduction, Lab Safety and Basic Instruments	2
2	Summarizing data	2
3	Frequency distributions	2
4	Prevalence rate (P)	2
5	Incidence rate (IR)	2
6	Cumulative incidence (CI)	2
7	Incident rate (I)	2
	Midterm Exam	
8	Measures of association: Risk ratio (RR)	2
9	Measures of association: Rate ratio	2
10	Measures of association: Odds ratio (OR)	2
11	Mortality frequency measures	2
12	Displaying public health data	2
13	Displaying public health data	2
	Final Exam	
Total		**26**

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding:**		
1.1	To state the basic concepts of epidemiology.	- Lectures. - Activates. - Homework.	- Short quizzes. - Final exams. - Homework.
1.2	To describe knowledge about applications of descriptive and analytical epidemiology.		
2.0	**Skills:**		
2.1	To calculate some epidemiological data (i.e. ratios, proportions, incidence rates, mortality rates, prevalence, and years of potential life lost) and present data in the form of tables, charts, and graphs.	- Lectures. - Lab demonstrations. - Short assay.	- Assessment lab report. - Practical examination. - Demonstrations through charts and posters.
2.2	To employ a calculator and some computer programs in the calculation and analysis of epidemiological data.		
3.0	**Values:**		
3.1	To work independently and as part of group	- Essay writing. - Individual presentation or group.	- Oral and written scientific report. - Interactive discussion.
3.2	To show the responsibility to solve given assignments on their own and submit them on time.		

2. Assessment Tasks for Students

#	*Assessment task	Week Due	Percentage of Total Assessment Score
1	Activities and Short Quizzes	1-13	10%
2	Midterm Theoretical Exam	8	25%
3	Midterm Practical Exam	8	10%
4	Final Practical Exam	14	15%
5	Final Theory Exam	15	40%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

- Office hours: 6 hours / week at least.
- Academic Guidance for about 30 students as determined by admission and registration.
- Direct supervision of staff for lab works.
- Electronic communication through blackboard and e-mail.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	- Melissa, M. A., Greg, R. Al., Russell, S. K. and Martha S. W. (2008). Perinatal Epidemiology for Public Health Practice. Springer. ISBN: 0387094385.
Essential References Materials	- CDC, (2012). Principles of Epidemiology, 3d edition (Self-Study Course SS1978), An Introduction to Applied Epidemiology and Biostatistics, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), Atlanta, GA 30333. - Handouts are given by the Instructor. - http://www.epidemiolog.net/epid160/lecture___/
Electronic Materials	- http://en.wikipedia.org/wiki/epidemiology - http://www.epidata.dk/index.htm
Other Learning Materials	- Search through Google, science direct.com and Wikipedia for related topics.

2. Facilities Required

Item	Resources
Accommodation Classrooms, laboratories, demonstration) (.rooms/labs, etc	-A sufficient number of classrooms, well equipped practical laboratories are available to accommodate students. -Virtual session provided by the blackboard (which allow discussions, and sharing PowerPoint and video)
Technology Resources AV, data show, Smart Board, software,) (.etc	-Data show -Wireless connection in the building for students and faculties

Other Resources Specify, e.g. if specific laboratory) equipment is required, list requirements or (attach a list	-Case study materials from the health centers. -A trip to the local health center.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	Indirect - Questionnaires.
Extent of achievement of course learning outcomes	Program committee - Staff members. - Students.	Direct - Questionnaires. - Reports. - Meetings
Quality of learning resources	Program leaders - Peer Reviewer	Direct & Indirect - Questionnaires. - Reports. - Meetings

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Biology Department Council
Reference No.	
Date	1/6/2022