Course Specifications

Revised November 2019

Course Title:	**Epidemiology**
Course Code:	**4014451-2**
Program:	**BSc Microbiology**
Department:	**Department of Biology**
College:	**Faculty of Applied Science – Department of Biology**
Institution:	**UM AL – QURA UNIVERSITY**
Revision Date	**November 2019**

Table of Contents

A. Course Identification **3**

6. Mode of Instruction (mark all that apply) 3

B. Course Objectives and Learning Outcomes **4**

1. Course Description 4

2. Course Main Objective 4

3. Course Learning Outcomes 4

C. Course Content **6**

D. Teaching and Assessment **6**

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods 6

2. Assessment Tasks for Students 9

E. Student Academic Counseling and Support **9**

F. Learning Resources and Facilities **9**

1.Learning Resources 9

2. Facilities Required 10

G. Course Quality Evaluation **10**

H. Specification Approval Data **11**

A. Course Identification

1. Credit hours: 2 hours
2. Course type **a.** University ☐ College ☐ Department ☑ Others ☐ **b.** Required ■ Elective ☐
3. Level/year at which this course is offered: **4th Year / Level 7**
4. Pre-requisites for this course (if any): Medical Microbiology (4013472-3)
5. Co-requisites for this course (if any)**:**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	30	50 %
2	Blended		-
3	E-learning		-
4	Correspondence		-
5	Other	30	50 %

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	Lecture	30
2	Laboratory/Studio	42
3	Tutorial	-
4	Practical/Field work/Internship	6
5	Others (specify)	30
	Total	102
Other Learning Hours*		
1	Study	30
2	Assignments	8
3	Library	15
4	Projects/Research Essays/Theses	10
5	Others (specify)	-
	Total	63

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

This course deals with basic epidemiologic concepts and approaches to population health issues in veterinary and human medicine. The course covers a wide spectrum of topics, some of which (e.g., outbreak investigation, properties of tests) will be treated in more depth, while others (e.g., epidemiologic study design) will be introduced, with more emphasis in subsequent courses.

2. Course Main Objective

❖ **After completing this course student should be able to:**

- Define epidemiology and its relates to other disciplines.
- Define what Disease outbreak is.
- Measuring Disease Frequency.
- List of Infectious disease.
- List Epidemiological Factors associated with hosts.
- List Epidemiology factors of disease transmission.
- Define Environmental Epidemiology.
- Understand and explain how epidemiology is used and applied.
- Understand and be able to apply commonly used terms and methods of epidemiology.
- Define and properly use terms to describe disease and disease transmission.
- Understand and explain what epidemiology is and how it relates to other disciplines.
- Define and properly use terms to describe disease and disease transmission
- Summarize the internal and external structure of the pathogen bacterial cells.
- Develop familiarity with the major types of pathogenic microorganisms and the diseases that they produce in humans.
- Explain, analyze and interpret the laboratory findings.
- Differentiate between the symptom of fungal and bacterial pathogens
- Write briefly the general characterizations of each pathogen bacterial group.
- Understand the disease control and prevention.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
	Upon successful completion of this course The student should be aware with: • Define epidemiology and its relates to other disciplines. • Define what Disease outbreak is. • Measuring Disease Frequency. • List of Infectious disease. • List Epidemiological Factors associated with hosts. • List Epidemiology factors of disease transmission. • Define Environmental Epidemiology. • Understand and explain how epidemiology is used and applied. • Understand and be able to apply commonly used terms and methods of epidemiology. • Define and properly use terms to describe disease and disease transmission.	

	CLOs	Aligned PLOs
2	**Skills:**	
2.1	**Cognitive skills to be developed:** • Summarize the internal and external structure of the pathogen bacterial cells. • Develop familiarity with the major types of pathogenic microorganisms and the diseases that they produce in humans.. • Explain, analyze and interpret the laboratory findings. • Differentiate between the symptom of fungal and bacterial pathogens • Write briefly the general characterizations of each pathogen bacterial group. • Understand and explain what epidemiology is and how it relates to other disciplines. • Understand and explain how epidemiology is used and applied. • Understand and be able to apply commonly used terms and methods of epidemiology. • Define and properly use terms to describe disease and disease transmission. • Understand the Disease control and prevention	
2.4.	**Psychomotor Skills** Upon successful completion of this course, the student is expected to be able to: • Perform the laboratory experiments precisely • Operate all devices in lab • Prepare different media	
3	**Competence:**	
3.1	• Developing oral presentations. • Communicating personal ideas and thoughts. • Work independently and as part of a team to finish some assignments. • Communicate results of work to others. • Use of needed precautions when dealing with pathogen microorganisms • Demonstrate professional attitudes and behaviors towards others. • Propose the smart questions • Understand and dissecting the problem so that it is fully solved understood. • Demonstrate the assertiveness for his decision. • Demonstrate his capability for the responsibility and Accountability • Show Effective verbal communication with clarity and must be characterize with the following interpersonal attributes; (verbal communication, Non-verbal communication, good listening for the others, questioning, good manners, problem solving, Social awareness, self-management, responsibility and accountability) • Enhancing the ability of students to use computers and internet. • Interpret the laboratory data	

CLOs		Aligned PLOs
	• Know how to write a report	

C. Course Content

1 Topics to be Covered		
Topic	No of Weeks	Contact hours
❖ **Introduction:** - An Historical Overview of epidemiology	**1**	**2**
❖ **Principles of Epidemiology :**	**1**	**2**
❖ **Measuring Disease Frequency:**	**1**	**2**
❖ **Disease outbreak:**	**2**	**4**
❖ **Surveillance or mentoring :**	**2**	**4**
❖ **Infectious disease epidemiology:**	**1**	**2**
❖ **Epidemiological Factors associated with hosts:**	**1**	**2**
❖ **Epidemiology factors of disease transmission :**	**2**	**4**
❖ **Environmental Epidemiology**:	**2**	**4**
❖ **Disease control and prevention:**	**1**	**2**
	14 weeks	**28hrs**

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**		
1.1	• Define epidemiology and its relates to other disciplines. • Define what Disease outbreak is. • Measuring Disease Frequency. • List of Infectious disease. • List Epidemiological Factors associated with hosts. • List Epidemiology factors of disease transmission. • Define Environmental Epidemiology.	- The methodology includes a combination of lectures by the lecturer, seminar presentation by the students and web-interactions. - At the end of the programme, students will be divided into groups for seminar presentation on important areas of the	• Periodical exam and reports 10% • Mid- term theoretical exam 20% • Mid-term practical exam 5% • Final practical exam 15% • Final exam 50%

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	• Understand and explain how epidemiology is used and applied. • Understand and be able to apply commonly used terms and methods of epidemiology. • Define and properly use terms to describe disease and disease transmission.	course to assess their understanding and comprehension of the course. - All students will be involved in on-line learning process and each student is required to create an E-mail address to facilitate student web interactions. -Using images and movies -Encouraging students to collect the new information about what the new in microbial physiology -Make the reference books and scientific sites concerning medical microbiology in internet avialable.	
2.0	**Skills**		
2.1	**Cognitive skills** • Summarize the internal and external structure of the pathogen bacterial cells. • Develop familiarity with the major types of pathogenic microorganisms and the diseases that they produce in humans.. • Explain, analyze and interpret the laboratory findings. • Differentiate between the symptom of fungal and bacterial pathogens • Write briefly the general characterizations of each pathogen bacterial group. • Understand and explain what epidemiology is and how it relates to other disciplines. • Understand and explain how epidemiology is used and applied. • Understand and be able to apply commonly used terms and methods of epidemiology. • Define and properly use terms to	- Lectures - Brain storming - Discussion	- Exam must contain questions that can measure these skills. - Quiz and exams - Discussions after the lecture.

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	describe disease and disease transmission. • Understand the Disease control and prevention		
2.2	**Psychomotor Skills** Upon successful completion of this course, the student is expected to be able to: • Perform the laboratory experiments precisely • Operate all devices in lab • Prepare different media	• Case Study • Active learning • Small group discussion	• Evaluate the efforts of each student in preparing the report. • Evaluate the scientific values of reports. • Evaluate the work in team • Evaluation of students presentations
3.0	**Competence**		
3.1	• Developing oral presentations. • Communicating personal ideas and thoughts. • Work independently and as part of a team to finish some assignments. • Communicate results of work to others. • Use of needed precautions when dealing with pathogen microorganisms • Demonstrate professional attitudes and behaviors towards others. • Propose the smart questions • Understand and dissecting the problem so that it is fully solved understood. • Demonstrate the assertiveness for his decision. • Demonstrate his capability for the responsibility and Accountability • Show Effective verbal communication with clarity and must be characterize with the following interpersonal attributes; (verbal communication, Non-verbal communication, good listening for the others, questioning, good manners, problem solving, Social	- Lab work - Case Study - Active learning - Small group discussion - Homework (preparing a report on some topics related to the course depending on web sites). - Seminars presentation - Practical during carryout the experiments in the lab.	- Oral exams. - Evaluate the efforts of each student in preparing the report. - Evaluate the scientific values of reports. - Evaluate the work in team - Evaluation of the role of each student in lab group assignment - Evaluation of students presentations

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	awareness,self-management, responsibility and accountability) • Enhancing the ability of students to use computers and internet. • Interpret the laboratory data. • Know how to write a report.		

2. Assessment Tasks for Students

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Exam duration	Proportion of Final Assessment
1	**Periodical Exam (s)**	**4**	**15 min**	**10 %**
2	**Mid Term Exam (Theoretic)**	**8**	**60 min**	**20 %**
3	**Mid Term Exam (practical)**	**9**	**30 min**	**10 %**
4	**Reports and essay**	**11**	**--**	**5 %**
5	**Final Practical Exam**	**15**	**60 min**	**15 %**
6	**Final Exam**	**16**	**120 min**	**40 %**
			Total Marks	**100%**

***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: 10hrs.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	1)- Rothman, Kenneth. J. (2012) *Epidemiology An Introduction 2nd edition*. Oxford University Press. (2)- Brownson, Ross. C. Petitti, Diana. B. (2006) *Applied Epidemiology Theory and Practice 2nd edition*. Oxford University Press.
Essential References Materials	- *Sherris Medical Microbiology, 4th Ed.* (2004) Ryan and Ray (Eds.), McGraw-Hill, ISBN: 0-8385-8529-9. -*Medical Microbiology, A Guide to Microbial Infections: Pathogenesis, Immunity, Laboratory Diagnosis, and Control, 16th Ed.* (2002) Greenwood, Slack, and Peutherer (Eds.), Churchill Livingstone; ISBN: 0443-07077-6. -*Medical Microbiology, 3rd Ed.* (2004) Mims, DOckrell, Goering, Roitt, Wakelin, and Zuckerman, Mosby; ISBN: 0-7234-3259-7. - *Medical Microbiology & Immunology: Examination & Board Review,*

	7th Ed. (2002) Levinson and Jawetz, Lange Medical Books/McGraw Hill; ISBN: 0-07-138217-8.
Electronic Materials	-http://www.cdc.gov/mmwr/
Other Learning Materials	• **PPT prepared by Dr. Samir Organjii**

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	• Class room is already provided with data show • The area of class room is suitable concerning the number of enrolled students (68) and air conditioned
Technology Resources (AV, data show, Smart Board, software, etc.)	• Digital lab containing 15 computers.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	• Incubators, autoclaves, measuring equipment, water bath, digital balances, pH meters, safety facilities. • Availability of some reference bacterial strains • Availability all kits for identification of the microorganisms isolated from different habitates • Availability of **VITEK** device for rapid identification of microorganisms

G. Course Quality Evaluation

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching
- **Questionaries**
- **Open discussion in the class room at the end of the lectures.**

2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department
- **Revision of student answer paper by another staff member.**
- **Analysis the grades of students.**

3. Processes for Improvement of Teaching
- **Preparing the course as PPT.**
- **Using scientific movies.**
- **Coupling the theoretical part with laboratory part**
- **Periodical revision of course content.**

4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)
- **After the agreement of Department and Faculty administrations**

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.
- **Periodical revision by Quality Assurance Units in the Department and institution**

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

Prepared by faculty staff: **1. Dr. Samir Organjii**	**Signature:**
Date Report Completed: November 2019	
Revised by: 1. Dr. Khaled Elbanna 2. Dr. Hussein H. Abulreesh 3. Dr. Shady Elshahawy	**Signature:**
Date: November 2019	
Program Chair Dr. Hussein H. Abulreesh	**Signature:**
Dean	**Signature:**
Date:	