

جامعة أم القرى

كلية الطب

الماجستير في الأحياء الدقيقة الطبية

4. Learning and Teaching

4/1 Learning Outcomes and Graduate Specifications

4/1/1 Main tracks or specializations covered by the program:

(a) Medical bacteriology

(b) Medical virology

(c) Medical mycology

4/1/2 Curriculum Study Plan Table

Level	Course Code	Course Title	Required or Elective	Prerequisite Courses	Credit Hours
	1004601-02 (MMB)	Molecular Microbiology Biology	Required	No Prerequisite	2
	1004601-02 (BAC)	Bacteriology	Required	No Prerequisite	2
	1004601-02 (VIR)	Virology	Required	No Prerequisite	2
	1004601-02 (BPM)	Basic Practical Microbiology	Required	No Prerequisite	2
Level 2	1004601-01 (MGB)	Microbial Genomics and Bioinformatics	Required	No Prerequisite	1
	1004601-01 (MYC)	Mycology	Required	No Prerequisite	1
	1004601-01 (PAR)	Parasitology	Required	No Prerequisite	1
	1004601-01 (CS1)	Clinical Seminar 1	Required	No Prerequisite	1
	1004601-02 (APM)	Advance Practical Microbiology	Required	1004601-02 (BPM)	2
Level 3	1004601-02 (RES)	Research Methods	Required	No Prerequisite	2
	1004601-01 (CS2)	Clinical Seminar 2	Required	1004601-01 (CS1)	1
	1004601-10 (HP1)	Hospital Practice 1	Required	No Prerequisite	10
Level 4	1004601-10 (HP2)	Hospital Practice 2	Required	1004601-10 (HP1)	10
	1004601-06 (REP)	Research Project	Required	No Prerequisite	6

Include additional levels or courses if needed

COURSE SPECIFICATIONS

Form

Course Title: Molecular Microbiology

Course Code: 1004601-02 (MMB)

Date: 15-02-1440

Institution: Umm Al-Qura University

College: Medicine

Department: Microbiology

A. Course Identification and General Information

1. Course title and code:

Molecular Microbiology

Code: 1004601-02 (MMB)

2. Credit hours: 2

3. Program(s) in which the course is offered:

M.Sc. Medical Microbiology

4. Name of faculty member responsible for the course

Dr. Sami Ashgar

5. Level/year at which this course is offered: 1

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: NA

9. Mode of Instruction (mark all that apply):

a. Traditional classroom

percentage?

b. Blended (traditional and online)

percentage?

c. E-learning

percentage?

d. Correspondence

percentage?

f. Other

percentage?

Comments:

B Objectives

1. The main objectives of this course

The aim of this course is the deep understanding of the evolution, cell biology and genetics of microorganisms and the ability of utilizing modern techniques in the diagnosis and characterization of microorganisms.

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material and availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of molecular microbiology.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

This course describes the basic and advance principles of molecular microbiology to help the students in understanding and utilization modern molecular techniques in the identification and characterization if pathogenic microorganisms.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Molecular organization of microbial cells	1	2
Metabolism and growth	2	2
DNA and RNA structure and replication	3	2
Microbial variation and evolution	4	2
Protein synthesis and regulation of gene expression	5	2
Cellular differentiation in prokaryotes	6	2
Molecular mechanisms of antibiotic resistance	7 and 8	4
Molecular biology of the yeast <i>Saccharomyces cerevisiae</i>	9	2
Identification of microorganisms by PCR	10	2
Real-Time PCR in clinical microbiology	11	2
Sequence-based identifications and characterization of microorganisms	12	2

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

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned	24	8				32
	Actual	24	8				32

Credit	Planned	2					2
	Actual	2					2

3. Individual study/learning hours expected for students per week.

4

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Describe the basic and advance principles of molecular microbiology	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
2.1			
2.0	Cognitive Skills		
2.1	Understand and utilization modern molecular techniques in the identification and characterization if pathogenic microorganisms	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
2.2	Use the PCR and Real-Time PCR and DNA sequencing for the identification and characterization of microbial pathogens.	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			
4.0	Communication, Information Technology, Numerical		
4.1			
4.2			
5.0	Psychomotor(if any)		
5.1			
5.2			

5. Assessment Task Schedule for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Midterm quizzes	7	20%
2	Comprehensive written exam	14	80%

D. Student Academic Counseling and Support

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

E Learning Resources

1. List Required Textbooks
 - Medical microbiology, 6th eds. (2009), by P.R. Murray, K.S. Rosenthal & M. A. Pfaller. MOSBY-ELSEVIER.
 - David Greenwood, Medical Microbiology, 2012, 18th Edition, Churchill Livingstone.
2. List Essential References Materials (Journals, Reports, etc.)
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
4. 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.)
 - Four classrooms with 30 seats each
 - Three laboratories enough for 30 students each
2. Technology resources (AV, data show, Smart Board, software, etc.)
All class rooms and laboratories are equipped with multi-media projectors
3. Other resources
The department of microbiology have many laboratories, which are well-equipped with all basic and advance state-of-the-art facilities needed for the students training and their research projects.

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching
Students will be given the chance to evaluate the teaching quality by the end of the course via online evaluation forms.
2. Other Strategies for Evaluation of Teaching by the Instructor or the Department
The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.
3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ Dr. Sami Ashgar _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: Bacteriology

Course Code: 1004601-02 (BAC)

Date: 15-02-1440

Institution: Umm Al-Qura University

College: Medicine

Department: Microbiology

A. Course Identification and General Information

1. Course title and code:

Bacteriology Code: 10004601-02 (BAC)

2. Credit hours: 2

3. Program(s) in which the course is offered:

M.Sc. Medical Microbiology

4. Name of faculty member responsible for the course

Dr. Ayman Momenah

5. Level/year at which this course is offered: 1

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: NA

9. Mode of Instruction (mark all that apply):

a. Traditional classroom	<input checked="" type="checkbox"/>	percentage?	<input type="text" value="80"/>
b. Blended (traditional and online)	<input checked="" type="checkbox"/>	percentage?	<input type="text" value="20"/>
c. E-learning	<input type="checkbox"/>	percentage?	<input type="text"/>
d. Correspondence	<input type="checkbox"/>	percentage?	<input type="text"/>
f. Other	<input type="checkbox"/>	percentage?	<input type="text"/>

Comments:

B Objectives

1. The main objectives of this course
 - 1.1. To understand the basic microbial structure and function, study the comparative characteristics of prokaryotes and eukaryotes and the structural similarities and differences of bacteria/archaea belonging to different physiological groups.
 - 1.2. To describe methods for laboratory culture and staining for detection of bacteria and to describe the morphologies and growth forms of bacterial pathogens in clinical specimens. Know the physical and chemical methods of sterilization and disinfection, methods for identification and isolation of pure cultures of bacteria.
 - 1.3 Explain the features of microbial genomes and discuss the role of microbes in elucidating basic genetic mechanisms such as mutation, recombination and transfer of DNA between cells
 - 1.4. To know the relationship of function and structures of bacteria that are important for causing disease, recognize the essential properties of clinical specimens that are important for pathogen identification and hazards associated with handling infected clinical specimens.

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material and availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of bacteria and its prevention and treatment.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

This course provides learning opportunities in the basic principles of medical bacteriology and infectious disease. It covers principles of aseptic practice, physical and chemical methods of sterilization and disinfection, methods for identification and isolation of pure cultures of bacteria and the role of the human body's normal microflora. This course extends its scope to understand the involvement of bacteria in human disease with respect to infections of the respiratory tract, gastrointestinal tract, urinary tract, skin and soft tissue and explain the methods of control of bacteria, e.g. chemotherapy & vaccines.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to medical bacteriology. What are bacteria and how do we identify them?	1	2

Classification & physiology of bacteria The battle between host and pathogen	2	2
Bacterial metabolism and Genetics	3	2
Mechanisms of bacterial pathogenesis	4	2
Biofilms and normal flora	5	2
Immune response to infection	6	2
Gram positive bacteria: <i>Staphylococci, Streptococci, Bacillus and Clostridia.</i>	7-8	4
Gram negative bacteria: <i>E. coli, Salmonella, Shigella, Pseudomonas, Brucella and Neisseria.</i>	9-10	4
Immune response to infection	11	2
Antibacterial agents: Mechanisms of action and resistance	12	2

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

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned	28	4				32
	Actual	28	4				32
Credit	Planned	2					2
	Actual	2					2

3. Individual study/learning hours expected for students per week.

4

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Identify the diversity of bacteria and approaches used to study pathogenesis of bacteria.	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
1.2	Describe the attribution of bacterial virulence in colonization and damaging the host defense in the process of bacterial pathogenesis.	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
2.0	Cognitive Skills		
2.1	describe the mechanism of host-pathogen interaction in the pathogenesis of infectious	Interactive Lecture workshop	Midterm quizzes and Comprehensive

	diseases.		written exam
2.2			
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			
4.0	Communication, Information Technology, Numerical		
4.1			
4.2			
5.0	Psychomotor(if any)		
5.1			
5.2			

5. Assessment Task Schedule for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Midterm quizzes	7	20%
2	Comprehensive written exam	14	80%

D. Student Academic Counseling and Support

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

E Learning Resources

- List Required Textbooks
 - Medical microbiology, 6th eds. (2009), by P.R. Murray, K.S. Rosenthal & M. A. Pfaller. MOSBY-ELSEVIER.
 - David Greenwood, Medical Microbiology, 2012, 18th Edition, Churchill Livingstone.
- List Essential References Materials (Journals, Reports, etc.)
- List Electronic Materials, Web Sites, Facebook, Twitter, etc.
- 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.)

- Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
 - Four classrooms with 30 seats each
 - Three laboratories enough for 30 students each
- Technology resources (AV, data show, Smart Board, software, etc.)
All class rooms and laboratories are equipped with multi-media projectors

3. Other resources

The department of microbiology have many laboratories, which are well-equipped with all basic and advance state-of-the-art facilities needed for the students training and their research projects.

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

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

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3. Procedures for Teaching Development

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4. Procedures for Verifying Standards of Student's Achievement

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ Dr. Ayman Momenah _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course: Title: Medical Virology

Code: 1004601-02 (VIR)

Date: 15-02-1440	Institution: Umm Al-Qura University
College: Medicine	Department: Microbiology

A. Course Identification and General Information

1. Course title and code: Medical Virology Code: 1004601-02 (VIR)			
2. Credit hours: 2			
3. Program(s) in which the course is offered. M.Sc. Medical Microbiology			
4. Name of faculty member responsible for the course Dr. Ayman Johergy			
5. Level/year at which this course is offered: 1			
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: NA			
9. Mode of Instruction (mark all that apply):			
a. Traditional classroom	<input checked="" type="checkbox"/>	percentage?	<input type="text" value="80"/>
b. Blended (traditional and online)	<input checked="" type="checkbox"/>	percentage?	<input type="text" value="20"/>
c. E-learning	<input type="checkbox"/>	percentage?	<input type="text"/>
d. Correspondence	<input type="checkbox"/>	percentage?	<input type="text"/>
f. Other	<input type="checkbox"/>	percentage?	<input type="text"/>
Comments:			

B Objectives

1. The main objectives of this course

Discuss medical and molecular aspects of virology.

Know about the emerging viral infections.

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material, availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of medical virology.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

This Medical Virology course covers the medical and molecular aspects of virology, immunity to infection and epidemiology.

In this course, the students will explore the current issues and concepts in medical virology and acquire the professional skills necessary to make independent, informed judgements in viral infections.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to virology	1	2
Genomic organization of viruses and viral classification	2	2
The virus's life cycle and virus evolution	3	2
How viruses cause infections	4	2
Immune response to viral infections	5	2
Different types of viral infections	6	2
Common viral infections	7 and 8	4
Diagnosis of viral infection: viral isolation and microscopy	9	2
Serological diagnosis of viral infections	10	2
Molecular diagnosis of viral infections	11	2
Control, Treatment and Prevention of viral infections	12	2

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

	Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total

Contact Hours	Planned	24	8				32
	Actual	24	8				32
Credit	Planned	2					2
	Actual	2					2

3. Individual study/learning hours expected for students per week.

4

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Students will be able to define viruses and know their structure, characteristics and classification.	Interactive lectures and tutorials	Midterm quizzes and Comprehensive written exam
	Students will be able to understand viral replication and routes of entry of viruses in cells and in the body	Interactive lectures and tutorials	Midterm quizzes and Comprehensive written exam
2.0	Cognitive Skills		
2.1	Students will be able to differentiate between localized and systemic viral infections	Interactive lectures and tutorials	Midterm quizzes and Comprehensive written exam
2.2	Students will be able to describe the specific and non-specific immune response to viral infections.	Interactive lectures and tutorials	Midterm quizzes and Comprehensive written exam
2.3	Students will be able to understand the mechanism of action of antiviral agents and the use viral vaccines.	Interactive lectures and tutorials	Midterm quizzes and Comprehensive written exam
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			
4.0	Communication, Information Technology, Numerical		
4.1			
4.2			
5.0	Psychomotor (if any)		
5.1			
5.2			

5. Assessment Task Schedule for Students During the Semester

Assessment task (i.e., essay, test, quizzes, group project,	Week Due	Proportion of Total
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	examination, speech, oral presentation, etc.)		Assessment
1	Midterm quizzes	7	20 %
2	Comprehensive written exam	14	80 %

D. Student Academic Counseling and Support

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

E Learning Resources

1. List Required Textbooks

Principles and Practice of Infectious Diseases 8th Edition Vol: 2 (2016) – Mandell, Douglas, and Bennett. Human Virology. 5th Edition (2016). John Oxford, Paul Kellam, and Leslie Collier Fields Virology. 2014. Bernard N. Fields

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

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

4. 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.)

- Four classrooms with 30 seats each
- Three laboratories enough for 30 students each

2. Technology resources (AV, data show, Smart Board, software, etc.)

All class rooms and laboratories are equipped with multi-media projectors

3. Other resources

The department of microbiology have many laboratories, which are well-equipped with all basic and advance state-of-the-art facilities needed for the students training and their research projects.

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

Students will be given the chance to evaluate the teaching quality by the end of the course via online evaluation forms.

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

The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance

and their feedback.

3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ Dr. Ayman Johergy _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: Basic Practical Microbiology

Course Code: 1004601-02 (BPM)

Date: 15-02-1440	Institution: Umm Al-Qura University
College: Medicine	Department: Microbiology

A. Course Identification and General Information

1. Course title and code: Basic Practical Microbiology Code: 1004601-02 (BPM)			
2. Credit hours: 2			
3. Program(s) in which the course is offered: M.Sc. Medical Microbiology			
4. Name of faculty member responsible for the course Dr. Hamdi Mustafa			
5. Level/year at which this course is offered: 1			
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: NA			
9. Mode of Instruction (mark all that apply):			
a. Traditional classroom	<input type="text"/>	percentage?	<input type="text"/>
b. Blended (traditional and online)	<input type="text"/>	percentage?	<input type="text"/>
c. E-learning	<input type="text"/>	percentage?	<input type="text"/>
d. Correspondence	<input type="text"/>	percentage?	<input type="text"/>
f. Other	<input checked="" type="text" value="x"/>	percentage?	<input type="text" value="100"/>
Comments: This is laboratory-based hands-on training course			

B Objectives

1. The main objectives of this course
 - 1.1 Develop students' knowledge and understanding of the structure, classification and replication of bacteria, viruses and fungi.
 - 1.2 Encourage students to perfect the practical skills necessary for the laboratory analysis of bacteria and viruses.
 - 1.3 Develop the student's understanding and knowledge of the principles behind methods used to test for the presence of pathogens.

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material and availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of diagnostic clinical microbiology.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

The increasing incidence of microbial infections worldwide and the rapid development of increasing resistance to antibiotics and opportunistic infections of other living organisms. This reflects the increasing importance of the study of these causes through the accurate diagnosis of these microorganisms and methods of infection control through the study of this course, which will focus on the basic principles and practice of diagnostic tools for identification of bacteria, fungi and viruses and treatment of pathogens.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Principles of microbial culture: Growth characteristics & identification	1	4
Specimens collection, transport and processing	2	4
Manual and automated systems for microbial detection & identification	3	4
Identification of Gram-positive cocci	4	4
Identification of Gram-positive rods	5	4
Identification of Gram-negative rods	6	4
Identification of Gram-negative cocci & coccobacilli	7	4
Gram Negative Coccobacilli:	8	4
Identification of other Gram-negative bacteria	9	4
Identification of Mycobacteria	10	4

Antibiotic susceptibility testing	11	4
Antibiotic Susceptibility Testing	12	4
Identification of fungi	13	4
Identification of viruses	14	4

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

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned				56		56
	Actual				56		56
Credit	Planned				2		2
	Actual				2		2

3. Individual study/learning hours expected for students per week.

NA

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1			
1.2			
2.0	Cognitive Skills		
2.1	Be able to identify the microscopic characteristics of bacteria and fungi	Practical sessions and group discussion	Practical exam
2.2	Be able to identify appropriate laboratory procedures for the detection and Understand the structure, classification and replication of microbial pathogens	Practical sessions and group discussion	Practical exam
2.3	Be aware of the health and safety issues related to handling microbial pathogens	Practical sessions and group discussion	Practical exam
2.4	Understand the principles of microbial culture and laboratory analysis identification of organisms	Practical sessions and group discussion	Practical exam
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			

4.0	Communication, Information Technology, Numerical		
4.1	Work effectively as an individual or part of a team	Practical sessions and group discussion	Continuous assessment
4.2			
5.0	Psychomotor(if any)		
5.1	Basic laboratory skills for the detection and identification of organisms	Practical sessions and group discussion	Practical exam
5.2	Be able to identify viral cytopathic effect	Practical sessions and group discussion	Practical exam

5. Assessment Task Schedule for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Comprehensive practical exam	14	100%

D. Student Academic Counseling and Support

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

Our department have ten full-time faculty available for academic support and counseling. Each faculty have 2-hour office hours per week for students support and supervision.

E Learning Resources

- List Required Textbooks
 - Medical microbiology, 6th eds. (2009), by P.R. Murray, K.S. Rosenthal & M. A. Pfaller. MOSBY-ELSEVIER.
 - David Greenwood, Medical Microbiology, 2012, 18th Edition, Churchill Livingstone.
- List Essential References Materials (Journals, Reports, etc.)
- List Electronic Materials, Web Sites, Facebook, Twitter, etc.
- 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.)

- Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
 - Three laboratories enough for 30 students each

- Technology resources (AV, data show, Smart Board, software, etc.)
All class rooms and laboratories are equipped with multi-media projectors

- Other resources
The department of microbiology have many laboratories, which are well-equipped with all basic and

advance state-of-the-art facilities needed for the students training and their research projects.

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

Students will be given the chance to evaluate the teaching quality by the end of the course via online evaluation forms.

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

The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.

3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ Dr. Hamdi Mustafa _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: Microbial Genomics and Bioinformatics

Course Code: 1004601-01 (MGB)

Date: 15-02-1440

Institution: Umm Al-Qura University

College: Medicine

Department: Microbiology

A. Course Identification and General Information

1. Course title and code:

Microbial Genomics and Bioinformatics

Code: 1004601-01 (MGB)

2. Credit hours: 1

3. Program(s) in which the course is offered:

M.Sc. Medical Microbiology

4. Name of faculty member responsible for the course

Dr. Abdalla Ahmed

5. Level/year at which this course is offered: 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: NA

9. Mode of Instruction (mark all that apply):

a. Traditional classroom

percentage?

b. Blended (traditional and online)

percentage?

c. E-learning

percentage?

d. Correspondence

percentage?

f. Other

percentage?

Comments:

B Objectives

1. The main objectives of this course

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

1. Plan, design and setup a microbial DNA sequencing experiment.
2. Work with NGS DNA sequence data, check quality of sequence reads and manipulate fastq data files.
3. Perform genome de novo assembly and reads mapping of NGS DNA sequence data to reference genome.
4. Use the basic NCBI and EBI genomics tools.
5. Perform 16S sequence based bacterial identification and basic metagenomics analysis.
6. Identify antibiotics resistant genes using NGS sequence data.
7. Use NGS sequence data to determine pathogenic serotypes of Salmonella and Escherichia coli.
8. Use NGS sequence data identification of acquired virulence genes in Staphylococcus aureus and Escherichia coli.
9. Use NGS data for microbial genotyping and hospital molecular epidemiology.

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material and availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of bacteria and its prevention and treatment.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

This course will provide an introduction to microbial genomics and microbial bioinformatics. The content of this course is designed to provide a basic hands-on training on DNA sequence data analysis. Special focus will be giving for tools and resources for microbial identification, antibiotics resistant prediction and metagenomics.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to DNA sequencing technologies	1	1
Applications of DNA sequencing	2	1
DNA sequencing: experiment setup and study design	3	1
Working with DNA sequence data	4	1
Quality control and Fastq manipulation	5	1
Sequence assembly and mapping	6	1
Biomedical and genomic information resources (NCBI and EBI tools)	7	1
Sequence based identification and metagenomics	8	1
Genomics-based microbial identification	9	1
Antibiotics resistant mechanisms and understanding the genetic basis of antibiotics resistance	10 and 11	2
Genotyping (Multi Locus Sequence Typing and SNPs phylogeny)	12	1

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

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned	12		6			18
	Actual	12		6			18
Credit	Planned	1					1
	Actual	1					1

3. Individual study/learning hours expected for students per week.

4

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Plan, design and setup a microbial DNA sequencing experiment.	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
1.2	Work with NGS DNA sequence data, check quality of sequence reads and manipulate	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam

	fastq data files.		
1.3	Use NGS data for microbial genotyping and hospital molecular epidemiology.	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
2.0	Cognitive Skills		
2.1	Perform genome de novo assembly and reads mapping of NGS DNA sequence data to reference genome.	Computer-based practical session	Task-bases assessment
2.2	Use the basic NCBI and EBI genomics tools.	Computer-based practical session	Task-bases assessment
2.3	Perform 16S sequence based bacterial identification and basic metagenomics analysis.	Computer-based practical session	Task-bases assessment
2.4	Identify antibiotics resistant genes using NGS sequence data.	Computer-based practical session	Task-bases assessment
2.5	Use NGS sequence data to determine pathogenic serotypes of Salmonella and Escherichia coli.	Computer-based practical session	Task-bases assessment
2.6	Use NGS sequence data identification of acquired virulence genes in Staphylococcus aureus and Escherichia coli.	Computer-based practical session	Task-bases assessment
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			
4.0	Communication, Information Technology, Numerical		
4.1			
4.2			
5.0	Psychomotor(if any)		
5.1			
5.2			

5. Assessment Task Schedule for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Midterm quizzes	7	20%
2	Comprehensive written exam	14	20%
	Task-bases assessment	3-11	60%

D. Student Academic Counseling and Support

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

E Learning Resources

- List Required Textbooks
 - Medical microbiology, 6th eds. (2009), by P.R. Murray, K.S. Rosenthal & M. A. Pfaller. MOSBY-ELSEVIER.
 - David Greenwood, Medical Microbiology, 2012, 18th Edition, Churchill Livingstone.
- List Essential References Materials (Journals, Reports, etc.)

1. Didelot X, Bowden R, Wilson DJ, Peto TE, Crook DW. Transforming clinical microbiology with bacterial genome sequencing. *Nat Rev Genet.* 2012;13(9):601-12.
2. Grad YH, Lipsitch M, Feldgarden M, Arachchi HM, Cerqueira GC, Fitzgerald M, et al. Genomic epidemiology of the Escherichia coli O104:H4 outbreaks in Europe, 2011. *Proc Natl Acad Sci U S A.* 2012;109(8):3065-70.
3. Harris SR, Cartwright EJP, Török ME, Holden MTG, Brown NM, Ogilvy-Stuart AL, et al. Whole-genome sequencing for analysis of an outbreak of meticillin-resistant Staphylococcus aureus: a descriptive study. *The Lancet Infectious Diseases.* 2013;13(2):130-6.
4. Hasman H, Hammerum AM, Hansen F, Hendriksen RS, Olesen B, Agerso Y, et al. Detection of mcr-1 encoding plasmid-mediated colistin-resistant Escherichia coli isolates from human bloodstream infection and imported chicken meat, Denmark 2015. *Euro Surveill.* 2015;20(49).
5. Hasman H, Saputra D, Sicheritz-Ponten T, Lund O, Svendsen CA, Frimodt-Moller N, et al. Rapid whole-genome sequencing for detection and characterization of microorganisms directly from clinical samples. *J Clin Microbiol.* 2014;52(1):139-46.

3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
Center for Genomic Epidemiology www.genomicepidemiology.org/
National Center for Biotechnology Information <https://www.ncbi.nlm.nih.gov/>

4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.
DNASTAR version 15

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.)

- Four classrooms with 30 seats each
- Three laboratories enough for 30 students each

2. Technology resources (AV, data show, Smart Board, software, etc.)

All class rooms and laboratories are equipped with multi-media projectors

3. Other resources

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

Students will be given the chance to evaluate the teaching quality by the end of the course via online evaluation forms.

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

The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.

3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ Dr. Abdalla Ahmed _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: Medical Mycology

Course Code: 1004601-01 (MYC)

Date: 15-02-1440	Institution: Umm Al-Qura University
College: Medicine	Department: Microbiology

A. Course Identification and General Information

1. Course title and code:			
Medical mycology	Code: 1004601-01 (MYC)		
2. Credit hours: 1			
3. Program(s) in which the course is offered:			
M.Sc. Medical Microbiology			
4. Name of faculty member responsible for the course			
Dr. Hani Fadhah			
5. Level/year at which this course is offered: 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: NA			
9. Mode of Instruction (mark all that apply):			
a. Traditional classroom	<input checked="" type="checkbox"/>	percentage?	<input type="text" value="80"/>
b. Blended (traditional and online)	<input checked="" type="checkbox"/>	percentage?	<input type="text" value="20"/>
c. E-learning	<input type="checkbox"/>	percentage?	<input type="text"/>
d. Correspondence	<input type="checkbox"/>	percentage?	<input type="text"/>
f. Other	<input type="checkbox"/>	percentage?	<input type="text"/>
Comments:			

B Objectives

1. The main objectives of this course
 - 1.1. To understand the basic fungal cells structure and function, and to study the structural similarities and differences between fungi and bacteria.
 - 1.2. To describe fungal human interactions and clinical conditions associated with fungal-human interaction.
 - 1.3 To understand the basics of selections of antifungal treatment and response to antibiotics.

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material and availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of bacteria and its prevention and treatment.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

This course describes the basic principles of medical mycology and clinical conditions associated with fungi. This course extends its scope to understand the involvement of fungi in human disease and the importance of fungi in everyday life. Special focus will be given for fungal gross and ultra-structure and its direct effect the correct selections of antifungal treatment and response to antibiotics.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to mycology	1	1
Superficial and cutaneous mycoses	2 and 3	2
Subcutaneous mycoses	4	1
Systemic mycoses	5	1
Opportunistic fungal infections 1	6	1
Opportunistic fungal infections 2	7	1
Laboratory diagnosis of fungal infections (cutaneous and subcutaneous mycoses)	8	1
Laboratory diagnosis of fungal infections (systemic mycoses)	9	1
Molecular identification of fungi	10	1
Antifungal agents	11	1
Management of fungal infections	12	1

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

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned	12	6				18
	Actual	12	6				18
Credit	Planned	1					1
	Actual	1					1

3. Individual study/learning hours expected for students per week.

4

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	To understand the basic fungal cells structure and function, and to study the structural similarities and differences between fungi and bacteria.	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
1.2	To describe fungal human interactions and clinical conditions associated with fungal-human interaction.		
2.0	Cognitive Skills		
2.1	To understand the basics of selections of antifungal treatment and response to antibiotics.	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
2.2			
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			
4.0	Communication, Information Technology, Numerical		
4.1			
4.2			
5.0	Psychomotor(if any)		
5.1			
5.2			

5. Assessment Task Schedule for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Midterm quizzes	7	20%
2	Comprehensive written exam	14	80%

D. Student Academic Counseling and Support

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

E Learning Resources

- List Required Textbooks
 - Medical microbiology, 6th eds. (2009), by P.R. Murray, K.S. Rosenthal & M. A. Pfaller. MOSBY-ELSEVIER.
 - David Greenwood, Medical Microbiology, 2012, 18th Edition, Churchill Livingstone.
- List Essential References Materials (Journals, Reports, etc.)
- List Electronic Materials, Web Sites, Facebook, Twitter, etc.
- 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.)

- Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
 - Four classrooms with 30 seats each
 - Three laboratories enough for 30 students each
- Technology resources (AV, data show, Smart Board, software, etc.)
All class rooms and laboratories are equipped with multi-media projectors
- Other resources
The department of microbiology have many laboratories, which are well-equipped with all basic and advance state-of-the-art facilities needed for the students training and their research projects.

G Course Evaluation and Improvement Procedures

- Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

Students will be given the chance to evaluate the teaching quality by the end of the course via online evaluation forms.

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

The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.

3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ Dr. Hani Faidah _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: **Medical Parasitology**

Course Code: 1004601-01 (PAR)

Date: 15-02-1440

Institution: Umm Al-Qura University

College: Medicine

Department: Microbiology

A. Course Identification and General Information

1. Course title and code:

Medical Parasitology Code: 1004601-01 (PAR)

2. Credit hours: 1

3. Program(s) in which the course is offered:

M.Sc. Medical Microbiology

4. Name of faculty member responsible for the course

Dr. Atique Alrhman

5. Level/year at which this course is offered: 3

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: NA

9. Mode of Instruction (mark all that apply):

a. Traditional classroom

percentage?

b. Blended (traditional and online)

percentage?

c. E-learning

percentage?

d. Correspondence

percentage?

f. Other

percentage?

Comments:

B Objectives

1. The main objective of this course

This course aimed in providing theoretical aspects of medical parasitology. The course will cover protozoan and metazoan parasites of human importance and the vectors which are responsible for transition. This will equip students with specialized skills to enable them to pursue a career in health care, research, control or teaching related to medical parasitology.

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material and availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of bacteria and its prevention and treatment.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

This course describes the basic principles of medical parasitology and clinical conditions associated with parasites. This course will help students to understand the involvement of common parasites in human disease, diagnosis and management of human parasitic infections.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
General Parasitology	1	1
Medical Protozoology	2	1
Amoebiasis	3	1
Flagellates & Ciliates	4	1
Leishmaniasis	5	1
Trypanosomiasis	6	1
Sporozoa	7	1
Medical Helminthology	8	1
Medically Important Trematodes	9	1
Nematodes	10	1
Cestodes	11	1
Medical Entomology	12	1

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

	Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact	Planned	12	6			18

Hours	Actual	12	6				18
Credit	Planned	1					1
	Actual	1					1

3. Individual study/learning hours expected for students per week.

4

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	demonstrate detailed knowledge and understanding of the biology, life cycles, pathogenesis	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
2.0	Cognitive Skills		
2.1	To understand diagnosis of parasitic infections in humans and their relevance for human health and strategies for control	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			
4.0	Communication, Information Technology, Numerical		
4.1			
4.2			
5.0	Psychomotor(if any)		
5.1			
5.2			

5. Assessment Task Schedule for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Midterm quizzes	7	20%
2	Comprehensive written exam	14	80%

D. Student Academic Counseling and Support

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

E Learning Resources

1. List Required Textbooks
 - Medical microbiology, 6th eds. (2009), by P.R. Murray, K.S. Rosenthal & M. A. Pfaller. MOSBY-ELSEVIER.
 - David Greenwood, Medical Microbiology, 2012, 18th Edition, Churchill Livingstone.
2. List Essential References Materials (Journals, Reports, etc.)
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
4. 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.)
 - Four classrooms with 30 seats each
 - Three laboratories enough for 30 students each

2. Technology resources (AV, data show, Smart Board, software, etc.)
All class rooms and laboratories are equipped with multi-media projectors

3. Other resources
The department of microbiology have many laboratories, which are well-equipped with all basic and advance state-of-the-art facilities needed for the students training and their research projects.

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

Students will be given the chance to evaluate the teaching quality by the end of the course via online evaluation forms.

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

The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.

3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ Dr. Atique Al-Rahman _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: Clinical Seminars 1

Course Code: 1004601-01 (CS1)

Date: 15-02-1440	Institution: Umm Al-Qura University
College: Medicine	Department: Microbiology

A. Course Identification and General Information

1. Course title and code: Clinical Seminars 1 Code: 1004601-01 (CS1)			
2. Credit hours: 1			
3. Program(s) in which the course is offered: M.Sc. Medical Microbiology			
4. Name of faculty member responsible for the course: all faculty			
5. Level/year at which this course is offered: 1			
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: NA			
9. Mode of Instruction (mark all that apply):			
a. Traditional classroom	<input checked="" type="checkbox"/>	percentage?	<input type="text" value="100"/>
b. Blended (traditional and online)	<input type="checkbox"/>	percentage?	<input type="text"/>
c. E-learning	<input type="checkbox"/>	percentage?	<input type="text"/>
d. Correspondence	<input type="checkbox"/>	percentage?	<input type="text"/>
f. Other	<input type="checkbox"/>	percentage?	<input type="text"/>
Comments:			

B Objectives

1. The main objective of this course

1. To build the necessary educational skills such as; reading, searching, analyzing, writing, producing clinical data in the form of presentation.
2. Presenting, communication, judgment data specially from clinical point of view
3. Acquiring knowledge about the common clinical microbiology topics

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material, availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of clinical microbiology.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

These weekly clinical seminars will discuss the most important topics in clinical microbiology. The students will prepare the seminars in different topics under the supervision of the teaching staff. This course will foster the reading, critical thinking and scientific discussion skills in the students.

The students will present their clinical seminars once a week as a group of 3 students. Titles for the seminars will be announced 10 - 14 days before the presentation. Seminars are scheduled once a week.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Upper respiratory tracts infections	1	2
Bacterial meningitis	2	2
Diagnosis of MERS Corona virus	3	2
Diagnosis of intestinal parasites	4	2
Causes of bacterial diarrhea	5	2
Sexually transmitted diseases	6	2
Viral hepatitis	7	2
Diagnosis and management of urinary tract infections	9	2
Invasive fungal infections in immunocompromised patients	10	2
Diagnosis of blood and tissue parasites.	11	2

Pulmonary tuberculosis	12	2
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2. Course components (total contact and credit hours per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned		24				24
	Actual		24				24
Credit	Planned		2				2
	Actual		2				2

3. Individual study/learning hours expected for students per week.

2

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Students will collect huge knowledge about hot topics in clinical microbiology	Interactive discussion	Continuous assessment
1.2			
2.0	Cognitive Skills		
2.1	Students will be able to understand common clinical microbiology topics and to know the up to date methods of diagnosis and management	Interactive discussion	Continuous assessment
2.2			
3.0	Interpersonal Skills & Responsibility		
3.1	Students will be able to present scientific topics and answers simples and advance questions	Interactive discussion	Continuous assessment
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	Students will be able to present and communicate ideas using different audiovisual	Interactive discussion	Continuous assessment

	tools.		
4.2			
5.0	Psychomotor(if any) This course does not provide any psychomotor skill development		
5.1			
5.2			

5. Assessment Task Schedule for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Continuous assessment during seminars	Every week	100 %

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic counseling.

Our department have ten full-time faculty available for academic support and counseling. Each faculty have 2-hour office hours per week for students support and supervision.

E Learning Resources

1. List Required Textbooks

- Medical microbiology, 6th eds. (2009), by P.R. Murray, K.S. Rosenthal & M. A. Pfaller. MOSBY-ELSEVIER.
- David Greenwood, Medical Microbiology, 2012, 18th Edition, Churchill Livingstone.

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

The University's electronic databases of Journals and online resources

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

4. 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.)
Four classrooms with 30 seats each

2. Technology resources (AV, data show, Smart Board, software, etc.)
All class rooms and laboratories are equipped with multi-media projectors

3. Other resources
The University's main library

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

Students will be given the chance to evaluate the teaching quality by the end of the course via online evaluation forms.

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

The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.

3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ **All Faculty** _____

Signature: _____ **Date Completed:** 15-02-1440

Program Coordinator: _____ **Dr. Sami Ashgar** _____

Signature: _____ **Date Received:** 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: Advance Practical Microbiology

Course Code: 1004601-02 (APM)

Date: 15-02-1440

Institution: Umm Al-Qura University

College: Medicine

Department: Microbiology

A. Course Identification and General Information

1. Course title and code:

Advance Practical Microbiology Code: 1004601-02 (APM)

2. Credit hours: 2

3. Program(s) in which the course is offered:

M.Sc. Medical Microbiology

4. Name of faculty member responsible for the course

Dr. Farouk Mohamed

5. Level/year at which this course is offered: 1

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: NA

9. Mode of Instruction (mark all that apply):

a. Traditional classroom	<input type="text"/>	percentage?	<input type="text"/>
b. Blended (traditional and online)	<input type="text"/>	percentage?	<input type="text"/>
c. E-learning	<input type="text"/>	percentage?	<input type="text"/>
d. Correspondence	<input type="text"/>	percentage?	<input type="text"/>
f. Other	<input checked="" type="text"/>	percentage?	<input type="text" value="100"/>

Comments: This is laboratory-based hands-on training course

B Objectives

1. The main objectives of this course

1.1 Develop students' knowledge and understanding of the advance techniques used for the identifications and detection of bacteria, viruses and fungi.

1.2 Encourage students to perfect the advance practical skills necessary for the laboratory diagnosis of pathogenic microorganisms.

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material and availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of advance diagnostic tools in clinical microbiology.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

The increasing incidence of microbial infections worldwide and the rapid development of increasing resistance to antibiotics and opportunistic infections of other living organisms. This reflects the increasing importance of the study of these causes through the accurate diagnosis of these microorganisms and methods of infection control through the study of this course, which will focus on the advance and state-of-the-art principles and practice of diagnostic tools for identification of bacteria, fungi and viruses.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Advance techniques in tissue culture and viral isolation	1	4
Sero-diagnosis of microbial infections	2	4
DNA and RNA extraction form clinical specimens	3	4
DNA and RNA extraction from pure cells and tissue cultures	4	4
Quantity and quality check of extracted nucleic acids	5	4
DNA and RNA amplification and detection techniques	6	4
Polymerase Chain Reaction & Reserve Transcriptase PCR	7	4
Real Time PCR	8	4
DNA Sequencing: Whole genome sequencing	9	4
DNA Sequencing: 16S & 18S metagenomics	10	4
Microbial Genotyping by PCR	11	4
Microbial Genotyping by DNA sequencing	12	4

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

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned		8		48		56
	Actual		8		48		56
Credit	Planned				2		2
	Actual				2		2

3. Individual study/learning hours expected for students per week.

NA

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1			
1.2			
2.0	Cognitive Skills		
2.1	Be able to identify appropriate serological tests for the detection and identification of microbial pathogens	Practical sessions and group discussion	Practical exam
2.2	Demonstrate skills in working with nucleic acid extraction, amplification and detection .		
2.3	Basic laboratory skills for the detection, identification and quantification of organisms using nucleic acid based techniques.	Practical sessions and group discussion	Practical exam
2.4	Demonstrate skills in working with tissue culture, viral isolation and identification.	Practical sessions and group discussion	Practical exam
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	Work effectively as an individual or part of a team	Practical sessions and group discussion	Continuous assessment
4.2			
5.0	Psychomotor(if any)		
5.1	Acquire advance laboratory skills for the detection	Practical sessions and	Practical exam

	and identification of organisms	group discussion	
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5. Assessment Task Schedule for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Comprehensive practical exam	14	100%

D. Student Academic Counseling and Support

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

Our department have ten full-time faculty available for academic support and counseling. Each faculty have 2-hour office hours per week for students support and supervision.

E Learning Resources

1. List Required Textbooks

- Medical microbiology, 6th eds. (2009), by P.R. Murray, K.S. Rosenthal & M. A. Pfaller. MOSBY-ELSEVIER.
- David Greenwood, Medical Microbiology, 2012, 18th Edition, Churchill Livingstone.

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

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

4. 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.)

- Three laboratories enough for 30 students each

2. Technology resources (AV, data show, Smart Board, software, etc.)

All class rooms and laboratories are equipped with multi-media projectors

3. Other resources

The department of microbiology have many laboratories, which are well-equipped with all basic and advance state-of-the-art facilities needed for the students training and their research projects.

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

Students will be given the chance to evaluate the teaching quality by the end of the course via online evaluation forms.

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

The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.

3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ Dr. Farouk Mohamed _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: Research Methods

Course Code: 1004601-02 (REM)

Date: 15-02-1440

Institution: Umm Al-Qura University

College: Medicine

Department: Microbiology

A. Course Identification and General Information

1. Course title and code:

Research Methods

Code: 1004601-02 (REM)

2. Credit hours: 2

3. Program(s) in which the course is offered:

M.Sc. Medical Microbiology

4. Name of faculty member responsible for the course

Dr. Sumyya Hariri

5. Level/year at which this course is offered: 3

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: NA

9. Mode of Instruction (mark all that apply):

a. Traditional classroom

percentage?

b. Blended (traditional and online)

percentage?

c. E-learning

percentage?

d. Correspondence

percentage?

f. Other

percentage?

Comments:

B Objectives

1. The main objectives of this course

1. Understand the basics of scientific research.
2. Recognize the different research types and research designs.
3. Recognize the different types of scientific publications.
4. Able to write research results and submitted for publication.
5. Know the basics of appraisal and criticism of published literature.

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material and availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of bacteria and its prevention and treatment.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

The goal of Research Methods course is to learn how research is being done, and to put that knowledge into practice. Students will learn how to formulate research question, write research proposal, select the appropriate research design, write research finding and submit it for publication.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to Research	1	2
The Literature Review: approaches, sources, and writing	2 and 3	4
Research Ethics: issues, rights, and responsibilities	4	2
Types of Research	5	2
Quantitative Research Design	6	2
Qualitative Research Design	7	2
Sampling Methods and sample size	8	2
Data Collection and Management	9	2
Writing Research Reports	10	2
Types of Scientific Articles	11	2
Management of fungal infections	12	2

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

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned	24	8				32
	Actual	24	8				32

Credit	Planned	2					2
	Actual	2					2

3. Individual study/learning hours expected for students per week.

4

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Demonstrate knowledge of research processes (preparation, conducting and writing) .	Interactive Lectures	Midterm quizzes and Comprehensive written exam
1.2	Understand the different references writing and citing styles .	Interactive Lectures	Midterm quizzes and Comprehensive written exam
1.3	Compare and contrast quantitative and qualitative research	Interactive Lectures	Midterm quizzes and Comprehensive written exam
2.0	Cognitive Skills		
2.1	Perform literature reviews using printed and online databases .	Interactive Lecture Participated Discussion	Midterm quizzes and Comprehensive written exam
2.2	Prepare scientific research proposals and reports .	Interactive Lectures	Midterm quizzes and Comprehensive written exam
	Define and select the appropriate health research designs for different research types .	Interactive Lectures	Midterm quizzes and Comprehensive written exam
	Describe sampling methods and calculate the correct samples size for health research.	Interactive Lectures	Midterm quizzes and Comprehensive written exam
	Explain the rationale for research ethics.	Interactive Lectures	Midterm quizzes and Comprehensive written exam
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			

4.0	Communication, Information Technology, Numerical		
4.1			
4.2			
5.0	Psychomotor(if any)		
5.1			
5.2			

5. Assessment Task Schedule for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Midterm quizzes	7	20%
2	Comprehensive written exam	14	80%

D. Student Academic Counseling and Support

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

E Learning Resources

1. List Required Textbooks

Creswell, J. W. Research design: Qualitative, quantitative and mixed methods approaches. 5th Ed. Thousand Oaks, CA: Sage, 2018.

Porta, M. (2014). A dictionary of epidemiology (6th ed). New York, NY: Oxford University Press.

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

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

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

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.)

- Four classrooms with 30 seats each
- Three laboratories enough for 30 students each

2. Technology resources (AV, data show, Smart Board, software, etc.)

All class rooms and laboratories are equipped with multi-media projectors

3. Other resources

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

Students will be given the chance to evaluate the teaching quality by the end of the course via online evaluation forms.

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

The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.

3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ Dr. Sumyya Hariri _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: Clinical Seminars 2

Course Code: 1004601-01 (CS2)

Date: 15-02-1440	Institution: Umm Al-Qura University
College: Medicine	Department: Microbiology

A. Course Identification and General Information

1. Course title and code: Clinical Seminars 2 Code: 1004601-01 (CS2)			
2. Credit hours: 1			
3. Program(s) in which the course is offered: M.Sc. Medical Microbiology			
4. Name of faculty member responsible for the course: all faculty			
5. Level/year at which this course is offered: 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: NA			
9. Mode of Instruction (mark all that apply):			
a. Traditional classroom	<input checked="" type="checkbox"/>	percentage?	<input type="text" value="100"/>
b. Blended (traditional and online)	<input type="checkbox"/>	percentage?	<input type="text"/>
c. E-learning	<input type="checkbox"/>	percentage?	<input type="text"/>
d. Correspondence	<input type="checkbox"/>	percentage?	<input type="text"/>
f. Other	<input type="checkbox"/>	percentage?	<input type="text"/>
Comments:			

B Objectives

1. The main objective of this course

4. To build the necessary educational skills such as; reading, searching, analyzing, writing, producing clinical data in the form of presentation.
5. Presenting, communication, judgment data specially from clinical point of view
6. Acquiring knowledge about the advance clinical microbiology topics

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material, availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of clinical microbiology.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

“Clinical seminar 2” is a forum for the student to gain experience in presenting scientific data. This course, which comes after “Clinical Seminars 1”, is a more advance course and contain more advance topics. Most of the selected topics are important for the students in their hospital practice, which will start parallel to this course in the same semester. This course is required for all students in the Medical Microbiology MSc program. The students will present their clinical seminars once a week as a group of 3 students. Titles for the seminars will be announced 10 - 14 days before the presentation. Seminars are scheduled once a week.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Pneumonia	1	2
Diagnosis of sepsis	2	2
ESBL & CRE: diagnosis and management	3	2
Molecular basis of antibiotics resistance	4	2
Molecular diagnosis of arboviruses infections	5	2
Soft tissues infections	6	2
Microbial typing and hospital molecular epidemiology	7	2
Bacterial outbreaks during Hajj: Management and diagnosis	8	2

DNA sequencing and future of routine microbiology	9	2
Malaria in Saudi Arabia: Diagnosis and management	10	2
Role of clinical microbiology laboratory in control of hospital infections	11	2
AIDS defining illnesses in Saudi Arabia	12	2

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

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned		24				24
	Actual		24				24
Credit	Planned		2				2
	Actual		2				2

3. Individual study/learning hours expected for students per week.

2

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Students will collect huge knowledge about advance and clinically relevant topics in microbiology	Interactive discussion	Continuous assessment
1.2			
2.0	Cognitive Skills		
2.1	Students will be able to understand advance topics in clinical microbiology and will know how to manage difficult issues in clinical microbiology such as antibiotics resistance and hospital infections.	Interactive discussion	Continuous assessment
2.2			
3.0	Interpersonal Skills & Responsibility		

3.1	Students will be able to present scientific topics and answers simples and advance questions	Interactive discussion	Continuous assessment
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	Students will be able to present and communicate ideas using different audiovisual tools.	Interactive discussion	Continuous assessment
4.2			
5.0	Psychomotor(if any) This course does not provide any psychomotor skill development		
5.1			
5.2			

5. Assessment Task Schedule for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Continuous assessment during seminars	Every week	100 %

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic counseling.

Our department have ten full-time faculty available for academic support and counseling. Each faculty have 2-hour office hours per week for students support and supervision.

E Learning Resources

1. List Required Textbooks

- Medical microbiology, 6th eds. (2009), by P.R. Murray, K.S. Rosenthal & M. A. Pfaller. MOSBY-ELSEVIER.
- David Greenwood, Medical Microbiology, 2012, 18th Edition, Churchill Livingstone.

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

The University's electronic databases of Journals and online resources

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

4. 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.)

Four classrooms with 30 seats each

2. Technology resources (AV, data show, Smart Board, software, etc.)

All class rooms and laboratories are equipped with multi-media projectors

3. Other resources
The University's main library

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

Students will be given the chance to evaluate the teaching quality by the end of the course via online evaluation forms.

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

The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.

3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ All Faculty _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: Hospital Practice 1

Course Code: 1004601-10 (HP1)

Date: 15-02-1440	Institution: Umm Al-Qura University
College: Medicine	Department: Microbiology

A. Course Identification and General Information

1. Course title and code: Hospital Practice 1 Code: 1004601-10 (HP1)			
2. Credit hours: 10			
3. Program(s) in which the course is offered: M.Sc. Medical Microbiology			
4. Name of faculty member responsible for the course All faculty			
5. Level/year at which this course is offered: 3			
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: NA			
9. Mode of Instruction (mark all that apply):			
a. Traditional classroom	<input type="text"/>	percentage?	<input type="text"/>
b. Blended (traditional and online)	<input type="text"/>	percentage?	<input type="text"/>
c. E-learning	<input type="text"/>	percentage?	<input type="text"/>
d. Correspondence	<input type="text"/>	percentage?	<input type="text"/>
f. Other	<input checked="" type="text" value="x"/>	percentage?	<input type="text" value="100"/>
Comments: Hospital-based hands-on training course			

B Objectives

1. The main objectives of this course

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

Perform routine and advance antimicrobial susceptibility testing for commonly used antibiotics.

Recognize the different microbes using routine microbiological methods.

Master the different tools and techniques used in clinical microbiology laboratory for the identification of bacteria, viruses, parasites and fungi.

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material and availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of hospital practice in the clinical microbiology laboratory.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

This Hospital-based hands-on training course is designed to give the students full hospital laboratory and clinical exposure under direct faculty supervision. Students will spend four working days per week in the hospital for the entire semester. Under close supervision, the students are required to perform a minimum number of laboratory tests in the clinical microbiology laboratory. The student's logbook will be used to monitor the student's performance and achievements. The students will have one working day in the campus to meet their MSc facilitators and attend compulsory courses.

1. Topics to be Covered

List of Topics	No. of Weeks	Minimum number of tests
Blood culture	1-14	60
Respiratory specimens' culture	1-14	40
Wound swabs culture	1-14	40
Stool culture	1-14	20
CSF culture and gram stain	1-14	20
Other body fluids culture and gram stain	1-14	20
Urine analysis	1-14	80
Stool analysis	1-14	40
MRSA screening by culture	1-14	40
MRSA screening by PCR	1-14	40

CRE screening by culture	1-14	40
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2. Course components (total contact and credit hours per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned				384		384
	Actual				384		384
Credit	Planned				10		10
	Actual				10		10

3. Individual study/learning hours expected for students per week.

0

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1			
1.2			
2.0	Cognitive Skills		
2.1	Perform routine and advance antimicrobial susceptibility testing for commonly used antibiotics.	Hospital practical training	Student's Logbook and field supervisor feedback
2.2	Recognize the different microbes using routine microbiological methods.	Hospital practical training	Student's Logbook and field supervisor feedback
2.3	Master the different tools and techniques used in clinical microbiology laboratory for the identification of bacteria, viruses, parasites and fungi.	Hospital practical training	Student's Logbook and field supervisor feedback
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			
4.0	Communication, Information Technology, Numerical		
4.1			
4.2			

5.0	Psychomotor(if any)		
5.1	Perform routine and advance antimicrobial susceptibility testing for commonly used antibiotics.	Hospital practical training	Student's Logbook and field supervisor feedback
5.2	Master the different tools and techniques used in clinical microbiology laboratory for the identification of bacteria, viruses, parasites and fungi.	Hospital practical training	Student's Logbook and field supervisor feedback

5. Assessment Task Schedule for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Student's Logbook	1-14	80%
2	Field supervisor feedback	1-14	20%

D. Student Academic Counseling and Support

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

E Learning Resources

1. List Required Textbooks
2. List Essential References Materials (Journals, Reports, etc.)
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
4. 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.)
University Hospital
Ministry of Health Hospitals
2. Technology resources (AV, data show, Smart Board, software, etc.)
3. Other resources

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

Students will be given the chance to evaluate the hospital training quality by the end of the course via online evaluation forms.

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

The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.

3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ All Faculty _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: Hospital Practice 2

Course Code: 1004601-10 (HP2)

Date: 15-02-1440	Institution: Umm Al-Qura University
College: Medicine	Department: Microbiology

A. Course Identification and General Information

1. Course title and code:			
Hospital Practice 2	1004601-10 (HP2)		
2. Credit hours: 10			
3. Program(s) in which the course is offered:			
M.Sc. Medical Microbiology			
4. Name of faculty member responsible for the course			
All faculty			
5. Level/year at which this course is offered: 4			
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: NA			
9. Mode of Instruction (mark all that apply):			
a. Traditional classroom	<input type="text"/>	percentage?	<input type="text"/>
b. Blended (traditional and online)	<input type="text"/>	percentage?	<input type="text"/>
c. E-learning	<input type="text"/>	percentage?	<input type="text"/>
d. Correspondence	<input type="text"/>	percentage?	<input type="text"/>
f. Other	<input checked="" type="text" value="x"/>	percentage?	<input type="text" value="100"/>
Comments:			
Hospital-based hands-on training course			

B Objectives

1. The main objectives of this course

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

Perform routine and advance antimicrobial susceptibility testing for commonly used antibiotics.

Recognize the different microbes using routine microbiological methods.

Master the different tools and techniques used in clinical microbiology laboratory for the identification of bacteria, viruses, parasites and fungi..

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material and availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of hospital practice in the clinical microbiology laboratory.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

This Hospital-based hands-on training course is designed to give the students full hospital laboratory and clinical exposure under direct faculty supervision. Students will spend four working days per week in the hospital for the entire semester. Under close supervision, the students are required to perform a minimum number of laboratory tests in the clinical microbiology laboratory. The student's logbook will be used to monitor the student's performance and achievements. The students will have one working day in the campus to meet their MSc facilitators and attend compulsory courses.

1. Topics to be Covered

List of Topics	No. of Weeks	Minimum number of tests
VITEK, Microscan, or Phoenix bacteria & yeast identification	1-14	60
Antimicrobial susceptibility testing using VITEK, Microscan, or Phoenix	1-14	40
Antimicrobial susceptibility testing using disk diffusion method	1-14	40
Antimicrobial susceptibility testing using E-Test	1-14	20
HIV testing by ELISA	1-14	20
Hepatitis ELISA	1-14	20
Aspergillus culture	1-14	80
Candida culture	1-14	40
Zygomycetes culture	1-14	40

Dermatophytes KOH direct examination	1-14	40
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2. Course components (total contact and credit hours per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned				384		384
	Actual				384		384
Credit	Planned				10		10
	Actual				10		10

3. Individual study/learning hours expected for students per week.

0

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1			
1.2			
2.0	Cognitive Skills		
2.1	Perform routine and advance antimicrobial susceptibility testing for commonly used antibiotics.	Hospital practical training	Student's Logbook and field supervisor feedback
2.2	Recognize the different microbes using routine microbiological methods.	Hospital practical training	Student's Logbook and field supervisor feedback
2.3	Master the different tools and techniques used in clinical microbiology laboratory for the identification of bacteria, viruses, parasites and fungi.	Hospital practical training	Student's Logbook and field supervisor feedback
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			
4.0	Communication, Information Technology, Numerical		
4.1			
4.2			
5.0	Psychomotor(if any)		
5.1	Perform routine and advance antimicrobial	Hospital practical	Student's Logbook

	susceptibility testing for commonly used antibiotics.	training	and field supervisor feedback
5.2	Master the different tools and techniques used in clinical microbiology laboratory for the identification of bacteria, viruses, parasites and fungi.	Hospital practical training	Student's Logbook and field supervisor feedback

5. Assessment Task Schedule for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Student's Logbook	1-14	80%
2	Field supervisor feedback	1-14	20%

D. Student Academic Counseling and Support

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

E Learning Resources

1. List Required Textbooks
2. List Essential References Materials (Journals, Reports, etc.)
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
4. 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.)
University Hospital
Ministry of Health Hospitals
2. Technology resources (AV, data show, Smart Board, software, etc.)
3. Other resources

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching

Students will be given the chance to evaluate the hospital training quality by the end of the course via online evaluation forms.

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

The postgraduate committee of the department will conduct a systematic check for the evaluation of

all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.

3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ All Faculty _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440

COURSE SPECIFICATIONS

Form

Course Title: Research Project

Course Code: 1004601-06 (REP)

Date: 15-02-1440	Institution: Umm Al-Qura University
College: Medicine	Department: Microbiology

A. Course Identification and General Information

1. Course title and code:			
Research Project	Code: 1004601-06 (REP)		
2. Credit hours: 6			
3. Program(s) in which the course is offered:			
M.Sc. Medical Microbiology			
4. Name of faculty member responsible for the course			
All faculty			
5. Level/year at which this course is offered: 4			
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: NA			
9. Mode of Instruction (mark all that apply):			
a. Traditional classroom	<input type="text"/>	percentage?	<input type="text"/>
b. Blended (traditional and online)	<input type="text"/>	percentage?	<input type="text"/>
c. E-learning	<input type="text"/>	percentage?	<input type="text"/>
d. Correspondence	<input type="text"/>	percentage?	<input type="text"/>
f. Other	<input checked="" type="text" value="x"/>	percentage?	<input type="text" value="100"/>
Comments:			
This is laboratory-based research project			

B Objectives

1. The main objectives of this course

To provide an opportunity for original and independent research, including both practical and theoretical components, on a topic in clinical microbiology.

To develop and tune skills in time management.

To develop skills in formulating testable hypotheses.

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

The course contents are derived from the knowledge of established material available in textbooks, online reference material and availability of new research data as to date. This course will continue to evolve in the outcome of its objectives with changes made with its contents and presentation methods to provide the medical students with a comprehensive knowledge of research management and results writing.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

The MSc project will entail each student four months of full-time work investigating a topic related to medical microbiology and resulting in the submission of a research report. The project is conducted on a novel question, often associated with a larger research project being conducted by staff within the Department of Microbiology, or with an external organization. The project draws on a literature review on a general area of the research question, providing the background to understanding the issues associated with the research. The literature review also provides material suitable for the introduction of the research report. The project can be focused on existing data, or may require the collection of new data, or can aim to develop a new test or method. Each student will present a seminar on the results of his/her project towards the end of the research project period.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Research project	1-12	96

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

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned				96		96
	Actual				96		96

Credit	Planned				6		6
	Actual				6		6

3. Individual study/learning hours expected for students per week.

NA

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

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 targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1			
1.2			
2.0	Cognitive Skills		
2.1	The Student will be able to conduct an original and independent research, including both practical and theoretical components, on a topic in clinical microbiology.	Research project	Research supervisor and research report
2.2	The Student will develop skills in formulating testable hypotheses.	Research project	Research supervisor and research report
3.0	Interpersonal Skills & Responsibility		
3.1	The student will develop and tune skills in time management	Research project	Research supervisor and research report
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	The student will be able to collect data and perform simple and complex data analysis using different computer programs.	Research project	Research supervisor and research report
4.2			
5.0	Psychomotor(if any)		
5.1	The student will develop many technical laboratory skills in common and advance microbiology techniques.	Research project	Research supervisor and research report
5.2			

5. Assessment Task Schedule for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Research supervisor	1-14	40%
2	Research report	1-14	60%

D. Student Academic Counseling and Support

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

E Learning Resources

1. List Required Textbooks
2. List Essential References Materials (Journals, Reports, etc.)
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
4. 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.)
 - Four classrooms with 30 seats each
 - Three laboratories enough for 30 students each
2. Technology resources (AV, data show, Smart Board, software, etc.)
All class rooms and laboratories are equipped with multi-media projectors
3. Other resources
The department of microbiology have many laboratories, which are well-equipped with all basic and advance state-of-the-art facilities needed for the students training and their research projects.

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching
Students will be given the chance to evaluate the research project quality by the end of the course via online evaluation forms.
2. Other Strategies for Evaluation of Teaching by the Instructor or the Department
The postgraduate committee of the department will conduct a systematic check for the evaluation of all taught course by monitoring the quality of teaching materials, exams and students' performance and their feedback.
3. Procedures for Teaching Development

The postgraduate committee of the department will encourage the faculty staff for attending training workshops to improve the quality of their teaching.

4. Procedures for Verifying Standards of Student's Achievement

The postgraduate committee of the department will conduct random checks to verify the students' achievements by the end of each semester.

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

The course will be in continuous evaluation and will be updated at least once every 5 years

Name of Course Instructor: _____ All faculty _____

Signature: _____ Date Completed: 15-02-1440

Program Coordinator: _____ Dr. Sami Ashgar _____

Signature: _____ Date Received: 15-03-1440