Republic of Yemen

Ministry of Higher Education & Scientific Research

Emirates International University

Faculty of Dentistry

Department of Basic science

Doctor of Dental Surgery

Course Specification of Microbiology and Immunology

Course No. ( )

Review committee:

Head of the Department

Quality Assurance head

Dean of Faculty

I. Course Identification and General Information:

1	**Course Title:**	Microbiology and Immunology			
2	**Course Code & Number:**				
3	**Credit Hours:**	**Credit Hours**	**Theory Hours**		**Lab. Hours**
			Lecture	**Exercise**	
		5	4	--	2
4	**Study Level/ Semester at which this Course is offered:**	2nd Level / 1st Semester			
5	**Pre –Requisite (if any):**	Biology			
6	**Co –Requisite (if any):**	None			
7	**Program (s) in which the Course is Offered:**	Doctor of Dental Surgery			
8	**Language of Teaching the Course:**	English			
9	**Study System:**	Semester based System			
10	**Mode of Delivery:**	Full Time			
11	**Location of Teaching the Course:**	Faculty of Dentistry			
12	**Prepared by:**	Dr. Abdulbasit Al-Ghoury			

II. Course Description:

The course is concerning with the Bacteria, viruses, fungi, and basic immunology which infect human or play a role in human oral infection to prepare the students for understanding of infectious diseases and their management. This course is designed to provide the student with knowledge essential for the general medical dentistry practitioner related to microbes of medical significance regarding their structures; host parasite relationship; epidemiological and host factors regulating microbial diseases transmission pattern. It concerned with microbial pathogenesis and immune responses and the different methods of management and control of microbial diseases. In addition, to provide the student with the skill and attitude of observation, interpretation and integration of data needed to diagnose human oral microbial infections.

III. Course Intended Learning Outcomes (CILOs) : Upon successful completion of the course, students will be able to:			Referenced PILOs Learning out of program	
	A. Knowledge and Understanding:			
a1	Describe the basic concepts of microbes; terminology, morphology, structures, transmission, pathology, pathogenesis, immune responses, clinical picture, host parasite relationship, treatment, prevention and control of microbial diseases.		A1	Describe the scientific basis of dentistry and the relevant biomedical and behavioral sciences which form the basis for understanding human growth, development and health.
a2	Define the principles of management for common microbial oral infection and human life-threatening conditions.		A4	Describe the different clinical, laboratory and special investigatory procedures practiced in dentistry.
	B. Intellectual Skills:			
b1	Integrate the concepts and principles of the medical microbiology and immunology in various fields of medical sciences.		B1	.Incorporate theoretical basic biomedical, behavioral and dental sciences with the clinical signs and symptoms for appropriate understanding of disease and its management.
b2	Analyze clinical laboratory data related to infectious diseases to reach a final diagnosis and plan the management of patients.		B2	Apply critical thinking and evidence-based problem solving when providing patient's care.
	C. Professional and Practical Skills:			
c1	Perform different methods in the diagnosis of microbial diseases.		C1	Obtain and record a comprehensive history, perform an appropriate physical examination, and carry out different investigations to reach a correct diagnosis and treatment
	D. Transferable Skills:			
d1	Communicate effectively and respectively with colleagues, supervisors and staff members.		D3	Demonstrate leadership and teamwork skills with colleagues and other oral health team for effective

				delivery of oral health care.
d2	Use computers efficiently in reaching biomedical information to remain current with advances in knowledge and practice (research assignments), also the implementation of e-learning tool of education to communicate ideas, widen the scope of medical Microbiology knowledge and stimulate fruitful arguments effectively		**D1, 2**	1- Commit to continuous education, self-development and lifelong learning to remain updated with advances in dental practice 2- Use advanced information and communication technologies to enrich and diversify professional experience.

(A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
a1	Describe the basic concepts of microbes; terminology, morphology, structures, transmission, pathology, pathogenesis, immune responses, clinical picture, host parasite relationship, treatment, prevention and control of microbial diseases.	Lectures Seminars Discussion	Quizzes Midterm Exam Final Exam
a2	Define the principles of management for common microbial oral infection and human life-threatening conditions.	Lectures Seminars Discussion	Quizzes Midterm Exam Final Exam

(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
b1	Integrate the concepts and principles of the medical microbiology and immunology in various fields of medical sciences.	Lectures Seminars Discussion Case Study	Quizzes Midterm Exam Final Exam
b2	Analyze clinical laboratory data related to infectious diseases to reach a final	Lectures Seminars Discussion	Quizzes Midterm Exam

	diagnosis and plan the management of patients.	Case Study	Final Exam

(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
c1	Perform different methods in the diagnosis of microbial diseases.	Lab Experiments Training Case Study	Direct observation Practical Exam

(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
d1	Communicate effectively and respectively with colleagues, supervisors and staff members.	Discussion Self-Learning Presentation Seminars	Research Homework Group work Direct observation
d2	Use computers efficiently in reaching biomedical information to remain current with advances in knowledge and practice (research assignments), also the implementation of e-learning tool of education to communicate ideas, widen the scope of medical Microbiology knowledge and stimulate fruitful arguments effectively	Discussion Self-Learning Presentation Seminars	Research Homework Group work Direct observation

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Introduction	– Definition, purpose, philosophy and organization. – Taxonomy. – Morphology.	1st	4	a1, b1

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
		– Structures			
2	**General Bacteriology**	– Bacterial Classification, Morphology and Cell Structure. – Bacterial growth and metabolism.	2nd	4	a1, b1
3	**General Bacteriology**	– Bacterial Genetics. – Mechanisms of Bacterial Pathogenesis and General Methods for identification of bacteria.	3rd	4	a1, a2, b1
4	**General Bacteriology**	– Sterilization and Disinfection and Antisepsis. – Antimicrobial Chemotherapy	4th	4	a1, a2, b1
5	**General Bacteriology**	– Normal microbiota. – Dental black and carries with normal micobiom.	5th	4	a1, a2, b1
6	**Systematic Bacteriology**	- Bacillus, Clostridium. - Corynebacterium, Nocardia, actinomycetes. - Staphylococci. - Streptococc.	6th & 7th	8	a1, a2, b1
7	**Midterm Exam**	–	8th	2	a1, a2, b1
8	**Systematic Bacteriology**	– Oral bacterial infections.	9th	2	a1, a2, b1
9	**Immunology**	- Principles and immune system components. - Immune responses.	10th	4	a1, a2, b1
10	**Immunology**	- Innate and adaptive Immune responses.	11th	4	a1, a2, b1
11	**Immunology**		12th	4	a1, a2,

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
		- Clinical immunology			b1, b2
12	**Medical Mycology**	- Introduction, taxonomy, and Superficial Mycoses. - Cutaneous Mycoses.	13Th	4	a1, a2, b1, b2
13	**Medical Mycology**	- Subcutaneous Mycoses - Systemic and Opportunistic Mycoses.	14th	2	a1, a2, b1, b2
14	**Medical virology**	- Introduction ,Viral Pathogenesis and management. - Herpes and Papilloma.	14th	2	a1, a2, b1, b2
15	**Medical virology**	- Viral hepatitis - Orthomyxoviruses, coxakies viruses	15th	2	a1, a2, b1, b2
16	**Medical virology**	- Retroviruses. - GENERAL REVISION	15th	2	a1, a2, b1, b2
17	**Final Exam**	-	16 th	2	a1, a2, b1, b2
Number of Weeks /and Units Per Semester			**16**	**60**	

B. Case Studies and Practical Aspect:

No.	Tasks/ Experiments	Week Due	Contact Hours	Learning Outcomes (CILOs)
1	Lab. Safety and instrumentation	2nd	2	b1, b2, c1
2	- Bacterial morphology	3rd	2	b1, b2, c1
3	- Bacterial stains	4th	2	b1, b2, c1

No.	Tasks/ Experiments	Week Due	Contact Hours	Learning Outcomes (CILOs)
4	- Bacterial stains	5th	2	b1, b2, c1
5	- Bacterial cultures	6th	2	b1, b2, c1
6	- Bacterial identification and diagnosis	7th	2	b1, b2, c1
7	- Staphylococci	8th	2	b1, b2, c1
8	- Streptococci	9th	2	b1, b2, c1
9	- Fungal morphology and Mycoses diagnosis.	10th	2	b1, b2, c1
10	- Viral detection and diagnosis.	11th	2	b1, b2, c1
11	- Viral detection and diagnosis	12th	2	b1, b2, c1
12	- General revision	13th	2	b1, b2, c1
13	- Review	14th	2	
14	- Practical Exam	15th	2	b1, b2, c1
Number of Weeks /and Units Per Semester		15	28	

V. Teaching Strategies of the Course:

- Lectures
- Seminar
- Presentation
- Discussion
- Case studies
- Lab Experiments
- Training
- Case Study

VI. Assessment Methods of the Course:

- Quizzes
- Midterm Exam.
- Final Exam.
- practical Exam.
- Research
- Homework
- Group work
- Direct observation

VII. Assignments:

No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	**Assignment 1: seminars**	10th	5	d1,d2
Total			**5**	

VIII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Assignments	10th	5	5%	d1,d2
2	Quizzes 1	10th	5	5%	a1, a2, b1
3	Midterm Exam	8th	20	20%	a1, a2, b1
4	Practical Exam	15th	20	20%	b1, b2, c1
5	Final Exam	16th	50	50%	a1, a2, b1, b2
Total			100	100%	

IX. Learning Resources:

1- Required Textbook(s) (maximum two):

Geo. F. Brooks, et al (2007): Jawetz, Melnick, & Adelberg's Medical Microbiology, 24th edition, USA.

2- Essential References:

Marsh, P & Martin M. (2009): Oral Microbiology, 5th Edit. Elsevier Limited, USA.

3- Electronic Materials and Web Sites etc.:

Websites:

http://www.phage.org/black09.htm

http://www.microbe.org/microbes/virus_or_bacterium.asp

http://www.bact.wisc.edu/Bact330/330Lecturetopics

http://whyfiles.org/012mad_cow/7.html

http://www.microbelibrary.org/

http://www.hepnet.com/hepb.htm

http://www.tulane.edu/~dmsander/Big_Virology/BVHomePage.html

http://www.mic.ki.se/Diseases/c2.html

http://www.med.sc.edu:85/book/welcome.htm

http://www.biology.arizona.edu/immunology/microbiology_immunology.html

	X. Course Policies: (Based on the Uniform Students' By law (2007)
1	**Class Attendance:** Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	**Tardiness:** A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	**Exam Attendance/Punctuality:** No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	**Assignments & Projects:** Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	**Cheating:** Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	**Forgery and Impersonation:** Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	**Other policies:** The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

Faculty of Dentistry

Department of Basic science

Doctor of Dental Surgery

Course Plan (Syllabus) of Microbiology & Immunology

Course No. ( )

I. Information about Faculty Member Responsible for the Course:								
Name of Faculty Member:	Abdulbasit Al-Ghoury	Office Hours						
Location& Telephone No.:	Sana'a 772196085							
E-mail:	basit_alghoury@yahoo.com	SAT	SUN	MON	TUE	WED	THU	

II. Course Identification and General Information:

1	**Course Title:**	Microbiology and Immunology			
2	**Course Code & Number:**				
3	**Credit Hours:**	**Credit Hours**	**Theory Hours**		**Lab. Hours**
			Lecture	**Exercise**	
		5	4	--	2
4	**Study Level/ Semester at which this Course is offered:**	2nd Level / 1st Semester			
5	**Pre –Requisite (if any):**	Biology			
6	**Co –Requisite (if any):**	None			
7	**Program (s) in which the Course is Offered:**	Doctor of Dental Surgery			
8	**Language of Teaching the Course:**	English			
9	**Study System:**	Semester based System			
10	**Mode of Delivery:**	Full Time			
11	**Location of Teaching the Course:**	Faculty of Dentistry			
12	**Prepared by:**	Dr. Abdulbasit Al-Ghoury			

III. Course Description:

The course is concerning with the Bacteria, viruses, fungi, and basic immunology which infect human or play a role in human oral infection to prepare the students for understanding of infectious diseases and their management. This course is designed to provide the student with knowledge essential for the general medical dentistry practitioner related to microbes of medical significance regarding their structures; host parasite relationship; epidemiological and host factors regulating microbial diseases transmission pattern. It concerned with microbial pathogenesis and immune responses and the different methods of management and control of microbial diseases. In addition, to provide the student with the skill and attitude of observation, interpretation and integration of data needed to diagnose human oral microbial infections.

IV. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the Course, student will be able to:

	A. Knowledge and Understanding:
a1	Describe the basic concepts of microbes; terminology, morphology, structures, transmission, pathology, pathogenesis, immune responses, clinical picture, host parasite relationship, treatment, prevention and control of microbial diseases.
a2	Define the principles of management for common microbial oral infection and human life-threatening conditions.
	B. Intellectual Skills:
b1	Integrate the concepts and principles of the medical microbiology and immunology in various fields of medical sciences.
b2	Analyze clinical laboratory data related to infectious diseases to reach a final diagnosis and plan the management of patients.
	C. Professional and Practical Skills:
c1	Perform different methods in the diagnosis of microbial diseases.
	D. Transferable Skills:
d1	Communicate effectively and respectively with colleagues, supervisors and staff members.
d2	Use computers efficiently in reaching biomedical information to remain current with advances in knowledge and practice (research assignments), also the implementation of e-learning tool of education to communicate ideas, widen the scope of medical Microbiology knowledge and stimulate fruitful arguments effectively

V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	**Introduction**	– Definition, purpose, philosophy and organization. – Taxonomy. – Morphology. – Structures	1st	4

V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
2	**General Bacteriology**	– Bacterial Classification, Morphology and Cell Structure. – Bacterial growth and metabolism.	2nd	4
3	**General Bacteriology**	– Bacterial Genetics. – Mechanisms of Bacterial Pathogenesis and General Methods for identification of bacteria.	3rd	4
4	**General Bacteriology**	– Sterilization and Disinfection and Antisepsis. – Antimicrobial Chemotherapy	4th	4
5	**General Bacteriology**	– Normal microbiota. – Dental black and carries with normal micobiom.	5th	4
6	**Systematic Bacteriology**	- Bacillus, Clostridium. - Corynebacterium, Nocardia, actinomycetes. - Staphylococci. - Streptococc.	6th & 7th	8
7	**Midterm Exam**	–	8th	2
8	**Systematic Bacteriology**	– Oral bacterial infections.	9th	2
9	**Immunology**	- Principles and immune system components. - Immune responses.	10th	4
10	**Immunology**	- Innate and adaptive Immune responses.	11th	4
11	**Immunology**	- Clinical immunology	12th	4
12	**Medical Mycology**	- Introduction, taxonomy, and Superficial Mycoses. - Cutaneous Mycoses.	13Th	4
13	**Medical Mycology**	- Subcutaneous Mycoses		2

V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		- Systemic and Opportunistic Mycoses.		
14	Medical virology	- Introduction ,Viral Pathogenesis and management. - Herpes and Papilloma.	14th	2
15	Medical virology	- Viral hepatitis - Orthomyxoviruses, coxakies viruses	15th	2
16	Medical virology	- Retroviruses. - GENERAL REVISION	15th	2
17	Final Exam	-	16th	2
Number of Weeks /and Units Per Semester			16	60

B. Case Studies and Practical Aspect:

No.	Tasks/ Experiments	Week Due	Contact Hours
1	Lab. Safety and instrumentation	2nd	2
2	- Bacterial morphology	3rd	2
3	- Bacterial stains	4th	2
4	- Bacterial stains	5th	2
5	- Bacterial cultures	6th	2
6	- Bacterial identification and diagnosis	7th	2
7	- Staphylococci	8th	2
8	- Streptococci	9th	2
9	- Fungal morphology and Mycoses diagnosis.	10th	2

B. Case Studies and Practical Aspect:			
No.	**Tasks/ Experiments**	**Week Due**	**Contact Hours**
10	- Viral detection and diagnosis.	11th	2
11	- Viral detection and diagnosis	12th	2
12	- General revision	13th	2
13	- Review	14th	2
14	- Practical Exam	15th	2
Number of Weeks /and Units Per Semester		**14**	**28**

VI. Teaching Strategies of the Course:

- Lectures
- Seminar
- Presentation
- Discussion
- Case studies
- Lab Experiments
- Training
- Case Study

VII. Assessment Methods of the Course:

- Quizzes
- Midterm Exam.
- Final Exam.
- practical Exam.
- Research
- Homework
- Group work
- Direct observation

VIII. Assignments:

No.	Assignments	Week Due	Mark
1	**Assignment 1:** seminars	10th	5
	Total		**5**

IX. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	**Assignments**	10th	5	5%
2	**Quizzes 1**	10th	5	5%
3	**Midterm Exam**	8th	20	20%
4	**Practical Exam**	15th	20	20%
5	**Final Exam**	16th	50	50%
	Total		**100**	**100%**

X. Learning Resources:

1- Required Textbook(s) (maximum two):

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2- Essential References:

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Websites:

http://www.phage.org/black09.htm
http://www.microbe.org/microbes/virus_or_bacterium.asp
http://www.bact.wisc.edu/Bact330/330Lecturetopics
http://whyfiles.org/012mad_cow/7.html
http://www.microbelibrary.org/
http://www.hepnet.com/hepb.htm
http://www.tulane.edu/~dmsander/Big_Virology/BVHomePage.html

http://www.mic.ki.se/Diseases/c2.html http://www.med.sc.edu:85/book/welcome.htm http://www.biology.arizona.edu/immunology/microbiology_immunology.html

XI. Course Policies: (Based on the Uniform Students' Bylaw (2007)

1	**Class Attendance:** Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
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