

T6. Course Specification (CS) توصيف المقرر

Institution NAJRAN UNIVERSITY Date of Report: Sunday, 21/05/2017 (25/08/1438)
College/Department College of Applied Medical Sciences /Clinical Laboratory Sciences.

A. Course Identification and General Information

1. Course title and code: Environmental Microbiology 2-MIC458.			
2. Credit hours 2 (1+1)			
3. Program(s) in which the course is offered. Clinical Laboratory Sciences. (If general elective available in many programs indicate this rather than list programs)			
4. Name of faculty member responsible for the course Lectures: Dr Mohammad AM Nasher Practicals: Mr Mohammad Ridhwan			
5. Level/year at which this course is offered 7th level/ 4th year			
6. Pre-requisites for this course (if any) Clinical Bacteriology (1), Clinical Bacteriology (2), Medical Virology, Medical Mycology and Medical Parasitology			
7. Co-requisites for this course (if any) -----			
8. Location if not on main campus Main Campus			
9. Mode of Instruction (mark all that apply)			
a. Traditional classroom	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
b. Blended (traditional and online)	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="80"/>
c. e-learning	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="20"/>
d. Correspondence	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
f. Other	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
Comments:			

B Objectives

1. What is the main purpose for this course?

To provide students of the College of Applied Medical Sciences with a comprehensive and up-to-date guide to environmental microbiology including basic scientific knowledge as well as cognitive, psychomotor and interpersonal and numerical skills in the most reliable, easy, attractive and illustrated manner.

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

The students are advised and encouraged to take advantage of the IT facilities that are available in the library at the main campus to develop their understanding of the subjects of the course.

Other development plan include:

Problem-based learning.

Group assignments.

Practical notebook.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Normal flora of human body.	1	1
Hand washing and hand hygiene.	1	1
Introduction of Nosocomial infections (hospital acquired infections).	2	2
Common types of hospital acquired infections (wound, UTI, respiratory, skin, gastrointestinal infection, bacteraemia and septicemia).	2	2
Basics of infection control in hospital.	2	2
Microbiology of air (introduction and air borne infections).	2	2
Microbiology of food (introduction and food borne infections).	2	2
Microbiology of water (introduction and water borne infections).	2	2
Microbiology of soil (introduction and soil borne infections).	1	1
Total	15	15
PRACTICALS		
Microbiological monitoring of hand washing and hand hygiene.	2	2

Microbiological examinations for identification of hospital environment. include tables, beds, clothes (bed sheets), walls, hands, staff, wards/casualty, OT (minor and major), instruments etc.	3	3
Surveillance of hospital supplies, sterilizers and environment.	2	2
Microbiological examination of air.	2	2
Microbiological examination of food.	2	2
Microbiological examination of water.	2	2
Microbiological examination of soil.	2	2
Total	15	15

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	15	-----	-----	15	-----	30
Credit	1	-----	-----	1	-----	2

3. Additional private study/learning hours expected for students per week.	
Group assignments:	
The students will be divided into small groups (3 students/group) and will be given a research subject to be prepared in a written and software format for presentation. (1 credit hour/week).	
	1 Credit hour/Week

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
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Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

	NQF Learning Dmain And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge: By the end of this course the student should be able to:		
1.1	Describe the value of proper hand washing and the importance of efficient decontamination procedures.	- Lectures, tutorials and independent study assignments.	Multiple choice questions. Short accounts. Group assignment. Practical examination.
1.2	Memorize knowledge about hospital-acquired (nosocomial) infections and infection control practices in hospitals and health institutes.	- Lectures, tutorials and independent study assignments.	Multiple choice questions. Short accounts. Group assignment. Practical examination.
2.0	Cognitive Skills: By the end of this course the student should be able to:		
2.1	Explain suitable diagnostic procedures for nosocomial infections and the hospital environment (air, water, food, soil).	Lectures, practical laboratory work and groups assignments.	Multiple choice questions. Short accounts. Group assignment. Practical examination.
2.2	Evaluate the ability to think critically and make reasonable judgments by analyzing, combining and evaluating quantitative and non-quantitative information.	Practical laboratory work and groups assignments.	Multiple choice questions. Short accounts Group assignment. Practical examination.
3.0	Interpersonal Skills & Responsibility: By the end of this course the student should be able to:		
3.1	Illustrate basic skills of microbiological techniques for detection and identification of nosocomial infections and hospital environment (air, water, food, soil).	Group assignment, practical classes and tutorials.	Multiple choice questions. Short accounts. Group assignment. Practical examination.
3.2	Appraise the role of microbiologist in infection control committee of the hospital.	Group assignment, practical classes and tutorials.	Multiple choice questions. Short accounts. Group assignment. Practical examination.
4.0	Communication, Information Technology, Numerical: By the end of this course the student should be able to:		
4.1	Demonstrate efficiently the different knowledge resources including the library resources and the web sites.	Lectures, tutorials and independent study assignments.	Multiple choice questions. Short accounts. Group assignment. Practical examination.
4.2	Assess and manipulate laboratory results through various mathematical and statistical methods as well as clinical evaluation of nosocomial infected patients and hospital environment (air, water, food, soil).	Lectures, tutorials and independent study assignments.	Multiple choice questions. Short accounts. Group assignment. Practical examination.

5.0	Psychomotor		
5.1	Not applicable	-----	
5.2	Not applicable	-----	

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 intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	1 st Quiz	3 rd week	2.5%
2	Mid-term Exam	6 th week	20%
3	2 nd Quiz	12 th week	2.5%
4	Assignments	13 th week	5%
5	Practical notebook	14 th week	5%
6	Attendance	The whole semester	5%
7	Final practical exam	15 th week	20%
8	Final term Exam	15 th week	40%

D. Student Academic Counseling and Support

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

Each of The member staffs responsible for theoretical and practical parts will be available for 2 hours (10 am – 12 am) in a day per a week for individual student counseling and advice. This should include the time allocation and schedule for teaching staff to meet with students.

E. Learning Resources

1. List Required Textbooks
<ol style="list-style-type: none"> 1. Medical Microbiology. Jawetz, Melnick and Adelberg's. Latest edition. 2. Bailey and Scott's Diagnostic Microbiology. Baron and Finegold. Latest Edition. 3. Color Atlas of diagnostic Microbiology. Maza LD, Pezzlo M, Baron E. Mosby- year book Inc., USA. Latest Edition 4. Manual of Clinical Microbiology. Murray PR, et al. ASM Press. Latest Edition. 5. Manual for the Laboratory Identification and Antimicrobial Susceptibility Testing of Bacterial Pathogens of Public Health Importance in the Developing World. Perilla MJ et al. CDC and WHO. 6. District laboratory practice in tropical countries. Monica C. Cambridge Univ. Press. Latest edition. 7. Topley and Wilson's Microbiology and microbial infections. Balows A and Sussman M. Hodder Arnold Publication. Latest edition. 8. Zinsser Microbiology. Wolfgang et al. Appelton & Lange Co., CA, USA. Latest edition.
2. List Essential References Materials (Journals, Reports, etc.)
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)
<ol style="list-style-type: none"> 1. E-Learning (education by fun): Video tapes (audio-visual) www.WHO.com www.CDC.com www.ASM.com
5. 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.)
<ol style="list-style-type: none"> Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) <ul style="list-style-type: none"> - Lecture room (20 students capacity) supplied with data show for lectures presentation - Laboratory (15 students capacity) supplied with data show, microscopes (one for each student), incubators, ovens as well as reagents and kits for microbiological techniques. Computing resources (AV, data show, Smart Board, software, etc.) <ul style="list-style-type: none"> - Computers and multimedia are already available. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) <ul style="list-style-type: none"> - Library supplied with reference text books, electronic resources.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching - Confidential completion of standard course evaluation questionnaire. - Focus group discussion with small groups of students.
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor - Observations and assistance from colleagues. - Independent advice on assignment tasks from the Dean and governing body.
3 Processes for Improvement of Teaching - Reviewing the feedback and action plan for improvement will be organized accordingly.
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) - Check marking of a sample of examination papers by other staff members. - Check marking of assignment tasks by the Dean and governing body.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. - Based on students' questionnaires feedback.

Faculty or Teaching Staff: **Dr Mohammad AM Nasher**

Signature: 

Date Report Completed: **Sunday, 21/05/2017 (25/08/1438)**

Received by: **Dr Bandar al-Shehri, Dean/ Head, Department of Clinical Laboratory Sciences**

Signature: _____ Date: **Sunday, 21/05/2017 (25/08/1438)**