



Course specifications (Postgraduate Degree)

Course Title:	Advanced Studies in Bacteriology
Course Code:	621 MBio
Program:	PhD in Microbiology
Department:	Botany and Microbiology
College:	Science
Institution:	King Saud University

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A. Course Identification

1. Credit hours: 2 (1+1)
2. Course type <input checked="" type="checkbox"/> Required <input type="checkbox"/> Elective
3. Level/year at which this course is offered: First level
4. Pre-requisites for this course (if any): NA
5. Co-requisites for this course (if any): NA

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom X	28	100 %
2	Blended		
3	E-learning X		
4	Correspondence X		
5	Other		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	Lecture	20
2	Laboratory/Studio	
3	Seminars	8
4	Others (specify)	
	Total	28
Other Learning Hours*		
1	Study	15
2	Assignments	8
3	Library	15
4	Projects/Research Essays/Theses	7
5	Others(specify)	
	Total	45

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

B. Course Objectives and Learning Outcomes

<p>1. Course Description Studying the laws of thermodynamics governing energy relations in different systems and through bacterial enzymes and their accompanying, In addition to discussing and following up the modern scientific applications in bacteriology in the relevant scientific journals.</p>
<p>2. Course Main Objective Supervised readings and discussion of experimental approaches in bacteriology including related Journals.</p>

3. Course Learning Outcomes

Course Learning Outcomes (CLOs)		Aligned PLOs*
1	Knowledge	
1.1	Students will be able to describe variety of classical and modern of bacteriology the of used for microbial diagnosis	K1.4
1.2	Students will be able to underline the Infection Mechanism in bacteria that require further investigation in the field of specialization.	K1.2
1...		
2	Skills	
2.1	Students will be able to design antimicrobial experiments with appropriate controls, and to conduct original research.	S2.2
2.3	Students will be able to utilize the advanced techniques to distinguish between different types of bacteria in the specialized field.	S2.5
2...		
3	Competence	
3.1	Students will be able to communicate effectively with research journals and scientific conferences to discuss bacterial infection control.	C3.6
3.2	Students will be able to reconstruct new strategies for prevention and treatment of bacterial infections.	C3.1
3...		

* Program Learning Outcomes

C. Course Content

No	List of Topics	Contact Hours
1	Introduction and Methods of Advanced Studies in Bacteriology	6
2	Infection Mechanism, Antimicrobial and Infection Control	6
3	Advanced studies in Genetics and Molecular Diagnostics of Bacteria	6
4	Methods of Advanced Techniques in Bacteriology	4
5	Advanced Analysis of Research in Bacteriology	6
Total		28

D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge		
1.1	Students will be able to describe variety of classical and modern of bacteriology the of used for microbial diagnosis	Search and read related updated articles. Practice	Verbal seminars, tutorials
1.2	Students will be able to underline the Infection Mechanism in bacteria that require further investigation in the field of specialization.		
...			

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
2.0	Skills		
2.1	Students will be able to design antimicrobial experiments with appropriate controls, and to conduct original research.	laboratory exercises, open discussion - Team studies and reports	Evaluation of students activities presentations
2.2	Students will be able to utilize the advanced techniques to distinguish between different types of bacteria in the specialized field.		
...			
3.0	Competence		
3.1	Students will be able to communicate effectively with research journals and scientific conferences to discuss bacterial infection control.	Group task work Production of information booklets exchange	Hands out/ open discussion
3.2	Students will be able to reconstruct new strategies for prevention and treatment of bacterial infections.	E-learning to deliver learning materials	
...			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Written exam	15	40%
2	Review of journal article	3	10%
3	On-line assessment for written work and paper review	3	10%
4	Practical assessment; Based on laboratorial-industry practices, supervised and assessed by experienced staff in advanced field of bacteriology.	4	10%
5	Laboratory and technical skills	3	10%
6	Oral presentation	7	10%
7	Laboratory report	3	10%
8			

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

E. Student Academic Counseling and Support

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

Teacher-guided activities; 2 hours per week

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Cowan and Steel's Manual for the Identification of Medical Bacteria – 3rd Edition Microbiology (Lippincotts illustrated reviews) Harvey <i>et al.</i> ,
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Essential Reference Materials	Medical Bacteriology journal Microbiology journal Nature microbiology journal
Electronic Materials	Blackboard, whatsapp, padlet, pubmed, Recognized journals websites.....
Other Learning Materials	Microsoft office Reflow/endnote

2. Educational and research Facilities and Equipment Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms, laboratories, demonstration rooms/labs
Technology Resources (AV, data show, Smart Board, software, etc.)	AV, data show, Smart Board, software
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Bacteria lab (including bacteria and tissue culture), microbial genetic analysis lab (PCR, western blot, high speed bacteria centrifuge, cooler centrifuge, bacterial shaker-incubator, air pump....

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Student, peer Reviewer, program leaders	Course evaluation questioner Students- faculty meetings
Extent of achievement of course learning outcomes	Program Leaders, faculty, quality and development unit	Preparation of course report Peer consultation on teaching Departmental council discussions Self evaluation
Quality of learning resources	Student, faculty, internal and external auditors	Course evaluation Self-study report

Evaluation Areas/Issues (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Botany and microbiology
Reference No.	
Date	