



هيئة تقويم التعليم

Education Evaluation Commission

المركز الوطني للتقويم والاعتماد الأكاديمي

National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

Course Specifications

Institution: King Saud university	Date:
College/Department : Science\ Botany and Microbiology	

A. Course Identification and General Information*

1. Course title and code: Bot 551 Advanced Genetic			
2. Credit hours: 2(1+1)			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs)			
4. Name of faculty member responsible for the course Dr. Humaira Rizwana			
5. Level/year at which this course is offered: Postgraduate students 1st semester			
6. Pre-requisites for this course (if any): The Structure of Nucleus, Chromosome Structure, eukaryotic DNA, prokaryotic DNA and Plasmids.			
7. Co-requisites for this course (if any): Bot.252 ,Bot.253 ,Bot.354 and Bot.358			
8. Location if not on main campus: College of Science- University City for Female Students and Dir'iya for male students			
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 type="checkbox"/>	What percentage?	<input type="checkbox"/>
c. e-learning	<input type="checkbox" value="*"/>	What percentage?	<input type="checkbox" value="75"/>
d. correspondence	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
f. other	<input type="checkbox" value="*"/>	What percentage?	<input type="checkbox" value="25"/>
Comments:			

B Objectives

<p>1. What is the main purpose for this course? To understand and acquire knowledge about advance genetics, which includes in depth understanding of the role of DNA its fine structure, functions, changes it undergoes and its effects on plant structure and function, manipulation of DNA and its application.</p>
<p>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)</p> <p>Web based references have already been implemented. Similarly, the advancements and new additions have been added to course material.</p>

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
The genetic material: Structure of nucleotide, Pyrimidines and Purines, formation of a polynucleotide chain.	2	2
Role and functions of DNA and RNA	3	2
Mutation: Recall the process, Various types of changes in DNA and its effects.	2	2
Mutagens: Different types of mutagens a detail account. Its mode of action and its target sites.	2	2
Mutagenesis: A complete understanding	1	1
Mutational breeding: Breeding and types of breeding processes. Mutational breeding and its examples.	2	2
Genetic engineering, methods and its application.	3	3

2. Course components (total contact hours and credits per semester):							
		Lecture	Tutorial	Laboratory / Studio	Practical	Other:	Total
Contact	Planned	15	1 hours\week	-	30 hours\semester		45hours\semester

Hours	Actual	15	1 hours\week		2 hours\week		
Credit	Planned	15	3 hours\week		2 hours\week		
	Actual	15	3 hours\week		1 hours\week		

3. Additional private study/learning hours expected for students per week. 3
2 hours weekly for the homework and pre-laboratory reports assignments

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

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 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. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Students will learn and have complete understanding of DNA and RNA structure	Lectures(ppts,) Practical. E-references	Practical and theatrical tests Practical reports
1.2	Students will be able to relate the importance of enzymes in the process of replication translation and transcription.		
1.3	Students will understand and learn various damaging effects of chemical and physical mutagens on DNA. Consequences of these effects will be understood as well.		
1.4	Students will be well versed with Genetic engineering and all its application.		
2.0	Cognitive Skills		
2.1	Various tasks such as concept maps, recalling from previous knowledge and its correlation with present knowledge will be tested.	Quiz, group activities ,recalling and sharing as group activities, Practical. E-references	Practical and theatrical tests Practical reports
2.2			
3.0	Interpersonal Skills & Responsibility		
3.1	Project designing	Problem solving in the tutorial / recitation	Performance evaluation
3.2	Powerpoint presentation	Computer lab	

		Lectures	
3.3	Work independently and as part of a team.	Computer lab Lectures	
4.0	Communication, Information Technology, Numerical		
4.1	Use the computer for analysing and processing the experimental data.	Writing laboratory reports Incorporating the use and utilization of computer in the course requirements	Evaluating the laboratory written reports.
4.2	Use computational tools.		Evaluating the problems solutions.
4.3	Report writing by the students teams.		Evaluating the oral discussion in the lecture.
4.4	Use the computer for searching an updating topic related to the course		
5.0	Psychomotor		
5.1	NA		
5.2			

5. Schedule of Assessment Tasks 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	Oral presentations	5 th	10%
2	Group project	8 th	10%
3	Test (2)	3 rd /6 th	30%
4	Quiz (2)	4 th / 7 th	10%
5	Final exam	16 th	40%

D. Student Academic Counseling and Support

<p>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)</p> <ul style="list-style-type: none"> - Office hours 8 hr/ week. - Student meeting. - E-mail

E Learning Resources

<p>1. List Required Textbooks:</p> <ul style="list-style-type: none"> - Concepts of genetics (8th ed.) 2005 by Klug, W. S. and Cummings, M. R. - Essentials of molecular biology (3rd Ed) 1998, by Malacinski, G. M. and Freifelder, D. - Principles of Gene Manipulation (1994) by Old, R.W. and Primrose, S. B.
<p>2. List Essential References Materials (Journals, Reports, etc.);</p> <ul style="list-style-type: none"> -Concepts of genetics (8th ed.) 2005 by Klug, W. S. and Cummings, M. R.

<ul style="list-style-type: none"> -Essentials of molecular biology (3rd Ed) 1998, by Malacinski, G. M. and Freifelder, D. -Molecular Biology: second edition (1998) by Turner, P.C. ; McLennan, A.G. and Bates, A.D.
<p>3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.:</p> <ul style="list-style-type: none"> - Websites on the internet that are relevant to the topics of the course - http://www.bios.co/uk
<p>4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.</p> <ul style="list-style-type: none"> • Multi media associated with the text book and the relevant websites

F. Facilities Required

<p>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.)</p>
<p>1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)</p> <ul style="list-style-type: none"> - Lecture room with at least 25 seats - laboratory with at least 25 places
<p>2. Technology resources (AV, data show, Smart Board, software, etc.)</p> <ul style="list-style-type: none"> - Computer room containing at least 15 systems - Scientific calculator for each student.
<p>3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)</p> <ul style="list-style-type: none"> - Availability of chemicals, glassware and equipment relevant to the course material - Safety facilities

G Course Evaluation and Improvement Processes

<p>1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> - Through electronic evaluation forms and teachers evaluation on edugate prior to viewing their results - Course evaluation by student - Students- faculty meetings -
<p>2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> • Peer consultation on teaching • Departmental council discussions • Discussions within the group of faculty teaching the course

3. Processes for Improvement of Teaching

- Conducting workshops given by experts on the teaching and learning methodologies
- Periodical departmental revisions of its methods of teaching
- Monitoring of teaching activities by senior faculty members

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)

- Providing samples of all kind of assessment in the departmental course portfolio of each course
- Assigning group of faculty members teaching the same course to grade same questions for various students. Faculty from other institutions are invited to review the accuracy of the grading policy
- Conducting standard exams such as the American Plant Society exams or others.

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

- The course material and learning outcomes are periodically reviewed and the changes to be taken are approved in the departmental and higher councils.
- The head of department and faculty take the responsibility of implementing the proposed changes.

Name of Course Instructor: **Dr. Humaira Rizwana and Dr, Mona S. Alwahibi**

Signature: _____ Date Specification Completed:

Program Coordinator: _____

Signature: _____ Date Received: _____