



Kingdom of Saudi Arabia
**The National Commission for Academic
Accreditation & Assessment**

COURSE SPECIFICATION

Course title **General Biology**

Course code: **4011101-4**

Revised September 2015



Course Specification

For Guidance on the completion of this template, please refer to *of Handbook 2*
Internal Quality Assurance Arrangements

Institution: UM AL – QURA UNIVERSITY
College/Department : Faculty of Science – Department of Biology

A Course Identification and General Information

1. Course title General Biology
2. Course code: 4011101-4
2. Credit hours: 4hrs
3. Program(s) in which the course is offered. : BSc Microbiology
3. Name of faculty member responsible for the course: Botany academic staff members / Zoology academic staff members
5. Level/year at which this course is offered: 1st Year / Level 2
6. Pre-requisites for this course (if any): ---
7. Co-requisites for this course (if any): ---
8. Location if not on main campus: Main campus



B Objectives

After completing this course student should be able to:

1. Define the principles and concepts of the living cells.
2. Differentiate between animal and plant cells
3. Aware of the protoplasmic and non-protoplasmic cell contents and its structure and function.
4. Study the different types of animal and plants tissues (structure and function).
5. Understand the biological activities of the living cells.
6. Aware of DNA structure and meiosis mitosis.

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

The course will cover the principle of eukaryotic cell structure and function. This course will provide a conceptual and experimental background in biology sufficient to enable students to take courses that are more advanced in related fields.

1 Topics to be Covered		
Topic	No of Weeks	Contact hours
❖ Introduction: - The living cells. - Basis of cytology and histology. -Major differences between Eukaryotic and Prokaryotic cells. -Major differences between plant and animal cells	1	3
❖ Plant cell morphology and structure I - Cell wall, middle lamella, types of pits. - Structure and function. - Cytoplasmic ultra structure and function: Endoplasmic reticulum; mitochondria; Golgi apparatus, ribosomes	1	3



<p>❖ Plant cell morphology and structure II - Plastids, chloroplasts, chromoplast, leucoplast types, morphology, ultra structure and function, distribution. -Non protoplasmic contents of plant cell (cell vacuole – carbohydrates – proteins – fats and oils – crystals glycosides – latex – alkaloids – tannins – organic acids)</p>	1	3
<p>❖ Animal cell morphology and structure I -Fine structure of the Cell membrane and Cell junctions -Functions of cell membrane (cell transport) -Mitochondria, Peroxisomes, Lysosomes (phagocytosis, autocytosis and pinocytosis) Centrioles, cytoskeleton, microtubules and microfilaments,</p>	1	3
<p>❖ Animal / Plant cell morphology and structure: The Nucleus -Nucleus, nuclear envelope, nucleopores, nucleoplasm, chromatin and nucleolus Chromosomes, chromatids, centromere, chronema, nucleoproteins -Molecular structure of nucleic acids (DNA and RNA) Basis of transcription and translation Exercises, transcription of DNA sequence to RNA, translation of mRNA to a peptide chain of amino acids</p>	1	3
<p>❖ Plant / Animal cell morphology and structure: Cell division Cell cycle (Growth (G1), Synthesis (S), Gap (G2) and Mitose (M) phases) Replication of DNA during S phase) Cell Division (Mitosis and Meiosis)</p>	1	3
<p>❖ Plant Histology I -Meristematic tissues in plants – classification of meristematic tissues – Apical and lateral meristems – 1^{ty} and 2^{ty} meristems. -Permanent tissues – Epidermis – Types of epidermis and their functions – Types of stomata – Hairs and trichomes</p>	1	3
<p>❖ Plant Histology II -Parenchyma tissues – Characters of parenchyma cells and their types – Collenchyma tissues - Characters of collenchyma cells and their types. -Sclerenchyma – Fibers – Sclereids – Their structure, types, and distribution in plant body. -Secretary tissues</p>	1	3



❖ Plant Histology III -Conducting tissues – Xylem structure – 1ry and 2ry xylem. -Phloem tissue (structure – function) – 1ry and 2ry phloem. -Types of vascular bundles – Some 2ry structures in plants – Annual rings – Periderm – lenticles.	1	3
❖ Animal Histology I -Introduction to Animal tissues difference and distribution of the animal tissues in the human body -Epithelial tissues, simple and stratified epithelia, glandular epithelia	1	3
❖ Animal Histology II -Connective tissues	1	3
❖ Animal Histology III -Muscular tissues -Nervous tissues	1	3
	14 weeks	42hrs

2 Course components (total contact hours per semester):			
Lecture : 42	Tutorial:	Practical: 42	Other:

**3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week):
12h (reports & essay)**

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. **Knowledge** : Description of the knowledge to be acquired

Upon successful completion of this course The student will be able to:

- **Student will be familiar with the general characters of plant cells.**
- **Student will be aware with the differences between plant and animal cells.**
- **Student will be familiar with protoplasmic and non protoplasmic contents of plant cell.**
- **Student will be familiar with the different types of plant tissues, their functions and distribution within plant body.**

- 1- **Define the difference between prokaryotic and eukaryotic cells.**
- 2- **Describe the fine structure and functions of all living organelles.**
- 3- **Explain biological activities of the animal cells.**
- 4- **List the events of cell cycle and cell divisions.**
- 5- **Detect the difference between animal tissues.**
- 6- **Explain the function of animal tissues.**
- 7- **Discuss the distribution of all animal tissues in the body organs.**

(ii) **Teaching strategies to be used to develop that knowledge**

- The methodology includes a combination of lectures by the lecturer, seminar presentation by the students and web-interactions.
- At the end of the programme, students will be divided into groups for seminar presentation on important areas of the course to assess their understanding and comprehension of the course.
- All students will be involved in on-line learning process and each student is required to create an E-mail address to facilitate student web interactions.
- Using images and movies
- Encouraging students to collect the new information about what the new in Microbiology
- Enable the reference books and scientific sites concerning General biology in

internet.

(iii) Methods of assessment of knowledge acquired:

- Periodical exam and reports 10%
- Mid- term theoretical exam 20%
- Mid-term practical exam 5%
- Final practical exam 15%
- Final exam 50%

b. Cognitive Skills

(i) Cognitive skills to be developed

Having successfully completed the course students should be able to:

Explain the structure and function of the plant and animal cells.

- Understand the ultrastructure and function of living organelles.
- Follow some of the biological activities of the cell.
- Detect the events of cell cycle and cell division.
- List types of plant and animal tissues.
- Differentiate between plant and animal tissues.
- Explain specific characters of each tissues.
- Classify the plants and animal tissues
- The student will be able to detect the plant and animal tissues in the selected organs examined under the microscopic.

(ii) Teaching strategies to be used to develop these cognitive skills:

- Lectures
- Brain storming
- Discussion

(iii) Methods of assessment of students cognitive skills

- Exam must contain questions that can measure these skills.
- Quiz and exams
- Discussions after the lecture

c. Interpersonal Skills and Responsibility

At the end of the course, the student will be able to:

Describe the structure of the cell

- Explain most of the biological activities of the cell
- Make short presentation about the cell and the animal tissues.

- **Defined the desirable sections.**

(i) Teaching strategies to be used to develop these skills and abilities

- Lab work
- Case Study
- Active learning
- Small group discussion

(iii) Methods for assessment of the students interpersonal skills and capacity to carry responsibility

- Evaluate the efforts of each student in preparing the report.
- Evaluate the scientific values of reports.
- Evaluate the work in team
- Evaluation of the role of each student in lab group assignment
- Evaluation of students presentations

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain. At the end of the course, the student will be able to:

1. Enhancing the ability of students to use computers and internet.
2. Interpret biological data
3. Present biological data orally.
4. Know how to write a report.

5. Teaching strategies to be used to develop these skills

1. Homework (preparing a report on some topics related to the course depending on web sites).
2. Seminars presentation
3. Field visits to factories

(iii) Methods of assessment of students numerical and communication skills



<ol style="list-style-type: none"> 1. Evaluation of presentations 2. Evaluation of reports 3. Practical exam
<p>e. Psychomotor Skills (if applicable)</p> <p>At the end of the course, the student will be able to:</p> <ul style="list-style-type: none"> • Practice the basic Lab. Skills. • Use light microscope in accuracy. • Prepare microscopic slides.
<p>(ii) Teaching strategies to be used to develop these skills</p> <p>- Follow up students the students in lab and during carryout all microbiological techniques</p>
<ol style="list-style-type: none"> 4. Methods of assessment of students psychomotor skills <ul style="list-style-type: none"> • Giving additional marks for preparing correct media, bacterial slides , good seminar presentation • Practical exam.

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	Exercises & Home works	All weeks	5 %
2	Participation	All weeks	5 %
3	Written Test (1)	6 th week	15%
4	Written Test (2)	11 th week	15%
5	Final Exam (Practical)	15 th week	20%
6	Final Exam (theoretical)	16 th week	40%

D. Student Support

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

Office hours: 10 hrs

E. Learning Resources

Required Text(s):

Reece et. al (2013) Campbell Biology 10th edition. Benjamin Cummings.

Mauseth, J. (2008) Plant Anatomy. Blackburn Press

Wojciech Paulina (2015) Histology: a text and atlas. LWW

Recommended Reading List

Electronic Materials, Web Sites

Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)

- Class room is already provided with data show
- The area of class room is suitable concerning the number of enrolled students (68) and air conditioned.

2. Computing resources

- Providing class rooms with computers and labs with data show.

3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

- Availability of some reference bacterial strains
- Availability different specific media and chemicals used for isolation.



G Course Evaluation and Improvement Processes

<p>1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> • Questionnaires • Open discussion in the class room at the end of the lectures
<p>2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> • Revision of student answer paper by another staff member. • Analysis the grades of students.
<p>3. Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> • Preparing the course as PPT. • Using scientific movies. • Coupling the theoretical part with laboratory part • Periodical revision of course content.
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <ul style="list-style-type: none"> • After the agreement of Department and Faculty administrations
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> • Periodical revision by Quality Assurance Units in the Department and institution

Faculty member responsible for the course:

<p>Prepared by faculty staff: 1.Botany / Zoology academic staff members 2.Khaled Elbanna</p>	<p>Signature:</p>
<p>Date Report Completed: 09/2015</p>	
<p>Revised by: 1. Dr. Khaled Elbanna 2. Dr. Hussein H. Abulreesh 3. Dr. Shady Elshahawy</p>	<p>Signature:</p>
<p>Date: 1.10.2015</p>	



Program Chair Dr. Hussein H. Abulreesh	Signature:
Dean Prof. Samir Natto	Signature:
Date:	

مرفقات:

- نماذج من الاختبارات الدورية والنصفية والنهائية

**National Commission for Academic Accreditation &
Assessment**

Course Specification

**General Anatomy
4012041-3**

Course Specification

Institution	Umm Al Qura University
College/Department	Faculty of Science – Biology Department

A Course Identification and General Information

1. Course title and code: General Anatomy 4012041-3
2. Credit hours 3
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) BSc. Biology
4. Name of faculty member responsible for the course Prof. Dr. Momen Zareh + Dr. Azzam N. Al Yacoub
5. Level/year at which this course is offered: 3 rd level / year 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

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course.

After passing the Zoolgy part the students are expected to have a clear idea about:

- The methods used to anesthetize and kill animals.
- The general anatomical directions and nomenclature.
- Anatomy of the Integumentary system.
- Anatomy of the skeletal system.
- Anatomy of the muscular system.
- Anatomy of the cardiovascular system.
- Anatomy of the nervous system.
- Anatomy of the digestive system.
- Anatomy of the excretory system.
- Anatomy of the reproductive system (male + female).
- Anatomy of the endocrine system.
- Anatomy of the immune system.

After passing the Botany part the students are expected to have a clear idea about:

- Characters and types of meristematic tissues.
- Characters and types of simple permanent tissues (parenchyma – collenchyma – sclerenchyma).
- Characters and types of compound permanent tissues (xylem – phloem).
- Internal structure of monocot & dicot roots - monocot & dicot stems - monocot & dicot leaves

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

- Using updated web-based reference materials.
- Performing lab experiments to clarify the dissection method used to watch the anatomy of the different systems in animal and plant body
- Using research articles to support the knowledge offered in the course.

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
General anatomical directions and nomenclature Anatomy of the Integumentary system.	1	2

Anatomy of the skeletal system Anatomy of the muscular system.	1	2
Anatomy of the cardiovascular system Anatomy of the nervous system.	1	2
Anatomy of the digestive system Anatomy of the excretory system.	1	2
Anatomy of the reproductive system (male + female). Anatomy of the endocrine system.	1	2
Anatomy of the immune system.	1	2
Meristematic tissues Simple tissues (parenchyma – collenchyma – sclerenchyma).	1	2
Compound permanent tissues (xylem – phloem).	1	2
Internal structure of monocot & dicot roots	1	2
Internal structure of monocot & dicot stems	1	2
Internal structure of monocot & dicot leaves	1	2

2 Course components (total contact hours per semester):				
Lecture: 22 hours	Tutorial:	Laboratory: 22 hours	Practical/Field work/Internship	Other: first and second exams: 2 hours Final exams: Lab 2 hours theoretical: 2 hours

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week) 4 hours/week
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4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

By the end of the course the student should be able to:

- 1- Anesthetise and kill animals for anatomical purposes.
- 2- know the anatomical direction and terms.
- 2- Anatomy of the different body systems in animals and human .
- 3- Develop the anatomical drawing of body systems .
- 4- know the characters and types of meristematic and permanent tissues.
- 5- Develop the internal structure of the different plant organs.

(ii) Teaching strategies to be used to develop that knowledge

- Lectures
- Take home assignment
- Internet activities
- Laboratory work.

(iii) Methods of assessment of knowledge acquired

- First exam (theoretical) 10%.
- Second exam (theoretical) 10%.
- Mid-term practical exam 10%.
- Student activities (Reports and lab work) 10%
- Final practical exam 20%.
- Final exam 40%.

b. Cognitive Skills

(i) Description of cognitive skills to be developed

- The ability to:
 1. To know anatomical characteristics of living organisms.
 2. To recognize an overview of the tissues anatomy.
 3. To refer different organs of different systems.
 4. To dissect experimental animals, and identify various systems.
 5. To know anatomical nomenclature and terms.
 7. To describe the disorders arise after any organ injury.
 8. To use computer and internet.

(ii) Teaching strategies to be used to develop these cognitive skills

- Seminars.
- Self assessment.
- Discussion.
- Examination of selected micrographs and hand drawings.

<p>(iii) Methods of assessment of students cognitive skills</p> <ol style="list-style-type: none">1. Course work reports2. Evaluation of the topics prepared by students according to the content, arrangement, and covering of the topic.3. Midterm and final exams4. Checking the homework assignments
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ol style="list-style-type: none">1. Developing oral presentations2. Communicating personal ideas and thoughts.
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ol style="list-style-type: none">1. Engage student in carrying out internet search.2. The ability to debate the scientific basis of animal anatomy.4. Solving problems in groups during tutorial5. Checking the homework assignments in groups during discussion6. Dividing students into groups to cooperate with each other during the experiments.

(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility

1. Oral exams.
2. Evaluation of student essays assignments and search work.
3. Observation of student ethical and moral behaviour.
4. Students' attendance is recorded during lectures.
5. Assessment of the student reports.
6. Grading homework assignments.

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain.

1. Use IT and communication technology in gathering and interpreting information and ideas.
2. Use the internet as a means of communication and a source of information.
3. Scientific writing.
4. Use his/her observations to solve problems.
5. Doing research and conduct searches for restoring information.
6. Able to discuss the facts and logical propose methods to solve the difficulties.

(ii) Teaching strategies to be used to develop these skills

1. Oral presentations.
2. Internet search assignments and essays.
3. Incorporating the use and utilization of computer in the course requirements.
4. Students will be asked for delivering a summary regarding certain topics related to the course.

(iii) Methods of assessment of students numerical and communication skills

1. Evaluation of student essays and assignments.
2. Evaluating the laboratory written reports.
4. Evaluating during the discussion in lecture and reports.

e. Psychomotor Skills (if applicable)

(i) Description of the psychomotor skills to be developed and the level of performance required

- To draw some examples of human body systems.
- To examine models of organs and systems.
- To dissect some examples of animals.
- To use computers and internet.

(ii) Teaching strategies to be used to develop these skills

- Laboratory exercises and anatomy.
- Activities and homework.
- Community participation.

(iii) Methods of assessment of students psychomotor skills

- Evaluating the laboratory written reports.
- Evaluating the community participation.

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Short theoretical exam 1 (First exam)	4 th week	10%
2	Short theoretical exam 2 (second exam)	8 th week	10%
3	Mid-term practical exam, lab work and reports	During the semester	20%
4	Final exam (practical)	13 th week	20%
5	Final exam (theoretical)	15 th week	40%

D. Student Support

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

- Three office hours per week

E Learning Resources

1. Required Text(s)

مبادئ في علم التشريح : صلاح الدين محمد أبو الرب، هيثم عزمي مرار، أمين إبراهيم أبو ليل
محمد عبده العودات. مورفولوجيا النبات وتشريحيه جامعة الإمام محمد بن سعود الإسلامية

<p>2. Essential References</p> <p>مبادئ في علم التشريح : صلاح الدين محمد أبو الرب, هيثم عزمي مرار, أمين إبراهيم أبو ليل محمد عبدو العودات. مورفولوجيا النبات وتشريحه جامعة الإمام محمد بن سعود الإسلامية</p>
<p>3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)</p> <p>Gray's Anatomy for Students: by Richard L. Drake, A. Wayne Vogl, Adam W.M. Mitchell Harold Charles Bold . 1967. Morphology of plants. Minnesota University Press. USA</p>
<p>4-.Electronic Materials, Web Sites etc</p> <p>Anatomy Atlases: http://www.anatomyatlases.org/atlasofanatomy/</p>
<p>5- Other learning material such as computer-based programs/CD, professional standards/regulations</p> <ul style="list-style-type: none"> - Microsoft office package. - 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 (ie number of seats in classrooms and laboratories, extent of computer access etc.)</p>
<p>1. Accommodation (Lecture rooms, laboratories, etc.)</p> <ul style="list-style-type: none"> - Lecture room with data show facilities - Laboratory
<p>2. Computing resources</p> <ul style="list-style-type: none"> - Laptop for showing the lectures and practical sections - data show facilities and smart board
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</p>

- Microscopes
- Animal dissection tools
- Animal dissection board
- Microscope slides and strips
- Alcohol, formaldehyde and cotton
- Animal and human anatomical samples
- Plant anatomical samples and ready slides

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

- Course evaluation by student
- Students- faculty meetings

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

- Peer consultation on teaching
- Departmental council discussions
- Discussions within the group of faculty teaching the course

3 Processes for Improvement of Teaching

- Undergraduate Committee will review deficiencies based on the student evaluation, faculty input, course file, and program assessment.
- Feedback from employers and alumni surveys and graduating students' input are used to identify any deficiencies in students' ability in applying knowledge of properties and the use of structural materials.

4. Processes for Verifying Standards of Student Achievement (eg. 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)

- Undergraduate Committee will review samples of student work in this course to check on the standard of grades and achievements.
- A faculty member from a reputable university will evaluate the course material and the students' work to compare the standard of grades and achievements with those at his university.

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

- Continuous evaluation of the students during the term
- 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 change.

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

Biostatistics

4012061-2

September 2015

Course Specification

Institution: Um Al-Qura University.
College/Department : College of Sciences/Department of Biology.

A Course Identification and General Information

1. Course title and code: Biostatistics 4012061-2			
2. Credit hours:			
2 Credit hrs.	Lecture: 2h/week	Practical 0h/week	2 actual hours/week
Total	60 hrs / 15 week		
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs): BSc Biology.			
4. Name of faculty member responsible for the course: Staff of Food Sciences.			
5. Level/year at which this course is offered: level 4 (4th level).			
6. Pre-requisites for this course (if any):			
7. Co-requisites for this course (if any):			
8. Location if not on main campus:			

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course. Intended Learning Outcome: (bases of Biostatistics) to provide students by the basic concepts of statistics and probability such as displaying the data, central tendency, dispersion, coefficient of correlation, probability and types of random variables. Some probability distributions. To learn classification and descriptive the data. Understanding the meaning of coefficient of correlation between two variables.
2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field) To continuous improvement of the present course: <ul style="list-style-type: none"> - Refreshing knowledge, figures, diagrams, animations and self test of the present course using websites. - Discussing all data explained in the theoretical and practical works. - Self evaluation for my performance - Evaluation of the student knowledge which acquired during lectures and lab activities by using training questions and open discussions. - Push all students to perform essential skills discussions, examinations,

self correction of their wrong answers.

Future planning:

- The students need to use computer Labs.
- The student need training hours for the present course.

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		
Topic	Weeks	Total Contact (actual) hours/week
Introduction	1	2
Descriptive statistics: data as a simple/grouped frequency tables. Data presentation (frequency distribution) and box-plot.	2	4
Data presentation different types bars and histograms. Data presentation by pie and graphs.	1	2
Measure of central tendency.	1	2
Measures of dispersion.	1	2
Midterm test.	1	2
F test.	1	2
T test : t-test for single sample, two equal samples and t-test for two non equal samples and non-paired samples.	1	2
Chi-square test.	1	2
One way analysis of variance, two way analysis of variance.	1	2
Some biological indices.	1	2
Use Excel program to present data.	1	2
Use SPSS version 17 to analyse data.	1	2
Review	1	2
Final exam	1	2
Total weeks / total actual contact hours	16	32

2 Course components (total contact hours per semester):			
Lecture: 32 hours	Tutorial:	Practical/Fieldwork/Internship: 0 hours	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week)

1 hours/week

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- **A brief summary of the knowledge or skill of course is intended to develop.**
- **A description of the teaching strategies to be used in the course to develop that knowledge or skill.**
- **The methods of student assessment to be used in the course include:**
- **Open discussion,**
- **Activities,**
- **Periodical quiz test,**
- **Midterm and final exams are used to evaluate learning outcomes in the domain concerned.**

a. Knowledge

(i) Description of the knowledge to be acquired

By the end of the course the student should be able to:

1. **Organize and display the data as a simple/grouped frequency table according to its type Qualitative data.**
2. **Be aware by the measures of central tendency and dispersion. Quantative data.**
3. **Understand the basic concepts of Descriptive statistics and Some biological indices.**
4. **Understand the statistical analysis of variables.**

(ii) Teaching strategies to be used to develop that knowledge

- **Lectures.**
- **Home work.**
- **Statistical exercises.**

(iii) Methods of assessment of knowledge acquired

- **Short discussions.**
- **Short essay questions.**
- **Term activities.**
- **Final and midterm exam.**

<p>b. Cognitive Skills:</p>
<p>(i) Cognitive skills to be developed</p> <p>At the end of the course the student will develop the ability to:</p> <ul style="list-style-type: none"> • Displaying and organizing different types of data . Representing the data. • Distinguish between the central tendency and dispersion Statistical measurements.
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> • Lectures. • Home work. • Statistical exercises.
<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> • Short discussions. • Short essay questions. • Term activities. • Final and midterm exam.
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <p>At the end of the course the student should have developed the ability to:</p> <ul style="list-style-type: none"> • Organize data in simple frequency and grouped tables . Understand statistics. • Calculate the measures of central tendency, dispersion and correlation. • Solve some problems related to the distributions of discrete random variables.
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> • Group discussion. • Presentation.
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> • Periodical exams.
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p>

<p>By the end of this course the student should have developed the skill to:</p> <ul style="list-style-type: none"> • Search the internet. • Design a professional presentation.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> • Using Diagrams, animations from web sites. • Open Discussion.
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> • Oral presentation. • Assessment of presentations. • Term activities.
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <p>At the end of the course the student have gained psychomotor skills to:</p> <ul style="list-style-type: none"> • Encourage the students to express themselves in the class and to present their views. • Work effectively both in a group and independently.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> • Open discussions.
<p>(iii) Methods of assessment of students psychomotor skills</p> <ul style="list-style-type: none"> • Oral exam.

5. Schedule of Assessment Tasks for Students During the Semester			
Asses sment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assesse ment
1	Open discussions and oral exams each week	4,5,6,7, 9,10,11,12	10
2	Home work and duties notes	6,8,10,12	10
3	Periodical exams	6,10	10
4	Midterm exam	8	20
5	Final exam	16	50
8	Total		100

D. Student Support

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

3 hours per week as office hours and can be arranged according to the student needs.

E Learning Resources

1. Required Text(s) - Biostatistics notes.
2. Essential References Chap T. LE. (2003). Introductory Biostatistics. John Wiley & Sons Publication.
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List) Daniel, W.A. (1987). Biostatistics: A foundation for analysis in the health sciences. 4th ed. New York: Wiley.
4-.Electronic Materials, Web Sites etc For example: <u>http://jmasi.com/ehsa/index.htm</u>
5- Other learning material such as computer-based programs/CD, professional standards/regulations Soft ware program such as Excel and SPSS.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Air conditioning lecture rooms and computer laboratory.
2. Computing resources Original soft ware programs such as Excel and SPSS ver. 17.
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) There is no.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching <ul style="list-style-type: none">- Student activities.- Student discussions.- Student suggestions.

<ul style="list-style-type: none"> - Student evaluations.
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> - Self evaluation (from student activities, suggestions, evaluations) - Student evaluations in UQU system.
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> - Self improvement. - Refreshing knowledge.
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <ul style="list-style-type: none"> - Comparing lectures with the examinations. - Random rechecking of exams.
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> - Follow up the students during lectures.

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

Biochemistry

4012072-3

Revised November 2015

Course Specification

Institution	Umm Al-Qura University
College/Department	Faculty of Science/Biology Department

A Course Identification and General Information

1. Course title and code:	Biochemistry (4012072)
2. Credit hours	Lectures 3 hrs/week
3. Program(s) in which the course is offered.	Bachelor degree in Biology Program
4. Name of faculty member responsible for the course	Dr. Shady El-Shhawy
5. Level/year at which this course is offered	Third level/Second year students
6. Pre-requisites for this course (if any)	Organic Chemistry
7. Co-requisites for this course (if any)	None
8. Location if not on main campus	

B Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <p>By the end of this course the students are expected to be able to:</p> <ol style="list-style-type: none">1. Understand the molecular and cellular biochemistry.2. Develop understanding of the biosynthesis and biochemical role of the specialized tissues of the body.3. Develop the student's awareness of the biochemical bases of tissue associated diseases.
<p>2. Briefly describe any plans for developing and improving the course that are being implemented.</p> <ul style="list-style-type: none">• Course development plan:<ol style="list-style-type: none">1. Knowledge present in the prescribed textbooks and reference books has been supplemented with latest information from reliable scientific web sites.2. Homework assignments on the selected topics would encourage the students to learn independently and promote active learning.3. Biosynthetic pathways can be best learnt by Flow diagrams and computer animation which will be used to enhance active learning.4. Powerpoint programs can be developed for better explanation of biosynthesis and biochemical role of the tissues.

C. Course Description

1 Topics to be Covered		
Topic	No of Weeks	Contact hours
Introduction to biochemistry: <ul style="list-style-type: none">• What is the biochemistry and what study.• Uses of biochemistry.• Changes in energy and electron transfer.• Oxidation and reduction reactions.• Metabolism: definition and its mechanism.	2	6

I) Carbohydrates metabolism: <ul style="list-style-type: none"> • Digestion and absorption of carbohydrates. • Utilization of carbohydrates: <ol style="list-style-type: none"> 1. Glycogen metabolism (glycogenesis and glycolysis). 2. Oxidation of glucose: <ol style="list-style-type: none"> A) Glycolysis; Steps of reactions- calculate the energy yield- control of glycolysis. 	2	6
<ul style="list-style-type: none"> B) Conversion of pyruvate to acetyl-CoA C) citric acid cycle CAC : <ul style="list-style-type: none"> - Steps of reactions. - Energy calculation from krebs cycle. - Control of Krebs cycle. 	1	3
<ul style="list-style-type: none"> • The importance of Krebs cycle. • The role of oxygen in the Krebs cycle. • Pasteur effect. • Cori cycle 	1	3
<ul style="list-style-type: none"> - Definition and importance of gluconeogenesis. - Definition and importance of pentose phosphate pathway. - Definition and importance of secondary metabolic pathway of glucose. 	1	3
II) Lipid metabolism: <ul style="list-style-type: none"> • Digestion and absorption of fat. • Use of triglyceride in the blood and tissues, fat storage. • Oxidation of fatty acids: <ul style="list-style-type: none"> - Steps of B-Oxidation and its energy product. 	1	3
<ul style="list-style-type: none"> • Fatty acid biosynthesis: microsomal, mitochondrial synthesis and extra-mitochondrial De Novo synthesis of fatty acids. 	1	3
<ul style="list-style-type: none"> • Cholesterol: structure, importance and source Synthesis and metabolic fate of cholesterol. 	1	3
III) Protein metabolism: Digestion and absorption Metabolic utilization of amino acids Source of ammonia, Transamination, Oxidative deamination, Transdeamination, Decarboxylation.	1	3
IV- Nucleic acids metabolism: structure of DNA and RNA and their differences Cellular component for protein synthesis	1	3

2 Course components (total contact hours per semester):			
Lecture:	Tutorial:	Practical/Fieldwork/Internship:	Other:
36 hrs/semester 3 hrs/week	24 hrs/semester 2 hrs/week		

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)
 2 hour weekly for the homework

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired
 Student should understand:

1. To enumerate the different reaction of carbohydrates, fats and protein metabolism.
2. To remember the different types of amino acids.
3. To distinguish the difference between aerobic and anaerobic oxidation.
4. To recognize the anabolism and catabolism and nitrogen balance.
5. To know the reactions, importance and regulation of carbohydrate, proteins and lipid metabolism.

(ii) Teaching strategies to be used to develop that knowledge

1. Lectures and student research papers.
2. The using of visual display such as PowerPoint.
3. Homework assignments.
4. Discussions (connecting what they learn in the class and applying this information in laboratory).
5. Handout of lecture notes for each topic.

<p>(iii) Methods of assessment of knowledge acquired</p> <ol style="list-style-type: none"> 1. Homework and Quizzes 6. Midterm and final written exams. 7. Evaluation of reports 8. Group discussions and participation in the lecture. 9. Course work reports
<p>b. Cognitive Skills</p>
<p>(i) Cognitive skills to be developed</p> <p>By the end of this course, the students should be able to:</p> <ol style="list-style-type: none"> 1. Understand the importance of carbohydrates, proteins and lipid function and its role in metabolism. 2. Draw the metabolic pathways of carbohydrates, proteins and lipid. 3. To recognize the difference between energy production from lipid and carbohydrate.
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ol style="list-style-type: none"> 1. Interactive lectures. 2. Seminars. 3. Participation of students in discussions during the lecture. 4. Trying to explain the issues in regular and motivated manner.
<p>(iii) Methods of assessment of students cognitive skills</p> <ol style="list-style-type: none"> 1. Continuous assessment. 2. Course work reports 3. Evaluation of the topics prepared by students according to the content, arrangement, and covering of the topic. 4. Midterm and final exams 5. Checking the homework assignments
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <p>By the end of this course, the students should be able to:</p> <ol style="list-style-type: none"> 1. The ability to form groups and the distribution of tasks. Ability to work independently to complete the assignment given. 2. Perform self-directed learning. 3. The ability to exchange ideas and accept the opinions of others and perform group discussions. 4. Skill presentation in front of others.

5. Ability to clearly express an opinion and accept the opinions of others.

(ii) Teaching strategies to be used to develop these skills and abilities

1. Hold brain-storming during lectures.
2. Deep discussion with the students by asking some diverse and exciting oral questions during the lecture.
3. Using powerpoint presentation and gland illustration. Writing group reports
4. Solving problems in groups during tutorial
5. Checking the homework assignments in groups during discussion
6. Give students the opportunity to discuss any items with the faculty member.
7. To raise the spirit of cooperation among students.
8. Sharing duties (interactive workshop / joint presentation / report / prepare working papers / bring duties ... etc).
9. Dividing students into groups to cooperate with each other during the experiments.

(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility

1. Oral exams.
2. Evaluation of student essays assignments and search work.
3. Request a share presentation in front of the students through discussions.
4. Students' attendance is recorded during lectures.
5. Assessment of the student reports.
6. Grading homework assignments.

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain.

1. Use information and communication technology.
2. Use IT and communication technology in gathering and interpreting information and ideas.
3. The ability to use e-mail to communicate with the instructor and other students.
4. Encourage students to use internet for searching certain electronic journals regarding topics of the course.
5. Scientific writing.
6. Use his/her observations to solve problems.
7. The ability of the students to access useful sites on the Internet, in order to search for specific data and information.
8. Able to calculate and discuss the facts and logical propose methods to solve the difficulties.

(ii) Teaching strategies to be used to develop these skills <ol style="list-style-type: none"> 1. Oral presentations. 2. Internet search assignments and essays. 3. Incorporating the use and utilization of computer in the course requirements. 4. Request the students to send their home works and research via e-mail. 5. Asking the students to exploit some useful sites in the internet associated with the topics of decision for further learning.
(iii) Methods of assessment of students numerical and communication skills <ol style="list-style-type: none"> 1. Evaluation of student essays and assignments. 2. Marks given to for good reports and presentations 3. Evaluating during the discussion in lecture and reports. Part of the grad is put for student's written participation.
e. Psychomotor Skills (if applicable)
(i) Description of the psychomotor skills to be developed and the level of performance required Not applicable
(ii) Teaching strategies to be used to develop these skills Not applicable
(iii) Methods of assessment of students psychomotor skills Not applicable

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Attendance & Activities	Weekly	10%
2	Quizzes	Every 2 weeks	30%
3	Mid-term Exam	Week 5	10%
4	Final Exam	As scheduled by the registrar	50%

D. Student Support

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

10. Two hours office per week

E Learning Resources

1. Required Text(s):

No textbook is designated. Course materials will be based on a combination of lecture notes, handouts, journal articles and various references. Following is a list of suggested (yet not required) references that you would further read as class topic(s) evolves.

Recommended Books:

Principles of Biochemistry (Part 2): Prof. Dr. Mohammed Abdullah al-Habashi - Al Dar Al Arabia Publishing and Distribution 2002. (Arabic Version).

Foundations of Biochemistry (Part 1): Dr. .Abd El-Moneim Mohammed Al-AAser 1996. (Arabic Version)

2. Essential References

Principles of Biochemistry (Second Edition) A. L. Lehninger; D. L. Nelson and M. M. Cox (1993). (English Version)

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

4-.Electronic Materials, Web Sites etc

<http://www.coursera.org>
<http://www.edx.org>

5- Other learning material such as computer-based programs/CD, professional standards/regulations

- Microsoft office package.
- Multi- media associated with the text book and the relevant websites

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)

- Lecture room suitable for 35 students.
- Lecture room equipped with a black board and Data show.
- Optically and electronically facilitated lecture rooms (smart rooms).

<p>2. Computing resources</p> <ul style="list-style-type: none"> • Computers or internet connection. • Smart Board • Data show is required in every room
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</p> <p style="text-align: center;">Not applicable</p>

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> • Course evaluation by student • Continuous preparation of exercise and examples of questions to measure the level of success of the students in the course, and to estimate the efficiency of the used teaching system.
<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 • Continuous internal and external revision for evaluation and development. • Estimating the achievement of the students and professors through the questionnaires. • Evaluation for the continuous quizzes and final exam by the students by using surveys.
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> • Undergraduate Committee will review deficiencies based on the student evaluation, faculty input, course file, and program assessment. • Feedback from employers and alumni surveys and graduating students' input are used to identify any deficiencies in students' ability in applying knowledge of properties and the use of structural materials. • Organize workshop on effective teaching methods to enable instructors to improve their teaching skills. • Teaching method will focus on students' learning and on course learning outcomes.
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <ul style="list-style-type: none"> • Undergraduate Committee will review samples of student work in this course to check on the standard of grades and achievements. • A faculty member from a reputable university will evaluate the course material and the students' work to compare the standard of grades and achievements with those at his university. • Periodic exchange and remarking of tests with staff at another institution.
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> • Continuous evaluation of the students during the term • 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 change.
- Reviewing the course report, specification and its development periodically by the study plans commission and external professors.
- Schedule Workshops for staff members. - Modernize the source of learning for the course.
- Statistical analysis of the results of the students survey and exploit them in the development, measuring and evaluation.

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

Plant Kingdom

4012211-3

Revised November 2015

Course Specification

For Guidance on the completion of this template, please refer to of Handbook 2 Internal Quality Assurance Arrangements

Institution Umm Al Qura University
College/Department: Biology Department, faculty of Science

A Course Identification and General Information

1. Course title and code: Plant kingdom 4012211
2. Credit hours : 3 (2+1)
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) BSc Biology
4. Name of faculty member responsible for the course Prof. Dr. Kadry Nabeh Abdel Khalik
5. Level/year at which this course is offered Level 3
6. Pre-requisites for this course (if any) Biology 1 Botany (401101, 103)
7. Co-requisites for this course (if any) No
8. Location if not on main campus

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course.

- 1. To provide students with skills necessary for study of plant kingdom.**
- 2. To develop in the students' an awareness of the significance of plant kingdom .**
- 3. Evaluate the students to use the morphology in reclassification of plant kingdom based on the plant morphology and other characters.**
- 4. To train students in the proper use of the compound light microscope and to give them experience in interpreting images that they see through the microscope in terms of how plant structure is related to function.**
- 5. To provide students with skills in modern microscopic digital image capture, processing and analysis techniques useful in plant kingdom like alge, fungi, bryophyta studies.**
- 6. To instill in students an appreciation for the complexity of tissue organization that exists within plant bodies that allow pl**

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

- Refreshing knowledge, figures, diagrams, animations and self test of the present course using internet web sites.**
- Discussing all data explained in the theoretical and practical works.**
- Evaluation of the student knowledge which acquired during lectures and lab activities by using training questions and open discussions.**
- Push all student to perform essential skills such as drawings, discussions, examinations, self correction of their wrong answers.**
- The student need to apply the internet in our lab.**
- The student need official hours for the present course.**
- Electronic materials and other computer based programs have**

been utilized to support the lecture course material.

- The course planned as basic lectures and reports, seminars and excursions introduced by students to understand new important topics related to the course .
- Very important material always posted on the WebCT that could be accessed by the students enrolled in the course

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		
Topic	No of Weeks	Contact hours
Introduction, seed structure and seed germination, and different examples for seed germination	1	2
Viruses	1	2
Bacteria & Cyanobacteria	2	4
Actinomycetes	1	2
Kingdom Chromista (Albugo, Diatoms)	1	2
Chresophyta	1	2
Phaeophyta (Fucus)	1	2
Fungi (Ascomyctes, Zygomycetes, Basidiomycetes)	2	4
Lichens & chlorophyta	2	2
Archegoniatae (Bryophyta (Hepaticae, Musci)	2	4
Pteridophyta	1	2
Spermatophyta	1	2

2 Course components (total contact hours per semester):			
Lecture: 30	Tutorial: 6+	Practical/Fieldwork/Internship: 45	Other: 6

3. Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week)

2 hours weekly for the homework and reports.

4. Development of Learning Outcomes in Domains of Learning
For each of the domains of learning shown below indicate:
<ol style="list-style-type: none"> 1. Describe the strategies and skill of teaching the course. 2. Summary for the all information's in the course to be develop. 3. The way of evaluating the student assessment that will help the outgain of teaching the course.
a. Knowledge
(i) Description of the knowledge to be acquired
<ol style="list-style-type: none"> 1. Understanding basic information of the plant kingdom. 2. Gain more about the systematic and evolution of the plant kingdom. 3. Learning about Virus, Fungi, Algai, and their modifications. 4. Identifying the species based on morphology. 5. Knowing more the difference between different parts of plant kingdom 6. How many differences between archegoniate and Spermatophyta. 7. The ability to get involve with computer internet and its programs
(ii) Teaching strategies to be used to develop that knowledge
<ol style="list-style-type: none"> 1. linkage between the previous and current information in the class. 2. Homework assignments 3. Discussions 4. Seminar and Report.
(iii) Methods of assessment of knowledge acquired
<ol style="list-style-type: none"> 1. Quizzes during the class for short time. 2. Mid Term Test.

<ol style="list-style-type: none"> 3. Homework's Assignment. 4. Final Exams. 5. Report Evaluation
<p>b. Cognitive Skills</p>
<p>(i) Cognitive skills to be developed</p> <ol style="list-style-type: none"> 1. Learning about Fungi, Bacteria and Algae identification 2. Numerical analysis of different characters. 3. How we can use morphology in reclassification of plant Kingdom 4. Developing a large skill of thinking through using morphology in studying Plant kingdom.
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ol style="list-style-type: none"> 5. Homework assignments 6. Problem solving in the tutorial hours. 7. Internet Exploring.
<p>(iii) Methods of assessment of students cognitive skills</p> <ol style="list-style-type: none"> 1. Short quizzes at the time of class. 2. Mid-term and final exams 3. Following the homework assignments. 4. Research groups, and seminars
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ol style="list-style-type: none"> 1. Work in a team work and also independently in course work. 2. Consider the members of the group in the class and the time of lecture. 3. Cooperation with class member in discussing the results of work in class.
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ol style="list-style-type: none"> 1. Writing group reports and discussed 2. Solving problems in groups during tutorial / presentation sessions
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ol style="list-style-type: none"> 1. Mid-Term and final exams. 2. Assessment of the Research topics. 3. Grading homework assignments
<p>d. Communication, Information Technology and Numerical Skills</p>

<p>(i) Description of the skills to be developed in this domain.</p> <ol style="list-style-type: none"> 1. Arrange excursion for collecting plants 2. Preserving Bacteria, Fungi, and Algae 3. Make different slides sections in the various of plant kingdom. 4. Working with computer for topic research and processing the updating data. 5. Use different computer programs. 6. Report writing.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ol style="list-style-type: none"> 1. Writing reports for some topics and excursions related to the course name. 2. Incorporating the use and utilization of computer in the course requirements. 3. Writing reports for experimental techniques.
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ol style="list-style-type: none"> 1. Evaluating the written reports. 2. Discussion the reports in a group.
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <p>Not appropriate</p>
<p>(ii) Teaching strategies to be used to develop these skills</p> <p>Not appropriate</p>
<p>(iii) Methods of assessment of students psychomotor skills</p> <p>Not appropriate</p>

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Class works Quizzes, homework and paper work)	weekly	10/100
2	Mid-Term Exam 1	5	10/100

3	Mid-Term Exam II	11	10/100
4	Final exam	16	40/100
5			

D. Student Support

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

Office hours 8 hr/ week.

E Learning Resources

1. Required Text(s)

1. Required Text(s)

Campbell, *Mosses and Ferns* (London, 1906)

Pearson, *The Hepaticae of the British Isles* (London, 1902)

Dixon and Jameson, *The Student's Handbook of British Mosses* (London, 1896)

Braithwaite, *British Moss Flora* (London, 1887-1905). (W. H. L.)

David L. Jones and Stephen C. Clemesha. *Australian Ferns and Fern Allies.*

Richard Deakin. Florigraphia Britannica; Or, Engravings and Descriptions of the Flowering Plants and Ferns of Britain, Volume 3

Richard Deakin. Florigraphia Britannica, Or, Engravings and Descriptions of the Flowering Plants and Ferns of Britain (Volume 2)

Richard Deakin. Florigraphia Britannica, Or, Engravings and Descriptions of the Flowering Plants and Ferns of Britain (Volume 1)

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2. Essential References

Plant Microtechnique and Microscopy. Steven E. Ruzin. Oxford University Press. 1999. This is an excellent handbook full of methods, stains, optics, and how-to. As a resource it would be useful to grad school and beyond.

<p>3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)</p> <p><u>Acta Botanica Fennica</u></p> <p><u>American Journal of Botany</u></p> <p><u>Biologia Plantarum</u></p>
<p>http://www.1911encyclopedia.org/Bryophyta</p> <p>http://www.1911encyclopedia.org/Pteridophyta</p> <p><u>Core Literature Project: Historical Monographs in Botanical Sciences</u></p> <p><u>Glossary in preservation</u></p> <p><u>IBC Symposium</u></p> <p>http://www3.austincc.edu/catalog/descbiol.htm</p> <p><u>Links to professional organizations and associations</u></p> <p><u>Links for plant libraries and archives resources</u></p>
<p>5- Other learning material such as computer-based programs/CD, professional standards/regulations</p> <p>Multimedia associated with the text book and the relevant websites</p>

F. Facilities Required

<p>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</p>
<p>1. Accommodation (Lecture rooms, laboratories, etc.)</p> <p>1. Lecture room with at least 30 seats</p> <p>2. Biological laboratory with at least 20 places</p>
<p>2. Computing resources</p> <p>Computer room containing at least 10 systems</p>
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</p> <p>20 microscopes connecting with computer screen and different lenses, Safety</p>

facilities

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
<ol style="list-style-type: none">1. Course evaluation by student2. Students- faculty meetings
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
<ol style="list-style-type: none">1. consultation on teaching by Instructor.2. Departmental council discussions3. Discussions within the group of faculty teaching the course
3 Processes for Improvement of Teaching
<ol style="list-style-type: none">1. workshops given by Arabic and Foreign experts on the teaching, active learning and its strategy.2. Departmental discussion of different methods of teaching skills
4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)
<ol style="list-style-type: none">1. Following standard exams as in American and European Societies of exams.2. Assigning group of faculty members teaching the same course to grade same questions for various students.3. Faculty from other institutions are invited to review the accuracy of the grading systems in our program.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.
<ul style="list-style-type: none">• The course material and learning outcomes are periodically reviewed and the changes to be taken are approved in the department.• The head of department and faculty take the responsibility of implementing the proposed changes.

Faculty member responsible for the course: Prof. Dr. Kadry Nabeh Abdel Khalik

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

**Plant Taxonomy
4012232-3**

Revised November 2015

Course Specification

For Guidance on the completion of this template, please refer to of Handbook 2 Internal Quality Assurance Arrangements

Institution Umm Al- Qura University
College/Department : Faculty of Science for Girls- Biology department

A Course Identification and General Information

1. Course title and code: Plant Taxonomy (4312232-3)
2. Credit hours: 3 hours (2hours theoretical + 1 hour practical)
3. Program(s) in which the course is offered: BSc Biology
4. Name of faculty member responsible for the course Associate Prof. Eman Ahmed Kamel Karakish Email: eakarakish@uqu.edu.sa
5. Level/year at which this course is offered: sixth level (second term)
6. Pre-requisites for this course (if any): Archegoniate- Plant embryology
7. Co-requisites for this course (if any) -----
8. Location if not on main campus -----

B Objectives

- Definition the knowledge of plant taxonomy and different patterns of plant classifications
- Clarify the essential and non- essential flowers whorls
- Illustrate the different types of inflorescences and fruits
- Explain the definition of significant differences between monocot and dicot plants in angiosperms
 - The application of previous studies on the most important plant families, their taxonomic status, and characteristics
 - The student familiar with ways to use the keys and industrial training and put it to distinguish between different plant species
 - Induce the students to use the Internet in the search for all that is new in the field of study

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		
Topic	No of Weeks	Contact hours
Explanation what means by plant taxonomy and its principals (identification, classification, nomenclature)	1	2
The flowers (types, sexuality.....)	1	2
The non- essential whorls (calyx and corolla) and the aestivation	1	2
The essential whorls (androecium and gynaecium) and the types of placentation	1	2
Types of inflorescences	1	2
Types of fruits	1	2

The angiosperm, the different between the monocot and the dicot plants Examples of monocot families	2	2
Exampes of dicot families	4	2

2 Course components (total contact hours per semester): nearly 39 credit hour per semester 13 weeks × 2houers = 26 theoretical hour, 13 hours × 3hours = 39 practical hour			
Lecture: 2 hours	Tutorial:	Practical/Fieldwork /Internship:3hours	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week) The credit hours = 39 hour actual hours = 65 hour

<p>4. Development of Learning Outcomes in Domains of Learning</p> <p>End of the first half of the semester the student be able to recognize the structure of the flower, in terms of (Type- sex- aestivation – floral diagram- types of placentation), types of inflorescences and different kinds of fruits.</p> <p>* The end of the semester: the student will be able to apply all previous studies on the most flowering plant families of monocots and dicot.</p> <p>* The student getting the skills of how to work in the longitudinal and cross section of the flowers, drawing the floral diagram, writing the plant formula, then trying to make taxonomic keys for different families they studied</p>

a. Knowledge

(i) Description of the knowledge to be acquired

- Definition of plant classification and the basis of the different patterns, herbarium and its role in preservation the dried plant collections.
- Definition of the kinds of flowers and how to explain the different whorls, arranged in inflorescences, and the types of fruits.
- Participated in teaching plants angiosperms and the most important plant families and the species related to these families
- Illustrate the use of industrial keys to distinguish between different plant families.

(ii) Teaching strategies to be used to develop that knowledge

- Lectures
- laboratories to dissect the flowers and examine the types of inflorescences and fruits and the different classifying keys
- periodic duties

(iii) Methods of assessment of knowledge acquired

- Asking some questions in the beginning of every lecture, in order to remember the previous lecture.
- Hold two periodic theoretical tests one of them in the seventh week (20 degrees).
- Providing scientific research or Power Point presentations about the topics that have been studied (10 degrees).
- Hold a final practical test (20 degrees).
- A theoretical final test in the fourteenth week (40 degrees).
 - the student gets deprived if absent for 25% of the number of lectures or laboratories

b. Cognitive Skills

(i) Cognitive skills to be developed

- The ability to make scientific comparisons between different types of flowers
- The ability to the flowering plants into families
- the ability to known how to Identify and Nominate The plant species

(ii) Teaching strategies to be used to develop these cognitive skills

- Use the worksheets individual duties to ask each student comparisons between plants in each community
- Collective duties by distributing pictures of objects on the plants groups (teams) and ask each group to identify the object in the image and classifies them

(iii) Methods of assessment of students cognitive skills

Oral tests to assess cognitive skills by using pictures or presentations or video clips

Will be a degree of collective duties accounted for 40% of the degree of team work duties either individual student to get extra score if solved correctly early

c. Interpersonal Skills and Responsibility

(i) Description of the interpersonal skills and capacity to carry responsibility to be developed

- Work effectively in a group
- The ability to judge people and situations objectively based on fixed moral standards is not affected personal
- The ability to dialogue and to accept criticism and accept the other opinion
- The ability to express their own opinion without fear or hesitation and improves their self-confidence

(ii) Teaching strategies to be used to develop these skills and abilities

- That the student research in books and online on the subject of the article to be determined in agreement with the professor of subject in order to enhance the self- learning
- When you provide students with presentations to be discussed and put to dialogue with them and are evaluated in the form specified by the professor Article
- nominate a leader for each group periodically
- the distribution of tasks between team members under the supervision of the commander
- When the student to give the presentation is to discuss its performances and dialogue with the students during the submitting of view and is based on the evaluation form specific standards by Professor Article

(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility

- Evaluating the group discussion
- Evaluating scientific analysis done by the Group
- Note and follow the behaviour of the student inside the hall
- The commitment of the student's

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain.

- Skills, oral and written communication
- Using computer and search the Web for information sources
- Use a power point for Proposals Group
- The use of statistical methods in the analysis of information

(ii) Teaching strategies to be used to develop these skills

- assign the student to view and throwing solutions to the issues that required to be analyzed
- commissioning duties appliances rely on search in the World Wide Web
- The use of modern technology in scientific research
- Find information in databases and sites corresponding universities

<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> - Assess the students through what is being discussed in the lecture - Assessment of individual and collective duties based on predefined criteria
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <ul style="list-style-type: none"> -The use of the microscope - Anatomy of organisms - Drawing samples
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> -Assign the student using a microscope to examine samples -Assign the student autopsy -Assign the student draw samples
<p>(iii) Methods of assessment of students psychomotor skills</p> <ul style="list-style-type: none"> -Follow up the student in the lab during the examination and dissection and evaluation - Monitoring degrees of draw

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Two periodic theoretical exam	Fourth, seventh	20%
2	scientific research or Power Point presentations	Eighth to eleventh	10%
3	Practical activity	Six to twelfth	10%
4	Final practical exam	thirteenth	20%
5	Final theoretical exam	fourteenth	40%

D. Student Support

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

Office hours 6 hours per week distributed over the week days

Correspondence students through the university site

Receive inquiries through e-mail, recorded on my university site

1. E Learning Resources

2. Required Text(s) –

- A private note prepared by the professor of the course by the help of specialized references
- PowerPoint presentation prepared by Professor rapporteur on its website.
- Use of

2. Essential References

Bolous, L. (2000): Flora Of Egypt. Vol. 1-4 .El Hadara Press,Cairo – Egypt.

Collenette,Sheila (1985): Flowers of Saudi Arabia. Scorpion publishing ltd. London.

- خليفة، سيد فرج (1974): النبات التصنيفى. قسم النبات – كلية العلوم – جامعة عين شمس.

- سعد، شكرى ابراهيم (1975): تصنيف النباتات الزهرية- الطبعة الثالثة – الهيئة المصرية العامة للكتاب، فرع الاسكندرية.

- السحار، قاسم فؤاد (1983): تصنيف النباتات الزهرية – الطبعة الأولى – مكتبة مصر.

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

Communicate with my website through the my link

4-.Electronic Materials, Web Sites etc

Communicate with the different sites of the Internet site and the instructor (Google and other).

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.)

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Assessment**

COURSE SPECIFICATION

Plant Ecology

4012242-3

Revised November 2015

Course Specification

Institution: Umm Al-Qura University
College/Department : Science- Biology Department

A Course Identification and General Information

1. Course title and code: Plant Ecology, 4012242
2. Credit hours: 3 hours (3 practical +2 lecture)
3. Program(s) in which the course is offered: Bachelor of Science- Biology (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course : Dr. Hanan El-Sayed Mohamed Osman / Dr Yasser Al-Maroe
5. Level/year at which this course is offered: sixth year, second semester
6. Pre-requisites for this course (if any): General Biology 101, Plant Archegoniate
7. Co-requisites for this course (if any):
8. Location if not on main campus:-----

B Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <p>The course is completed in one semester; which is approximately of 14 weeks duration. This course introduce the students to the concept of ecology, its divisions, and components and the relationships within the ecosystem, and the negative and positive role of man towards the environment. Also, this course deals with the factors affecting the plant growth in their environment (soil, temperature etc.).</p> <p>- By the end of this course the students should</p> <ul style="list-style-type: none"> • Describe the ecosystem functional structure. • Illustrate energy in ecological ecosystem. • Draw food chain and food webs • Illustrate the biochemical cycles. • Exchange ideas, principles and information by oral, written and visual means. • Work effectively both in a team and independently. • Use the information technology together
<p>2. Briefly describe any plans for developing and improving the course that are being implemented.</p> <ul style="list-style-type: none"> • This course is reviewed and up dated each year according to the recent and current researches and discoveries in this field. • Use of scientific illustration assigned to student groups.

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
Introduction	1	2
Definition of Plant ecology, factors affecting the plant environment	2	2
Climatic factor (precipitation – temperature)	3	2
Light – Humidity- Wind- Evaporation	4	2
Physiographic factor	5	2
Biological factor, plant-plant relationship- plant – animal relationship Inter-relations of Living Organisms (Mutualism, Commensalism, Parasitism)	6	2
Soil factor (soil formation, soil Origin, structure)	7	2
Soil physical properties	8	2
Soil physical properties (cont.)	9	2
Soil chemical properties	10	2
Structure of the ecosystem - Energy in ecological systems	11	2
Food web and food chain	12	2
Biogeochemical cycles	13	2
Final Revision	14	2

Lecture: 2 h.	Tutorial: Revision session and oral presentations for the project will be given. The time and format for each session will be arranged via the student's coordinators.	Laboratory: 3 h.	Other: Students are advised to come and see the course organisers for any queries they have.
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3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week):

Students are asked to make some pre-reading before each lecture and they need to do some extra reading after the lecture in order to bring the answers for some questions and points raised in the lecture.

4. Development of Learning Outcomes in Domains of Learning
a. Knowledge
<p>(i) Description of the knowledge to be acquired</p> <ul style="list-style-type: none"> • Understanding the plant ecology and their types • Factors affecting on plant vegetation. • Soil formation, Physical and chemical properties of soil. • Describe the ecosystem functional structure. • Illustrate energy in ecological ecosystem. • Draw food chain and food webs • Illustrate the biochemical cycles.
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <ol style="list-style-type: none"> 1. Lectures. 2. Video tapes, CDs and DVDs (audiovisuals) 3. Assignments (essays and oral presentation). 4. Tutorials. 5. Accelerated learning (learning by fun). 6. Mind maps.
<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> - monthly exams - practical exam - Self-study included in the Exams - Homework - Discussion during the lectures - practical project in groups - Final exam
b. Cognitive Skills

<p>(i) Description of cognitive skills to be developed</p> <ul style="list-style-type: none"> • Skill of getting experimental data. • Skill of presenting data and results. • Skill of acquiring updates in plant ecology.
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> • Practical studies • Browsing in internet • Self-studies to be included in exams • Home work • Presentations by students • lectures
<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> • Practical exam • Discussions panel • Self-study included in the Exams • Homework • Discussion practical project • Presentations
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> • Perform effective communication and positive relation with others and be able to work as an effective member in a team. • Apply the ethical and professional standard of ethics during the team works.
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> - Practical project of students
<p>(ii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <p>Oral presentation lecture about the project presented by students and discussed with them after distributing the students into groups to encourage the team work. - Full essay about the project, group work.</p>
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> • Use technology in analysing data and information. • Use technology in communication skills with others.

(ii) Teaching strategies to be used to develop these skills Assignments (essays and oral presentation).
(iii) Methods of assessment of students numerical and communication skills - Students are asked to prepare and present a lecture about subject related to the course using a power point programme. - Students are asked to write a short essay about subject related to the course, which will encourage them to search for the knowledge in the proper references in form of (scientific books or journals and internet sites).
e. Psychomotor Skills: Not applicable
(i) Description of the psychomotor skills to be developed and the level of performance required -
(ii) Teaching strategies to be used to develop these skills -
(iii) Methods of assessment of students psychomotor skills

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Monthly first exam	5th	10
2	Monthly second exam	11th	10
3	Presentation of project and discussion	12th	10
4	Lab activity	During the lab	10
5	Practical exam	14th	20
6	Final exam	15th	40

D. Student Support

<p>1. Arrangements for availability of teaching staff for individual student consultations and academic advice.</p> <ul style="list-style-type: none"> Course lecturers are happy to answer all students' quires during or after the lectures, and
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they can be reached by personal meeting, phones or emails.

- All students have the e-mail of the course lecturers.
- Office hours for the course organiser and lecturer of the course are given to students, this is at least 4 hours per week divided into two days.

E. Learning Resources

1. Required Text(s): - Molles M.C. (2008) Ecology. McGraw Hill, New York. - Botkin D.B. Keller E.A. (2007) Environmental Science. Wiley, New York. - Ricklefs R.E., Miller G.L. (2000) Ecology. John Wiley & Sons, New York.
2. Essential References
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
4- Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations
Students are required to use Microsoft word programme and PowerPoint programme also they are encouraged to use some mind map computer soft wares

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 (Lecture rooms, laboratories, etc.) Classrooms are available in the faculty of Applied Science campus which is enough to accommodate at least 40 students.
2. Computing resources Computing recourses are available in the library.

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching University used to measure students feedback about the course every few years. In addition, a special form was designed by the department and are given at the end of term to measure the student's feedback about the quality of teaching and course contents. Information in this feedback form are treated confidentially and students are not asked to write their names in it.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department: Any complain from students about quality of teaching and/ or course contents are always treated confidentially and considered and discussed well to find the solutions for it. In addition, as mentioned previously the department form for students feedback are also seen and analysed to

improve any shortage in any aspects or matters.

3. Processes for Improvement of Teaching:

Department teaching staff are always encourage to update their knowledge in the field of work by attending national and international conferences and self-developments courses held inside or outside the university campus and a record of that is kept for each academic staff.

Dr. Hanan Osman

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

**Phycology
4012252-3**

Revised November 2015

Course Specification

For Guidance on the completion of this template, please refer to of Handbook 2 Internal Quality Assurance Arrangements

Institution: Umm Al-Qura University
College/Department : Faculty of Sciences/ Biology Department

A Course Identification and General Information

1. Course title and code: Algae (Phycology), 4012252
2. Credit hours: 3 hours
3. Program(s) in which the course is offered: B. Sc. In Biology Program, (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course: Prof. Ali Gab-Alla
5. Level/year at which this course is offered: fourth level
6. Pre-requisites for this course (if any): Biology1 (401201)
7. Co-requisites for this course (if any): -----
8. Location if not on main campus: Biology Department, Faculty of Applied Sciences

B Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <p>a- To study of the different algal groups in fresh and marine waters, their description, identification and taxonomy, biology including life cycle, and ecology.</p> <p>b- To be familiar with the ecological and economic importance of algae.</p> <p>c- Commercial use of algae.</p>
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field):</p> <p>a- During the course, some field trips for the students usually carried out to study different environments of algae (fresh and marine waters), to collect their own collections, to learn more about the ecology, different habitats of different species on the ground.</p>

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		
Topic	No of Weeks	Contact hours
Introduction: what are algae? – Importance of their study – Habitats – structure of algal cells, algal forms, general notes about reproduction – Classification	2	4
Economic importance of algae and its applications	1	2
Division: Chlorophyta – general characters – systematic characteristics of classes, orders and families with examples of most dominant genera, including their habits, habitats, structure and life cycle.	4	8
Division: Euglenophyta – general characters – systematic characteristics of classes, orders and families with examples of most dominant genera, including their habits, habitats, structure and life cycle.	1	2

Division Chromophyta – general characters – systematic characteristics of classes, orders and families with examples of most dominant genera, including their habits, habitats, structure and life cycle.	4	8
Division Rhodophyta – general characters – systematic characteristics of classes, orders and families with examples of most dominant genera, including their habits, habitats, structure and life cycle.	2	4

2 Course components (total contact hours per semester):			
Lectures: 28	Tutorial:	Practicals: 42	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week). 12 hours (reporting)

4. Development of Learning Outcomes in Domains of Learning For each of the domains of learning shown below indicate: <ul style="list-style-type: none"> • A brief summary of the knowledge or skill the course is intended to develop; • A description of the teaching strategies to be used in the course to develop that knowledge or skill; • The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.
a. Knowledge
(i) Description of the knowledge to be acquired 1- Build up knowledge about economic importance of algae 2- Build up knowledge about identification of different groups and genera of algae of the local habitats 3- Build up knowledge about the biology and ecology of different groups and their genera (the most common genera).

<p>(ii) Teaching strategies to be used to develop that knowledge</p> <ol style="list-style-type: none"> 1- Teaching strategies could be achieved through lectures, discussions groups, and seminars. 2- Field trips for students to collect their own collections and prepare reports about their local habitats. 3- Preparing reports about economic importance of algae illustrated with figures and photos and collecting some products of algal origin.
<p>(iii) Methods of assessment of knowledge acquired.</p> <ol style="list-style-type: none"> 1- Through discussions, seminars 2- Mid-term exams 3- Mid-term reports 4- Final exams
<p>b. Cognitive Skills</p>
<p>(i) Cognitive skills to be developed</p> <ol style="list-style-type: none"> 1- Skill of collecting algae 2- Skill of preserving algae 3- Skill of description of algae 4- Skill of identification of algae 5- Skill of describing, measuring, evaluating the different environments of different algal species
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ol style="list-style-type: none"> 1- Field teaching for collecting algae and description of the environment. 2- Using basic books and keys for description of algae

- 3- Using appropriate keys for identifications of algae
- 4- Using basic books for teaching

(iii) Methods of assessment of students cognitive skills

- 1- Field reports
- 2- Practical notebook for describing species
- 3- Discussions and seminars
- 4- Exams

c. Interpersonal Skills and Responsibility

(i) Description of the interpersonal skills and capacity to carry responsibility to be developed

- 1- Ability of student to work within a group
- 2- Ability of student to do discussions within a group
- 3- Ability of student to share in performing sample collections, performing reports

(ii) Teaching strategies to be used to develop these skills and abilities

- 1- Dividing students into different working groups
- 2- Each group should perform reports, seminars, discussions (Promotion of discussions during lectures and laboratories).

(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility

- 1- Assessment of the existence and role of each student within a study group.
- 2- Assessment of the performance of each group through exams and evaluation of reports
- 3- Assessment of the performance ability of each group and students within to carry on responsibilities in a certain time.

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain.

- 1- Skills of information collection
- 2- Skills of data collections
- 3- Skills of sharing and conveying information with other students

(ii) Teaching strategies to be used to develop these skills

- 1- Using libraries for collecting data
- 2- Using internet and computers for collecting data and information

(iii) Methods of assessment of students numerical and communication skills

Assessment of the student ability

- 1- To use the internet for collecting information,
- 3- To use the university library, or international libraries,
- 4- To convoy scientific information between a group of students

e. Psychomotor Skills (if applicable)
(i) Description of the psychomotor skills to be developed and the level of performance required 1- Ability of using laboratory equipments 2- Ability of using microscope 3- Ability of drawing samples
(ii) Teaching strategies to be used to develop these skills 1- Teaching student how to use microscope 2- Teaching student how to collect and fix samples 3- Teaching student how to draw samples
(iii) Methods of assessment of students psychomotor skills Evaluation of student performance: 1- In using microscope, 2- In preparation of samples, 3- and drawing of samples

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Periodical Exam	4	5 %
2	Mid Term Exam (practical)	8	15 %
3	Mid Term Exam	9	30%
4	Reports and essay	11	5 %
5	Final Practical Exam	15	15 %
6	Final Exam	16	30 %

D. Student Support

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

a- Time faculty: 10 hours each week

E Learning Resources

1. Required Text(s)

a- Course note prepared by faculty member responsible for the course: Prof. Dr. Ali Gab-Alla

2. Essential References

- Algae (2000). Abdel Aziz Kablan, Idris Monir Turkey, Mohamed Mohamed Alhoseny (Eds.). Abo-Azzma Books Library.
- The Algae (1973). V. J. Chapman, D. J. Chapman (Eds.). Macmillan and Co LTD.

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

4-.Electronic Materials, Web Sites etc

<http://www.algae.com/fifhtoc.html>

<http://www.seaweeds.com/fifhtoc.html>

5- Other learning material such as computer-based programs/CD, professional standards/regulations

a- CD containing images of algal genera and their systematic classification prepared by faculty member responsible for the course: Prof. Dr. Ali Gab-Alla (1436/1437)

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) a- Class rooms are already provided with data show, audiovisual equipments b- The areas of class rooms are suitable, concerning the number of enrolled students; and air conditioned.
2. Computing resources a- Providing class rooms with computers.
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) a- Providing the lab with extra prepared slides (renew slide resources), herbarium sheets b- Availability of new light microscopes

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching a- Questionaries b- Class room discussions
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department a- Revision of student answer paper by another staff member. b- Analysis the grades of students.
3 Processes for Improvement of Teaching a- Preparing the course as power point presentation and overhead slides.

4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)

1- After the agreement of Department and Faculty administrations

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

- Periodical revision by Quality Assurance Units in the Department and Institution

Attachment 2 (e)

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

Invertebrates

4012311-3

Revised November 2015

Course Specification

Institution: Umm Al-Qura university
College/Department: Faculty of Science – Biology Department

A Course Identification and General Information

1. Course title and code: Invertebrates. Code (4012311-3)
2. Credit hours 3 (2theoretical + 1 practical)
3. Program(s) in which the course is offered. BSc Biology (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course Dr Randa Ahmed Elbassat
5. Level/year at which this course is offered 3 rd level
6. Pre-requisites for this course (if any) animal zoology 104
7. Co-requisites for this course (if any) -----
8. Location if not on main campus -----

B Objectives

<p>1-list the general characters of the main phyla (protozoa, porifera, cnidaria, platyhelminthes, nematoda ,annelida, Arthropoda, Mollusca and Echinodermata.</p> <p>2- identify the main types of invertebrates upon their morphological variations.</p> <p>3- illustrate the biology and life cycles of selected examples of invertebrates.</p> <p>4- define the phylogenetic relations among the different invertebrates.</p> <p>5- understand the economic and medical importance of all invertebrates phyla.</p>
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field):</p> <ul style="list-style-type: none"> • Update learning resources on a regular basis through sites available on the electronic network. • New teaching methods and the use of presentations • • update content on a regular basis to keep up with modern developments • promote self-learning among students

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
<ul style="list-style-type: none"> • Definition of invertebrates • An introduction to the history of the evolution of invertebrate taxonomy. • Foundations of animals' classification. • Kingdom Protozoa – General characters 	1	2

<p>Phylum: Sarcomastigophora (Ex.: <i>Entamoeba</i> and The foraminifera): studying general biological activities.</p>		
<p>Phylum: Ciliophora - eg.: <i>Paramecium sp</i> - taxonomic position – reproduction and deferent Biological activities.</p>	2	2
<p>Multicellular organisms (Parazoan animalsgeneral characters)- Phylum: Proifera- studying deferent biological activities and reproduction.</p>	3	2
<p>Subkingdom: Metazoa - Phylum: Cnidaria (general characters- 3 3 2- Class: Hydrozoa (eg.: <i>Obelia</i>) 3- Class: Scyphozoa (eg.: <i>Ourelia</i>) 4- Class: Anthozoa (eg.: <i>Alcyoniun</i> and stony corals) – general morphological characters.</p>	4	2
<p>The Triploblastica -Phylum: Annelida - general characters of phylum and classes – 1- Class: Oligochaeta – eg. <i>Allolobophora caliginosa</i> – tegument – internal structure of deferent systems – reproduction and life cycle 2- Class: Polychaeta – eg. <i>Nereis</i> – general morphology and reproduction. 3- Class: Hirudinea – eg. <i>Hirudo medicinalis</i> (Medical leech) - morphology – internal systems reproduction and life cycle</p>	5	2
<p>Med term Exam</p>	6	2
<p>. Phylum: Arthropoda - general characters of phylum and classes – shrimp internal anatomy – morphology some other aquatic arthropods of economic importance.</p>	7	2
<p>Scorpion and spider shape, anatomy and life cycle. • comparison between <i>Scolopendera and lulus sp</i></p>	8	2

Phylum: Mollusca (general characteristics – Main classes) 1- Class: Gastropoda (Desert snail) study of the morphology and anatomical - the life cycle – the importance of the torsion and coiling – Orders of gastropods 2- Class: Polyplacophora morphology and anatomy of chiton	9	2
3- Class: Bivalvia - Anodonata sp. (shell morphology – internal anatomy – feeding – reproduction and life cycle) 4- Class: Cephalopoda (general characteristics - Classification of Class: Cephalopoda) – Sepia and Octopus (general morphology and anatomy – biological activities	10	2
Phylum: Echinodermata (Classification and general characteristics) 1- Class: Asteroidea - Sea Stars (general morphology and anatomy - Water Vascular System) 2- Class: Ophiuroidea – <i>Ophiocoma</i> 3- Class: Echinoidea – <i>Tripneustes</i> 4- class: Holothoridae – Sea cucumbe	11	2
Revision	12	2
Final Exam	13	2

2 Course components (total contact hours per semester):				
Lecture: 24 h	Tutorial: 4	Laboratory 12	Practical/Field work/Internship 2	Other: 42 h

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

- 1- Apply the taxonomical rules on specific examples of invertebrates.
- 2- Compare between unicellular and multicellular animals.
- 3- Differentiate between Acoelomate, pseudocoelomate and coelomate animals.
- 4- Evaluate the advancement and similarities between phyla.

(ii) Teaching strategies to be used to develop that knowledge

Lectures. Presentations and practical work.

(iii) Methods of assessment of knowledge acquired

solving worksheets that directly measure students understanding

b. Cognitive Skills

(i) Description of cognitive skills to be developed

- The ability to make scientific comparisons between invertebrate organisms
- The ability to classify objects invertebrate
- the ability to detect invertebrate organisms in the environment
- The ability to understand the life cycles of organisms in invertebrate

(ii) Teaching strategies to be used to develop these cognitive skills

- Use the worksheets

<ul style="list-style-type: none"> • individual duties like to ask each student comparisons between invertebrate organisms in Each community • Collective duties by distributing pictures of objects on the invertebrate groups (teams) and ask each group to identify the object in the image and classifies Debates between work and work teams
<p>(iii) Methods of assessment of students cognitive skills</p> <p>Oral tests to assess cognitive skills by using pictures or presentations or video clips.</p>
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> • The ability to assume responsibility for self-education • Work effectively in a group • The ability to express their own opinion without fear or hesitation and improves their self-confidence • Ability to lead a team to work
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> • Ask the student research in books and online To enhance the self- learning. . Ask students to make their own presentations to be discussed • the distribution of tasks between team members under the supervision of the commander • Enhance the ability of the student to express themselves.
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <p>Evaluating the group discussion</p> <ul style="list-style-type: none"> • Evaluating scientific analysis done by the group • Note and follow the behavior of the student • The commitment of the student's performance of duties specified in their times
<p>d. Communication, Information Technology and Numerical Skills</p>

<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> • Skills, oral and written communication • Using computer and search the Web for information sources • Use a power point for Proposals Group • The use of statistical methods in the analysis of information
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> • assign the student to view and throwing solutions to the issues that required to be analyzed • commissioning duties appliances rely on search in the World Wide Web • The use of modern technology in scientific research • Find information in databases and sites corresponding universities.
<p>(iii) Methods of assessment of students numerical and communication skills</p> <p>Assess the students through what is being discussed in the lecture</p> <ul style="list-style-type: none"> • Assessment of individual and collective duties based on predefined criteria
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <p>The use of the microscope</p> <ul style="list-style-type: none"> • Anatomy of organisms <p>• Drawing samples</p>
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> • Assign the student using a microscope to examine samples • Assign the student autopsy • Assign the student draw samples
<p>(iii) Methods of assessment of students psychomotor skills</p> <p>Follow up the student in the lab during the examination and dissection and evaluation</p> <ul style="list-style-type: none"> • Monitoring degrees of draw

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	1 Med term exam	5-6	15%
2	2 Assay and work sheet	2-4-7	5%
3	3 Group assay	10	10%
4	4 Lab	7	10%
5	5 Final exam	14	40%
6	6 Lab final exam	13	20%
7			
8			

D. Student Support

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

- Follow up students in courses laboratories to provide the required expertise by overseeing the labs.
- scheduled office hours (4 hours) during the school week to connect with students.

E Learning Resources

1. Required Text(s)
2. Essential References Text books, web sites and journals
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List) Barnes, R.S.K. :”Kingdom animalia”. In Asynoptic classification of living organisms. Blachwell scientific publication 1984.

Barnes, R.S.K. : The invertebrates A new synthesis PC low and P jw olive, 1989
4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecturer rooms + lab
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) Dissecting microscope Binuclear microscope

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching Continuous follow up
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

Follow up

3 Processes for Improvement of Teaching

Using presentations and movies

4. Processes for Verifying Standards of Student Achievement (eg. 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)

Continuous evaluation of students activities and homeworks.

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

Arranging cooperation with similar departments of other universities

Kingdom of Saudi Arabia
The National Commission for Academic
Accreditation & Assessment
COURSE SPECIFICATION

Molecular Biology

4013082-3

Revised March 2007

Course Specification

*For Guidance on the completion of this template, please refer to of Handbook 2
Internal Quality Assurance Arrangements*

Institution: UM AL – QURA UNIVERSITY
College/Department : Faculty of Sciences – Biology Department

A Course Identification and General Information

1. Course title Molecular Biology
2. Course code: 4013082-3
2. Credit hours: 3hrs
3. Program(s) in which the course is offered. : BSc Biology
4. Name of faculty member responsible for the course: Associate Prof. Dr. Gamal Osman
5. Level/year at which this course is offered: 6rd
6. Pre-requisites for this course (if any): Bacteriology 401244 + Biochemistry 401231
7. Co-requisites for this course (if any): ---
8. Location if not on main campus: Main campus

B Objectives

-Upon successful completion of this course, the student should:

- ❖ know the differences between Eukaryote and prokaryote
- ❖ Know the structure of DNA.
- ❖ He should be aware with the DNA replication.
- ❖ He should be aware with the different types of RNA.
- ❖ He should understand the transcription.
- ❖ He will be able to differentiate between RNA and DNA

- ❖ Also, he should be know the translation
- ❖ He will be able to find and understand mutation
- ❖ He should be familiar with some bioinformatics.
- ❖ He should understand the genetic code

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

This course aims to give the student an idea of the primary and secondary cellular structures and replication of the genetic material

and studying of different types of RNA and the genetic code and regulation of gene expression.

1 Topics to be Covered		
Topic	No of Weeks	Contact hours
Introduction and Mendelian Genetics	1	2
❖ DNA Structure	1	2
❖ DNA replication		
❖ Different types of RNA.	1	2
❖ Transcription	3	6
❖ Genetic code	4	8
❖ Translation	2	4

<ul style="list-style-type: none"> ❖ Mutation ❖ Regulation of gene expression in Prokaryote ❖ Regulation of gene expression in Eukaryote ❖ Some Bioinformatics 	2	4
Total learning weeks and Contact hours	14 weeks	28hrs

2 Course components (total contact hours per semester):			
Lecture : 28	Tutorial:	Practical: 42	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week):
12h (reports & essay)

<p>4. Development of Learning Outcomes in Domains of Learning</p> <p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> • A brief summary of the knowledge or skill the course is intended to develop; • A description of the teaching strategies to be used in the course to develop that knowledge or skill; • The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<p>a. Knowledge : Description of the knowledge to be acquired</p> <p style="padding-left: 40px;">Upon successful completion of this course, the student:</p> <ul style="list-style-type: none"> ❖ will understand the differences between DNA and RNA ❖ will understand the role of different types of RNA ❖ will Have knowledge about what causes the mutation and its different types ❖ will be familiar with the transcription and translation ❖ will be aware with some bioinformatics.
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <ul style="list-style-type: none"> • Lectures which must start with preliminary one showing course contents • Using images and movies

- Studying DNA and RNA in the lab.
- Encouraging student to collect the new information about replication , transcription and translation..
- Enable the reference books and scientific sites concerning molecular microbiology in internet.

(iii) Methods of assessment of knowledge acquired:

- Periodical exam and reports 10%
- Mid- term theoretical exam 20%
- Mid-term practical exam 5%
- Final practical exam 15%
- Final exam 50%

b. Cognitive Skills

(i) Cognitive skills to be developed

Having successfully completed the course students should be able to:

- thinking and give information about the importance of DNA in life
- give information about the role of DNA and RNA in translation.
- Explain the mutation
- Understand the genetic code

(ii) Teaching strategies to be used to develop these cognitive skills:

- Through lectures, videos and some laboratory experiments which introduced to the students to enable them to understand the is the DNA structure
- Demonstrate the different types of mutation.

(iii) Methods of assessment of students cognitive skills

- Exam must contain questions that can measure these skills.

c. Interpersonal Skills and Responsibility

(i) Description of the interpersonal skills and capacity to carry responsibility to be developed

- student should be able to obtain knowledge by himself from different sources
- the student is encouraged to work in a team.

(ii) Teaching strategies to be used to develop these skills and abilities

- Open class discussions with students for minutes during lectures and labs.
- Students (as groups and individuals) should give reports concerning certain topics of the course.

(iii) Methods for assessment of the students interpersonal skills and capacity to carry responsibility

- Evaluate the efforts of each student in preparing the report.
- Evaluate the scientific values of reports.

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain.

- Enhancing the ability of students to use computers and internet.

(ii) Teaching strategies to be used to develop these skills

- Homework (preparing a report on some topics related to the course depending on web sites).

(iii) Methods of assessment of students numerical and communication skills

- Evaluation the efforts of students in preparing the reports and referring the references.

e. Psychomotor Skills (if applicable)

Description of the psychomotor skills to be developed and the level of performance required

Students should be able to:

- Practice the basic Lab. Skills
- Use light microscope in accuracy.
- Prepare microscopic slides and culture media.
- Isolation of DNA and RNA

(ii) Teaching strategies to be used to develop these skills

- Follow up students during preparing slides, examination and isolation.

(iii)Methods of assessment of students psychomotor skills

- Giving additional marks for preparing the best purified DNA and RNA

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
------------	--	----------	--------------------------------

1	Periodical Exam	4	5 %
2	Mid Term Exam (practical)	8	5 %
3	Mid Term Exam	9	20 %
4	Reports and essay	11	5 %
5	Final Practical Exam	15	15 %
6	Final Exam	16	50 %

D. Student Support

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

Office hours: 10 hrs

E. Learning Resources

Required Text(s):

- Course note and PPT prepared by faculty member responsible for the course: Prof. Dr. Gamal Osman
- **Recommended Books and Reference Material (Journals, Reports, etc)**
 1. Molecular Microbiology | Stephen J.W. Busby | Springer
www.springer.com/us/book/9783642720734
 2. Molecular Microbiology: Diagnostic Principles and Practice ...
www.amazon.com
 3. Advances in Molecular and Cellular Microbiology
ebooks.cambridge.org/series_landing.jsf;...Molecular...Microbiology

Other learning material such as computer-based programs/CD, professional standards/regulations

- **PPT prepared by prof. Dr. Gamal Osman**

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)

- Class room is already provided with data show
- The area of class room is suitable concerning the number of enrolled students (68) and air conditioned.

2. Computing resources

- Providing class rooms with computers and labs with data show.

3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

- Availability of some reference
- Availability new light microscopes
- Availability different specific media and chemicals used for isolation (List with the Head of the Department)
- Availability of DNA and protein cells

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching

- Questionaries
- Open discussion in the class room at the end of the lectures

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

- Revision of student answer paper by another staff member.
- Analysis the grades of students.

3. Processes for Improvement of Teaching

- Preparing the course as PPT.
- Using scientific movies.
- Coupling the theoretical part with laboratory part
- Periodical revision of course content.

4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)

- After the agreement of Department and Faculty administrations

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

- Periodical revision by Quality Assurance Units in the Department and institution

Faculty member responsible for the course: Prof. Dr. Gamal Osman

Signature
22/11/1436

مرفقات:
• نماذج من الاختبارات الدورية والنصفية والنهائية

نموذج الاختبار النهائي



اختبار ميكروبيولوجيا جزيئية- قسم الاحياء – كلية العلوم – جامعة أم القرى

الاسم _____ الرقم _____

برجاء حل 5 أسئلة من 6 – كل سؤال 8 درجات

السؤال الاول أكمل

- 1- كودونات الانتهاء هي و..... و..... و..... و.....
- 2- يبدأ الحذف عند تتابع وينتهي عند تتابع.....
- 3- ترتبط الاحماض الأمينية برابطه تسمى ب
- 4- من أنواع ال POINT MUTATIONS و.....
- 5- اذا كان احد جينات في جينوم الفار به سيتوسين 20% اذا نسبة الثايمين هي.....
- 6- جينوم الدروسوفيلا به 14 كروموسوم يعنى ذلك ان عدد جزيئات ال DNA هو.....
- 7- من أنواع ال FRAMESHIFT MUTATIONS..... و.....

السؤال الثاني علل لماذا

- 1- لماذا سميت الطفرة الصامتة بهذا الاسم؟
- 2- لماذا يتم تكوين الخيط المتلكى على مراحل؟
- 3- لماذا تموت الفئران في حاله اصابتها ببكتيريا الالتهاب الرئوي المطفرة ؟
- 4- لماذا عند عمل تحور للبكتيريا ب mRNA هيموجلوبين دم الارنب يتم انتاجه؟
- 5- لماذا عند حدوث طفرة عند 260 ننسبها ال DNA وليس البروتين ؟
- 6- لماذا يتم حذف ال intron؟

السؤال الثالث عرف

- 1- معنى ال Missense mutation؟
- 2- معنى شموليه الشفرة الوراثية؟
- 3- عرف التآرجح الشفرة الوراثية؟
- 4- بولى سيسترونك ومنوسيسترونك RNA؟

5- عرف وظيفة القلنسة و ذيل البولي أ في تخليق ال ر ن ا في مميزه النواه؟

6 - عرف ما الفرق بين Reverse mutation and Forward mutation ؟

السؤال الرابع اختار الإجابة الصحيحة من بين الأقواس

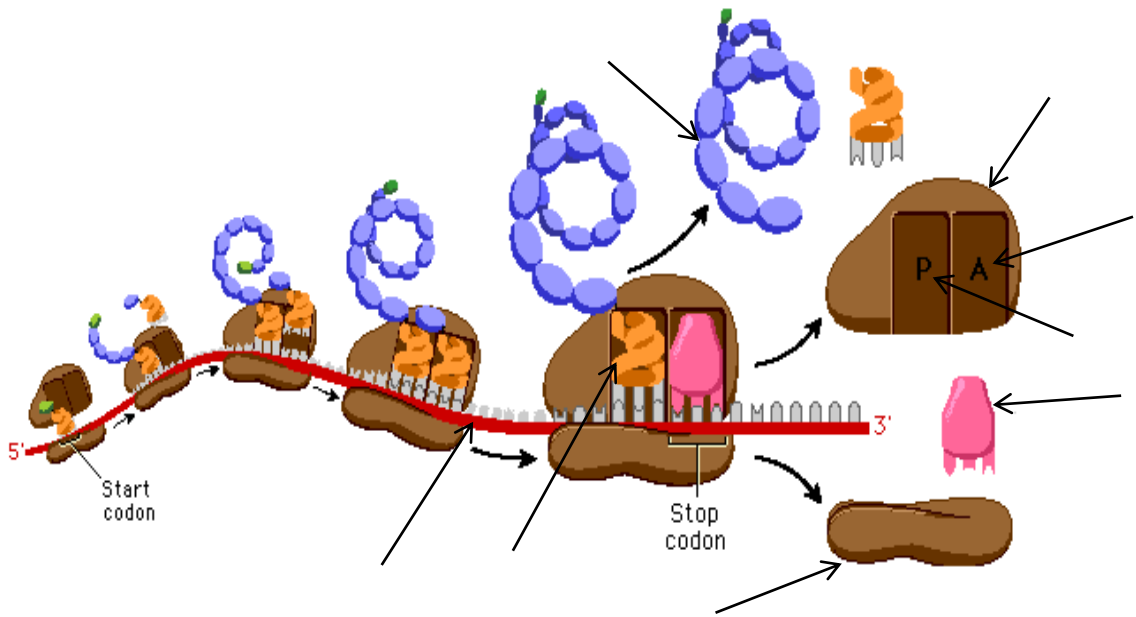
- 1- توجد القلنسة في (في مميزه النواه - في غير مميزه النواه - في مميزه النواه وغير مميزه النواه)
- 2- اذا كان لديك 150 حمض الميني فمعنى هذا ان الجين المسؤول عن انتاجها فيه (300-450-400) نيوكلوتيده؟
- 3- يتم نسخ ال DNA في دورة الخلية (s - G1G2 - G1- G2 - جميع ما سبق)؟
- 4- يقوم الSSbبروتين ب (بفك حلزنة الDNA- بربط الDNA - يمنع ارتباط الحلزون المزدوج)
- 5- الانزيم الذى قوم ببناء البروتين في عملية الترجمة هو (بوليمراز 3 - امينواسيلسيناز - جميع ما سبق)
- 6- يتكون الريبوسوم ال 50S من حجرات عددها (3-2-1)

السؤال الخامس اذكر صح ام خطأ مع ذكر الصح اذا كانت الإجابة خطأ

- 1- لما ال lac operon is repressed هذا معناه انه لا يوجد لاكتوز ()
- 2- تتابع منطقة المحفز في غير مميزه النواه هو TATAAT ()
- 3- وظيفه انزيم التوبوايسوميراز هي بناء سلسله ال DNA ()
- 4- ال ر ن ا متعادل الشحنة ()
- 5- لما ال lac operon is induced هذا معناه انه يوجد لاكتوز ()
- 6- هي الطفرات التي تحدث دائما : Conditional mutations ()
- 7- يرتبط الثايمين بالجوانين بينما يرتبط السيتوسين بالادنين ()

السؤال السادس

تعرف على الأسهم في الرسم مع ذكر اسم هذه العملية



مع خالص تمنیاتی بالتوفیق
 ا.د/ جمال هریدی

Kingdom of Saudi Arabia

**The National Commission for Academic
Accreditation & Assessment**

COURSE SPECIFICATION

Plant Physiology (1)

(4013261-3)

Revised November 2015

Course Specification

For Guidance on the completion of this template, please refer to of Handbook 2 Internal Quality Assurance Arrangements:

Institution: Umm Al Qura University.
College/Department: Faculty of Science, Biology Department.

A. Course Identification and General Information

1. Course title and code: Plant Physiology (1) (4013261-3)
2. Credit hours: 3 hours - Biology
3. Program(s) in which the course is offered. BSc Biology (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course: <i>Prof. Dr. Hamed El Sayed Ahmed El Sayed</i>
5. Level/year at which this course is offered: 5th
6. Pre-requisites for this course (if any): Biochemistry
7. Co-requisites for this course (if any): -
8. Location if not on main campus: main campus (Al Aziziah Dist. Laboratory and Class Rooms).

B. Objectives

1. Summary of the main learning outcomes for students enrolled in the course:

- ✚ This course aims to Identified the students of the primary basics that will help them understand the vital functions of plant cells live as well as inform them of the extent of the needs of plant mineral elements of inorganic and sources and how to plant them and relations of aquatic plant and laws that enable the plant from the water balance for what is absorbed and inspecting of water
- ✚ Requesting the definition of the principles and functions of the members of the plant and the interpretation of the manifestations of life, and the development of its relationship recognizing the surrounding environment, the achievement of scientific knowledge for the students and the development of their capabilities to conduct simple experiments and recording observations and conclusions discussed and devised them
- ✚ Generally to provide the student with the idea for the basic functions and operations of the members of the different plant

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

Recognize the characteristic of the colloidal system and the importance of ecological systems and surface properties of osmosis phenomena, explain the mechanisms of absorption of water and its transmission and its relationship with the statement and the roles in environmental conditions and physiological factors influencing it and explain the importance of the necessary elements and physiological roles.

Also, explain the follow:

- 1) Introduction and functions of cell organelles
- 2) Solutions and water relations and functions of organelles
- 3) Soil structure in Agricultural and its relationship to mineral nutrition
- 4) Transport across the Phloem
- 5) Plant Metabolism
 - (a) - photosynthesis
 - (b) - Respiration
- 6) Growth and Development, and its relationship with the plant hormone
- 7) Plant tissue culture
- 8) Methods of tissue culture

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		
Topic	No of Weeks	Contact hours
Physiological Aspects of the Plant Cell	1	2
Protoplasm	2	2
Colloidal Properties of Protoplasm	3	2
Plasma Membrane and Permeability	4	2
Water Relation of Cells	5	2
Plant Water Relations Absorption and Ascent of Sap	6	2
Transpiration	7	2
Mineral Nutrition (Importance of Essential Nutrient) Key to mineral deficiency symptoms	8-9	4
(Enzymes)	10	2
Respiration and Energy Transform	11	2
Photosynthesis	12	2
Growth, Development and Differentiation and Plant Hormones.	13	2
Plant Tissue Culture	14	2

2 Course components (total contact hours per semester):			
Lecture:	Tutorial:	Practical/Fieldwork/Intern ship:	Other:
28	--	42	Meetings to present assignments along with mid-term exams written

3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week): The study rate increase 4 hours to search through the Internet to access the sites according to reach the student has done extensive research in the specialty materials.

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired:

- * - Identify solutions and types of laws that govern mobility
- ** - To identify the water relations of plant cell
- *** - Identification of water and pictures of his presence in the soil and air
- **** - To identify the movement of water from the soil to the roots and between cells and transport across the wood cells
- ***** - To identify the movement of stomata and methods of measuring and calculating transpiration and the factors influencing the rate
- ***** - To identify the mineral nutrition inorganic
- ***** - To identify the major and minor mineral elements and sources of the plant
- ***** - To identify the sand and aquatic farms and methods of food preparation solutions
- ***** - To identify the theories of absorption of mineral elements and the movement of the mechanism of absorption and transmission solutions across membranes and transmission elements and reuse
- ***** - To identify the nutrition organic plant
- ***** - To identify the photosynthesis and gaseous exchange in the photosynthesis process and interactions of optical and non-optical (dark reactions) is installed in the path of carbon plants and building high-end sugar to starch
- ***** - To identify the factors affecting the photosynthesis process
- ***** - To identify the transfer of organic material processed through the fabric of bark
- ***** - Identify to recognize the importance of enzymes in biological processes within the various plant cells, including vegetable metabolism
- ***** - To identify the rate of growth and unfolding of hormones in the plant
- ***** - To identify the method of tissue culture to develop new types of bear different environmental stresses such as drought, desertification and salinity ----- and other environmental factors

(ii) Teaching strategies to be used to develop that knowledge

- Present the View topics of study to the students to learn the course content
- The involvement of the students with questions after the presentation showed to see how learned scientific article
- To give the students a duty to do the same lecturer by themselves for the development of their ability to research and dumping within the same decision, but using modern techniques as a show Power Point.
- Practicals Technique and Hands-on analysis of different plants to develop their capacity to access to different labs.
- The meetings work of scientific for students of each group to view the work done by colleagues and evaluated and that personal development and the ability to make a speech in front of others
- Training to use the Internet to access scientific sites to assemble the relevant decision is required and the development of the ability to access to the latest findings of science and scientific art.

(iii) Methods of assessment of knowledge acquired

- Duty weekly for each lecture "activities within the scheduled"
- Mid-term tests for the practical "half of the semester."
- Final testing of practical "end of the semester."
- Mid-term exams for my "half of the semester."
- Final testing of my "end of the semester."
- Questions diversity of style and distinctive inclusive Homework and reports
- Assigning students to summarize the scientific material
- Assigning students to conduct individual and group research

b. Cognitive Skills

(i) **Cognitive skills to be developed**

- Skills to identify the processes metabolism that take place within the plant
- Skills to identify the plants adapted to external conditions, such as unwanted heat, drought, salinity and other -----
- Skills the ability to analysed information and access to the right solution

- Skills the ability to use modern technology by searching the World Wide Web and computer to extract information
- Skills the ability to Writing, search and submit it in the form of mini-essay familiar with useful information through the recognition of the steps sound scientific research
- Skills the ability to predict the results of the search before reaching the end of the road
- Knowledge of environmental and plant factors that negatively or positively affect agricultural crops
- The ability to think, analysis and interpretation and the acquisition of knowledge through information analysis

(ii) Teaching strategies to be used to develop these cognitive skills

- Presentation skills and throw through the activities and duties required to be displayed to the students in seminars
- Laboratory exercises for the use of instruments and tools, chemicals with modern techniques
- To encourage teamwork how to work collectively discussed and presented in workshops for discussions and evaluation by the students (peer review)
- The application of problem-solving and decision-making analysis of samples required them skills
- Discussions raised during the presentation of the lecture

(iii) Methods of assessment of students cognitive skills

- Laboratory lessons through practical tests to assess
- Research related to the course are viewing on students in the evaluation discussion groups
- Evaluation of the theoretical scheduled through periodic final and a quarterly exams

c. Interpersonal Skills and Responsibility

- (i) Description of the interpersonal skills and capacity to carry responsibility to be developed
- The development of the spirit of cooperation at the students through teamwork

- The ability to understand and respect the views of students for each other
- Expanding the circle of knowledge through the use of the World Wide Web in search of new in science
- Know how difficult the arrival of the scientific material to the students through discussions at the end of each lecture
- The ability to group discussion to reduce the gap between the students and a faculty member with the decision
- The ability to take responsibility I have students with each other
- The development of the spirit of cooperation and accept the responsibility of leadership hand or pander

- (ii) Teaching strategies to be used to develop these skills and abilities
- A panel discussion of the students inside the classroom management
 - Cash at the students accept the offer after research and presentation in seminars
 - The development of self-study among students
 - Create a spirit of competition among students through mental questions relating to the adequate understanding of scientific material to the highest level
 - Develop the skills to extract the correct information and scientific ways

- (iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility
- Oral exams of the content of scientific theory Article
 - Methods of Research Assessment and measure how students accept cash in views
 - Commitment to the requirements of the students work assigned her
 - The ability to offer and throw in front of each other
 - Individual and collective business valuation

d. Communication, Information Technology and Numerical Skills

- (i) Description of the skills to be developed in this domain.
- The ability to use the Web in search of the latest findings of modern science
 - The ability to use computers in research writing and presentation using power point
 - The use of computers in the provision of research and scientific reports required

<ul style="list-style-type: none"> - The use of modern techniques in scientific research - The ability to research information required analysis.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - To give students individual and collective duties and activities and reports and presented through the use of Microsoft Office - View summaries of scientific material to the students using the programs Power point - To urge the students to visit the library to take advantage of modern scientific research - Make a table for the students scientific debate
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> - The performance of individual students to assess work - Evaluation of the performance of the students of collective works - Evaluation of the required practical applications - Evaluation of the ability of students to use computers to write and Display search - Evaluation of the students ability to use the Web to draw scientific research - Evaluation of the students methods of writing bug research capacity and take it out in final form
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <p style="text-align: center;">Does not apply</p>
<p>(ii) Teaching strategies to be used to develop these skills</p> <p style="text-align: center;">Does not apply</p>
<p>(iii) Methods of assessment of students psychomotor skills</p> <p style="text-align: center;">Does not apply</p>

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (e.g. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Weekly assignments every	Two weeks	%20
2	The theoretical the test midterm	8	%10
3	Midterm the practical test	6	%10
4	The final practical test	12	%20
5	Final theoretical test	15	%40

D. Student Support

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

- Following up the the students in academic labs to provide expertise required by supervising laboratory
- Office scheduled hours (6 hours) during the school week to communicate with the students
- Access to e-mail and send and correct assignments and re-send it back to the students
- Provide advice and guidance to students at any time during working hours and by telephone and electronic communications and the exchange of sending electronic files with students

E Learning Resources**1. Required Text(s):**

- فسيولوجيا النبات العام - الجزء الثاني - باصلاح، محمد عمر، علي الهلال، محمد حمد الوهبي - مطبعة جامعة الملك سعود للنشر العلمي والمطابع - الرياض (2002م)
- علم النبات العام - د أحمد محمد مجاهد - 1986م - مكتبة الأنجلو المصرية
- أساسيات فسيولوجيا النبات - دكتور /محمد جمال الدين حسونة - دار المطبوعات الجديدة القاهرة - ج.م.ع.
- أسس الكيمياء الحيوية
- عماد فسيولوجيا النبات - دكتور/ عماد الدين وصفي - المكتبية الأكاديمية - الدقي - القاهرة - ج.م.ع.
- فسيولوجيا النبات - دكتور/ أحمد مصطفى حمد - نيوأوفست للطباعة - ت 002025730526 - القاهرة - ج.م.ع.
- كتاب مترجم عن فسيولوجيا النبات للأستاذ الدكتور / روبرت دفلن - القاهرة - ج.م.ع
- أسس الكيمياء الحيوية - للدكتور محمد عبد المنعم الأعسر - المكتبة الأكاديمية - القاهرة ج.م.ع

- Growth and Organization in Plant , Stewart, F.C. Adison - Wesley Co. Reading Wareing (1987)

- فسيولوجيا النبات العملية - عبد الجواد - هشام، محمد علي الوهبي - الناشر - عمادة شؤون المكتبات , جامعة الملك سعود - الرياض (1409هـ)
- الكيمياء الحيوية (كيمياء حيوية تركيبية وكيمياء حيوية فسيولوجية - عبد الرحمن أحمد الحملاوي) الطبعة الثالثة - دار القلم - الكويت - 1984م

- فسيولوجيا النبات العام - الجزء الثاني - باصلاح محمد عمر - علي الهلالي - محمد حمد الوهبي - مطبعة جامعة الملك سعود للنشر العلمي والمطابع - 2002م

2. Essential References

- Dr. Imad Physiology / Imad Eddin descriptive - Dokki. Cairo - Egypt.
- The vital foundations of Chemistry - Dr. Mohamed Abdel Moneim southpaw-academic library - Cairo - ARE
- Growth and Organization in Plant, Stewart, FC Adison - Wesley Co. Reading Wareing (1987)
- Plant Physiology process - Abdel Gawad - Hisham, Mohammed Ali Al Wahaibi - publisher - Deanship of Library Affairs, King Saud University - Riyadh (1409)
- General Plant Physiology - Part II - reform, Mohammad Omar, Ali Crescent, Mohammed Hamad Al Wahaibi - King Saud University Press for publishing scientific and presses - Riyadh (2002 m)
- General Plant - Science Dr. Ahmed Mohammed Mujahid --1 986 m- Anglo-Egyptian library
- The basics of the physiology of intentions - Dr. / Mohammed Jamal al-Din Hassouna - House new publications Cairo - J.m.a.
- Chemistry vital (vital chemistry and synthetic chemistry vital physiological - Ahmed Abdel-Rahman el-Hamalawy) Third Edition - Pen House - Kuwait - 1984
- Plant Physiology year - the second part - the reform of Mohammad Omar - the Hilali

- Mohammed Hamad Al Wahaibi - King Saud University Press for publishing scientific and presses - 2002
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
- Dr. Imad Physiology / Imad Eddin descriptive – Dokki. Cairo – Egypt. - The vital foundations of Chemistry - Dr. Mohamed Abdel Moneim southpaw-academic library - Cairo - ARE - Growth and Organization in Plant, Stewart, FC Adison - Wesley Co. Reading Wareing (1987) - Plant Physiology process - Abdel Gawad - Hisham, Mohammed Ali Al Wahaibi - publisher - Deanship of Library Affairs, King Saud University - Riyadh (1409) - General Plant Physiology - Part II - reform, Mohammad Omar, Ali Crescent, Mohammed Hamad Al Wahaibi - King Saud University Press for publishing scientific and presses - Riyadh (2002 m) - General Plant - Science Dr. Ahmed Mohammed Mujahid --1 986 m- Anglo-Egyptian library - The basics of the physiology of intentions - Dr. / Mohammed Jamal al-Din Hassouna - House new publications Cairo - J.m.a. - Chemistry vital (vital chemistry and synthetic chemistry vital physiological - Ahmed Abdel-Rahman el-Hamalawy) Third Edition - Pen House - Kuwait - 1984 - Plant Physiology year - the second part - the reform of Mohammad Omar - the Hilali - Mohammed Hamad Al Wahaibi - King Saud University Press for publishing scientific and presses - 2002
4- Electronic Materials, Web Sites etc
There are too many websites and are searched using the more than one method to enter on Google for sites that have to do with rule the required of scientific study
5- Other learning material such as computer-based programs/CD, professional standards/regulations
Using the Microsoft software in writing tables and graphs and PowerPoint presentation using the Power Point

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) - Classrooms are equipped with different display such as Data Show Data Show and smart blackboard and other

<ul style="list-style-type: none"> - Laboratories equipped with the tools and various chemicals usable - Various measurements of physiological analysis devices - Laboratories and classrooms available the safety and security tools - The provision of computers to access the World Wide Web for students
<p>2. Computing resources</p> <ul style="list-style-type: none"> - Classrooms containing over to computers for students to access the World Wide Web and the preparation the required of them on campus under the supervision of faculty members and the like.
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</p> <p>Chemicals usable is expired Devices for measurement analysis of all - mineral elements, proteins and chlorophyll, carbohydrates and fats DNA, RNA, Amino Acids, Proteins, Free Proline, Carbohydrates, Sucrose, Enzymes Activity, Micro & Micro Inorganic Elements, --etc. Green house glass (glass house) for breeding different plants Green House</p>

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> - The work of a questionnaire to assess the of scientific material presented by the students in END OF each semester to learn and cons scheduled to be avoided in the coming years - Work meetings with the students to take their opinions in decision - The level of the students periodically measure to note enables the student to absorb the planned article - Evaluating the results of the students to know the feedback of the scheduled Nutrition - Assess the duties required and knowledge of the extent of the student response to decision
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> - Preparation of reports on students scheduled - Evaluating the results of the students are supported by a committee to measure feedback - Self-assessment with the decision and the use of a single modern teaching methods - The level of use of assessment of the students by professors highly experienced consultants in the same specialization - Internal periodic review by the Commission supported the decision
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> - Find what's new in the scientific material to get to the best - Take advantage of the experience of others to pursue of scientific education to go along with continuous update - The need to append the faculty members and the like training courses and specialized workshops for the advancement of the educational process in the best

- Need to benefit from the expertise of experienced follow-up of the educational process
- Provide a suitable atmosphere for study and provide all the requirements to complete the educational process
- Development league to see weaknesses in the end by the Rapporteur of the Committee on Internal Audit

4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)

- Evaluation and reporting duties required
- A review of exams papers by faculty member
- Cooperation with the faculties of a debate in the local, regional and international universities to reach academic accreditation

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

- Review scheduled characterization and vocabulary periodically by an internal committee and then an external committee to get to the desired academic accreditation
- Compared to the course specification with similar decisions in other universities
- The work of self-study with the decision to see the weaknesses and improve in the new plan
- Characterization of the decision to put in line with the reduction of unemployment and community service labour market
- Take advantage of the statistical analysis of the results of the students in the improvement and development of the weaknesses
- Updated learning resources to courses to keep up with the rapid developments in the field of science and knowledge.

Kingdom of Saudi Arabia

**The National Commission for Academic
Accreditation & Assessment**

COURSE SPECIFICATION

**Plant Physiology (2)
4013272-3**

Revised November 2015

Course Specification

For Guidance on the completion of this template, please refer to of Handbook 2 Internal Quality Assurance Arrangements:

Institution: Umm Al Qura University.
College/Department: Faculty of Science, Biology Department.

A. Course Identification and General Information

1. Course title and code: Plant Physiology (2) : 4013272-3
2. Credit hours: 3 hours - Biology
3. Program(s) in which the course is offered. BSc Biology (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course: <i>Prof. Dr. Hamed El Sayed Ahmed El Sayed</i>
5. Level/year at which this course is offered: 7th
6. Pre-requisites for this course (if any): Plant Physiology (1) & Biochemistry
7. Co-requisites for this course (if any): -
8. Location if not on main campus: main campus (Al Aziziah Dist. Laboratory and Class Rooms).

B. Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course:</p> <ul style="list-style-type: none"> ✦ Inform the students the rules of the foundations of Plant Physiology to clarify with the mechanics of the link to highlight the unity of functionality within the plant cell as well as to provide the students all the leading space research are transported with offers of Plant Physiology to clarify some details. ✦ The course aims to give the student an idea of the basics of the various processes within the plant in terms of metabolic activity as well as a brief picture of the chemistry of organic compounds and manufactured within the plant.
<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>Recognize the characteristic of the growth and Development, and its relationship with the plant hormone</p> <ul style="list-style-type: none"> <input type="checkbox"/> Physiology of flowering <input type="checkbox"/> Introduction to bioenergy <input type="checkbox"/> Plant enzymes <input type="checkbox"/> Carbohydrate metabolism <input type="checkbox"/> Metabolism of amino acids and proteins <input type="checkbox"/> Sulphur metabolism <input type="checkbox"/> Study of some organic components in the plant and the economic value such as:- <input type="checkbox"/> The sugars <input type="checkbox"/> The fat <input type="checkbox"/> Pigments <input type="checkbox"/> Vitamins <p>Plant Metabolism</p> <ol style="list-style-type: none"> 1) Plant tissue culture 2) Methods of tissue culture

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		
Topic	No of Weeks	Contact hours
<ul style="list-style-type: none"> • Introduction to bioenergy • Thermodynamics law, "the first and second" • Definition of Heat content • Definition of Inotropes • Definition of the free energy 	1	2
<ul style="list-style-type: none"> • Enzymes ○ Definition of the enzyme - The synthesis of the enzyme ○ The existence of the enzyme and its distribution in plant cells ○ General properties of the enzyme ○ The structural composition of the molecule protein 	2 -3	4

<p>"enzyme"</p> <ul style="list-style-type: none"> ○ 1- First structure of enzymes ○ 2- secondary structure of the three forms (spiral - plate folded - random) ○ 3- The third structure of the protein ○ 4- fourth structure of the protein ○ The structural composition of the enzymes ○ Split the organization Enzymes ○ Mechanical action of the enzyme ○ Activation energy ○ Enzymatic reaction kinetics ○ Michal's constant Km ○ Factors affecting the enzyme interaction ● classification's Enzymes 		
<ul style="list-style-type: none"> ● Carbohydrate metabolism ● Monosaccharide's ● Disaccharides sugars ● Tri-saccharides sugars ● Tetra-saccharides sugars ● Polysaccharides pentose carbon atoms ● Polysaccharides hexose carbon atoms ● Cellulose "combination" ● Starch "composition and synthesized" ● Amylose – Amylopectin ● Economic importance of carbohydrates in the plant ● General properties of sugars ● Sugar shifts in plant ● Sucrose synthesized and installed in the plant 	4-5	4
<ul style="list-style-type: none"> ● Nitrogen Metabolism ● Proteins Structure and Classification. ● Stages of protein construction ● 1. Nitrate Reductase ● 2. The composition of amino acids and amides ● 3. The composition of proteins 	6-7	4
<ul style="list-style-type: none"> ● The importance and fat distribution ● Fat metabolism ● First :- ● The fat synthesis is divided into: - ● 1. Synthesis of fatty acids ● 2. Synthesis of glycerol ● 3. Esterification between them to be the fat ● Second: - ● The Destroy of the fat "fat oxidation by beta" β" and Alpha" α "oxidation. ● Converting the fat into sugars ● Plant protection covers "Cuticle, waxes... 	8-9	4
<ul style="list-style-type: none"> ● Some biological processes related to sulfur ● Sulfur metabolism - the symptoms of sulfur deficiency 	10	2
<ul style="list-style-type: none"> ● Some organic ingredients in plant study economic value (plant pigments) 	11	2

• Some organic ingredients in plant study economic value "vitamins"	12	2
• The growth and Development, and Differentiation and Plant Hormones	13	2
• Plant Tissue Culture	14	2

2 Course components (total contact hours per semester):			
Lecture:	Tutorial:	Practical/Fieldwork/Intern ship:	Other:
28	--	42	Meetings to present assignments along with mid-term exams written

3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week):
The study rate increase 4 hours to search through the Internet to access the sites according to reach the student has done extensive research in the specialty materials.

<p>4. Development of Learning Outcomes in Domains of Learning For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> • A brief summary of the knowledge or skill the course is intended to develop; • A description of the teaching strategies to be used in the course to develop that knowledge or skill; • The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<p>a. Knowledge:</p> <p>(i) Description of the knowledge to be acquired:</p> <p>* - Recognize the bio-energy in the plant through the use of plants as a source of energy ** - Recognize the importance of enzymes in biological processes within the various plant cells, including plant metabolism *** - Identify the growth rate of the plant, through the growth and accumulation of nutrients analysed sugars and starches and fatty acids, and other organic ----- **** - Recognize the importance of pigments in the plant in the formation of sugars and accumulation of starch. ***** - Identify the source of vitamins in various plants ***** - To recognize the importance of the sulphur component of the plant and agricultural soil ***** - To identify the presence of fatty acids and amino acids and proteins within the plant by plant metabolic processes ***** - Through this study, we found out the importance of energy sources in the plant</p>
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <ul style="list-style-type: none"> - Present the View topics of study to the students to learn the course content - The involvement of the students with questions after the presentation showed to see how learned scientific article - To give the students a duty to do the same lecturer by themselves for the development of their ability to research and dumping within the same decision, but using modern techniques as a show Power Point. - Practicals Technique and Hands-on analysis of different plants to develop their capacity to access to different labs. - The meetings work of scientific for students of each group to view the work done by colleagues and evaluated and that personal development and the ability to make a speech in front of others - Training to use the Internet to access scientific sites to assemble the relevant decision is required and the development of the ability to access to the latest findings of science and scientific art.
<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> - Duty weekly for each lecture "activities within the scheduled" - Mid-term tests for the practical "half of the semester." - Final testing of practical "end of the semester." - Mid-term exams for my "half of the semester." - Final testing of my "end of the semester." - Questions diversity of style and distinctive inclusive Homework and reports - Assigning students to summarize the scientific material - Assigning students to conduct individual and group research
<p>b. Cognitive Skills</p> <p>(i) Cognitive skills to be developed</p> <ul style="list-style-type: none"> - Skills to identify the processes metabolism that take place within the plant - Skills to identify the plants adapted to external conditions, such as unwanted heat, drought, salinity and other ----- - Skills the ability to analysed information and access to the right solution - Skills the ability to use modern technology by searching the World Wide Web and computer to extract

<p>information</p> <ul style="list-style-type: none"> - Skills the ability to Writing, search and submit it in the form of mini-essay familiar with useful information through the recognition of the steps sound scientific research - Skills the ability to predict the results of the search before reaching the end of the road - Knowledge of environmental and plant factors that negatively or positively affect agricultural crops - The ability to think, analysis and interpretation and the acquisition of knowledge through information analysis
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> - Presentation skills and throw through the activities and duties required to be displayed to the students in seminars - Laboratory exercises for the use of instruments and tools, chemicals with modern techniques - To encourage teamwork how to work collectively discussed and presented in workshops for discussions and evaluation by the students (peer review) - The application of problem-solving and decision-making analysis of samples required them skills - Discussions raised during the presentation of the lecture
<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> - Laboratory lessons through practical tests to assess - Research related to the course are viewing on students in the evaluation discussion groups - Evaluation of the theoretical scheduled through periodic final and a quarterly exams
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> - The development of the spirit of cooperation at the students through teamwork - The ability to understand and respect the views of students for each other - Expanding the circle of knowledge through the use of the World Wide Web in search of new in science - Know how difficult the arrival of the scientific material to the students through discussions at the end of each lecture - The ability to group discussion to reduce the gap between the students and a faculty member with the decision - The ability to take responsibility I have students with each other - The development of the spirit of cooperation and accept the responsibility of leadership hand or pander
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> - A panel discussion of the students inside the classroom management - Cash at the students accept the offer after research and presentation in seminars - The development of self-study among students - Create a spirit of competition among students through mental questions relating to the adequate understanding of scientific material to the highest level - Develop the skills to extract the correct information and scientific ways
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> - Oral exams of the content of scientific theory Article - Methods of Research Assessment and measure how students accept cash in views - Commitment to the requirements of the students work assigned her - The ability to offer and throw in front of each other - Individual and collective business valuation
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> - The ability to use the Web in search of the latest findings of modern science - The ability to use computers in research writing and presentation using power point

<ul style="list-style-type: none"> - The use of computers in the provision of research and scientific reports required - The use of modern techniques in scientific research - The ability to research information required analysis.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - To give students individual and collective duties and activities and reports and presented through the use of Microsoft Office - View summaries of scientific material to the students using the programs Power point - To urge the students to visit the library to take advantage of modern scientific research - Make a table for the students scientific debate
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> - The performance of individual students to assess work - Evaluation of the performance of the students of collective works - Evaluation of the required practical applications - Evaluation of the ability of students to use computers to write and Display search - Evaluation of the students ability to use the Web to draw scientific research - Evaluation of the students methods of writing bug research capacity and take it out in final form
e. Psychomotor Skills (if applicable)
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <p style="text-align: center;">Does not apply</p>
<p>(ii) Teaching strategies to be used to develop these skills</p> <p style="text-align: center;">Does not apply</p>
<p>(iii) Methods of assessment of students psychomotor skills</p> <p style="text-align: center;">Does not apply</p>

5. Schedule of Assessment Tasks for Students During the Semester

Assess ment	Assessment task (e.g. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Weekly assignments every	Two weeks	%20
2	The theoretical the test midterm	8	%10
3	Midterm the practical test	6	%10
4	The final practical test	12	%20
5	Final theoretical test	15	%40

D. Student Support

<p>1. Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)</p> <ul style="list-style-type: none"> - Following up the the students in academic labs to provide expertise required by supervising laboratory - Office scheduled hours (6 hours) during the school week to communicate with the students - Access to e-mail and send and correct assignments and re-send it back to the students - Provide advice and guidance to students at any time during working hours and by telephone and electronic communications and the exchange of sending electronic files with students

E Learning Resources

<p>1. Required Text(s):</p> <p>- فسيولوجيا النبات العام – الجزء الثاني – باصلاح، محمد عمر، علي الهلال، محمد حمد الوهبي – مطبعة جامعة الملك سعود للنشر العلمي والمطابع – الرياض (2002م)</p> <p>- علم النبات العام – د أحمد محمد مجاهد – 1986م- مكتبة الأنجلو المصرية</p> <p>- أساسيات فسيولوجيا النبات – دكتور /محمد جمال الدين حسونة – دار المطبوعات الجديدة القاهرة – ج.م.ع.</p> <p>- أسس الكيمياء الحيوية</p> <p>- عماد فسيولوجيا النبات – دكتور/ عماد الدين وصفي - المكتبة الأكاديمية – الدقي – القاهرة – ج.م.ع.</p> <p>- فسيولوجيا النبات – دكتور/ أحمد مصطفى حمد – نيوأوفست للطباعة – ت 002025730526 - القاهرة – ج.م.ع.</p> <p>- كتاب مترجم عن فسيولوجيا النبات للأستاذ الدكتور / روبرت دفنن – القاهرة - ج.م.ع</p> <p>- أسس الكيمياء الحيوية – للدكتور محمد عبد المنعم الأعسر – المكتبة الأكاديمية - القاهرة ج.م.ع</p> <p>- Growth and Organization in Plant , Stewart, F.C. Adison - Wesley Co. Reading Wareing (1987)</p> <p>- فسيولوجيا النبات العملية – عبد الجواد – هشام, محمد علي الوهبي - الناشر – عمادة شؤون المكتبات , جامعة الملك سعود - الرياض (1409هـ)</p> <p>- الكيمياء الحيوية (كيمياء حيوية تركيبية وكيمياء حيوية فسيولوجية – عبد الرحمن أحمد الحملاوي) الطبعة الثالثة – دار القلم – الكويت – 1984م</p> <p>- فسيولوجيا النبات العام - الجزء الثاني – باصلاح محمد عمر – على الهلالي – محمد حمد الوهبي – مطبعة جامعة الملك سعود للنشر العلمي والمطابع – 2002م</p>
<p>- Dr. Imad Physiology / Imad Eddin descriptive – Dokki. Cairo – Egypt.</p> <p>- The vital foundations of Chemistry - Dr. Mohamed Abdel Moneim southpaw-academic library - Cairo - ARE</p> <p>- Growth and Organization in Plant, Stewart, FC Adison - Wesley Co. Reading Wareing (1987)</p> <p>- Plant Physiology process - Abdel Gawad - Hisham, Mohammed Ali Al Wahaibi - publisher - Deanship of Library Affairs, King Saud University - Riyadh (1409)</p> <p>- General Plant Physiology - Part II - reform, Mohammad Omar, Ali Crescent, Mohammed Hamad Al Wahaibi - King Saud University Press for publishing scientific and presses - Riyadh (2002 m)</p> <p>- General Plant - Science Dr. Ahmed Mohammed Mujahid --1 986 m- Anglo-Egyptian library</p> <p>- The basics of the physiology of intentions - Dr. / Mohammed Jamal al-Din Hassouna - House new publications Cairo - J.m.a.</p> <p>- Chemistry vital (vital chemistry and synthetic chemistry vital physiological - Ahmed Abdel-Rahman el-Hamalawy) Third Edition - Pen House - Kuwait - 1984</p> <p>- Plant Physiology year - the second part - the reform of Mohammad Omar - the Hilali - Mohammed Hamad Al Wahaibi - King Saud University Press for publishing scientific and presses - 2002</p>
<p>2. Essential References</p> <p>- Dr. Imad Physiology / Imad Eddin descriptive – Dokki. Cairo – Egypt.</p> <p>- The vital foundations of Chemistry - Dr. Mohamed Abdel Moneim southpaw-academic library - Cairo - ARE</p> <p>- Growth and Organization in Plant, Stewart, FC Adison - Wesley Co. Reading Wareing (1987)</p> <p>- Plant Physiology process - Abdel Gawad - Hisham, Mohammed Ali Al Wahaibi - publisher - Deanship of Library Affairs, King Saud University - Riyadh (1409)</p>

<ul style="list-style-type: none"> - General Plant Physiology - Part II - reform, Mohammad Omar, Ali Crescent, Mohammed Hamad Al Wahaibi - King Saud University Press for publishing scientific and presses - Riyadh (2002 m) - General Plant - Science Dr. Ahmed Mohammed Mujahid --1 986 m- Anglo-Egyptian library - The basics of the physiology of intentions - Dr. / Mohammed Jamal al-Din Hassouna - House new publications Cairo - J.m.a. - Chemistry vital (vital chemistry and synthetic chemistry vital physiological - Ahmed Abdel-Rahman el-Hamalawy) Third Edition - Pen House - Kuwait - 1984 - Plant Physiology year - the second part - the reform of Mohammad Omar - the Hilali - Mohammed Hamad Al Wahaibi - King Saud University Press for publishing scientific and presses - 2002
<p>3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)</p> <ul style="list-style-type: none"> - Dr. Imad Physiology / Imad Eddin descriptive – Dokki. Cairo – Egypt. - The vital foundations of Chemistry - Dr. Mohamed Abdel Moneim southpaw-academic library - Cairo - ARE - Growth and Organization in Plant, Stewart, FC Adison - Wesley Co. Reading Wareing (1987) - Plant Physiology process - Abdel Gawad - Hisham, Mohammed Ali Al Wahaibi - publisher - Deanship of Library Affairs, King Saud University - Riyadh (1409) - General Plant Physiology - Part II - reform, Mohammad Omar, Ali Crescent, Mohammed Hamad Al Wahaibi - King Saud University Press for publishing scientific and presses - Riyadh (2002 m) - General Plant - Science Dr. Ahmed Mohammed Mujahid --1 986 m- Anglo-Egyptian library - The basics of the physiology of intentions - Dr. / Mohammed Jamal al-Din Hassouna - House new publications Cairo - J.m.a. - Chemistry vital (vital chemistry and synthetic chemistry vital physiological - Ahmed Abdel-Rahman el-Hamalawy) Third Edition - Pen House - Kuwait - 1984 - Plant Physiology year - the second part - the reform of Mohammad Omar - the Hilali - Mohammed Hamad Al Wahaibi - King Saud University Press for publishing scientific and presses - 2002
<p>4. Electronic Materials, Web Sites etc</p> <p>There are too many websites and are searched using the more than one method to enter on Google for sites that have to do with rule the required of scientific study</p>
<p>5- Other learning material such as computer-based programs/CD, professional standards/regulations</p> <p>Using the Microsoft software in writing tables and graphs and PowerPoint presentation using the Power Point</p>

F. Facilities Required

<p>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</p>
<p>1. Accommodation (Lecture rooms, laboratories, etc.)</p> <ul style="list-style-type: none"> - Classrooms are equipped with different display such as Data Show Data Show and smart blackboard and other - Laboratories equipped with the tools and various chemicals usable - Various measurements of physiological analysis devices - Laboratories and classrooms available the safety and security tools - The provision of computers to access the World Wide Web for students
<p>2. Computing resources</p>

- Classrooms containing over to computers for students to access the World Wide Web and the preparation the required of them on campus under the supervision of faculty members and the like.
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)
Chemicals usable is expired
Devices for measurement analysis of all - mineral elements, proteins and chlorophyll, carbohydrates and fats
DNA, RNA, Amino Acids, Proteins, Free Proline, Carbohydrates, Sucrose, Enzymes Activity, Micro & Micro Inorganic Elements, --etc.
Green house glass (glass house) for breeding different plants Green House

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
- The work of a questionnaire to assess the of scientific material presented by the students in END OF each semester to learn and cons scheduled to be avoided in the coming years
- Work meetings with the students to take their opinions in decision
- The level of the students periodically measure to note enables the student to absorb the planned article
- Evaluating the results of the students to know the feedback of the scheduled Nutrition
- Assess the duties required and knowledge of the extent of the student response to decision
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
- Preparation of reports on students scheduled
- Evaluating the results of the students are supported by a committee to measure feedback
- Self-assessment with the decision and the use of a single modern teaching methods
- The level of use of assessment of the students by professors highly experienced consultants in the same specialization
- Internal periodic review by the Commission supported the decision
3 Processes for Improvement of Teaching
- Find what's new in the scientific material to get to the best
- Take advantage of the experience of others to pursue of scientific education to go along with continuous update
- The need to append the faculty members and the like training courses and specialized workshops for the advancement of the educational process in the best
- Need to benefit from the expertise of experienced follow-up of the educational process
- Provide a suitable atmosphere for study and provide all the requirements to complete the educational process
- Development league to see weaknesses in the end by the Rapporteur of the Committee on Internal Audit
4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)
- Evaluation and reporting duties required
- A review of exams papers by faculty member
- Cooperation with the faculties of a debate in the local, regional and international universities to reach academic accreditation
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.
- Review scheduled characterization and vocabulary periodically by an internal committee and then an external committee to get to the desired academic accreditation
- Compared to the course specification with similar decisions in other universities
- The work of self-study with the decision to see the weaknesses and improve in the new plan
- Characterization of the decision to put in line with the reduction of unemployment and community

service labour market

- Take advantage of the statistical analysis of the results of the students in the improvement and development of the weaknesses
- Updated learning resources to courses to keep up with the rapid developments in the field of science and knowledge.

Kingdom of Saudi Arabia
**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

Genetics

4013281-3

Revised November 2015

Course Specification

*For Guidance on the completion of this template, please refer to of Handbook 2
Internal Quality Assurance Arrangements*

Institution: Umm-Al-Qura University
College/Department : Faculty of Science – Biology Department

A Course Identification and General Information

1. Course title and code: Genetic (4013281-3)
2. Credit hours: 3 hours
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) BSc Biology
4. Name of faculty member responsible for the course Dr. Salma Omar Baoum
5. Level/year at which this course is offered: Level 4- 2015
6. Pre-requisites for this course (if any) Plant Biology 2
7. Co-requisites for this course (if any) None
8. Location if not on main campus :Faculty of Science- Alazezia - Makkah

B Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <ul style="list-style-type: none"> - Introduce the students to genetic, mitosis and mitosis mechanism, study Mendel's laws , solve genetic problems. - Introduce students to non Mendelian ratio. - Introduce students to the sex chromosome inheritance. - Introduce student to genetic engineering. - God's power sensor. - Giving students the ability to use the microscope. - Giving students the collective individual skill work. - Providing students with the skill of the using of modern technology.
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <ul style="list-style-type: none"> - Use the internet sites. - Use the images and video clips. - Assigning the students work activity.

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		
Topic	No of Weeks	Contact hours
1- Study the composition of the cell.	1	2
2- Study the nucleic acids.	1	2
3- Study the chemical composition of chromosomes	1	2
4- Study Meiosis and Mitosis division.	1	2
5- Study Mendel inheritance.	1	2
6- Study Mendel's modification ratio	1	2
7- Study the genetic epistasis	1	2
8- Study the new recombination in genetic.	1	2
9- Study chromosomal mutation	1	2
10- Study the sex chromosomes.	1	2
11- Gene expiration and genetic engineering	1	2

2 Course components (total contact hours per semester):			
Lecture: 24	Tutorial: 24	Practical/Fieldwork/Internship: 12	Other: Mid-term exam for 2 hours

3. Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week) _____

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
 - Course is interested in the definition of genetics.
 - Course is interested in the definition of Mendel laws.
 - Course is interested in the definition of Meiosis and Mitosis.
 - Course is interested in the deference between Mendel ratios.
 - Course is interested in the sex chromosomes.
 - Course is interested in gene expiration.
 - God's power sensor.
 - Giving students the ability to use the microscope.
 - Giving students the collective individual skill work.
 - Providing students with the skill of the using of modern technology.
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.
 - Through participation during the lecture and lab section activities in addition to the exams.

a. Knowledge :

(i) Description of the knowledge to be acquired

- Course is interested in the definition of genetics.
- Course is interested in the definition of Mendel laws.
- Course is interested in the definition of Meiosis and Mitosis.
- Course is interested in the sex chromosomes.
- Course is interested in gene expiration.
- God's power sensor.

- Providing students with the skill of the use of modern technology.
(ii) Teaching strategies to be used to develop that knowledge. - Lecture. - PowerPoint presentations. - Lectures of the content and its importance. - Curriculum activities. - Review of the above at the beginning of the lecture.
(iii) Methods of assessment of knowledge acquired. - Ask questions during the lecture. - Review the past lectures. - Action activities. - Tests
b. Cognitive Skills
(i) Cognitive skills to be developed. - The ability of utilizes the plant in more than one way. - The ability to link the course information. - The ability to distinguish between the right and wrong word. - God's power sensor. - Giving students the ability to use the microscope. -Giving students the collective individual skill work. - Providing students with the skill of the using of modern technology.
(ii) Teaching strategies to be used to develop these cognitive skills - Give examples within the lecture. - Using the hand drawing on the whiteboard. - Give the student the opportunity to participate in the lecture. - Ask and receive questions. - Use images and presentations.
(iii) Methods of assessment of students cognitive skills - Midterm test 20% - Activities and participation 10%. - Final Laboratory test 15%. - Final test40%. - Midterm laboratory test 15%.
c. Interpersonal Skills and Responsibility

<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> - The skill of the teamwork. - The skill of the search of the information and self-learning.
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> - Assigning students collectively activities by using the internet. - Students participation in Biology fair. - Training Student to work in groups inside the lab.
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> - By assigning the collective and individual activities in the lecture and the lab.
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> - Use the internet to gather information. - Utilizing the computer to view activities. -Use the email to deliver the activities.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - Give students individual and collaborative activities. - Follow up the students and make and give a feedback of the presented activities.
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> - Assess the activity and presence. 7% - Evaluation of participation in the Biology Fair 2%. - Midterm exam 20% - Final Exam 40%. - Laboratory tests 30%
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p>
<p>(ii) Teaching strategies to be used to develop these skills</p>

(iii) Methods of assessment of students psychomotor skills

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1			
2			
3			
4			
5			
6			
7			
8			

D. Student Support

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

E Learning Resources

- 1. Required Text(s) : Gardner Book
- 2. Essential References : Gardner Book.
- 3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
- 4-.Electronic Materials, Web Sites etc
- 5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)

<ul style="list-style-type: none"> - Lecture hall equipped with white board and fifty seats. - Provide the Laboratory with the safety equipment.
<p>2. Computing resources</p> <ul style="list-style-type: none"> - Provide a computer in every class room and lab.
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</p> <ul style="list-style-type: none"> _ Microscopes - Ready slides - White boards.

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> - Discuss students - Midterm and final tests. - Former review.
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <p style="text-align: center;">None</p>
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> - Using images and presentations. - Precision setting questions. - Training students in using information technology.
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p>
<p>5 -Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> - A preliminary evaluation in the lecture. - Evaluation test. - Evaluation activities.

Faculty member responsible for the course: Dr. Salma Omar Baoum

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

Flora of Saudi Arabia

(4013291- 3)

Revised November 2015

Course Specification

*For Guidance on the completion of this template, please refer to of Handbook 2
Internal Quality Assurance Arrangements*

Institution Umm Al- Qura University
College/Department Faculty of Science- Biology Department

A Course Identification and General Information

1. Course title and code: Flora of Saudi Arabia (4013291- 3)
2. Credit hours: 3
3. Program(s) in which the course is offered.: BSc Biology
4. Name of faculty member responsible for the course: Associate Prof. Eman Ahmed Kamel Karakish
5. Level/year at which this course is offered: seventh level
6. Pre-requisites for this course : Plant Taxonomy
7. Co-requisites for this course: Plant Biology, Plant Biology (2)
8. Location if not on main campus

B Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <ul style="list-style-type: none">- illustrate the plant geographical systems- define geographical aspects of the Kingdom of Saudi Arabia as part of the global geo-plant- characterize the life of the various wild plants and their growth under environmental and climatic conditions- training students to collect plant specimens and the different ways to dried and conservation. the development of industrial taxonomic keys
<p>2. Briefly describe any plans for developing and improving the course that are being implemented.</p> <ul style="list-style-type: none">- the use of a series of references that serve the course- the use of the internet for the topics that have been studied- contraceptive use different technology in the presentation of scientific material

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		
Topic	No of Weeks	Contact hours
Definition of flora, vegetation and plant community	1	2
orders of plant communities – floristic elements - endemicity	1	2
Use the keys to identify some plant families and ways to identify wild plants	1	2
herbaria and their role and importance in the science of flora	1	2
modern division of the plant geographical regions and the modern plant regions of the Saudi Arabia	1	2
The plant Life forms	1	2
Midterm test	1	2

study the plant geographical regions of the Kingdom in terms of: location, topography, soil type and diversity in the flora - with an explanation of these areas through the PowerPoint and documentaries	6	12
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<p>2 Course components (total contact hours per semester): nearly 39 credit hour per semester</p> <p>13 weeks × 2 hours = 26 theoretical hour, 13 hours × 3 hours = 39 practical hour</p>			
Lecture: 2 hours	Tutorial:	Practical/Fieldwork/Internship: 3 hours	Other:

<p>3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week)</p> <p>The credit hours = 39 hour actual hours = 65 hour</p>
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<p>4. Development of Learning Outcomes in Domains of Learning</p> <p>For each of the domains of learning shown below indicate:</p> <p>By the end of the course the student will be able to:</p> <p>Identify plants flora of Saudi Arabia through proper and preservation of samples in a herbarium.</p> <p>Acquire knowledge about different plant types growing in his community.</p>
<p>a. Knowledge</p>
<p>(i) Description of the knowledge to be acquired</p> <ul style="list-style-type: none"> - identify the different geographical regions of the Kingdom and characterize every form of plant life in the different areas - distinguish types of environments and plant populations

<ul style="list-style-type: none"> - the ability to drying and preservation of plant species in scientific ways
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <ul style="list-style-type: none"> - scientific lectures, practical lessons, assigning individual and group duties - the collection and presentation of information through the Internet connection - showing documentaries - open meetings, served research articles and discussions in lectures
<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> -periodic and final tests -discussions during lectures -evaluation of the scientific research presented by the students through a discussion with them through lectures
<p>b. Cognitive Skills</p>
<p>(i) Cognitive skills to be developed</p> <ul style="list-style-type: none"> -Collect information from more than one source - presentation of information and results through the use of computer -knows the greatness of God in His creation
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> - the use of computers and the internet - research submitted by students - practical lessons - presentations made by the students and the use of documentary films and power point presentations
<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> -semi- periodic examinations and productive discussions -assess the students in practical lessons - home business to assess and discuss the students - assess the skills of preparing research - evaluation of the students in the indirect decision of the syllabus

<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> - create a spirit of cooperation, understanding, respect and responsibility - work in groups to improve the skills of relationship with others - cooperation in solving the problems of the students in the compilation of scientific material
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> - the ongoing discussions in the lecture hall - the duties assigned to the students - the division of students into groups for making research and discuss topics
<p>(ii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> - estimate the student response to the assigned of doing tasks - measuring the extent of student learning through tests and discussions - assess the students association to the decision by dealing with colleagues and the professor
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> - skill of using a computer to assemble the scientific material - the ability to use modern electronic libraries - skill of understand and display the results in a clear way show creativity, criticism and retrieval of the information of the course
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - Contact with the internet - using the computer at the wording of the decision and the use of different programs - submit a written report

<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> - skills of dealing with the lab slides and the method of screening devices - the use of computer skill - work in groups - estimated to derive the required decision of text books and electronic references
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p>
<p>(ii) Teaching strategies to be used to develop these skills</p>
<p>(iii) Methods of assessment of students psychomotor skills</p>

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Definition of flora, vegetation and plant community	1	2
2	orders of plant communities – floristic elements - endemism	1	2
3	Use the keys to identify some plant families and ways to identify wild plants	1	2
4	herbaria and their role and importance in the science of flora	1	2
5	modern division of the plant geographical regions and the modern plant regions of the Saudi Arabia	1	2
6	The plant Life forms	1	2
7	Midterm test	1	2
8	study the plant geographical regions of the Kingdom in terms of: location, topography, soil type and diversity in the flora - with an	6	12

	explanation of these areas through the PowerPoint and documentaries		
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D. Student Support

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

- office hours (6 hours per week)
- academic Advising
- supervision on the articles and researches of student
- supervise the practical lessons

E Learning Resources

1. Required Text(s)

أ.د. أحمد محمد مجاهد ، فلورا المملكة العربية السعودية (1987)، عمادة شؤون المكتبات – جامعة الملك سعود .
د . العودات محمد ، د . الشيخ عبد الله وآخرون ، الجغرافيا النباتية , عمادة شؤون المكتبات – جامعة الملك سعود ، 1420
د . النافع , الجغرافيا النباتية للمملكة العربية السعودية ، جامعة الإمام محمد بن سعود ، 2004 م

2. Essential References

A.M.Migahid (1996): Flora of Saudi Arabia. Volume 1-3. University Libararies, King Saud University
Sheila collenette (1985): An Illustrated Guide to the flowers of Saudi Arabia. Scorpion Publishing Ltd, Victoria House, Buckhurst Hill, England

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

- - J.P. Mandaville, (1990). Flora of Eastern of S.A., John Wiley & Sons Ltd. England.
- Hermistra et al., (1990). Plants of Northern region of Saudi Arabia. Range and Animal development Research Center, AlJouf, Saudi Arabia

العودات وآخرون ، الجغرافيا النباتية ، 1985
جامس ب ، فلورا المنطقة الشرقية بالمملكة العربية السعودية ، 1990 .

4-.Electronic Materials, Web Sites etc
<https://faculty.sau.edu.sa/b.alhammad/page/581>

<http://saudiency.net/Loader.aspx?pageid=26&BookID=86&PID=5>

5- Other learning material such as computer-based programs/CD, professional standards/regulations

Computer - the internet in various scientific sites

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)
- lecture halls with a capacity of 50 seats and is available by a computer and a display device (Data show) and projector transparencies and Wi-Fi
-laboratories by the availability of appropriate hardware with slides and samples and other requirements for the course

2. Computing resources
Personal sources by the professor

3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)
-simple and compound microscope
- a computer and a data show
-well identified herbarium samples representing the flora of the Kingdom of Saudi Arabia

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
-Making questionnaires for students
- online communication with students
-test results
-activity and research by students

<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> -by the help of the opinion of colleagues and organizations - making panel discussions with students and colleagues who specialize in teaching methods and learning
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> - laboratories equipped as appropriate for the needs of the course - create the rooms of faculty members - organizing the lecture halls and providing them with various educational means - study the needs of the labor market of college graduates - the organization of different workshops
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <p>Cooperation between professors department - cooperation with the same faculties of other universities</p>
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> - consulting professors from the same specialization is a scientific and highly efficient teaching experience - the number of workshops for professors to be in unique in teaching and effect presentation Skills - continuous updating of the course items - make statistics of the students results

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

Animal Physiology

4013331-3

Revised November 2015

Course Specification

Institution	Umm Al-Qura University
College/Department	Faculty of Science/Biology Department

A Course Identification and General Information

1. Course title and code:	Animal Physiology (4313331-3)
2. Credit hours	Lectures 2 hrs/week Practical 3 hrs/week
3. Program(s) in which the course is offered.	Bachelor degree in Biology Program
4. Name of faculty member responsible for the course	Dr. Jehane Ibrahim
5. Level/year at which this course is offered	Fifth level/third year students
6. Pre-requisites for this course (if any)	Biochemistry
7. Co-requisites for this course (if any)	None
8. Location if not on main campus	

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course.

After completing this course, students should be able to:

1. Develop critical thinking skills and be able to apply physiological concepts and principles at the basic and applied levels.
2. Develop a working knowledge of the major physiological systems, and be able to associate anatomical areas with their specific function.
3. Develop an understanding of the role of evolutionary processes (e.g. natural selection) in driving the organization of physiological systems.
4. Understand important physiological challenges animals face, how those challenges vary in relation to the animals' environment, and the processes by which animals deal with these challenges.
5. Identify and describe structural differences of major physiological systems that characterize different taxonomic groups of animals.
6. Relate physiological processes, from the biochemical to the system level, to the function of the entire organism in its environment.
7. Develop an understanding of current research topics in animal physiology using the primary literature and to develop research questions and methodology to address these questions.
8. Develop research questions, devise methods to answer these questions, apply appropriate statistical tests to analyze data and present results of graphically, through writing and by other means.
9. Learn to properly and safely use animals and modern laboratory equipment to conduct physiological research.

2. Briefly describe any plans for developing and improving the course that are being implemented.

- Annual review of course by departmental course planning committee.
- Annual review and updating practical sessions with new experiments, slides and new preparations.
- Comparison of course topics with equivalent local and international courses.
- Class meetings consisted of lectures by the instructor, combined with audio-visual materials related to the lectures topics.
- Electronic materials have been utilized to support the lecture course material.
- Utilizing of recent research published in scientific journals.
- The course material was posted on the Website that could be accessed by the students enrolled in the course only.
- Improve the course contents according to the recent Text Book.

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		
Topic	No of Weeks	Contact hours
Definitions, physiology of cell membrane ,feedback mechanism and haemeostasis	2	4
Structure and function of digestive system,mechanism of digestion,absorbtion and role of enzymes in digestion and metabolism.	3	6
Mechanisms of respiration, exchange of gases, mechanism of Inspiration and exhalation	3	6
Circulation, systemic and pulmonary circulations, blood cellular elements, heart sounds and lymph	2	4
Nervous System, central nervous system, peripheral nervous system, Autonomic nervous system (Sympathetic and parasympathetic divisions),	2	4

2 Course components (total contact hours per semester):			
Lecture:	Tutorial:	Practical/Fieldwork/Internship:	Other:
24 hrs/semester 2 hrs/week	24 hrs/semester 2 hrs/week	36 hrs/semester 3 hrs/week	

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)
2 hour weekly for the homework

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

- Student should know how haemostasis occurs and how materials digested, absorbed and cross cell membrane
- Student should understand how blood circulates and how gases are exchanged
- Student should understand the main function of central and peripheral nervous system

(ii) Teaching strategies to be used to develop that knowledge

- In-class lecturing where the previous knowledge is linked to the current and future topics.
- Homework assignments
- Discussions (connecting what they learn in the class and applying this information in laboratory).
- Handout of lecture notes for each topic.

(iii) Methods of assessment of knowledge acquired

- Homework and Quizzes
- Midterm and final written exams (theoretical and practical)
- Evaluation of reports
- Oral presentation
- Course work reports

b. Cognitive Skills

(i) Cognitive skills to be developed

- The ability to:
 1. Understanding the physiological basis of cell membrane function.
 2. Understanding haemostasis.
 3. To use computer and internet.

4. To describe the disorders arise after any organ injury.
5. To identify some factors affecting on the biological processes inside living organisms.
6. To know anatomical characteristics of living organisms.
7. To prepare some physiological experiments.
8. To recognize an overview of the tissues anatomy.
9. To refer different organs of different systems.
10. To dissect experimental animals, and identify various systems.
11. Microscopic examination to differentiate between different organs.
12. Recognising physiological changes.

(ii) Teaching strategies to be used to develop these cognitive skills

1. Application of essential scientific techniques through lectures, classes and essays.
2. Small group discussion
3. Ask the students to make small search project during the semester
4. Making connections between different topics across the course.
5. Class discussions (Engage students in interaction with questions and answers).
6. Homework assignments
7. Use of microscopic illustrations.
8. Laboratory training.
9. Activities and homework.

(iii) Methods of assessment of students cognitive skills

1. Course work reports
2. Evaluation of the topics prepared by students according to the content, arrangement, and covering of the topic.
3. Midterm and final exams
4. Checking the homework assignments

c. Interpersonal Skills and Responsibility

(i) Description of the interpersonal skills and capacity to carry responsibility to be developed

1. Developing oral presentations
2. Communicating personal ideas and thoughts.
3. Work independently and as part of a team to finish some assignments.
4. Communicate results of work to others.

(ii) Teaching strategies to be used to develop these skills and abilities

1. Engage student in carrying out internet search.
2. The ability to debate the scientific basis of physiological mechanisms of

- body systems
3. Writing group reports
 4. Solving problems in groups during tutorial
 5. Checking the homework assignments in groups during discussion
 6. Cooperative learning and application of scientific method in thinking the scientific problem solving.
 7. Work as part of a team.
 8. Conducting group experiments and writing group reports.
 9. Dividing students into groups to cooperate with each other during the experiments.

(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility

1. Oral exams.
2. Evaluation of student essays assignments and search work.
3. Observation of student ethical and moral behaviour.
4. Students' attendance is recorded during lectures.
5. Assessment of the student reports.
6. Grading homework assignments.

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain.

1. Use information and communication technology.
2. Use IT and communication technology in gathering and interpreting information and ideas.
3. Use the internet as a means of communication and a source of information.
4. Encourage students to use internet for searching certain electronic journals regarding topics of the course.
5. Scientific writing.
6. Use his/her observations to solve problems.
7. Doing research and conduct searches for restoring information.
8. Able to calculate and discuss the facts and logical propose methods to solve the difficulties.

(ii) Teaching strategies to be used to develop these skills

1. Oral presentations.
2. Internet search assignments and essays.
3. Incorporating the use and utilization of computer in the course requirements.
4. Students will be asked for delivering a summary regarding certain topics related to the course.

<p>(iii) Methods of assessment of students numerical and communication skills</p> <ol style="list-style-type: none"> 1. Evaluation of student essays and assignments. 2. Evaluating the laboratory written reports. 3. Marks given to for good reports and presentations 4. Evaluating during the discussion in lecture and reports. Part of the grad is put for student's written participation.
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <ul style="list-style-type: none"> - To examine and describe some tissues under the microscope - To draw some examples of human systems. - To examine models of organs and systems. - To dissect some examples of animals. - To use computers and internet. - To contribute in the awareness programs that aim to take advantage of the wealth of animal and how to use them economically
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - Using of microscopic illustrations. - Laboratory exercises and anatomy. - Activities and homework. - Preparing researches. - Community participation.
<p>(iii) Methods of assessment of students psychomotor skills</p> <ul style="list-style-type: none"> - Evaluating the laboratory written reports.

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Attendance & Activities	Weekly	10%
2	Quizzes	Every 2 weeks	10%
3	Mid-term Exam	Week 5	40%
3	Mid-term Practical Exam	4 th Week	10%
4	Final Practical Exam	11 th Week	20%
5	Final Exam	As scheduled by the registrar	10%

D. Student Support

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

- **Two hours office per week**

E Learning Resources

1. Required Text(s):

No textbook is designated. Course materials will be based on a combination of lecture notes, handouts, journal articles and various references. Following is a list of suggested (yet not required) references that you would further read as class topic(s) evolves.

Recommended Books:

1. Animal Physiology, Second Edition, Richard W. Hill, Gordon A. Wyse, and Margaret Anderson, 2008
2. Gerard, et al., (2008). Principles of Anatomy and Physiology John Wiley & Sons Inc., USA.

2. Essential References

Stuart I Fox (2010) Human Physiology, Kindle Edition, McGraw-Hill, USA

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

1. Lauralee Sherwood , Hillar Klandorf, Paul Yancey (2012) Animal Physiology: From Genes to Organisms, Brooks Cole, USA.
2. Gerard, et al., (2008). Principles of Anatomy and Physiology John Wiley & Sons Inc., USA.

4-.Electronic Materials, Web Sites etc

<https://www.coursera.org/learn/physiology>

<https://www.edx.org>

5- Other learning material such as computer-based programs/CD, professional standards/regulations

- Microsoft office package.
- Multi- media associated with the text book and the relevant websites

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

<p>1. Accommodation (Lecture rooms, laboratories, etc.)</p> <ul style="list-style-type: none"> Lecture room suitable for 35 students. Lecture room equipped with a black board and Data show. Instructors use their own laptop Good Physiology lab
<p>2. Computing resources</p> <ul style="list-style-type: none"> Computers or internet connection. Active Board Data show is required in every room
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</p> <ul style="list-style-type: none"> Laboratory Instruments & Equipment: Spectrophotometer, Centrifuge, PH Meter, Flasks, Beakers, Screw Capped Tubes, Slides And Tips And Chemicals Kits

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> 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
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> Undergraduate Committee will review deficiencies based on the student evaluation, faculty input, course file, and program assessment. Feedback from employers and alumni surveys and graduating students' input are used to identify any deficiencies in students' ability in applying knowledge of properties and the use of structural materials. Organize workshop on effective teaching methods to enable instructors to improve their teaching skills. Teaching method will focus on students' learning and on course learning outcomes.
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <ul style="list-style-type: none"> Undergraduate Committee will review samples of student work in this course to check on the standard of grades and achievements. A faculty member from a reputable university will evaluate the course material and the students' work to compare the standard of grades and achievements with those at his university. Periodic exchange and remarking of tests with staff at another institution.

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

- Continuous evaluation of the students during the term
- 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 change.

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COURSE SPECIFICATION
Animal physiology (2)
(4013342-3)

Revised March 2012

Course Specification

*For Guidance on the completion of this template, please refer to of Handbook 2
Internal Quality Assurance Arrangements*

Institution Umm – Al Qura university
College/Department : College of sciences, Biology.

A Course Identification and General Information

1. Course title and code: Animal physiology (4013342-3)
2. Credit hours 3 hours
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) B.Sc. In Biology
4. Name of faculty member responsible for the course Prof. Dr. Hamed M. A. Mutwally Dr. Zuhair. Y. Al – Sahaf
5. Level/year at which this course is offered 3rd year
6. Pre-requisites for this course (if any) Biochemistry and vertebrate
7. Co-requisites for this course (if any)
8. Location if not on main campus

B Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <p>To let the student learn more about his body and how its work. To know more about all systems in the human and animal body and how they work. System structures and function and the role of each one and their correlations activity together. The role in maintain the good health for their bodies and how each system work and cooperative work for all human systems between each others</p>
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (Eg. increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <p>The most important plan to improve this course is to have suitable reference books updated in Arabic and English for students to study easily and encourage them to visit the web sites regarding this course subjects. Also the practical side of the course must be developed by implemented new experiments for each system in this course.</p>

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		
Topic	No of Weeks	Contact hours
The skeleton system (the bone)	1+2	4
The muscular system (Muscle contraction and ions roles)	3+4	4
The nervous system (Neuronal processing and behaviour)	5+6	4
The sensory mechanism (Eyes, Noses Ears and Taste buds; how they work	7+8	4
The reproductive male	9+10	4
The reproductive female systems	11+12	4

2 Course components (total contact hours per semester):			
Lecture: 16	Tutorial: 12	Practical/Fieldwork/Internship: 12	Other: 12 lectures+Lab.+2 weeks exams

<p>3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week)</p> <p>Precaution of laboratory using materials such as acids, alkaline and corrosion material</p>

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

The student must learn the basic and advance information of all animal and human body. Moreover, to know how every system in the body work. The structure and the function of each system. Such as the relation between circulatory system and respiratory system etc.

(ii) Teaching strategies to be used to develop that knowledge

By choosing suitable reference books and websites which will cover the main ideas a bout the course. Then send students to read these books and visit the website besides giving them details lecture each weak about one system exploring how does this system work and its relationship with other system inside the body.

(iii) Methods of assessment of knowledge acquired

By essays and mid term exam and final exam, beside practical exam being developed during the whole term

b. Cognitive Skills: the student must submit a report about one system of the course before the end of the term to discuss it and share it with his colloquies.

(i) Cognitive skills to be developed

How can the student take care about their body and how can they avoid the cause of disease which may attack their body by following the hygienic methods.

(ii) Teaching strategies to be used to develop these cognitive skills

By giving lectures about the system of human body and how they work and the kinds of diseases which may attack each system and the precaution which may attack each system and the precaution which may help the body not to affected by these diseases.

<p>(iii) Methods of assessment of students cognitive skills</p> <p>By giving the student some topics to make essays about each lecture being developed also by mid and final exams.</p>
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p>
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <p>By using the updated information and scientific theories about each system and the way its works (Using overhead projector, data show and web visiting)</p>
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <p>To guide students to renew their information by reading not only the reference books or lectures but also to wide their knowledge by visiting the website regarding their courses and seek the knowledge from other sources.</p>
<p>d. Communication, Information Technology and Numerical Skills</p> <p>Through personal communication, mobile, friends, office hours and in the class.</p>
<p>(i) Description of the skills to be developed in this domain.</p> <p>Let student know more information about his body and how its work, and the suitable ways to maintain these systems away of being infected and diseased or affected by bad behaviour which may become the persons himself.</p>
<p>(ii) Teaching strategies to be used to develop these skills</p> <p>By developing lectures, and to guide students to seek information from different sources of knowledge such as web sites testing hospitals watching some specific education of (TV) channels</p>
<p>(iii) Methods of assessment of students numerical and communication skills</p> <p>Personally, mobile, friends, essays, exams, techniques, projects.</p>
<p>e. Psychomotor Skills (if applicable)</p> <p>Studding all students behaviour before and after the course, seeking information from other colloquies about him and find good solution to him, sending him to an expertise to solve his problem.</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p>

(ii) Teaching strategies to be used to develop these skills
(iii) Methods of assessment of students psychomotor skills

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Attendance	All term	5
2	Quiz	Every week	5
3	Essay	3 – 6 – 10	10
4	Mid term exam	7	15
5	Lab mid term exam	7	10
6	Group project	14	5
7	Final lab exam	14	15
8	Final exam	16	35

D. Student Support

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

Through out the term in lecture and office hours personally

E Learning Resources

1. Required Text(s) Animal and human physiology Then, G. Animal Biology; Organic Chem.; Biochemist; Invertebrate and Vertebrate.
2. Essential References All books related to above courses must be available in the main library
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List) Physiology by Robert. M. Beme and Mathew N. Levi F. Anatomy and Physiology by Anthony C. ; Thibodeau C.; Prezbindowski K. and Beck E. 1979, Mosbby Co. Loondon.
4- Electronic Materials, Web Sites etc http://ar.wikipedia.org http://wwkhayma.com

<p>www.6 abib.com www.ar.wikipedia.com www6ramjnet.com www.a dams.org www.a3el.net. http: www.wikipedia org. http: www khayma.com/orqia</p>
<p>5- Other learning material such as computer-based programs/CD, professional standards/regulations U-tubes, Video</p>

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 (Lecture rooms, laboratories, etc.) We need much of new technology to assets the course; Classroom seats should be around 20 – 30; and Lab. seats should be around 20</p>
<p>2. Computing resources We need much of new technology to assets the course; and the connection accessories; e. mail; Huge memories</p>
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) Blood counter; Nerve & Muscle recording system; Respiratory system; Urine analysis; Food analysis; Biochemistry analyses; Enzymes; Chemicals; Glassware; computing system and Technician</p>

G Course Evaluation and Improvement Processes

<p>1- Strategies for Obtaining Student Feedback on Effectiveness of Teaching By asking them about the course; looking at their periodical exams, attending one lecture and lab.</p>
<p>2- Other Strategies for Evaluation of Teaching by the Instructor or by the Department Attending one lecture and lab to see how effective they and the response of students to that are. By looking at the project that students submit, general discussion.</p>
<p>3 Processes for Improvement of Teaching Using all new facilities and new techniques in teaching, contact teaching, office hours, essays and projects.</p>

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)

Using standard exams for all students before starting the term and after 6 weeks to know more about student's level, to seek another friend opinion in analyzing the results. Group discussions.

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

There are 4 periodical tests for all students before starting the term and after 4 weeks to know more about student's level. Two weeks after the mid term will be an essay to be done and in the 12th week their will be group discussion. The outcome of these tests could give lecturer good judgments.

Attachment 2 (e)

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COURSE SPECIFICATION

ANIMAL ECOLOGY

4013352-3

Revised November 2015

Course Specification

Institution: Umm Al-Qura university
College/Department: Faculty of Science – Biology Department

A Course Identification and General Information

1. Course title and code: Animal Ecology code 4013352-3
2. Credit hours 3 h
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Biology department
4. Name of faculty member responsible for the course Dr Randa Ahmed Elbassat
5. Level/year at which this course is offered level 6
6. Pre-requisites for this course (if any) vertebrates
7. Co-requisites for this course (if any) -----
8. Location if not on main campus -----

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course. - Illustrate basic scientific facts, concepts, principles, and applications related to animal ecology. - Represent examples for types of interrelationships between organisms and their ecosystems.
2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field) <ol style="list-style-type: none">1. Use the Internet to view information on the topics of study.2. Update the content of the course is a league based on recent developments in the field

3. and on the learning outcomes in the labor market.
4. Compare the course contents with other regional or global universities.
5. The use of different methods to assess the student and to the development of various

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
1. Different ways to study the ecology and Ecosystem and its components (living and non- living).	1	2
2. Factors that affect the succession and ecosystem types .	2	2
3. The density of organisms and the ways of calculating density. 4. some ecological laws	3	2
5. Aquatic eco-system in its different forms(sea- river-lake – swamp). Characteristics of each region from the previous environmental regulations and the types of organisms that exist in each region.	4	2
6. Med term exam.	5	2
7. Diversity and Richness and environmental age pyramids.	6	2
8. Environmental relationships that can arise between individuals of the same and different species(Harmful relationships and beneficial relations).	7	2
9. Relations between animals and plants , food chains and food webs .	8	2
10. Tribal communities and tribal forms of growth in the environment , organisms spread and distribution.	9	2
11. Environmental terrestrial biomes and characteristic for each biome . Plant species and animal inhabiting each biome.	10	2
12. Diversity laws and its applications in the terrestrial ecosystem.	11	2
13. Revision	12	2
14. Final exam	13	2

2 Course components (total contact hours per semester):				
Lecture:\	Tutorial:	Laboratory	Practical/Field work/Internship	Other:
24	6	12	4	36

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)

<p>4. Development of Learning Outcomes in Domains of Learning</p> <p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> • A brief summary of the knowledge or skill the course is intended to develop; • A description of the teaching strategies to be used in the course to develop that knowledge or skill; • The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<p>a. Knowledge</p>
<p>(i) Description of the knowledge to be acquired</p> <p>To differentiate between the different ecosystems.</p> <p>Employ recent communication and information technologies effectively in different tasks related to animal ecology Be aware of the proper ways to deal with the environment</p>
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <p>Lectures , presentations and student research.</p>
<p>(iii) Methods of assessment of knowledge acquired</p> <p>Homework, exams and research papers.</p>

b. Cognitive Skills
(i) Description of cognitive skills to be developed The student is able to propose solutions to some problems
(ii) Teaching strategies to be used to develop these cognitive skills Hold brainstorming during lectures. <ul style="list-style-type: none">• Participation of students in solving exercises during the lecture.• Post questions the students after the show to see how they recognize the topics.• Give students the opportunity to discuss any items with the faculty member
(iii) Methods of assessment of students cognitive skills <ul style="list-style-type: none">• Ability to work independently to complete the assignment given.• The ability to group discussions.
c. Interpersonal Skills and Responsibility
(i) Description of the interpersonal skills and capacity to carry responsibility to be developed <ul style="list-style-type: none">• The ability to assume responsibility for self-education• Work effectively in a group• The ability to express their own opinion without fear or hesitation and improves their self-confidence• Ability to lead a team to work

<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <p>Ask the student research in books and online To enhance the self- learning.</p> <p>. Ask students to make their own presentations to be discussed</p> <ul style="list-style-type: none"> • the distribution of tasks between team members under the supervision of the commander • Enhance the ability of the student to express themselves.
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <p>Group discussion</p> <p>Evaluate the personal homework and the team work.</p>
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> • Skills, oral and written communication • Using computer and search the Web for information sources • Use a power point for Proposals Group • The use of statistical methods in the analysis of information
<p>(ii) Teaching strategies to be used to develop these skills</p> <p>assign the student to view and throwing solutions to the issues that required to be analyzed</p> <ul style="list-style-type: none"> • commissioning duties appliances rely on search in the World Wide Web • The use of modern technology in scientific research • Find information in databases and sites corresponding universities.
<p>(iii) Methods of assessment of students numerical and communication skills</p> <p>Assess the students through what is being discussed in the lecture</p> <ul style="list-style-type: none"> • Assessment of individual and collective duties based on predefined criteria
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p>

<p>Collecting samples from environment</p> <p>Examining samples in lab</p>
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> • Assign the student using some environmental measuring tools.
<p>(iii) Methods of assessment of students psychomotor skills</p> <p>Follow up the student in the lab during the examination and evaluation</p>

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	presentation	6-7-8-9	10%
2	Med term exam	6	20%
3	Final practical exam	12	20%
4	Final exam	13	40%
5			
6			
7			
8			

D. Student Support

<p>1. Arrangements for availability of teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)</p> <p>4 hours</p>

E Learning Resources

1. Required Text(s) Smith, R.; Smith, R. M. (2000). <i>Ecology and Field Biology. (6th ed.)</i> .
2. Essential References -Begon, M.; Townsend, C. R., Harper, J. L. (2006). <i>Ecology: From individuals to ecosystems. (4th ed.)</i> . Blackwell. -Allee, W.; Emerson, A. E., Park, O., Park, T., and Schmidt, K. P. (1949). <i>Principles of Animal Ecology</i> . W. B. Saunders Company
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
4-.Electronic Materials, Web Sites etc http://www.eulc.edu.eg/eulc/libraries/index.aspx www.animal-ecology.info/
5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecturer room and lab
2. Computing resources library
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) Plankton net Water sampler Raft cell Inverted microscope

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G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <p>Continuous follow up</p>
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <p>Follow up</p>
<p>3 Processes for Improvement of Teaching</p> <p>Using presentations and movies</p>
<p>4. Processes for Verifying Standards of Student Achievement (eg. 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)</p> <p>Continuous evaluation of students activities and homeworks.</p>
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <p>Arranging cooperation with similar departments of other universities</p>

Kingdom of Saudi Arabia
**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

Entomology
4013362-3

Revised November 2015

National Commission for Academic Accreditation & Assessment

Course Specification

Institution: Umm Al_Qura university
College/Department : Biology Department, Faculty of Science.

A Course Identification and General Information

1. Course title and code: General Entomology – 4013362
2. Credit hours: 3 hrs
3. Program(s) in which the course is offered. B. Sc. Biology (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course Dr. Doaa Shehata Mohammed
5. Level/year at which this course is offered: fourth level
6. Pre-requisites for this course (if any): General Zoology & Invertebrate (1)
7. Co-requisites for this course (if any): Nothing
8. Location if not on main campus:-----

B Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <p>By the end of course student should:</p> <p>Understanding the human – insect relationship, the basic morphological and anatomical characteristic of insects including the integument and its components, the different tegmata of insect body and their appendages, the internal anatomy, the history of insect taxonomy and the bases of modern taxonomy.</p>
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <ul style="list-style-type: none"> - Compare and assess the concepts and principles behind scientific theories regarding the significance of the specific structure in the insect body. - Communicates scientific ideas orally and in writing, work in a team. - Effectively find and utilize new electronic and printed information. - Use advanced presentation aids.

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
- The insect - human relationship.	1	2
- The integument and its components. - The different tegmata of insect body: 1- head	1	2
- Types of antennae and mouth – parts. 2- Thorax	2	4
- Types of legs and wings.	1	2
- The abdomen and its appendages.	1	2
- The internal anatomy: - The digestive and circulatory systems.	2	4
- The excretory and respiratory systems.	2	4

- The nervous and genital systems.	2	4
- Moulting - Introduction of taxonomy	2	4

2 Course components (total contact hours per semester):				
Lecture: 14	Tutorial: 28	Laboratory: 12 (36 hrs)	Practical/Field work/Internship	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week): No

<p>4. Development of Learning Outcomes in Domains of Learning</p> <p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> • A brief summary of the knowledge or skill the course is intended to develop; • A description of the teaching strategies to be used in the course to develop that knowledge or skill; • The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<p>a. Knowledge</p>
<p>(i) Description of the knowledge to be acquired</p> <ul style="list-style-type: none"> - Identify the numerous levels of organization in the insect body. - Illustrate the in-depth knowledge of insect morphology, anatomy. - Illustrate the working knowledge of the terminology and nomenclature of insect body plan. - Identify the bases of modern taxonomy.
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <ul style="list-style-type: none"> - Lectures. - Class activity.

<ul style="list-style-type: none"> - Home work.
<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> - Final writing exam. - Mid-term exam. - Oral exam. - Home works.
<p>b. Cognitive Skills</p>
<p>(i) Description of cognitive skills to be developed</p> <p>By the end of course student should:</p> <ul style="list-style-type: none"> - Recognize the different insect tegmata. - Mastered drawing insect and its internal systems. - Distinguishes between insect orders. - Design models of insect life cycle.
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> - Class discussions. - Lectures. - Class activity. - Home work.
<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> - Final writing exam 40%. - Mid-term exam 20% - Oral exam 2.5% - Home works 2.5%
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <p>By the end of course student should:</p> <ul style="list-style-type: none"> - Communicates scientific ideas orally and in writing, work in a team and recognize and respect the views of other team members. - Analyse data and assess the impact and interrelationships between insects and other organisms.

<ul style="list-style-type: none"> - Plan, conduct, and write reports on insects.
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> - Home-work. - Work in a team.
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> - Observations. - Home-work.
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <p>By the end of course student should:</p> <ul style="list-style-type: none"> - Communicates scientific ideas orally and in writing, work in a team and recognize and respect the views of other team members. - Plan, conduct, and write reports on insects. - Use library resources, effectively find and utilize electronic printed. - Ability to use computer skilfully.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - Home work. - Class discussions - Work in a team.
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> - Evaluation of home-work and group activity.
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <ul style="list-style-type: none"> - Dissect different insects. - Describe the structure and function of various organs. - Drawing insect appendages and the internal systems. - Design models of insect life cycle.
<p>(ii) Teaching strategies to be used to develop these skills</p>

- Practical training.
(iii) Methods of assessment of students psychomotor skills
- Practical exams 35%

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Final writing exam	15	40%
2	Mid-term (writing exam)	10	20%
3	Oral exam		2.5%
4	Home-work		2.5%
5	Final practical exam	13	20%
6	Quiz 1 (practical)	3	5%
7	Quiz 2 (practical)	6	5%
8	Quiz 3 (practical)	9	5%

D. Student Support

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

E Learning Resources

1. Required Text(s) Lecture note of Department.
2. Essential References
- <i>An introduction to the study of insects</i> N.Y. Barrer, D. J. and DeLong, D. M. (1954).
- A general text –book of entomology. Imms, A.D. (1962).
- Laboratory manual for introductory entomology. Clifford Dennis (1965).

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
- Scientific search engines on the internet.
4-.Electronic Materials, Web Sites etc
- Scientific search engines on the internet.
5- Other learning material such as computer-based programs/CD, professional standards/regulations
- Modern devices or display screen and CD.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.)
- Lectures 40 student capacity hall, 2 hrs weekly.
- Equipped laboratory slides and microscope 25 student capacity, 3 hrs weekly.
- Allow 2 hrs theoretical and 3 hrs for practical parts at the weekly schedule.
- The number of students shall not exceed more than 40 at theory group.
- The number of students shall not exceed more than 25 at practical group.
2. Computing resources
- Labs and lecture halls equipped with screen and monitors.
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)
- Equipped laboratory with slides of different insect appendages and insect life cycle models.
- Labs and lecture halls equipped with screen and monitors.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
- Make a questionnaire to students at the end of the semester to evaluate the course.
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
- Make a questionnaire to students at the end of the semester to evaluate the course.
- Oral discussions with the students to learn the degree of achievement.
3 Processes for Improvement of Teaching
- Use advanced presentation aids.

4. Processes for Verifying Standards of Student Achievement (eg. 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).

- Make a comparison of educational achievement(test scores) between two courses of two different staff members of the same student groups.

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

- Make oral evaluation continuously for students.
- Make short periodic tests and final exam.
- Assessment of homework and activity.



Kingdom of Saudi Arabia
**The National Commission for Academic
Accreditation & Assessment**

COURSE SPECIFICATION

Virology and Bacteriology

4013401-3

Revised September 2015

Course Specification

For Guidance on the completion of this template, please refer to *of Handbook 2*
Internal Quality Assurance Arrangements

Institution: UM AL – QURA UNIVERSITY
College/Department : Faculty of Sciences – Biology Department

A Course Identification and General Information

1. Course title Virology and Bacteriology
2. Course code: 4013401-3
2. Credit hours: 3hrs
3. Program(s) in which the course is offered. : BSc Biology
3. Name of faculty member responsible for the course: Associate Prof. Dr. Khaled Elbanna
5. Level/year at which this course is offered: 5rd
6. Pre-requisites for this course (if any): Biology (1) Plant (401101-3)
7. Co-requisites for this course (if any): ---
8. Location if not on main campus: Main campus

B Objectives

After completing this course student should be able to:

1. List the roles of bacteria in the life and in different fields
2. Define basic structures and shapes of different bacterial genera.
3. Explain the fine structure of bacteria.
4. Differentiate between the different genera of bacteria.
5. Describe the bacterial growth curve.
6. Write the different methods for bacterial staining
7. summarize the factors effect on bacterial growth
8. summarize the nutritional requirements of bacteria
9. Describe the reproduction in bacteria
10. list the different animal and human diseases caused by some bacterial groups.
11. Discuss the different between gram positive and negative bacteria.
12. Describe the role of bacteria in genetic engineering and its applications in different fields.

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

This course deals the history and discovering the microorganisms, occurrence of bacteria in the environment, general characteristics of bacteria, bacterial cell structure, and differentiations between prokaryotic and Eukaryotic cells, nomenclature of bacteria. Methods and approaches for the isolation, staining and identification of bacteria are considered in the laboratory. Also, nutritional requirements for bacteria, study the factors effect of bacterial growth will be covered. Study the properties of some important bacterial groups that cause human and animal diseases.

1 Topics to be Covered

Topic	No of Weeks	Contact hours
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<p>❖ Introduction:</p> <ul style="list-style-type: none"> -History and discovery of viruses and bacteria An overview about the roles of viruses and bacteria in the environment and their applications in different fields - Distribution of viruses and bacteria in the environment - Different between the viruses, prokaryotes and Eukaryotes 	1	2
<p>❖ General Virology</p> <ul style="list-style-type: none"> - Nomenclature and classification of viruses - Distinctive properties of viruses - Morphology and ultra-structure - Capsids and their arrangements - Types and structures of viral envelopes. - Viral genome composition. - Virus related agents (viroids, prions, satellites). 	2	4
<p>❖ Bacterial Viruses</p> <ul style="list-style-type: none"> -General Properties of bacterial viruses - Bacteriophage structural organization. - Life cycle. <p>❖ Plant Viruses</p> <ul style="list-style-type: none"> -General Properties of plant viruses - Classification and nomenclature. <p>❖ Animal Viruses</p> <ul style="list-style-type: none"> -General Properties of bacterial viruses - Classification and nomenclature of animal human viruses - Epidemiology, lifecycle, pathogenicity. - Examples of certain important viral disease 	2	4
<p>- Nomenclature of bacteria</p> <ul style="list-style-type: none"> - Identification - Classification - Morphological characteristics - Phenotypic of bacteria - Genotypic of bacteria - Bergey's Manual of determinative Bacteriology -Bergey's Manual of Systematic Bacteriology 	1	2
<p>❖ Growth of bacteria</p> <ul style="list-style-type: none"> - Media and growth conditions for diverse bacteria -Sterilization methods -Methods for culturing bacteria - Nutritional elements, Oxygen, light, vitamins requirements 	1	2

❖ Bacterial motility - Swimming by flagella - Gliding - Rotary	3	6
❖ Bacterial staining - Simple Stains:(positive stain and negative stain) - Compound or differential stains: Gram stain (different between G ⁺ and G ⁻) Spore stain Acid fast stain	2	4
❖ Bacterial cell structure - Cell wall - Protoplast - Cytoplasmic membrane - Cytoplasmic contents: -Bacterial genome and plasmids - Stored materials - Gas Vacuoles -Spores (in some cases)	1	2
❖ Bacterial reproduction -reproduction methods in bacteria - Bacterial growth curve - Factors effect the growth curve of bacteria -	2	4
❖ Short Description for: - some bacterial genera important for plant and soils -some bacterial genera cause diseases for human and animal -some important bacteria used in foods, pharmaceuticals	2	4
	14 weeks	28hrs

2 Course components (total contact hours per semester):			
Lecture : 28	Tutorial:	Practical: 42	Other:

**3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week):
12h (reports & essay)**

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge : Description of the knowledge to be acquired

Upon successful completion of this course **The student** will be able to:

1. List the roles of bacteria in the life and in different fields
2. Define basic structures and shapes of different bacterial genera.
3. Describe the fine structure of bacteria.
4. list some bacterial genera caused diseases for animal, human and plant
5. Describe the bacterial growth curve.
6. Write the different methods for bacterial staining
7. list factors effect on bacterial growth
8. summarize the nutritional requirements of bacteria
9. Describe the reproduction in bacteria
- 10.
11. Write the different between gram positive and negative bacteria.
12. Recognize the role of bacteria in genetic engineering and its applications in different fields.

(ii) Teaching strategies to be used to develop that knowledge

- The methodology includes a combination of lectures by the lecturer, seminar presentation by the students and web-interactions. Students will be given opportunity to understand the role of important microorganisms in different applications and human service.

- At the end of the programme, students will be divided into groups for seminar presentation on important areas of the course to assess their understanding and comprehension of the course.
- All students will be involved in on-line learning process and each student is required to create an E-mail address to facilitate student web interactions.
- Using images and movies
- Encouraging students to collect the new information about what the new bacteriology
- Availability of the reference books and scientific sites concerning bacteria

(iii) Methods of assessment of knowledge acquired:

- Periodical exam and reports 10%
- Mid- term theoretical exam 20%
- Mid-term practical exam 5%
- Final practical exam 15%
- Final exam 50%

b. Cognitive Skills

(i) Cognitive skills to be developed

Having successfully completed the course students should be able to:

3. Explain the fine structure of bacteria.
4. Differentiate between the different genera of bacteria.
5. Describe the bacterial growth curve.
6. Explain why Gram negative could not keep the crystal violet during Gram staining.
7. Interpret why Gram positive kept the crystal violet during Gram staining
7. summarize the factors effect on bacterial growth
8. summarize the nutritional requirements for bacteria
9. Describe the reproduction methods in bacteria
10. list the different animal and human diseases caused by some bacterial groups.
11. Compare between gram positive and negative bacteria.
12. Describe the role of bacteria in genetic engineering
13. write the pathogenic bacterial genera caused diseases for plant, animal and human

(ii) Teaching strategies to be used to develop these cognitive skills:

- 1- Lectures
- 2-Brain storming
- Discussion

(iii) Methods of assessment of students cognitive skills

- Exam must contain questions that can measure these skills.

- Discussions after the lecture

c. Interpersonal Skills and Responsibility

- (i) Description of the interpersonal skills and capacity to carry responsibility to be developed

At the end of the course, the student will be able to:

1. Choose the suitable media and method for isolation different microbes from different habitats.
2. Demonstrate professional attitudes and behaviors towards others.
3. student should be able to obtain knowledge by himself from different sources
4. The student is encouraged to work in a team.

5. Teaching strategies to be used to develop these skills and abilities

- Lab work
- Active learning
- Small group discussion

•

(iii) Methods for assessment of the students interpersonal skills and capacity to carry responsibility

- Evaluate the efforts of each student in preparing the report.
- Evaluate the scientific values of reports.
- Evaluate the work in team
- Evaluation of the role of each student in lab group assignment
- Evaluation of students presentations

d. Communication, Information Technology and Numerical Skills

- (i) **Description of the skills to be developed in this domain.**

At the end of the course, the student will be able to:

- Enhancing the ability of students to use computers and internet.
- Interpret the laboratory data
- Know how to write a report.

(ii) Teaching strategies to be used to develop these skills

- Homework (preparing a report on some topics related to the course depending

<p>on web sites).</p> <ul style="list-style-type: none"> • Seminars presentation • Practical during carryout the experiments in the lab. <p>(iii) Methods of assessment of students numerical and communication skills</p> <ol style="list-style-type: none"> 1- Evaluation of presentations 2- Evaluation of reports 3- Practical exam
<p>e. Psychomotor Skills (if applicable)</p> <p>Upon successful completion of this course, the student is expected to be able to:</p> <ol style="list-style-type: none"> 1-perform the laboratory experiments precisely 2-operate all devices in lab 4- Preparation different media for isolation and cultivation of bacteria 5-Cultivate the bacterial isolates on the agar plates.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - Follow up students during preparing Preparation different media , isolation and cultivation of bacteria
<p>(iii)Methods of assessment of students psychomotor skills</p> <ul style="list-style-type: none"> • Giving additional marks for preparing correct media, bacterial slides , good seminar presentation

5. Schedule of Assessment Tasks for Students During the Semester			
Assess ment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Periodical Exam	4	5 %
2	Mid Term Exam (practical)	8	5 %
3	Mid Term Exam	9	20 %
4	Reports and essay	11	5 %
5	Final Practical Exam	15	15 %
6	Final Exam	16	50 %

D. Student Support

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

Office hours: 10 hrs

E. Learning Resources

Required Text(s):

- Book note prepared by associate prof. Dr. Khaled El Banna
- Brock Biology of Microorganisms, Twelfth edition by Madigan, Martinko, Dunlap and Clark; Publisher: Pearson Prentice-Hall, ISBN: 0132324601 (2008).
- Benson, H.J. (2002). Microbiological Applications. Laboratory Manual in General Microbiology, eighth edition.

Recommended Reading List

- 1-Prescott, L., Harley, J. and Klien, D. (2005). Microbiology, MacGraw
- 2-Larry McKane & Judy Kandel (1996) Microbiology–Essential and Applications, International Edition.

Electronic Materials, Web Sites

www.bacteriamuseum.org/niches/wabacteria/bacteriology.shtml<http://www.bacterio.net>

Other learning material such as computer-based programs/CD, professional standards/regulations

- PPT prepared by Associate prof. Dr. Khaled Elbanna

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)

- Class room is already provided with data show
- The area of class room is suitable concerning the number of enrolled students (68) and air conditioned.

2. Computing resources



- Providing class rooms with computers and labs with data show.
- 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**
- Availability of some reference bacterial strains

G Course Evaluation and Improvement Processes

<p>1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> • Questionaries • Open discussion in the class room at the end of the lectures
<p>2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> • Revision of student answer paper by another staff member. • Analysis the grades of students.
<p>3. Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> • Preparing the course as PPT. • Using scientific movies. • Coupling the theoretical part with laboratory part • Periodical revision of course content.
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <ul style="list-style-type: none"> • After the agreement of Department and Faculty administrations
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> • Periodical revision by Quality Assurance Units in the Department and institution

Faculty member responsible for the course:

Prepared by faculty staff: 1. Dr. Khaled Elbanna	Signature:
Date Report Completed: 1.09.2015	
Revised by: 1. Dr. Khaled Elbanna 2. Dr. Hassan Abulreesh	Signature:



3. Dr. Shady Elshahawy	
Date: 1.10.2015	
Head of Program Dr. Hassan Abulreesh	Signature:
Dean Prof. Dr. Samir Neto	Signature:
Date:	

مرفقات:

- نماذج من الاختبارات الدورية والنصفية والنهائية



جامعة أم القرى
كلية العلوم التطبيقية
قسم الأحياء

إمتحان نهائى بكتيريا (نظري)
الفصل الدراسى الثانى 2011- 2012
(زمن الإمتحان ساعتين)

(15 درجة)

أجب عن الأسئلة الآتية:
السؤال الأول-

أ- أذكر أهم خمسة فروق بين كل من :

prokaryotes	Eukaryotes
	-1
	-2
	-3
	-4
	-5

ب - من دراستك لمقرر البكتيريا، أذكر مثالا لكل من الميكروبات الآتية:

الإسم العلمى	وصف الميكروب
	1- ميكروب عصوى يميل للكروى Coccobacilli يسبب مرض الإجهاض فى الأبقار والحمى المالطية أو المتموجة للإنسان
	2- ميكروب أوتوتروفى حتمى يؤكسد الأمونيا إلى نيتريت وأخر يؤكسدها الى نيترات ويعيش فى التربة
	3- ميكروب أوتوتروفى يحصل على الطاقة من الضوء ويحصل على الكربون من ثانى أكسيد الكربون وينتج الأزوت لاتكافليا ويعيش فى التربة والماء
	4- ميكروب عصوى قصير سالب لجرام ويتواجد فى التربة وينتج صبغات ذات لون أخضر مزرق وتسبب التهابات مجرى البول وتسبب septicemia والالتهاب السحائى، كما تسبب أمراضا للنبات كالتبقع والجرب والذبول
	5- ميكروب إسطوانى الشكل سالب لجرام ويعيش متطفل اجبارى، يتواجد فى تجويف الفم فى بعض المرضى والقنوات التناسلية للإنسان ويسبب الزهري

6- ميكروب عصوى طويل مفرد او فى أزواج أو فى سلاسل ، موجب لجرام ومتحرك ، هوائى ومتحرك	
7- ميكروب عصوى طويل مفرد او فى أزواج أو فى سلاسل ،موجب لجرام وغير متحرك ، يخمر اللاكتوز ، لا هوائى إختياري وغير متحرك، ومهم فى الصناعات اللبنية كإنتاج الزبادى	
8- ميكروب كروى فى أزواج موجب لجرام، هوائى أو هوائى إختياري ، يستخدم فى الصناعات اللبنية	
9- ميكروب كروى فى أزواج سالب لجرام، هوائى يثبت الأزوت الجوى لا تكافليا	
10- ميكروب عصوى قصير وسالب لجرام ويسبب التسمم الغذائى والتيفود	

السؤال الثانى : ضع علامة صح أم خطأ أمام العبارات الآتية مع تصحيح العبارة الخاطئة ان وجد (20 درجة)

- 1- يعتمد تصنيف البكتيريا فى مرجع برجى الحديث (Bergy Manual systematic of Bacteriology) على دراسة الصفات الفسيولوجية والمورفولوجية ()
- 2- أعتد العالم Frederic Griffith فى دراسة ظاهرة التزاوج Conjugation فى البكتيريا على إجراء عدوى الفئران بمخلوط خلايا مقتولة للنوع الممرض وأخرى حيه ولكن غير مرضية من بكتيريا *Streptococcus pneumonia* ، لمعرفة كيفية إنتقال بعض الصفات الوراثية من ميكروب لآخر. ()
- 3-يعتبر العلمان Edward Tatum and Joshua Lederberg أول من أكتشفا ظاهرة التحول الوراثى Transformation فى البكتيريا سنة 1946 ()
- 4- تعتمد ظاهرة الحمل بالفاجات Transduction على قيام بعض أنواع البكتيريا بنقل بعض الصفات الوراثية من بكتيريا الى نوع آخر . ()
- 5- ترجع الحركة فى البكتيريا الى وجود أسواط تخرج من الجدار الخلوى ()
- 6- يعتبر الغشاء السيتوبلازمى المسئول الأساسى عن حماية الخلية البكتيرية من العوامل الخارجية ()
- 7- الريبوسومات والإنزيمات ومراكز تكسير الغذاء وإنتاج الطاقة تتواجد على الجدار الخلوى ()
- 8- من أهم وظائف الجدار الخلوى النفاذية الإختياريه للمواد الغذائية ()
- 9- المكون الأساسى للجدار الخلوى فى البكتيريا السالبة لجرام هى طبقتين سميكتين من الليبوبروتين lipoprotein تسمى Outer membrane ، بينما فى البكتيريا الموجبة لجرام الكمون الأساسى هو طبقة سميكة من مادة الجليكوجين ()
- 10- تبلغ نسبة الببتيدوجليكان فى البكتيريا الموجبة لجرام من 5-10 % ، بينما فى البكتيريا السالبة لجرام تصل الى 90-95 % ()

- 11- البيتيوجلوكان عبارة عن جزئين هما حمض أسيتيل ميوراميك (N-acetylmuramic acid (AMA)، وحمض أسيتايل فركتوز أمين N-acetylfructose amine (AFA) بالإضافة الى سلسلة من الأحماض الأمينية ()
- 12- البلازميدات تحمل نسخة من جميع الجينات الموجودة في chromosomal DNA ()
- 13- يعتبر المتوكونديريا هي ماكنة تصنيع البروتين في خلية البكتيريا ()
- 14- يقوم t RNA بحمل الشفرة الوراثية من ال DNA الى الريبوسوم ليقوم بترجمتها لتصنيع بروتين ما ، ليقوم m RNA بحملها بعد الترجمة الى الستوبلازم او خارج الخلية ()
- 15- الأسواط في البكتيريا تتركب من بروتين يسمى البيلين Pillin، بينما الزوائد او الشعيرات تتركب من بروتين يسمى الفلاجلين flagellin ()
- 16- تخزن المواد الكربوهيدراتية في الخلية البكتيرية في صورة مادة مبلمرة تسمى poly hydroxybutyric acid (PHB) ، بينما المواد الدهنية تخزن في صورة polysaccharide او الجليكوجين ()
- 17- يتراوح عدد القواعد الوراثية (النيوكليوتيدات) في جزئ 16s rDNA حوالي من 450 زوج قاعدة pb ()
- 18- يعتبر إختبار التزاوج DNA- DNA hybridization هو الإختبار الأساسي في تعريف ميكروب ما ()
- 19- غالبية البكتيريا العصوية القصيرة سالبة لجرام ، بينما غالبية البكتيريا الكروية موجبة لجرام ()
- 20- التجزئ في البكتيريا وسيلة من وسائل التكاثر وليس حفظ النوع ()

(5 درجات)

السؤال الثالث: علل:

- 1- الأسباب التي أدت الى اختيار E.coil في مجال الهندسة الوراثية؟
- 2- أسباب إحتفاظ البكتيريا الموجبة لجرام بصبغة الجنسيان (Crystal violet) فتظهر باللون البنفسجي، بينما لاتحتفظ بها البكتيريا السالبة لجرام فتظهر باللون الاحمر اثناء إجراء الصبغ بطريقة جرام
- 3- يعتبر إختبار 16s rDNA أحد واهم الإختبارات الهامة في تصنيف وتعريف البكتيريا
- 4- فسر قدرة البكتيريا على استهلاك كميات كبيرة من الغذاء في وقت قصير ؟
- 5- في بعض الاحيان تفقد بعض الانواع البكتيرية صفة الحساسية او المقاومة للمضاد الحيوي وتكسیر المبيدات او تكسير البترول

(10 درجات) أ-

السؤال الرابع:

- أ- أنكر إفتراضات العالم روبرت كوخ ، ثم وضح أهمية هذه الإفتراضات لخدمة الإنسان؟
- ب- باقل عدد من الإختبارات وضح في الجدول التالي كيف تفرق بين كل من جنس *Bacillus* و جنس *Lactobacillus*



<i>Lactobacillus</i>	<i>Bacillus</i>	إسم الإختبار
		-1
		-2
		-3

ج- عرف الجرثومة ثم قسم الجراثيم تبعاً لموضع وشكل وحجم الجرثومة ، موضحاً أهمية دراسة ذلك ؟؟

Attachment 2 (e)

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

ENVIRONMENTAL POLLUTION

4014091-3

Revised November 2015

Course Specification

Institution: Umm Al-Qura university
College/Department: Faculty of Science – Biology Department

A Course Identification and General Information

1. Course title and code: environmental pollution 4014091
2. Credit hours 3 h
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) BSc Biology
4. Name of faculty member responsible for the course Dr Randa Ahmed Elbassat
5. Level/year at which this course is offered level 7
6. Pre-requisites for this course (if any) animal ecology
7. Co-requisites for this course (if any) -----
8. Location if not on main campus -----

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course. The course will provide students with an understanding and appreciation of the complex interactions of man, health, and the environment. It will expose students to the multi-disciplinary nature of Environmental Health Sciences; the information and tools required to assess environmental quality as it relates to human and ecosystem health. The negative impacts that environmental degradation can have on human, wildlife and other bioreceptors in aquatic and terrestrial ecosystems; and the control measures required to minimize, manage and/or eliminate specific environmental problems. The course will address environmental stressors and pollution, their sources in the natural and workplace environments, their modes of transport and transformation, their ecological and public health effects, and existing methods for environmental disease prevention and remediation.
2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field)

1. Use the Internet to view information on the topics of study.
2. Update the content of the course is a league based on recent developments in the field
3. and on the learning outcomes in the labor market.
4. Compare the course contents with other regional or global universities.
5. The use of different methods to assess the student and to the development of various
6. skills and give them a chance to prove their ability in development.

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
The concept of the environment and the introduction of environmental regulations and the impact of human	1	2
Water resources and pollution of different types of pollution (industrial - agricultural- thermal- sewage) and the use of micro-organisms as evidence of pollution	2	2
Poisoning water bodies due to flourishing of toxic algae species and its impact on human and animal. Underground water pollution	3	2
Water pollution with oil residues and heavy metals and the bioaccumulation phenomenon	4	2
Med term Exam	5	2
Atmosphere (air pollution, acid rain and damages, the erosion of the ozone layer, global warming)	6	2
Soil pollution sources , effects and solutions	7	2
Pharmaceutical pollutants , cosmetics, personal hygiene and its impact on the environment and ways of safe disposal	8	2

Medical and pathological wastes , the proper way of getting rid of it.	9	2
Food sources in the world and the problems of food contamination and ways to solve them	10	2
Discussion of students reports on different environmental problems	11	2
Revision	12	2
Final exam	13	2

2 Course components (total contact hours per semester):				
Lecture:\	Tutorial:	Laboratory	Practical/Field work/Internship	Other:
24	6	12	4	36

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

To differentiate between the different methods of pollution.
Be aware of the risks of various environmental and extent of human intervention to reduce them.

That understands the importance of the use of nonpolluting sources of energy to the environment.
To differentiate between persistent organic chemicals and inorganic sources of water.
Be aware of the proper ways to deal with the environment

(ii) Teaching strategies to be used to develop that knowledge

Lectures and

student research

(iii) Methods of assessment of knowledge acquired

Homework, exams

and research papers.

b. Cognitive Skills

(i) Description of cognitive skills to be developed

The student is able to propose solutions to some problems

(ii) Teaching strategies to be used to develop these cognitive skills

Hold brainstorming during lectures.

- Participation of students in solving exercises during the lecture.
- Post questions the students after the show to see how they recognize the topics.
- Give students the opportunity to discuss any items with the faculty member

<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> • Ability to work independently to complete the assignment given. • The ability to group discussions.
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> • The ability to assume responsibility for self-education • Work effectively in a group • The ability to express their own opinion without fear or hesitation and improves their self-confidence • Ability to lead a team to work
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <p>Ask the student research in books and online To enhance the self- learning.</p> <p>. Ask students to make their own presentations to be discussed</p> <ul style="list-style-type: none"> • the distribution of tasks between team members under the supervision of the commander • Enhance the ability of the student to express themselves.
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <p>Group discussion</p> <p>Evaluate the personal homework and the team work.</p>
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> • Skills, oral and written communication • Using computer and search the Web for information sources • Use a power point for Proposals Group

<ul style="list-style-type: none"> • The use of statistical methods in the analysis of information
<p>(ii) Teaching strategies to be used to develop these skills</p> <p>assign the student to view and throwing solutions to the issues that required to be analyzed</p> <ul style="list-style-type: none"> • commissioning duties appliances rely on search in the World Wide Web • The use of modern technology in scientific research • Find information in databases and sites corresponding universities.
<p>(iii) Methods of assessment of students numerical and communication skills</p> <p>Assess the students through what is being discussed in the lecture</p> <ul style="list-style-type: none"> • Assessment of individual and collective duties based on predefined criteria
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <p>Collecting samples from environment</p> <p>Examining samples in lab</p>
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> • Assign the student using a microscope to examine samples
<p>(iii) Methods of assessment of students psychomotor skills</p> <p>Follow up the student in the lab during the examination and evaluation</p>

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	presentation	6-7-8-9	10%

2	Med term exam	6	20%
3	Final practical exam	12	20%
4	Final exam	13	40%
5			
6			
7			
8			

D. Student Support

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

4 hours

E Learning Resources

1. Required Text(s)

Friis, Robert H. *Essentials of Environmental Health*. Jones and Bartlett, Inc., Sudbury, MA. ISBN No. 0-7637-4762-9

2. Essential References

Hill, Marquita K., *Understanding Environmental Pollution, 2nd Edition*. Cambridge University Press, Cambridge, UK.

ISBN No. 0-5218-2024-3

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

4-.Electronic Materials, Web Sites etc

5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecturer room and lab
2. Computing resources library
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) Plankton net Water sampler Rafter cell Inverted microscope

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching Continuous follow up
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department Follow up

3 Processes for Improvement of Teaching

Using presentations and movies

4. Processes for Verifying Standards of Student Achievement (eg. 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)

Continuous evaluation of students activities and homeworks.

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

Arranging cooperation with similar departments of other universities

Kingdom of Saudi Arabia
**The National Commission for Academic Accreditation &
Assessment**

Biotechnology
(4014112-3)

Revised November 2015

Course Specification

For Guidance on the completion of this template, please refer to of Handbook 2 Internal Quality Assurance Arrangements

Institution: Umm Al-Qura University
College/Department: College of Science/ Biochemistry

A Course Identification and General Information

1. Course title and code: Biotechnology (4014112-3)
2. Credit hours; (2theoretical + 2 practical)
3. Program(s) in which the course is offered. BSc Biology
4. Name of faculty member responsible for the course: Dr. Fawziah Mohammed AL-Barakati
5. Level/year at which this course is offered . (Level 8)
6. Pre-requisites for this course (if any) (431448-3)
7. Co-requisites for this course (if any) Algae
8. Location if not on main campus . Main Campus .

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course.

The main objectives of this course are:

To introduce the modern and emerging approaches in Molecular Biotechnology and its applications in Biochemistry. The course is divided into four rotations, each with its own theoretical and practical sessions with emphasis on the theoretical basis of each technique, the actual working method, hands-on experience, pitfall and strengths of each technique.

Upon completion of the course the student will have:

- 1- knowledge and understanding of the definition of Biotechnology and genetic engineering by understanding the use of the living organisms to produce goods and services for practical and industrial purposes
- 2- gained experience of techniques used to manipulate living cells and an overview of the genetic engineering methods
- 3- exploited basic molecular biology knowledge to genetically engineer living organisms to provide services or products
- 4- the appreciation and value of the applications of biotechnology in medicine, agriculture and pharmaceutical industry
- 5- gained practical skills and ability to work with different biological samples and the ability to obtain records, observe and analyze information in the laboratory.
- 6- the ability to critically evaluate their own results
- 7- the ability to using the Internet and other electronic sources as a source of information
- 8- the knowhow of how to plan and work a project in the areas of Biotechnology and Genetic Engineering
- 9- skills necessary for self- managed and lifelong learning
- 10- the opportunities to work productively with others in the laboratory.
- 11- interpersonal and Teamwork skills
- 12- prepare written technical report
- 13- awareness of the importance of time and time management

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

- i- The course places importance on improving the ability of the students to use genetic engineering techniques in their research proposals by influencing their research skill.
- ii- New techniques will replace the older techniques
- iii- The course will be further advanced to provide training to students to use the

resources on the net.

iv- The course will be further improved to provide the students an on-the-job and research-based training.

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		
Topic	No of Weeks	Contact hours weekly
Introduction to biotechnology and its brief history Biotechnology in research and industry	1	2 h lecture
DNA molecules and replication	1	2 h lecture
RNA molecules and transcription	1	2 h lecture
Protein and translation	1	2 h lecture
Gene regulation and expression in both prokaryote and eukaryote	1	2 h lecture
DNA fingerprint .	1	2 h lecture
Genetic engineering applications	1	2 h lecture
Restriction endonucleases & vectors	1	2 h lecture
1st Continuous Assessment Test	1	2 h lecture
Restriction endonucleases & vectors	1	2 h lecture
DNA cloning; types and applications; development of recombinant protein; tissue cloning; animal and plant cloning	1	2 h lecture
Polymerase chain reaction and applications	1	2 h lecture
Recombinant DNA- technology- applications .	1	2 h lecture
	1	2 h lecture
	1	2 h lecture

2 Course components (total contact hours per semester):			
Lecture: 30	Tutorial:	Practical/Fieldwork/Internship: 30 Hrs	Other: CAT, Final Exam

3. Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week)

3 hours per week

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

i- Understand vocabularies associated with molecular biology

ii- Learn in detail about the biological processes and their regulation

iii- Knowledge about techniques in biotechnology and their applications

iv- Knowledge about genetic engineering techniques and their application in medicine, agriculture and industry.

(ii) Teaching strategies to be used to develop that knowledge

i- Creation of an environment in which students are best able to learn

ii- Didactic lectures in-class, where the previous knowledge is linked to the current and future topics. Lectures will be presented using PowerPoint slides to deliver the information. Blackboard will be used for explanations. The slides will serve as a guide for the student for the most important and basic information. It is essential that students attend the classes regularly, write notes in the class, and read the recommended books to prepare comprehensive notes during the entire semester. Taking notes by the students in the class will be an integral part of

<p>this course.</p> <ul style="list-style-type: none"> iii- Practical sections with close supervision to teach skills in genetic engineering and biotechnology iv- Homework assignments and writing in-class assignment v- Discussions and question/answer sections in the class vi- Problem solving vii- Answering quizzes: [this course will consist of quizzes (2-3 exams)]
<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> i- By questioning the students ii- By giving home work iii- Quizzes iv- Problem solving ability will be assessed by working out problems as home assignments. v- In addition during the semester, two continuous assessment tests will be held. vi- Finally, the entire semester's knowledge gain will be assessed through a Final written examination.
<p>b. Cognitive Skills</p>
<p>(i) Cognitive skills to be developed</p> <p>The following skills will be expected to develop in the students attending this course:</p> <ul style="list-style-type: none"> i- Skills for using genetic engineering and biotechnology for research or diagnostics ii- Understanding of the applications of genetic engineering and biotechnology for diagnostic purpose. iii- Skills to use the available resources iv- Skills of interpreting results v- Skills for conducting research vi- Skills for designing experiments, carrying out experiments, analysing and interpreting results and preparing reports on the work conducted. vii- Time management skills

<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> i- Didactic lectures ii- Assignments to be done at home iii- Regularly discussions will be held with the students iv- Problem will be given for the students to solve. v- Questions will be asked during the lecture vi- Hands-on training on the different techniques vii- Continuous monitoring and close supervision.
<p>(iii) Methods of assessment of students cognitive skills</p> <p>Cognitive skills will be assessed through</p> <ul style="list-style-type: none"> i- Regular questioning and discussions with the students ii- Quizzes given during the semester iii- Problem given to solve iv- The continuous assessment tests v- And the final examination.
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> i- By ensuring punctual attendance in lectures ii- Ensuring that the students hand out assignments at scheduled times iii- By improving communication with the students and between the students iv- Asking questions from all the students v- By involving the entire class in discussions vi- Encouraging assertive speaking among students vii- Work independently and as part of a group viii- Manage resources, time and other members of the group ix- Building a spirit to learn x- Communicate results with other members- building group spirit to share and discuss

xi- Discouraging plagiarism.
(ii) Teaching strategies to be used to develop these skills and abilities <ul style="list-style-type: none"> i- Lectures, where various examples are presented ii- Encouraging group-spirit, effective communication, and cooperation iii- Solving problems in groups in class iv- Assessing the students ability to communicate and learning spirit.
(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility <ul style="list-style-type: none"> i- By recording students attendance ii- Demonstrate critical thinking, problem-solving and decision making ability iii- Work constructively in a group, cooperating with their leaders and seniors. iv- Questions to assess interpersonal skills and responsibility carrying capacity in the Final examination v- Show professional responsibility and respect the compliance to work through systems vi- Demonstrate creativity and time management abilities.
d. Communication, Information Technology and Numerical Skills
(i) Description of the skills to be developed in this domain. <ul style="list-style-type: none"> - Using the computer for obtaining information - Laboratory work - Writing reports for assessment - Use computational tools for assessing data - Use of power point presentation for writing / presenting small reports on various topics - Report writing - Management of the time during exams, assignments and presentations

<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - Incorporating the use of computers in the course requirements - Writing reports - Active learning - Continuous feedback and discussion - Small group discussion - Presentations assignments
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> i- Evaluating reports written by students and students presentations ii- Evaluation of the role of each student in research assignment iii- Continuous oral discussions iv- Giving them problems to solve v- flow up for attendance and discussion participation
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <p>Not applicable</p>
<p>(ii) Teaching strategies to be used to develop these skills</p> <p>Not applicable</p>
<p>(iii) Methods of assessment of students psychomotor skills</p> <p>Not applicable</p>

D. Student Support

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

Office hours 8 hours / week

E Learning Resources

Textbook:

Aluizio Borem Santos (Author), Fabricio R. (Author), David E. Bowen Understanding Biotechnology (2003)

<p>2. Essential References Bollegi DM Rozycki MD Edelstein SJ ; Protein Methods. Wiley-Liss 1996</p> <p>Jeremy Dale, Malcom von Schantz: From Genes to Genome (2007) 2nd Ed. ISBN-10: 0470017341 .</p> <p>Lewin B (2004) gene 8 Pearson prentice hall ISBN:0-13-123924-4</p> <p>Lodge J et al (2007) gene cloning Taylor and Francis ISBN 0-7487-6534-4</p> <p>Carson S and Reportson D (2006)laboratory Manual of manipulation and expression of recombinant DNA Elsevier academic press ISBN: 13-978-0-120-088418-6</p>
<p>3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)</p>
<p>4-.Electronic Materials, Web Sites etc</p> <p>Web sites on the internet that are relevant to the topic</p>
<p>5- Other learning material such as computer-based programs/CD, professional standards/regulations Multimedia associated with the text books and the relevant websites</p>

F. Facilities Required

<p>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</p>
<p>1. Accommodation (Lecture rooms, laboratories, etc.) Lecture room with at least 50 seats Auditorium with a capacity of 100 seats Chemical laboratory with at least 50 places</p>
<p>2. Computing resources Computer room with 50 systems Scientific calculator for each student</p>
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</p>

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <p>Course evaluation by the student Student – faculty meetings</p>
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <p>Conducting workshops about latest techniques Periodical departmental revision of courses Monitoring teaching activities by senior faculty members</p>
<p>3 Processes for Improvement of Teaching</p> <p>Faculty from other institution may be invited to review the courses and accuracy of grading policy</p>
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <p>Providing samples of all kind of assessment in the departmental course portfolio of each course</p>
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <p>The course material and learning outcomes are periodically reviewed and the changes to be taken are approved in the departmental and higher councils.</p> <p>The head of the department and faculty take the responsibility of implementing the proposed changes.</p>

Kingdom of Saudi Arabia

**The National Commission for Academic
Accreditation & Assessment**

Tissue Culture

4014212-3

Revised November 2015

Course Specification

For Guidance on the completion of this template, please refer to of Handbook 2 Internal Quality Assurance Arrangements:

Institution: Umm Al Qura University.
College/Department: Faculty of Science, Biology Department.

A. Course Identification and General Information

1. Course title and code: Plant Tissue Culture : 4014212-3
2. Credit hours: 3 hours - Biology
3. Program(s) in which the course is offered. Biology (If general elective available in many programs indicate this rather than list programs).
4. Name of faculty member responsible for the course: <i>Prof. Dr. Hamed El Sayed Ahmed El Sayed</i>
5. Level/year at which this course is offered: 7th
6. Pre-requisites for this course (if any): Genetics 401141-3 and Plant Embryology 401454 - 3
7. Co-requisites for this course (if any): -
8. Location if not on main campus: main campus (Al Aziziah Dist. Laboratory and Class Rooms).

B. Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course:</p> <ul style="list-style-type: none"> * -Give the students' knowledge of with the definition of "plant tissue culture" in terms of techniques and applications. * - The course aims to give the students an idea of the basics of practical and theoretical study of the techniques of plant tissue and stages of cultivation revealed economic and objectives of these techniques. Inside the plant in terms of metabolic activity as well as a brief picture of the chemistry of organic compounds and manufactured within the plant.
<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> <ul style="list-style-type: none"> <input type="checkbox"/> Introduction to plant tissue culture <input type="checkbox"/> identify appropriate plant tissue sources <input type="checkbox"/> isolated and sterilized then grown in appropriate circumstances <input type="checkbox"/> methods of plant organ transplants <input type="checkbox"/> methods for preparation of cell commentator Farms <input type="checkbox"/> isolation and cultivation methods of plant protoplast cells <input type="checkbox"/> The Ways of integrate the protoplast somatic cells. <input type="checkbox"/> The importance economic for the applications of plant tissue culture science.

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		
Topic	No of Weeks	Contact hours
• Introduction to plant tissue culture	1	2
• Identify appropriate plant tissue sources	2	2
• Isolated and sterilized then grown in appropriate circumstances	3-4	4
• Methods of plant organ transplants culture.	5-6	4
• Methods for preparation of cell suspensions	7-8	4
• Isolation and cultivation methods of plant protoplast cells	9-10	2
• The Methods for integrate and cultivated protoplast in somatic cells	11	2
• The economic importance of the applications of plant tissue culture science.	12	2
• Applications has been studied by seminars	13-14	4

2 Course components (total contact hours per semester):			
Lecture:	Tutorial:	Practical/Fieldwork/Intern ship:	Other:

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

28	--	42	Meetings to present assignments along with mid-term exams written
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3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week):

The study rate increase 4 hours to search through the Internet to access the sites according to reach the student has done extensive research in the specialty materials.

a. Knowledge:
<ul style="list-style-type: none"> • Introduction to plant tissue culture • Identify appropriate plant tissue sources • Isolated and sterilized then grown in appropriate circumstances • Methods of plant organ transplants culture. • Methods for preparation of cell suspensions • Isolation and cultivation methods of plant protoplast cells • The Methods for integrate and cultivated protoplast in somatic cells • The economic importance of the applications of plant tissue culture science. • Applications has been studied by seminars
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> - A panel discussion of the students inside the classroom management - Cash at the students accept the offer after research and presentation in seminars - The development of self-study among students - Create a spirit of competition among students through mental questions relating to the adequate understanding of scientific material to the highest level - Develop the skills to extract the correct information and scientific ways
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> - Oral exams of the content of scientific theory Article - Methods of Research Assessment and measure how students accept cash in views - Commitment to the requirements of the students work assigned her - The ability to offer and throw in front of each other - Individual and collective business valuation
d. Communication, Information Technology and Numerical Skills
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> - The ability to use the Web in search of the latest findings of modern science - The ability to use computers in research writing and presentation using power point - The use of computers in the provision of research and scientific reports required - The use of modern techniques in scientific research - The ability to research information required analysis.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - To give students individual and collective duties and activities and reports and presented through the use of Microsoft Office - View summaries of scientific material to the students using the programs Power point - To urge the students to visit the library to take advantage of modern scientific research - Make a table for the students scientific debate
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> - The performance of individual students to assess work - Evaluation of the performance of the students of collective works - Evaluation of the required practical applications - Evaluation of the ability of students to use computers to write and Display search - Evaluation of the students ability to use the Web to draw scientific research - Evaluation of the students methods of writing bug research capacity and take it out in final form
e. Psychomotor Skills (if applicable)
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <p style="text-align: center;">Does not apply</p>
<p>(ii) Teaching strategies to be used to develop these skills</p> <p style="text-align: center;">Does not apply</p>
<p>(iii) Methods of assessment of students psychomotor skills</p> <p style="text-align: center;">Does not apply</p>

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (e.g. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Weekly assignments every	Two weeks	%20
2	The theoretical the test midterm	8	%10
3	Midterm the practical test	6	%10
4	The final practical test	12	%20
5	Final theoretical test	15	%40

D. Student Support

1. Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)
- Following up the students in academic labs to provide expertise required by supervising laboratory
 - Office scheduled hours (6 hours) during the school week to communicate with the students
 - Access to e-mail and send and correct assignments and re-send it back to the students
 - Provide advice and guidance to students at any time during working hours and by telephone and electronic communications and the exchange of sending electronic files with students

E Learning Resources

1. Required Text(s):
<ol style="list-style-type: none"> 1) Handbook of Plant Cell Culture Techniques and breeding. Ed. Evans, Sharp, Ammirato and Yamada. Macmillan, New York, 1983. 2) Plant Tissue Culture : Methods and Application in Agriculture. Ed. Travor A. Thorpe. Academic Press, 1981. 3) Growth and Organization in Plant , Stewart, F.C. Adison - Wesley Co. Reading Wareing (1987) 4) Plant Propagation by tissue culture: Handbook and directory of commercial laboratories. Ed. George, E. F. and Sherrington, P. D. Exegetics Limited, 1984.
2. Essential References
<ol style="list-style-type: none"> 1) Handbook of Plant Cell Culture Techniques and breeding. Ed. Evans, Sharp, Ammirato and Yamada. Macmillan, New York, 1983. 2) Plant Tissue Culture : Methods and Application in Agriculture. Ed. Travor A. Thorpe. Academic Press, 1981. 5) Growth and Organization in Plant , Stewart, F.C. Adison - Wesley Co. Reading Wareing (1987) 6) Plant Propagation by tissue culture: Handbook and directory of commercial laboratories. Ed. George, E. F. and Sherrington, P. D. Exegetics Limited, 1984.
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
<ol style="list-style-type: none"> 1) Handbook of Plant Cell Culture Techniques and breeding. Ed. Evans, Sharp, Ammirato and Yamada. Macmillan, New York, 1983. 2) Plant Tissue Culture : Methods and Application in Agriculture. Ed. Travor A. Thorpe. Academic Press, 1981. 7) Growth and Organization in Plant , Stewart, F.C. Adison - Wesley Co. Reading Wareing (1987) 3) Plant Propagation by tissue culture: Handbook and directory of commercial laboratories. Ed. George, E. F. and Sherrington, P. D. Exegetics Limited, 1984.
4. Electronic Materials, Web Sites etc
There are too many websites and are searched using the more than one method to enter on Google for sites that have to do with rule the required of scientific study
5- Other learning material such as computer-based programs/CD, professional standards/regulations
Using the Microsoft software in writing tables and graphs and PowerPoint presentation using the Power Point

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.)
<ul style="list-style-type: none"> - Classrooms are equipped with different display such as Data Show Data Show and smart blackboard and other - Laboratories equipped with the tools and various chemicals usable - Various measurements of physiological analysis devices - Laboratories and classrooms available the safety and security tools - The provision of computers to access the World Wide Web for students
2. Computing resources
<ul style="list-style-type: none"> - Classrooms containing over to computers for students to access the World Wide Web and the preparation the required of them on campus under the supervision of faculty members and the like.

3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)
 Chemicals usable is expired
 Devices for measurement analysis of all - mineral elements, proteins and chlorophyll, carbohydrates and fats
 DNA, RNA, Amino Acids, Proteins, Free Proline, Carbohydrates, Sucrose, Enzymes Activity, Micro & Micro Inorganic Elements, --etc.
 Green house glass (glass house) for breeding different plants Green House

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> - The work of a questionnaire to assess the of scientific material presented by the students in END OF each semester to learn and cons scheduled to be avoided in the coming years - Work meetings with the students to take their opinions in decision - The level of the students periodically measure to note enables the student to absorb the planned article - Evaluating the results of the students to know the feedback of the scheduled Nutrition - Assess the duties required and knowledge of the extent of the student response to decision
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> - Preparation of reports on students scheduled - Evaluating the results of the students are supported by a committee to measure feedback - Self-assessment with the decision and the use of a single modern teaching methods - The level of use of assessment of the students by professors highly experienced consultants in the same specialization - Internal periodic review by the Commission supported the decision
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> - Find what's new in the scientific material to get to the best - Take advantage of the experience of others to pursue of scientific education to go along with continuous update - The need to append the faculty members and the like training courses and specialized workshops for the advancement of the educational process in the best - Need to benefit from the expertise of experienced follow-up of the educational process - Provide a suitable atmosphere for study and provide all the requirements to complete the educational process - Development league to see weaknesses in the end by the Rapporteur of the Committee on Internal Audit
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <ul style="list-style-type: none"> - Evaluation and reporting duties required - A review of exams papers by faculty member - Cooperation with the faculties of a debate in the local, regional and international universities to reach academic accreditation
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> - Review scheduled characterization and vocabulary periodically by an internal committee and then an external committee to get to the desired academic accreditation - Compared to the course specification with similar decisions in other universities - The work of self-study with the decision to see the weaknesses and improve in the new plan - Characterization of the decision to put in line with the reduction of unemployment and community service labour market - Take advantage of the statistical analysis of the results of the students in the improvement and development of the weaknesses - Updated learning resources to courses to keep up with the rapid developments in the field of science and knowledge.

Kingdom of Saudi Arabia
**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

Parasitology

4014311-3

Revised November 2015

Course Specification

*For Guidance on the completion of this template, please refer to of Handbook 2
Internal Quality Assurance Arrangements*

Institution: Umm Al-Qura University
College/Department : College of Sciences / Biology Department

A Course Identification and General Information

1. Course title and code: Parasitology (4014311)
2. Credit hours: 3
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) BSc Biology
4. Name of faculty member responsible for the course Dr. Omaimah Abdulrahman M. Maghrabi / Dr. Raya Ali Soltan
5. Level/year at which this course is offered Level 5
6. Pre-requisites for this course (if any) Entomology (431363)
7. Co-requisites for this course (if any) None
8. Location if not on main campus

B Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <ul style="list-style-type: none"> • General concept of Parasitology • Knowledge of some parasitic disease that could be transmitted between animals and man (Zoonotic diseases). • Knowledge how to protect man and domestic animals from parasites and their treatment. • Basic knowledge of parasitism, the different biological inter-relationships and the host parasite relationships. • Knowledge of different parasitic examples from all phyla (Protozoa & Metazoa), their biology, morphology life cycles, diagnosis, treatment & control. • Dissemination of health awareness of these parasitic diseases.
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <ul style="list-style-type: none"> • Annual updating of the course contents with new information using internet materials. • A scientific film will be shown. • PowerPoint presentations for different types of parasites by dividing students into groups. • Survey work for common diseases in Makkah area using statistics collected from hospitals and health centre's.

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		
Topic	No of Weeks	Contact hours

An introduction to Parasitology, biological relationship, types of parasitism. General knowledge of parasites from the different phyla	1	2
1- Subkingdom Protozoa <ul style="list-style-type: none"> • Phylum Sarcomastigophora (<i>Entamoeba histolytica</i>, <i>Giardia</i>, <i>Trichomonas vaginalis</i>, <i>Trypanosoma</i>, <i>Leishmania</i>). • Ciliophora (<i>Balantidium coli</i>) • Apicomplexa (<i>Plasmodium</i>) 	5	10
2- Subkingdom Metazoa An Introduction to Helminths and their characters <ul style="list-style-type: none"> • Phylum Platyhelminthes (<i>Schistosoma mansoni</i>, <i>Schistosoma haematobium</i>, <i>Fasciola</i>, <i>Taenia saginata</i>, <i>Taenia solium</i>, <i>Echinococcus granulosus</i>) • Phylum Nemathelminthes (<i>Ascaris lumbricoides</i>, <i>Ancylostoma duodenale</i>, <i>Trichinella spiralis</i>) • Phylum Arthropoda (<i>Cimex lectularis</i>, <i>Chtenocephalides canis</i>, <i>Pules irritans</i>, <i>Pediculus humanus</i>, <i>Rhipicephalus sanguineus</i>, <i>Sarcoptes scabiei</i>). 	6	12
General Revision + Power point Presentation about different parasites	1	2

2 Course components (total contact hours per semester):			
Lecture: 13 weeks	Tutorial: 26 hours	Practical/Fieldwork/Internship: 30 hours	Other: Theoretical and Practical MidTerm exam) + (Final theoretical and practical exam

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

- **Identify parasitism, parasites and their examples**
- **Describe parasitic diseases and modes of diagnosis**
- **Trace control of parasitic infections.**
- **Understand host-parasite relationships.**

(ii) Teaching strategies to be used to develop that knowledge

- **In-class lecturing (using PowerPoint and illustrations)**
- **Laboratory practice and microscopic examination.**
- **Activities and assignments.**
- **Visits to hospitals and diagnostic laboratories.**
- **Using social media (Facebook and Twitter) to raise awareness of health for some parasites.**

(iii) Methods of assessment of knowledge acquired

- **Written exams (Major and final exams)**
- **Evaluation of lab reports and examinations**
- **Evaluation of Activities and assignments.**

b. Cognitive Skills

(i) Cognitive skills to be developed

- **Right use of microscopes.**
- **Identification and description of parasites.**
- **Using computers and internet.**
- **Characterize methods of resistance and appropriate treatment for each disease.**
- **Conducting documentary about some parasites throughout the Kingdom**

<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> • Use of labelled drawings and illustrations. • Practical training. • Activities and assignments.
<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> • Major and final exams • Evaluation of lab reports and examinations • Evaluation of Activities and assignments.
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> • Ability to work in a team to conduct a specific project. • Conducting a specific project with minimal supervision. • Communicating results of work to others.
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> • Work independently. • Work as part of a team. • Assessment of a page on the social networking sites to raise awareness of health for some parasites.
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> • Assessment of group projects. • Evaluation of projects conducted individually.
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> • Ability to work in a team to conduct a specific project. • Identify ways to solve problems. • Acquiring skills to computers and internet. • Ability to conduct searches and restore information.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> • Promoting students to submit activities, homework and writing reports.
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> • Evaluating the laboratory written reports

<ul style="list-style-type: none"> Results of activities and assignments
e. Psychomotor Skills (if applicable)
(i) Description of the psychomotor skills to be developed and the level of performance required <ul style="list-style-type: none"> Enhance the ability to develop self-confidence and leadership among student.
(ii) Teaching strategies to be used to develop these skills <ul style="list-style-type: none"> Encourage the student to explain presentations and analyse diseases caused by parasites
(iii) Methods of assessment of students psychomotor skills <ul style="list-style-type: none"> Appreciation for the excellent student in front of the group.

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Class activates (activities and homework)	3-5-8	10%
2	Monthly Exam.	6	20%
3	Monthly Lab. Exam.	7	10%
4	Final Lab. Exam.	14	20%
5	Final Exam.	15	40%
6	For Students Exceed the exact percentage of absence 25% (4-5 lectures) will be forced withdrawal		

D. Student Support

1. Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week) <ul style="list-style-type: none"> Direct supervision by staff member over lab. Sessions. Office hours at least 6 hr/ week

E Learning Resources

1. Required Text(s) Schmidt, Roberts “Foundations of Parasitology
2. Essential References
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List) Mehlhorn H. (2008): Encyclopaedia of parasitology. Chiodini et al. (2001): Atlas of medical helminthology and ProtoZoology. Roberts et al. (2004): Foundation of parasitology.
4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations • Microsoft Office Package

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) <ul style="list-style-type: none">• Modern lecture rooms using data show.• Equipped laboratories.
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) <ul style="list-style-type: none">• Light microscopes• Microscopical preparations of different parasites

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
<ul style="list-style-type: none">• Distribution of questioners for course evaluation by students.• Students- faculty meetings.
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
<ul style="list-style-type: none">• Peer consultation by departmental course committee.• Self-evaluation of the program by the department.
3 Processes for Improvement of Teaching
<ul style="list-style-type: none">• Installation of modern microscopes• Implementation of suggestions by departmental specialized committee.
4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)
<ul style="list-style-type: none">• Reviewing assessments by staff member/chairman/special committee when required and instructed by higher administration at the end of each semester.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.
<ul style="list-style-type: none">• Comparison of course with equivalent courses.• Reviewing course topics annually by the departmental specialized committee.• Refreshment of teaching resources to ensure updating of knowledge.• Use of statistics for course evaluation by students to improve the course.

. Name of faculty member responsible for the course

Dr. Omaimah Abdulrahman M. Maghrabi / Dr. Raya Ali Soltan

3/9/2015



Attachment 2 (e)

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

FACULTY OF APPLIED SCIENCES

FAUNA OF SAUDI ARABIA

4014321-3

Revised November 2015

Course Specification

Institution : Umm Al Qura University , Makkah
College/Department : Faculty of Sciences. Biology Departement (Girls) Al-Zaher

A Course Identification and General Information

1. Course title and code: Fauna of Saudi Arabia 4014321-3
2. Credit hours : 3 (2Theory + 2practical)
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Bachelor of Science - Biology
4. Name of faculty member responsible for the course Dr.Amal Ahmad Selim <i>aaselim@uqu.edu.sa</i>
5. Level/year at which this course is offered: Level 7 4 th Year
6. Pre-requisites for this course (if any) : Subject :Animal Ecology Code: 431367
7. Co-requisites for this course (if any)
8. Location if not on main campus

B Objectives

The course gives the student a clear idea about the wildlife of most wild animals including marine animals and birds in Saudi Arabia, and ability to adapt to different environments in the Kingdom, with special emphasis on the external characteristics of these animals and breeding periods and seasons.

By the end of the semester the student should be to:

- knows the importance of the geographical location of the Kingdom, and its impact on the distribution of the various animal groups.
- Distinguish general characteristics and taxonomy of invertebrate animals, and characteristics of each division of them, with recognition of the characteristics of some genera and species of each division and its habitat.
- Describe the characteristics of vertebrate animals in general and the characteristics of each community, with recognition of how to distinguish species, types and places of living of each of them.
- Understand the characteristics of amphibians and the taxonomic status and recognize the external features and the breeding seasons of the samples.
- Determine the details of the external features and taxonomic status of representative samples of families and genera with the knowledge of reptiles, the general characteristics of reptiles and characteristics of each family and their locations and environments in the Kingdom.
- Classify birds and learn about the different environments and seasons of reproduction , and understand the general characteristics of its own distinctive, with recognition of some races and types.
- Explain the terrestrial and marine mammals and the plane of the taxonomically, and identify animal models represent the ranks and families and the different species, including domestic and wild.
- Compare the characteristics of the animal communities and families.
- Distinguish different types of genera, and describes how to identify each of them

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

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 : Topics that should be addressed		
List of Topics	No of Weeks	Contact hours
Definition of the geographical location of the Kingdom and how it affects the wildlife.	1 st week	2
General characteristics of the characteristics of the invertebrate animals, classification, and examples of races and types of them.	2 nd week	2
The characteristics of vertebrates - Characteristics of a cartilaginous fish and examples of their species and types.	3 rd week	2
Bony fishes - how to identify them and describe the types of models representing it.	4 th week	2
General characteristics of amphibians, and the external characteristics of some specific examples .	5 th week	2
Med semester Examination	6 th week	2
General characteristics of reptiles - turtles, crocodiles	7 th week	2
Reptiles – Squamata and Chamaeleontidae	8 th week	2
Reptiles, Varanidae Lacertidae , Scincidae and snakes or Ophidia	9 th week	2
Taxonomy and general characteristics of the birds - models oe some types of falconiformes ,passeriformes , coraciiformes ,sinconiiformes,corvidaeformes.	10 th week	2
Mammals - general characteristics of mammals, description and taxonomy protoeheria ,theria ,metatheria and eutheria.	11 th week	2
Definition of the geographical location of the Kingdom and how it affects the wildlife.	12 th week	2
General characteristics and taxonomy of insectivore,chiroptera ,rodentia, lagomorpha, cetacean , carnivora prissodactyla,artiodactyla,proboscida.and primates.	13 th week	2

2 Course components (total contact hours per semester):				
Lecture:	Tutorial:	Laboratory:	Practical/Field work/Internship	Other:
	26 Hs	26Hs		

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)

<p>4. Development of Learning Outcomes in Domains of Learning</p> <p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> • A brief summary of the knowledge or skill the course is intended to develop; • A description of the teaching strategies to be used in the course to develop that knowledge or skill; • The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<p>a. Knowledge</p>
<p>(i) Description of the knowledge to be acquired</p> <p>Rapporteur had explained details of the attributes of State for examples of animals that inhabit different environments in the Kingdom, using Balsouroalainat saved, and the statement of terms and how to multiply, and measuring and drawing of samples in the laboratory, as indicated in decision details of the taxonomic status and characteristics of each family, each race, and compare them, covering the races of castes, vertebrates and fish Valbermaiyyat Valzuahv Vtairvltidieat</p>
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <p>Application of periodic oral and written short discussion with the students who had got previously studied information.</p>
<p>(iii) Methods of assessment of knowledge acquired</p>
<p>b. Cognitive Skills</p>
<p>(i) Description of cognitive skills to be developed</p>
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p>
<p>(iii) Methods of assessment of students cognitive skills</p>
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p>
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p>
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p>
<p>d. Communication, Information Technology and Numerical Skills</p>

(i) Description of the skills to be developed in this domain.			
(ii) Teaching strategies to be used to develop these skills : Teaching theoretical lectures, practical lessons, and giving some duties of an independent study as home duties. The lectures begin with review of the content and importance of the subject relating it to the gained knowledge by students. Each lecture always begins with reviewing the data or information gained in the previous lecture and relating it to the general goal of the topic item. Any available informations related to the topic should be clearly understood by the students .Individual activities given to the students require a continuous visiting to the library in addition to the websites. After collection of the data by each individual student, it was discussed within a wide student group and relating the obtained data to the course objectives. This activities were taken into consideration during student evaluation			
(iii) Methods of assessment of students numerical and communication skills			
e. Psychomotor Skills (if applicable)			
(i) Description of the psychomotor skills to be developed and the level of performance required			
(ii) Teaching strategies to be used to develop these skills			
(iii) Methods of assessment of students psychomotor skills			
5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Theoretical examination	6th week	20 Marks
2	Practical examination	6th week	10 Marks
3	The student provides an activity, in the form of small research collection or Power Point presentation videos about the wild animals and animal models or even collection of some available animals ,evaluated after the show. Two marks are deduced from each student delay in the delivery of activity after the tenth week. The average is taken among the periodic test marks.	9th week	5 Marks
4	The practical notebook .and periodic examinations are evaluated		5 Marks
5	Final practical examination	12th week	20 Marks
6	Final theoretical examination	14 th week	40Marks
	The student denied from entering the final exam. If her attendance is less than 25%		

D. Student Support

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

A notebook prepared by the subject teacher

E Learning Resources

1. Required Text(s)
1. Essential References 1-Adnan Mohamed Haji ,Introduction to the fauna of Saudi Arabia, Al Safa Press, , 1413 AH. 2 - A series of folders fauna of Saudi Arabia, Meteorology and Environmental Protection, Ministry of Defence and Aviation. 3 -Nabil Zaki Zahid, Khaled Bakr Kamal, and Gerald Groemer, General Zoology , vertebrate and invertebrate ,1426 4 - Mohammad Hassan Hamoud, ,Vertebrate Biology: the national centre of publication and distribution , Jordan
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.)
2. Computing resources
3. Other resources (specify .. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
3 Processes for Improvement of Teaching
4. Processes for Verifying Standards of Student Achievement (eg. 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)
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Guidelines on Using the Template for a Course Specification

Descriptions of what should be included in program and course specifications and in the annual and periodic reports are included in Section 2.4 of Part 2 of this *Handbook*

Institution, College/Department	Show the name of the institution and the college or department principally responsible for the course.
A. Course Identification and General Information	
1. Course title and code	Show the title and the institutional code number for the course.
2. Credit hours	Write the number of credit hours for the course.
3. Program(s) in which the course is offered	Write the name of the program in which the course is offered. A course may be offered in more than one program and a brief explanation may be needed to show how it relates to those programs. As a guide, if a course is an important component of several programs, list these programs. If it is used as a general skills course or a service course for a number of programs this should be noted and an indication given of the fields that are supported by it. (A first year course in mathematics might be an example of this.) If the course is a general elective which could be taken in many different programs this should be noted but those programs would not be listed.
4. Name of faculty member responsible for the course	If a single member of teaching staff has been given responsibility for teaching and reporting on the delivery of a course that persons name should be given. If a team of staff teach the course and one person has been given coordinating responsibility that persons name should be shown. If it is a new course for which an instructor has not yet been appointed that should be noted and the new appointees name included when it is known.
5. Level/year at which the course is offered	Show the year level when the course is intended to be taken.
6. Pre-requisites for this course	List any courses or other requirements that are prerequisites for enrolling in the course.
7. Co-requisites for this course	List any courses or other experiences that must be taken concurrently with this course.
8. Location if not on main campus	If the course is offered in a different location such as an industry setting or in another city or township indicate where this is done.

B. Objectives

1. Summary of main learning outcomes.	This is intended as a brief statement of the main learning outcomes of the course. Detailed learning outcomes in domains of learning are shown in the next section.
2. Course development plans	Briefly describe any plans for developments or changes in the course such as changes in use of web based material, new techniques of instruction, changes in content or increased reliance on students self study or use of library resources. The description should include the reason(s) for the changes being made.

C. Course Description

The general course description set out in the Handbook or Bulletin should be attached.	
1. Topics to be Covered	Complete the table to indicate the amount of time and the total number

	of contact hours intended to be given for each topic in the course. If part of a week is allocated for a particular topic use decimals to indicate time fraction. (For example a particular topic may be planned for 2.5 or 3.5 weeks).
2. Course Components	Indicate the total contact hours intended to be given in each organizational arrangement—Lecture, tutorial, laboratory etc.
3. Additional Private Study or Learning Hours	Indicate the amount of time expected of students in private study, assignment or other work associated with the course This should be shown as an average amount of time per week over the semester.
4. Development of Learning Outcomes in Domains of Learning	In this item summarize the learning outcomes expected from the course in each of the domains of learning, the teaching strategies to be used to develop that learning and the way student learning will be assessed. Note that every course is not expected to contribute to every domain. However wherever it is feasible to do so courses should be designed to contribute to the development of skills such as effective group participation, capacity for independent learning, communication skills, and problem solving abilities. The description of teaching strategies requires more than a specification of the organizational arrangement shown under C 2 and should indicate what will be done within those arrangements to develop the kind of learning sought.
a. Knowledge	
(i) Knowledge to be acquired	This should be a list of topics or areas of knowledge that students should know and understand when they complete the course.
(ii) Teaching strategies	Explain what strategies will be used to develop students' knowledge and understanding. <i>Example—Lectures, tutorials and independent study assignments. Introductory lecture gives an overview of the content and significance of the course and of its relationship to students' existing knowledge. Each subsequent lecture begins with a similar overview linking the particular content of the presentation to the general overview. Tutorials review the content of each lecture and clarify any matters not understood. Individual assignments require use of library reference material and web sites to identify information required to complete tasks.</i>
(iii) Methods of assessment	Explain how acquisition of knowledge will be assessed. <i>Example--15 minute multiple choice test on content on completion of each topic with results carrying 20% of final assessment. Multiple choice knowledge item on final exam.</i>
(b) Cognitive Skills	
(i) Cognitive skills to be developed	List the thinking and problem solving skills the course is intended to develop. As a guide it may be useful to begin with the phrase "The ability to..." The list should include both the use of analytic and predictive formulae and conceptual tools when asked to do so, and the ability to identify and use ones that are appropriate for new and unanticipated problems.
(ii) Teaching strategies	Explain techniques to be used to teach and encourage appropriate use of cognitive skills. <i>Example—Explanations and examples given in lectures and practiced under supervision in tutorials and laboratory tasks. Transfer of learning encouraged by use of analytical tools in different applications and through discussion of potential application in other areas. Assignment tasks include some open ended tasks designed to apply predictive, analytical and problem solving skills (Eg. What would happen if.....?, How could.....?)</i>
(iii) Methods of assessment	Explain method of assessment for cognitive skills. <i>Example—Problem solving questions carrying 50% of mark on tests</i>

	<i>given at the end of each topic and on end of semester examination. Group and individual assignments require application of analytical tools in problem solving tasks.</i>
(c) Interpersonal Skills and Responsibility	
(i) Skills to be developed	List the objectives of this course for improving students' interpersonal skills, capacity for self directed learning, and personal and social responsibility.
(ii) Teaching strategies	Explain what will be done in the course to develop students' interpersonal skills, personal and social responsibility, and capacity for independent learning. <i>Example—One group assignment in which 25% of assessment is based on individuals contribution to the group task. (Instructor meets with each group part way through project to discuss and advise on approach to the task) Two individual assignments requiring investigation using internet and library resources as a means of developing self study skills. Role play exercise on controversial issue relevant to the course based on a case study, with discussion in tutorial of appropriate responses and consequences to individuals involved.</i>
(iii) Methods of assessment	Explain how interpersonal skills and responsibility will be assessed. <i>Example—Assessment of group assignment includes component for individual contribution. Capacity for independent study assessed in individual assignments.</i>
(d) Communication Information Technology and Numerical Skills	
(i) Skills to be developed	Indicate the contribution of this course to students' communication, IT and numerical skills. Note that what is intended in this section is the development of generic skills for all students rather than specialized studies relevant to a field of study that would be included under items a. or b. For example a course in history or philosophy might include some use of basic mathematical or statistical information and the use of ICT in searching for information and presenting reports. A course in computer science might include the ability to present written reports that develop language ability.
(ii) Teaching strategies	Explain what will be done in the course to develop students' numerical and communication skills. <i>Example—Student assignments require good standards of use of ICT. Where standards are inadequate the student is referred for special remedial instruction. Student essay assignments require proper style and referencing format as specified in college style manual.</i>
(iii) Methods of assessment	Explain how numerical and communication skills will be assessed in this course. <i>Example—Test questions require interpretation of simple statistical information. Assessments of students assignment and project work include expectation of adequate use of numerical and communication skills. Five percent of marks allocated for standard of presentation using ICT.</i>
(e) Psychomotor Skills	
(i) Skills to be developed	Indicate any psychomotor skills the course is intended to develop and describe the standard to be achieved.
(ii) Teaching strategies	Explain processes to be used to develop required psychomotor skills as specified in course learning outcomes.
(iii) Methods of assessment	Explain how psychomotor skills will be assessed.
6. Schedule of Assessment Tasks	Complete the table to show the dates planned for each assessment task and the proportion of the final assessment allocated for that task.

D. Student Support	
1. Availability of teaching staff for consultations and advice.	Describe the arrangements to be made 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. Required Texts	List any required texts.
2. Essential References	List reference material regarded as essential for teaching the course.
3. Recommended Books and Reference Material	Attach list of material that should be available for reference by students undertaking the course.
4. Electronic Materials	List requirements for access to electronic materials, data bases etc.
5. Other Materials	List any other learning materials that are required for the course

F. Facilities Required	
1. Accommodation	Specify accommodation requirements for delivery of the course indicating the type of facility (eg lecture rooms, laboratories etc. the amount of time needed, any special requirements for scheduling, and the number of students to be accommodated.
2. Computing resources	Specify requirements for computer access.
3. Other Resources	Specify any other requirements for the course including specialized equipment. Attach list if necessary.

G. Course Evaluation and Improvement Processes	
1. Strategies for Obtaining Student Feedback on Quality of Teaching	Describe strategies. Eg. confidential completion of standard course evaluation questionnaire. Focus group discussion with small groups of students.
2. Other Strategies for Evaluation of Teaching	Describe any other strategies for evaluation of teaching. Eg. observations and assistance from colleagues, independent assessment of standards achieved by students, independent advice on assignment tasks, etc.
3. Processes for Improvement of Teaching	Describe processes for improvement of teaching. Eg. Workshops on teaching methods, review of recommended teaching strategies.
4. Processes for Verifying Standards of Student Achievement	Describe methods used to compare standards of achievement with standards achieved elsewhere. Eg. check marking of a sample of examination papers or assignment tasks,
5. Action Planning for Improvement	Describe process for reviewing feedback on the quality of the course and planning for improvement

Kingdom of Saudi Arabia
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Assessment**

COURSE SPECIFICATION

Pest Control

4014331-3

Revised November 2015

Course Specification

Institution: Umm Al_Qura university
College/Department : Biology Department, Faculty of Science.

A Course Identification and General Information

1. Course title and code: Pest Control 4014331
2. Credit hours: 3 hrs
3. Program(s) in which the course is offered. B. Sc. Biology (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course Dr. Doaa Shehata Mohammed
5. Level/year at which this course is offered: Fifth level
6. Pre-requisites for this course (if any): General entomology
7. Co-requisites for this course (if any): Nothing
8. Location if not on main campus:-----

B Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <p>By the end of course student should:</p> <ul style="list-style-type: none"> • Study the definition of pest and reasons for its deployments. • Study history and principles of insect control. • Study different strategies used in pest control. • Integrated pest management program (IPM). • Study the introduction of pesticides and their modes of action. • Recognize the role of ecosystem in controlling pests. • Knowledge of environmental friendly pesticides and its benefits.
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <ul style="list-style-type: none"> - Update topics of the study. - Communicates scientific ideas of pest control and pesticides orally and in writing, work in a team. - Effectively find and utilize new electronic and printed information. - Use advanced presentation aids.

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
- The definition of pest and reasons for its deployments.	1	2
- Recognize the role of ecosystem in controlling pests.	1	2
- Different strategies used in pest control: 1- Chemical control and its hazards 2- Natural, agricultural, and mechanical control methods.	2	4
3- Physical control. 4- Legal control. 5- Biological control	2	4
6- Microbial control. - Causes of pest infection with microbes. - Immune system of insects.	2	4
7- Hormonal control. 8- Pheromonal or behavioural control.	1	2

9- Radiations or chemosterilant as controlling agents. 10- Genetic control. 11- Integrated pest management program (IPM).	1	2
- The definition of organic agriculture and why it's needed.	1	2
- Examples of insect pest orders: (Orthoptera – Hemiptera – Lepidoptera – Hymenoptera – Diptera).	2	4

2 Course components (total contact hours per semester):				
Lecture: 13	Tutorial: 26 hrs	Laboratory: 11 labs. (33 hrs)	Practical/Field work/Internship The work of field trips preferred but we can not.	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week): NO

<p>4. Development of Learning Outcomes in Domains of Learning</p> <p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> • A brief summary of the knowledge or skill the course is intended to develop; • A description of the teaching strategies to be used in the course to develop that knowledge or skill; • The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<p>a. Knowledge</p> <p>(i) Description of the knowledge to be acquired</p> <p>By the end of course student should:</p> <ul style="list-style-type: none"> • Identify the different types of pests. • Define the major concepts in field of pest control and pesticides toxicology. As

<p>well as the major applications of pest control and pesticides toxicology in solving biological and environmental problems.</p> <ul style="list-style-type: none"> • Apprehend the basic information and techniques related to pest control and pesticides toxicology.
<p>(ii) Teaching strategies to be used to develop that knowledge:</p> <ul style="list-style-type: none"> • Lecturers. • Class discussion activity. • Homework.
<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> - Final writing exam. - Mid-term exam. - Oral exam. - Home works.
<p>b. Cognitive Skills</p>
<p>(i) Description of cognitive skills to be developed</p> <p>By the end of course student should:</p> <ul style="list-style-type: none"> • Compare and assess the concepts and principles behind scientific theories and interpret entomology phenomena on the light of insect control and insecticides toxicology concepts. • Analyse data and select the proper mechanisms of insect control and insecticides toxicology to be formulated into a theoretical framework, and assess the impact and interrelationships between an insects and it's biotic and abiotic environment.
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> - Class discussions. - Lectures. - Class activity. - Home work.
<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> - Final writing exam 40%. - Mid-term exam 20% - Oral exam 2.5% - Home works 2.5%
<p>c. Interpersonal Skills and Responsibility</p>

<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <p>By the end of course student should:</p> <ul style="list-style-type: none"> - Assess the scientific value of insect control and insecticides toxicology data and predict their possible implication and solve problems using suitable and safe approaches. - Communicates scientific ideas of insect control and insecticides toxicology orally and in writing, work in a team and recognize the views of other team members.
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> - Homework. - Work in a team
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> - Observations. - Home-work.
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <p>By the end of course student should:</p> <ul style="list-style-type: none"> - Communicates scientific ideas orally and in writing, work in a team and recognize and respect the views of other team members. - Plan, conduct, and write reports on pest control. - Use library resources, effectively find and utilize electronic printed. - Ability to use computer skilfully.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - Home work. - Class discussions. - Work in a team.
<p>(ii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> - Evaluation of home-work and group activity
<p>e. Psychomotor Skills (if applicable)</p>

<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <p>By the end of course student should:</p> <ul style="list-style-type: none"> - Drawing different pests. - To distinguish between different types of pests. - Knowledge of the form and type of pest infestation. - Assess the scientific value of insect control and insecticides toxicology data and predict their possible implication and solve problems using suitable and safe approaches.
<p>(iii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> - Practical training. - Field trips if possible.
<p>(iv) Methods of assessment of students psychomotor skills</p> <ul style="list-style-type: none"> - Practical exams 35%.

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Final writing exam	15	40%
2	Mid –term (writing exam)	10	20%
3	Oral exam		2.5%
4	Home-work		2.5%
5	Final practical exam	13	20%
6	Quiz 1 (practical)	3	5%
7	Quiz 2 (practical)	6	5%
8	Quiz 3 (practical)	9	5%

D. Student Support

<p>1. Arrangements for availability of 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"> - Extra teaching hours. - Extra office hours.

E Learning Resources

1. Required Text(s) Lecture note of Department.
2. Essential References <ul style="list-style-type: none">- Srivastava, K.P. (1996): Text Book Of Applied Entomology. Kalyani publishers.
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List) <ul style="list-style-type: none">- Scientific search engines on the internet.
4- Electronic Materials, Web Sites etc <ul style="list-style-type: none">- Scientific search engines on the internet.
5- Other learning material such as computer-based programs/CD, professional standards/regulations <ul style="list-style-type: none">- Modern devices or display screen and CD.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) <ul style="list-style-type: none">- Lectures 40 student capacity hall, 2 hrs weekly.- Equipped laboratory slides and microscope 25 student capacity, 3 hrs weekly.- Allow 2 hrs theoretical and 3 hrs for practical parts at the weekly schedule.- The number of students shall not exceed more than 40 at theory group.- The number of students shall not exceed more than 25 at practical group.
2. Computing resources <ul style="list-style-type: none">- Labs and lecture halls equipped with screen and monitors.
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) <ul style="list-style-type: none">- Equipped laboratory with slides and samples of different pests and manifestations of injury.- Labs and lecture halls equipped with screen and monitors.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching <ul style="list-style-type: none">- Make a questionnaire to students at the end of the semester to evaluate the course.
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

<ul style="list-style-type: none"> - Make a questionnaire to students at the end of the semester to evaluate the course. - Oral discussions with the students to learn the degree of achievement.
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> - Use advanced presentation aids.
<p>4. Processes for Verifying Standards of Student Achievement (eg. 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)</p> <ul style="list-style-type: none"> - Make a comparison of educational achievement(test scores) between two courses of two different staff members of the same student groups.
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> - Make oral evaluation continuously for students. - Make short periodic tests and final exam. - Assessment of homework and activity.

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COURSE SPECIFICATION

Embryology

4014352-3

Revised November 2015

Course Specification

Institution: Um Al-Qura University
College/Department : College of Science/Department of Biology

A Course Identification and General Information

1. Course title and code: Embryology 4014352-3			
2. Credit hours:			
3 Credit hrs.	Lecture: 2h/week	Practical 3h/week	
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs): BSc Biology			
4. Name of faculty member responsible for the course: Dr. Azzam Al Yacoub			
5. Level/year at which this course is offered: level 7 (7st level).			
6. Pre-requisites for this course (if any):			
7. Co-requisites for this course (if any): Vertebrates			

8. Location if not on main campus:

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course.

By the end of the course the student should be able to:

1- Define the process of embryonic development in general.

2- Describe the major phenomenon of development, growth and differentiation.

2- Explain the process of fertilization.

3- Comparison the events of cleavage, blastulation and gastrulation in selected chordate embryos.

4- Understand the formation of some selected organs created by ectoderm, endoderm and mesoderm.

5- Study the extra-embryonic membranes and their role in the formation of placenta.

6- Know the multiple birth and formation of twins.

7- Gain the scientific terms of embryology which allow the students how to deal with internet, text books and references.

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

- **Using updated web-based reference materials.**
- **Using research articles to support the knowledge offered in the course**

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		
Topic	Weeks	Total Contact (actual) hours/week
Introduction to the basis of embryology Definition of Growth and cell differentiation Brief of main embryonic stages History of embryology Reproduction, types of reproduction (asexual and sexual). References	1 st	2
Gametogenesis Origin of sex cells and formation of gonads Male reproductive system Formation of mature spermatozoon Spermiogenesis	2 nd	2
Female reproductive system Oogenesis Yolk and its role in egg formation Types of eggs according to the amount and distribution of yolk granules. Ovum membranes (primary and secondary) Formation of eggs in frog, birds and mammals	3 rd	2
Fertilization Acrosomal reaction Cleavage- blastula Fate maps	4 th	2
Early embryonic development of amphioxus, frog, chick and mammals. Comparison of male and female gametes Comparison of fertilization in some studied chordates	5 th	2
Comparison of blastula in amphioxus, frog, chick and mammals.	6 th	2
Midterm exam: Written exam Practical exam	7 th	2
Gastrulation: formation of gastrula in amphioxus, frog, chick and mammals.	8 th	2
Organogenesis in frog: Neurola stage <ul style="list-style-type: none"> - Frog embryo 3mm. - Frog embryo 4-5.5 mm. - Frog embryo 7-10mm.. 	9 th	2

Formation of some ectodermal organs: <ul style="list-style-type: none"> - Nervous system (central and peripheral system and neural crest). - Sense organs (optic, otic and olfactory organs). Formation of some mesodermal organs: <ul style="list-style-type: none"> - Heart and urino-genital systems. Formation of some endodermal organs: <ul style="list-style-type: none"> - Alimentary canal, liver and pancreas. 	10 th	5
Embryonic development of chick embryo: <ul style="list-style-type: none"> - Chock embryos 16, 18, 20, 24, and 33 hrs. 	11 th	2
Embryonic development of chick embryo: <ul style="list-style-type: none"> - Chick embryo at 33-48 hrs - Cephalic flexion and embryonic torsion. - Herat formation. - Blood circulation. - Brain formation. Second test exam.	12 th	2
Extra-embryonic membranes in birds. <ul style="list-style-type: none"> - Yolk sac. - Amnion and chorion. - Allantois 	13 th	2
Placenta: <ul style="list-style-type: none"> - Definition, function, formation. - Role of extra-embryonic membranes and endomertrium. - Formation of chorio-vitelline and chorio-allantoic placenta. Types of placenta according to: <ul style="list-style-type: none"> - Number of parries (epithelochorial, syndesmochorial, endotheliochorial and haemochorial placenta). - Shape (diffuse, cotyledonary, zonary and discoidal). - Fate of placent (non-deciduous and deciduous placednta). 	14 th	2
Twins: <ul style="list-style-type: none"> - Definition. - Types , identical, fraternal and Siamese twins. Embryonic Cloning Artificial fertilization. Practical Final exam	15 th	
Written Final exam	16 th	

2 Course components (total contact hours per semester):			
Lecture: 32 hours	Tutorial:	Practical/Fieldwork/Internship: 80 hours	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week)

1 hour/week

<p>4. Development of Learning Outcomes in Domains of Learning</p> <p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> • A brief summary of the knowledge or skill the course is intended to develop • A description of the teaching strategies to be used in the course to develop that knowledge or skill • The methods of student assessment to be used in the course include: • Open discussion, • Activities, • Periodical quiz test, • Midterm and final exams are used to evaluate learning outcomes in the domain concerned.
<p>a. Knowledge</p>
<p>(i) Description of the knowledge to be acquired</p> <p>By the end of the course the student should be able to:</p> <ol style="list-style-type: none"> 1- Define the process of embryonic development in general. 2- Describe the major phenomenon of development, growth and differentiation. 2- Explain the process of fertilization. 3- Comparison the events of cleavage, blastulation and gastrulation in selected chordate embryos. 4- Understand the formation of some selected organs created by ectoderm, endoderm and mesoderm. 5- Study the extra-embryonic membranes and their role in the formation of placenta. 6- Know the multiple birth and formation of twins. 7- Gain the scientific terms of embryology which allow the students how to deal with internet, text books and references. 8-Observe the serial embryonic stages in some selected chordate. 9- Develop the practical drawings.
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <ul style="list-style-type: none"> - Lectures - Take home assignment - Internet activities - Laboratory work.

<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> • Periodical exam and reports 10%. • Mid- term exam 20%. • Mid-term practical exam 10%. • Student activities (Reports and essay...) 5% • Final practical exam 20%. • Final exam 35%.
<p>b. Cognitive Skills:</p>
<p>(i) Cognitive skills to be developed</p> <p>At the end of the course the student will develop the ability to:</p> <ul style="list-style-type: none"> - Follow the stages of Gametogenesis. - Know the formation of yolk and its role in the formation of ova. - Classify the different types of uterus. - Understand the acrosomal reaction during fertilization. - Follow the cellular movements during gastrulation in selected embryos (amphioxus, frog, chick and mammals). - Detect the differentiation of mesoderm. - Summarized List types of animal tissues. - Differentiate be the heart formation and blood circulation. - Notify the embryonic and maternal parries involved in placentation. - Understand the embryonic sections (cross ans sagittal sections) and models.
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> - Seminars. - Self assessment. - Discussion. - Examination of selected micrographs and hand drawings. - Microscopic Examination.
<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> - Discussion. - Research work. - Multiple choice exams. - Practical evaluation. - Microscopic exam evaluation.
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> • Student should be able to obtain knowledge about animal embryology. • Defined the desirable sections. • Encouraging the student to work in a team.

<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> • Open class discussions with students for minutes during lectures and labs. • Students (as groups and individuals) should give reports concerning certain topics of the course.
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> • Evaluate the efforts of each student in preparing the report. • Evaluate the scientific values of reports. <ul style="list-style-type: none"> - Self test. - Practical test.
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> • Enhancing the ability of students to use computers and internet. <p>By the end of this course the student should have developed the skill to:</p> <ul style="list-style-type: none"> - Search the internet. - Design a professional presentation.
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> • Homework (preparing a report on some topics related to the course depending on web sites). <ul style="list-style-type: none"> - Demonstrative lectures - Using Diagrams, animations from web sites. - Open Discussion.
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> - Oral presentation. - Assessment of presentations
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <p>At the end of the course the student have gained psychomotor skills to:</p> <ul style="list-style-type: none"> - To discuss the events of embryonic development - To Examine the W.M embryos. - To follow the process of organogenesis precisely.

- To Examine the Microscopic slides, define and differentiate between the different embryonic stages.
(ii) Teaching strategies to be used to develop these skills <ul style="list-style-type: none"> - Lectures. - Laboratory sections.
(iii) Methods of assessment of students psychomotor skills <ul style="list-style-type: none"> - Multiple choice exams. - Practical Exams.

5. Schedule of Assessment Tasks for Students During the Semester			
Asses sment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Open discussion each week	During the semester	10
2	Presentations	During the semester	10
3	Midterm exam (Written and Practical)	7	30
4	Final exam (Written and Practical)	16	50
5			
6			
7			
8	Total		100

D. Student Support

1. Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)
3 hours per week and can be arranged according to the student needs

E Learning Resources

1. Required Text(s) <ul style="list-style-type: none"> - Internet search - Software programme (CD, Aimation) - Models

<p>2. Essential References</p> <ul style="list-style-type: none"> - Developmental Biology (8th edition) Gilbert, Scott F. Sunderland (MA): Sinauer Associates, Inc.; c2000 - Cells, Embryos, And Evolution by John Gerhart and Marc Kirschner, 1997, Blackwell Science, ISBN 0-86542-574-4
<p>3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)</p> <ul style="list-style-type: none"> - Developmental Biology (8th edition) Gilbert, Scott F. Sunderland (MA): Sinauer Associates, Inc.; c2000 - Cells, Embryos, And Evolution by John Gerhart and Marc Kirschner, 1997, Blackwell Science, ISBN 0-86542-574-4
<p>4-.Electronic Materials, Web Sites etc For example</p>
<p>5- Other learning material such as computer-based programs/CD, professional standards/regulations</p> <ul style="list-style-type: none"> - Animation programmes (Internet source) - Biological Charts (Prepared by the students)

F. Facilities Required

<p>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</p>
<p>1. Accommodation (Lecture rooms, laboratories, etc.) Lecture rooms and laboratory (Bad Lecture rooms, low facilities in lab equipments)</p>
<p>2. Computing resources Personal activity by the staff and few active students</p>
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) Microscopic slides, microscopes, models, Charts.</p>

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> - Student activities - Student discussion - Student suggestions - Student evaluations
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> - Self evaluation (from student activities, suggestions, evaluations) - Student evaluations by the Department
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> - Self improvement

<ul style="list-style-type: none">- Refreshing knowledge
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <ul style="list-style-type: none">- Comparing lectures with the examinations- Random rechecking of exams.
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none">- Follow up the students during lectures and practical lessons

Kingdom of Saudi Arabia
**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION

Endocrinology

4014362-3

Revised November 2015

Course Specification

Institution	Umm Al-Qura University
College/Department	Faculty of Science/Biology Department

A Course Identification and General Information

1. Course title and code:	Endocrinology (4014362-3)	
2. Credit hours	Lectures 2 hrs/week	Practical 3 hrs/week
3. Program(s) in which the course is offered.	Bachelor degree in Biology Program	
4. Name of faculty member responsible for the course	Dr. Jehane Ibrahim	
5. Level/year at which this course is offered	Sixth level/Third year students	
6. Pre-requisites for this course (if any)	Animal Physiology	
7. Co-requisites for this course (if any)	None	
8. Location if not on main campus		

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course.

By the end of this course the students are expected to be able to:

1. Acquire sound knowledge of Endocrine System structure and function.
2. Describe the major metabolic pathways and their inter-relationships.
3. Describe the symptoms and signs of some common diseases, injuries and disturbances of this system and their prevention.
4. Develop a problem solving approach to Endocrine and metabolic disorders.
5. Explain the pathogenesis of various Endocrine and or metabolic diseases categories and their presentation, investigations (laboratory, radiological, etc), and management.
6. Discuss the regulatory mechanism that regulates the different pathways of carbohydrates, lipids, protein and nucleic acid and their management.

2. Briefly describe any plans for developing and improving the course that are being implemented.

- Course development plan:
 1. Continuous updating of the information, knowledge and skills included in the course through the continuous search for new knowledge and skills available in recent publications (books, researches, internet and others).
 2. Continuous improvements in teaching methods to encourage the students to participate effectively in their various academic activities.
 3. Continuous evaluation of the course content, student level and establish plans accordingly.

C. Course Description

The course is designed to provide an understanding of endocrine gland functions, metabolic regulations, and metabolic abnormalities. It also provides an understanding of the structures and function of endocrine glands, the common endocrine disorders, and their management. Vast amounts of information and knowledge are accumulating rapidly concerning metabolism and endocrinology. Their tremendous importance is being increasingly recognized, especially in the light of new advances in medicine, because all diseases, including psychiatric and genetic abnormalities, are associated with metabolic changes. Furthermore, in all body cells, hormones influence the metabolism of nucleotides, proteins, lipids, carbohydrates, vitamins, water, and electrolytes. Therefore, knowledge of endocrinology and metabolism is important in every branch of medicine.

1 Topics to be Covered

Topic	No of Weeks	Contact hours
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Introduction to endocrinology, location and structure of endocrine glands	1	2
Hormones secreted by endocrine glands	1	2
Physiological effects of hormones	1	2
Abnormal levels of hormones	1	2
Role of hypothalamus in regulation of endocrine glands, Anterior pituitary hormones, Intermediate and Posterior pituitary hormones, Assessment of function and disorders of anterior and posterior pituitary	3	6
Thyroid hormones, Assessment of function and disorders of thyroid gland, Parathyroid hormones, Assessment of function and disorders of parathyroid gland, Calcium homeostasis	2	4
Adrenal gland hormones, Assessment of function and disorders of adrenal gland, Pancreatic hormones, Glucose homeostasis	2	8
Hormones of the gonads (ovary and testis)	1	2

2 Course components (total contact hours per semester):			
Lecture:	Tutorial:	Practical/Fieldwork/Internship:	Other:
24 hrs/semester 2 hrs/week	24 hrs/semester 2 hrs/week	36 hrs/semester 3 hrs/week	

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)
2 hour weekly for the homework

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

Student should understand:

1. The chemical nature of hormones.
2. The relationship between structure and function of hormones.
3. Quantitative aspects of hormonal action in relation to endocrine disorder.
4. The role of hormones as a regulatory factor of a living system.
5. The neurotransmitters and their relation with some diseases and drug addiction.

(ii) Teaching strategies to be used to develop that knowledge

1. In-class lecturing where the previous knowledge is linked to the current and future topics.
2. Homework assignments
3. Discussions (connecting what they learn in the class and applying this information in laboratory).
4. Handout of lecture notes for each topic.

(iii) Methods of assessment of knowledge acquired

1. Homework and Quizzes
5. Midterm and final written exams (theoretical and practical)
6. Evaluation of reports
7. Oral presentation
8. Course work reports

b. Cognitive Skills

(i) Cognitive skills to be developed

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

1. Examine and describe glands.
2. Determine hormonal impact and syndromes.
3. Prepare slides and samples and lab solutions.

<p>4. Use computers and internet to search for the latest information in endocrinology and its applications.</p>
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ol style="list-style-type: none"> 1. Interactive lectures. 2. Seminars. 3. Tutorials. 4. Practical classes that include brain-storming problem solving questions.
<p>(iii) Methods of assessment of students cognitive skills</p> <ol style="list-style-type: none"> 1. Continuous assessment. 2. Course work reports 3. Evaluation of the topics prepared by students according to the content, arrangement, and covering of the topic. 4. Midterm and final exams 5. Checking the homework assignments
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <p>By the end of this course, the students should be able to:</p> <ol style="list-style-type: none"> 1. Act as efficient team members. 2. Perform self-directed learning. 3. Participate in class discussion. 4. Present a talk to their colleagues in the student seminars 5. Behave ethically in the lecture and practical classes with the staff, colleagues and environment like instruments, benches, and laboratory material.
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ol style="list-style-type: none"> 1. Engage student in carrying out internet search. 2. Close monitoring while performing practical work. 3. Using power point presentation and gland illustration. Writing group reports 4. Solving problems in groups during tutorial 5. Checking the homework assignments in groups during discussion 6. Cooperative learning and application of scientific method in thinking the scientific problem solving. 7. Work as part of a team. 8. Conducting group experiments and writing group reports. 9. Dividing students into groups to cooperate with each other during the

experiments.

(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility

1. Oral exams.
2. Evaluation of student essays assignments and search work.
3. Observation of student ethical and moral behaviour.
4. Students' attendance is recorded during lectures.
5. Assessment of the student reports.
6. Grading homework assignments.

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain.

1. Use information and communication technology.
2. Use IT and communication technology in gathering and interpreting information and ideas.
3. Use the internet as a means of communication and a source of information.
4. Encourage students to use internet for searching certain electronic journals regarding topics of the course.
5. Scientific writing.
6. Use his/her observations to solve problems.
7. Doing research and conduct searches for restoring information.
8. Able to calculate and discuss the facts and logical propose methods to solve the difficulties.

(ii) Teaching strategies to be used to develop these skills

1. Oral presentations.
2. Internet search assignments and essays.
3. Incorporating the use and utilization of computer in the course requirements.
4. Students will be asked for delivering a summary regarding certain topics related to the course.

(iii) Methods of assessment of students numerical and communication skills

1. Evaluation of student essays and assignments.
2. Evaluating the laboratory written reports.
3. Marks given to for good reports and presentations
4. Evaluating during the discussion in lecture and reports. Part of the grad is put for student's written participation.

e. Psychomotor Skills (if applicable)
(i) Description of the psychomotor skills to be developed and the level of performance required <ul style="list-style-type: none"> - To examine and describe some endocrine glands under the microscope - To draw some examples of histological section of endocrine glands. - To use computers and internet.
(ii) Teaching strategies to be used to develop these skills <ul style="list-style-type: none"> - Using of microscopic illustrations. - Laboratory exercises. - Activities and homework. - Preparing researches. - Community participation.
(iii) Methods of assessment of students psychomotor skills <ul style="list-style-type: none"> - Evaluating the laboratory written reports.

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Attendance & Activities	Weekly	10%
2	Quizzes	Every 2 weeks	10%
3	Mid-term Exam	Week 5	10%
3	Mid-term Practical Exam	4 th Week	10%
4	Final Practical Exam	11 th Week	20%
5	Final Exam	As scheduled by the registrar	40%

D. Student Support

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

9. Two hours office per week

E Learning Resources

1. Required Text(s):

No textbook is designated. Course materials will be based on a combination of lecture notes,

<p>handouts, journal articles and various references. Following is a list of suggested (yet not required) references that you would further read as class topic(s) evolves.</p> <p>Recommended Books: Endocrinology (6th edition) by Mac E. Hadley, Prentice-Hall, New Jersey (2007).</p>
<p>2. Essential References</p> <p>Comparative Vertebrate Endocrinology, by Bentley, Cambridge Univ. Press. Cambridge. (2000). Textbook of Endocrine Physiology, by Griffin, Oxford University Press (2004)</p>
<p>3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)</p> <p>Essential Endocrinology, Brook And Marshall, Blackwell Science, Oxford. (1996)</p>
<p>4-.Electronic Materials, Web Sites etc</p> <p>http://www.vivo.colostate.edu/hbooks/pathphys/endocrine/basics/index.html http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookENDOCR.html http://www.hormone.org/endo101/</p>
<p>5- Other learning material such as computer-based programs/CD, professional standards/regulations</p> <ul style="list-style-type: none"> - Microsoft office package. - 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 (ie number of seats in classrooms and laboratories, extent of computer access etc.)</p>
<p>1. Accommodation (Lecture rooms, laboratories, etc.)</p> <ul style="list-style-type: none"> • Lecture room suitable for 35 students. • Lecture room equipped with a black board and Data show. • Optically and electronically facilitated lecture rooms (smart rooms). • Microscopically equipped laboratories.
<p>2. Computing resources</p> <ul style="list-style-type: none"> • Computers or internet connection. • Active Board • Data show is required in every room
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</p> <ul style="list-style-type: none"> • Microscopes – Hormones analysis Kits- incubators – autoclaves – titration equipment –water baths – digital lab. - 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">• 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
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none">• Undergraduate Committee will review deficiencies based on the student evaluation, faculty input, course file, and program assessment.• Feedback from employers and alumni surveys and graduating students' input are used to identify any deficiencies in students' ability in applying knowledge of properties and the use of structural materials.• Organize workshop on effective teaching methods to enable instructors to improve their teaching skills.• Teaching method will focus on students' learning and on course learning outcomes.
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <ul style="list-style-type: none">• Undergraduate Committee will review samples of student work in this course to check on the standard of grades and achievements.• A faculty member from a reputable university will evaluate the course material and the students' work to compare the standard of grades and achievements with those at his university.• Periodic exchange and remarking of tests with staff at another institution.
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none">• Continuous evaluation of the students during the term• 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 change.

Kingdom of Saudi Arabia
**The National Commission for Academic Accreditation &
Assessment**

COURSE SPECIFICATION
Mycology and Plant Pathology

4014411-2

Revised November 2015

Course Specification

*For Guidance on the completion of this template, please refer to of Handbook 2
Internal Quality Assurance Arrangements*

Institution Umm Al Qura University
College/Department Faculty of Science/ Biology Department

A Course Identification and General Information

1. Course title and code: Mycology and Plant Pathology 4014411-2
2. Credit hours 3 hours
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) BSc Biology
4. Name of faculty member responsible for the course Dr/ Doaa Elghareeb Gomaa Keshek
5. Level/year at which this course is offered four
6. Pre-requisites for this course (if any) Bacteria 401142-3
7. Co-requisites for this course (if any)
8. Location if not on main campus ELazeziya branch

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course.

1. This decision is in the study of fungi in all its aspects and regarded as one of the etiology and pathogenesis of many plants with large economic value and ways to cope with such diseases.
2. be able to identify some of fungal samples and access to its correct classification.

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

- Training students to obtain pure isolates of colonies of fungi isolated group and identified by the fungi that they study theoretically work and watch them slide under a microscope.
- The provision of some fungal isolates from which the student can identify them in the natural image.
- Prepare to be in the form of PPT to be an attractive offer for students captures their interest.

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		
Topic	No of Weeks	Contact hours
1- General characteristics of fungi in terms of the nature of the fungus and the environment, distribution, installation and vegetative cell wall and stored food and nutrition and ways of living and reproductive characteristics and the foundations of the division of fungi	1	1
2- Fungus whipworms department - the general characteristics of fungi gels - Classification of fungi sticky - a study of the general characteristics and study the rank Altimonettih - Sex Stiaumonets	2	2
3- Under section whipworms fungi - fungi range ovale its general characteristics, installation and life cycle of a number of important races with reference to the economic and Alohmatha examples like her: Sanktrem - Alomaest - Sabreaulegnia - Petheim - Viovthora - downy mildew fungi - Pogo	2	2
4- Department of fungus fungus Alasoutih- Alsegah - Department of the Open range Alsegotah fungus and general characteristics - rank Almiokoralat and examples such as the encroachment Raazobs Astolonnifer and encroachment Myukr	2	2
5- Under Ascomycetes section (ischial) - General characteristics of fungi ischial (Ascomycetes) - method of formation of germs Ascomycetes - taxonomic study and installation of a number of important races with reference to the economic importance of her Examples are: Chezuskaromesz - Saccharomyces cerevisiae - Tavrina - Alasbergalls Penicillium - fungi whiteness Powdery - Kitumaam - Sordaraa - Narospora - Zelara	2	2
6- Under fungi Basidiomycetes section - formation of germs Basidiomycetes way - taxonomic study, installation and life cycle of a number of important in this section races with reference to the economic importance, namely: fungi resonances - fungi Altvhamat - mushrooms - Omanata - Bullets - Kopraans - Hadenm- Clavaraa - to Ecuperdon	2	2
7- Under fungi Naqsh- and grounds department classification fungus missing - the diversity of microbial Alkonidah in fungi missing - taxonomic study and installation of a number of important in this section races with reference to the economic importance, namely: Candida albicans - FOMA - Putraats - Trajcuiderma - Macrosburn - Alternaraya - Kerveolria - Drickaslera - Kladosporim - Vimasam - Jrafim - Rhizoctonia	2	2
8- Lichens and general characteristics of the environment and the distribution and types such as filamentous Ashenat Ashenat crusty and Ashenat paper and Ashenat tree - the study of anatomy for Ashenat and its importance in nature and in human life	2	2

2 Course components (total contact hours per semester):			
Lecture: 15	Tutorial: 6	Practical/Fieldwork/Inte rnship: 15	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)

12 hours is to prepare reports and research by the student

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

1- student should learn fungus and general characteristics and different ways of living and breeding characteristics.

2- Should the student can learn the foundations of classification fungi.

3- student should recognize the on the forms and installation of some fungal species that cover the main sections of the fungi.

(ii) Teaching strategies to be used to develop that knowledge

1. divide the students into groups, each group is isolating fungi from different places and different samples.

2. isolates are obtained for various fungi have been isolated and are identified by the fungi that they study and work are sliced Of them and watch them under a microscope

3. introduce students to scientific references available library and Web sites related to the decision.

<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> • periodic tests and essay writing • mid-term test theoretical and practical migraine
<p>b. Cognitive Skills</p>
<p>(i) Cognitive skills to be developed</p> <ol style="list-style-type: none"> 1- The development of a child's ability to isolate the various fungi from different places 2. Training students to obtain pure isolates of colonies of fungi isolated group 3. Training students on the work of the different segments of the isolated fungi 4. Training students on the ability to make a comparison between the fungus and fungi isolated and studied by then identify the fungi isolated .. 5. The ability to draw a fungal species and to identify their structures that characterize each of them 6. The ability to predict the class you belong to any unknown encroachment presented to the student through the application of the qualities that distinguish each of them on the sample before it
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> • Provide illustrative examples in the lecture. • taking in some of the races and try to reach the lecture with the students to the nearest rank put her through a review of the obvious qualities in them. • applied the same idea at the laboratory study were asked do you have a sample cell wall? Do threaded fungal divided or undivided and so step by step.

<p>(iii) Methods of assessment of students cognitive skills</p> <p>Allocates individual duties of 5% of the grades and displayed 5% of the grades.</p>
<p>c. Interpersonal Skills and Responsibility</p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <p>Preparation and group activities for each head of a group on their behalf and take responsibility for delivery activities</p>
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <p>Evaluation of activities and duties, and choose the best ones and present them to the rest of the groups.</p>
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> • calendar Search through the collective effort of each student in this research • Individual research estimate by the scientific value of the research, and his effort from the student
<p>d. Communication, Information Technology and Numerical Skills</p>
<p>(i) Description of the skills to be developed in this domain.</p> <p>The development of a child's ability to use the computer as well as the compilation of information from the Internet and the information obtained from reliable scientific research sites, as well as access to images and illustrations of the various fungi movies studying diseases caused by</p>

<p>(ii) Teaching strategies to be used to develop these skills</p> <p>Assigning student research or scientific article based on information obtained from the Internet and computer use</p>
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> * Discuss the presentations and individual and collective duties with students * Selectable presentations and distinct duties and display * Evaluation of bids and duties of 5% of grades
<p>e. Psychomotor Skills (if applicable)</p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <ul style="list-style-type: none"> • the development of the student's ability to use a microscope. • Improve student level in microscopic examination and preparation of slides examined before. • definition of how to prepare the student center of diet and fungal isolate and purify the sample.
<p>(ii) Teaching strategies to be used to develop these skills</p> <p>Follow-up to the student in the lab and guidance on the best ways to microscopic examination of the fungi and the best view of the microscopic sample fungal</p>
<p>(iii) Methods of assessment of students psychomotor skills</p> <p>Push students to compete in the sample processing by raising the student's degree in practical even for those who gets the best microscopic vision and the ability to better adjust.</p>

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	League test		10%
2	Mid-term practical test		15%
3	The middle chapter in my test		15%
4	Writing and preparation of individual or collective article		5%
5	Final practical test		15%
6			40%
7			
8			

D. Student Support

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

Office hours unannounced to students through the university site: 6 hours per week

E Learning Resources

1. Required Text(s)

- Fungi, algae book authored by Dr. Metwally Abdel-Azim Metwally

2. Essential References

1. basics of mycology (2005) by Dr. Abdullah bin Nasser compassion professor fungi - Plant and Department of Microbiology - Faculty of Science - King Saud University

2. fungi (2002) written by Dr. Abdul Aziz bin Alsrany Kaplan, Dr. Idris bin Munir Turkish, Prof. Dr. Mohammed Mohammed Husseini, Department of Biology - Faculty of Science, King Abdul Aziz University - Medina

<p>3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)</p> <p>* Basics of mycology Written by: Dr. Abdullah bin Nasser Mercy</p> <p>* A book written by plant diseases</p> <p style="padding-left: 40px;">Prof. Dr. / Hussein Laroussi</p> <p style="padding-left: 40px;">Prof. Dr. / Samir Husni</p> <p style="padding-left: 40px;">Prof. Dr. / Ali Mohammed Abdul Rahim</p>
<p>4- Electronic Materials, Web Sites etc</p> <ul style="list-style-type: none"> • http://www.mycolog.com/fifthtoc.html • http://www.biolib.cz/en/gallery/dir22/ <p>http://en.wikipedia.org/wiki/Fungi</p>
<p>5- Other learning material such as computer-based programs/CD, professional standards/regulations</p>

F. Facilities Required

<p>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</p>
<p>1. Accommodation (Lecture rooms, laboratories, etc.)</p> <ul style="list-style-type: none"> • teaching hall suitable for the number of registered students with the decision. • hall equipped with a Display Data Show as it's air-conditioned.
<p>2. Computing resources</p> <ul style="list-style-type: none"> • require the provision of a computer in the hall as well as in the lab to display the scientific article stomach
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</p>

- There is a need for some ready-made slides (List was written by the management section)
- There is a need to equip the innate farms that could be applied in teaching
- Operation of the central gas pipeline
- Provide sufficient number of autoclaves
- Provide sufficient number of tools needed to isolate (Dettol - Petri dishes - Cotton - among Qsidir-Food suitable for the growth of fungi - Upper especially fungal)

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <p>Questionnaire for the students at the end of the semester to evaluate scheduled</p>
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <p>Oral discussion with the students to learn the extent of the collection</p>
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> • The use of computers and advanced display devices to provide lectures in the form of progressive presentations (PowerPoint), in addition of course to the explanation • periodic review of Course
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <p>Examination of the correction of a sample of the test papers or student work corrected by the faculty member or grades, and it is, and remarking professor exchange sample of the duties or correct tests on a regular basis with a faculty member another body to the same decision in other educational institution</p>
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> - Continuous updating of the items scheduled and regular basis - Statistics of the results of the work of the students with decision



Kingdom of Saudi Arabia
**The National Commission for Academic
Accreditation & Assessment**

COURSE SPECIFICATION

Final Year Project

4014923-5

Revised September 2015



Course Specification

For Guidance on the completion of this template, please refer to *of Handbook 2*
Internal Quality Assurance Arrangements

Institution: UM AL – QURA UNIVERSITY
College/Department : Faculty of Science – Department of Biology

A Course Identification and General Information

1. Course title Final Year Project
2. Course code: 4014923-5
2. Credit hours: 5hrs
3. Program(s) in which the course is offered. : BSc Biology
3. Name of faculty member responsible for the course: Teaching staff members (Biology)
5. Level/year at which this course is offered: 4th Year / Summer semester
6. Pre-requisites for this course (if any): --
7. Co-requisites for this course (if any): ---
8. Location if not on main campus: Main campus



B Objectives

After completing this course student should be able to:

1. Gain practical and theoretical knowledge about particular area of microbiology.
2. Work independently on the research project under the supervision of academic member of staff, and should be able to design experiments to answer the particular question posed, and critically analysed the results. There will be scope for initiative in this element of the project.
3. Be able to set the work in the context of work done by other experimentalists, and provide a concise summary of relevant literature.

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

At the end of this course student should be able to evaluate the different approaches used and suggest future experiments or alternative strategies for addressing the problem. The student should be able to conversant with writing a scientific report and presenting scientific data in a clear accessible manner. The skills learnt will be applicable to problem solving exercises encountered in all types of employment.

1 Topics to be Covered		
Topic	No of Weeks	Contact hours
❖		
❖		
❖		
❖		
❖		
❖		
❖		
❖		



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2 Course components (total contact hours per semester):			
Lecture : 28	Tutorial:	Practical: 42	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week): 12h (reports & essay)
--

4. Development of Learning Outcomes in Domains of Learning
For each of the domains of learning shown below indicate: <ul style="list-style-type: none">• A brief summary of the knowledge or skill the course is intended to develop;• A description of the teaching strategies to be used in the course to develop that knowledge or skill;• The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.
a. Knowledge : Description of the knowledge to be acquired
Upon successful completion of this course The student will be able to: <ol style="list-style-type: none">1. Gain practical and theoretical knowledge about particular area of microbiology.2. Work independently on the research project under the supervision of academic member of staff, and should be able to design experiments to answer the particular question posed, and critically analysed the results. There will be scope for initiative in this element of the project.3. Be able to set the work in the context of work done by other experimentalists, and provide a concise summary of relevant literature.

(ii) Teaching strategies to be used to develop that knowledge

- The methodology includes a combination of lectures by the lecturer, seminar presentation by the students and web-interactions. Students will be given opportunity to understand the role of important microorganisms in different applications and human service.
- At the end of the programme, students will be divided into groups for seminar presentation on important areas of the course to assess their understanding and comprehension of the course.
- All students will be involved in on-line learning process and each student is required to create an E-mail address to facilitate student web interactions.
- Using images and movies
- Encouraging students to collect the new information about what the new in biochemistry
- Enable the reference books and scientific sites concerning microbiology in internet.

(iii) Methods of assessment of knowledge acquired:

- **Submission of a literature review**
- **Submission of research report**

b. Cognitive Skills

(i) Cognitive skills to be developed

Having successfully completed the course students should be able to:

- **Displaying and organizing different types of data . Representing the data.**

(ii) Teaching strategies to be used to develop these cognitive skills:

- Reading relevant research and review articles
- Brain storming
- Discussion

(iii) Methods of assessment of students cognitive skills

- **Submission of a literature review**
Submission of research report

c. Interpersonal Skills and Responsibility

At the end of the course, the student will be able to:

1. Gain practical and theoretical knowledge about particular area of microbiology.
2. Work independently on the research project under the supervision of academic member of staff, and should be able to design experiments to answer the particular question posed, and critically analysed the results. There will be scope for initiative in this element of the project.
3. Be able to set the work in the context of work done by other experimentalists, and provide a concise summary of relevant literature.

(i) Teaching strategies to be used to develop these skills and abilities

- Lab work
- Case Study
- Active learning
- Small group discussion

(iii) Methods for assessment of the students interpersonal skills and capacity to carry responsibility

- Evaluate the efforts of each student in preparing the report.
- Evaluate the scientific values of reports.
- Evaluate the work in team
- Evaluation of the role of each student in lab group assignment
- Evaluation of students presentations

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain. At the end of the course, the student will be able to:

1. Enhancing the ability of students to use computers and internet.
2. Interpret biostatistics data
3. Present biochemical data.
4. Know how to write a report.

5. Teaching strategies to be used to develop these skills

1. Homework (preparing a report on some topics related to the course depending



<p>on web sites).</p> <ol style="list-style-type: none"> 2. Seminars presentation 3. Field visits to factories <p>(iii) Methods of assessment of students numerical and communication skills</p> <ol style="list-style-type: none"> 1. Evaluation of presentations 2. Evaluation of reports 3. Practical exam
<p>e. Psychomotor Skills (if applicable)</p> <p>At the end of the course, the student will be able to:</p> <ol style="list-style-type: none"> 1.
<p>(ii) Teaching strategies to be used to develop these skills</p>
<ol style="list-style-type: none"> 4. Methods of assessment of students psychomotor skills

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	Writing a literature review	All weeks	30%
2	Participation / discussion	All weeks	25%
3	Writing a proposal for a research project	All weeks	45%
4			
5			
6			

D. Student Support

<ol style="list-style-type: none"> 1. Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)
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Office hours: 10 hrs

E. Learning Resources

Required Text(s):

Recommended Reading List

Electronic Materials, Web Sites

Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)

- Class room is already provided with data show
- The area of class room is suitable concerning the number of enrolled students (68) and air conditioned.

2. Computing resources

- Providing class rooms with computers and labs with data show.

3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

-

G Course Evaluation and Improvement Processes



<p>1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> • Questionnaires • Open discussion in the class room at the end of the lectures
<p>2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> • Revision of student answer paper by another staff member. • Analysis the grades of students.
<p>3. Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> • Preparing the course as PPT. • Using scientific movies. • Coupling the theoretical part with laboratory part • Periodical revision of course content.
<p>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</p> <ul style="list-style-type: none"> • After the agreement of Department and Faculty administrations
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> • Periodical revision by Quality Assurance Units in the Department and institution

Faculty member responsible for the course:

<p>Prepared by faculty staff: 1. Dr Hussein H. Abulreesh 2. Dr. Khaled Elbanna</p>	<p>Signature:</p>
<p>Date Report Completed: 09/2015</p>	
<p>Revised by: 1. Dr. Khaled Elbanna 2. Dr. Hussein H. Abulreesh 3. Dr. Shady Elshahawy</p>	<p>Signature:</p>
<p>Date: 1.10.2015</p>	
<p>Program Chair Dr. Hussein H. Abulreesh</p>	<p>Signature:</p>
<p>Dean Prof. Samir Natto</p>	<p>Signature:</p>



Date:

مرفقات:

- نماذج من الاختبارات الدورية والنصفية والنهائية