

Module name:	<i>Animal physiology (II)</i>											
Module level, if applicable	<i>8th</i>											
Code, if applicable	<i>ZOO 421</i>											
Subtitle, if applicable	<i>NA</i>											
Courses, if applicable	<i>NA</i>											
Semester(s) in which the module is taught	<i>1st and 2nd semesters</i>											
Person responsible for the module	<i>Prof Dr: Zeinab Abd Elmohdy Abd Elhaleem</i>											
Lecturer	<i>Prof Dr: Zeinab Abd Elmohdy Abd Elhaleem</i>											
Language	<i>Arabic</i>											
Relation to curriculum	<i>Compulsory course for biology program</i>											
Type of teaching, contact hours	<i>Total Contact hours/semester:58 hrs.</i> <ul style="list-style-type: none"> <i>• Lecture:28</i> <i>• Laboratory :30</i> <i>Class size:27 students</i>											
Workload	<table border="1"> <thead> <tr> <th><i>Total-contact hours</i></th> <th><i>Self-study</i></th> <th><i>Discussion</i></th> <th><i>Total workload</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><i>58</i></td> <td style="text-align: center;"><i>67</i></td> <td style="text-align: center;"><i>18</i></td> <td style="text-align: center;"><i>143</i></td> </tr> </tbody> </table>				<i>Total-contact hours</i>	<i>Self-study</i>	<i>Discussion</i>	<i>Total workload</i>	<i>58</i>	<i>67</i>	<i>18</i>	<i>143</i>
<i>Total-contact hours</i>	<i>Self-study</i>	<i>Discussion</i>	<i>Total workload</i>									
<i>58</i>	<i>67</i>	<i>18</i>	<i>143</i>									
Credit points	<i>4.9 ECTS -3 KSA.</i>											
Requirements according to the examination regulations	<i>To attend at least 75% of lecture and practical study</i>											
Recommended prerequisites	<i>Cytology BIO 123</i> <i>Animal physiology(1) ZOO 313</i>											

<p>Module objectives/intended learning outcomes</p>	<p>Knowledge: the students are able to</p> <ul style="list-style-type: none"> 1-Recognize the structure of cardiovascular, Respiratory, Urinary and Endocrine System 2-Determine the function of cardiovascular, Respiratory, Urinary and Endocrine System <p>Cognitive Skills: the students are able to</p> <ul style="list-style-type: none"> 1-Explain the mechanism of action of cardiovascular, Respiratory, Urinary and Endocrine systems. 2- Analyze the phenomena and problems related to the function of cardiovascular, Respiratory, Urinary and Endocrine systems <p>Interpersonal Skills & Responsibility: the students are able to</p> <ul style="list-style-type: none"> Participate effectively with colleagues in researches, presentations and laboratory work. <p>Communication, Information Technology, Numerical: the students</p> <ul style="list-style-type: none"> Use advanced technology in collection and interpretation of data <p>Psychomotor: the students are able to:</p> <ul style="list-style-type: none"> 1-Use properly laboratory devices and equipment in carrying out experiments for blood and urine samples 2-Examine and draw microscopic slides properly
---	---

Content	<i>List of Topics</i>	<i>No. of Wks</i>	<i>Cont-act Hrs</i>	<i>%</i>
		<i>Theoretical part</i>		
	<i>- Structure of Cardiovascular System(heart – blood vessels –blood and its constituents) -Function of CVS and mechanism of action. Blood groups</i>	<i>4</i>	<i>8</i>	<i>28.6</i>
	<i>Midterm 1 + feedback</i>	<i>1</i>	<i>1</i>	<i>3.6</i>
	<i>Structure and function of respiratory system – Mechanism of respiration – Process of regulation of respiration</i>	<i>3</i>	<i>6</i>	<i>21.4</i>
	<i>Structure of urinary system – function of kidneys (glomeruli and tubules) and mechanism of action</i>	<i>3</i>	<i>6</i>	<i>21.4</i>
	<i>Midterm 2 + feedback</i>	<i>1</i>	<i>1</i>	<i>3.6</i>
	<i>Endocrine system(types of endocrine glands – hormonal regulation- the relation between these glands – their functions and mechanism of action)</i>	<i>3</i>	<i>6</i>	<i>21.4</i>
	<i>Practical part</i>			
	<i>Recognition of structures of heart – Confirmed tests for blood stains – Recognition of types of Red and White blood Cells – Osmotic fragility test of Red Blood Cells</i>	<i>4</i>	<i>8</i>	<i>26.7</i>
	<i>Erythrocyte sedimentation rate –Colorimetric test for Hemoglobin determination – Detection of blood groups and RH factor</i>	<i>3</i>	<i>6</i>	<i>20</i>
	<i>Recognition of normal and abnormal character of urine – Qualitative analysis of normal constituents of urine (Experiments for detection of Ammonia- Urea-Chloride- Creatinine-Carbonate-Sulphur –Uric acid)</i>	<i>4</i>	<i>8</i>	<i>26.7</i>
	<i>Qualitative analysis of abnormal constituents of urine (Experiments for detection of Protein – Glucose – phosphate and acetone)</i>	<i>3</i>	<i>6</i>	<i>20</i>
	<i>Revision</i>	<i>1</i>	<i>2</i>	<i>6.6</i>
	<i>The description should clearly indicate the weighting of the content and the level.</i>			
Study and examination requirements and forms of examination	<i>20 degrees for two Midterm exams 10 degrees for assignments, lab. Report ,Class work and reseach 20 degrees for final practical Exam 50 degrees for final theoretical Exam</i>			
Media employed	<i>Classroom provided with smartboard , computer , internet connection and enough seats Lab provided with the required devices , light microscopes and models for application of the practical part of the course Email (z.madkor@mu.edu.sa)</i>			

Reading list	<ul style="list-style-type: none">- <i>Science of Organ Physiology, 1424 H. Nabil Ahmed Abu Elnile, International Publishing House.</i>- <i>Science of Physiology, 1433 H. Shetawi Alabd Alaah , Al Msiraa Publishing House.</i>- https://emergencypedia.files.wordpress.com/2013/04/qanong-pdf.pdf
--------------	---

Module name:	<i>Mycology and Plant Pathology</i>			
Module level, if applicable	<i>Eighth level</i>			
Code, if applicable	<i>BOT 422</i>			
Subtitle, if applicable	<i>none</i>			
Courses, if applicable	<i>none</i>			
Semester(s) in which the module is taught	<i>1st and 2nd semesters</i>			
Person responsible for the module	<i>Dr. Aisha Ohag Osman Mohammed</i>			
Lecturer	<i>Dr. Aisha Ohag Osman Mohammed</i>			
Language	<i>Arabic</i>			
Relation to curriculum	<i>not applies</i>			
Type of teaching, contact hours	<i>Total Contact hours/semester:58 hrs.</i> <ul style="list-style-type: none"> • <i>Lecture:28</i> • <i>Laboratory:30</i> <i>Class size:25 students</i>			
Workload	<i>Total-contact hours</i>	<i>Self-study</i>	<i>Discussion</i>	<i>Total workload</i>
	<i>58</i>	<i>60</i>	<i>10</i>	<i>128</i>
Credit points	<i>4.4 ECTs-3 KSA.</i>			
Requirements according to the examination regulations	<i>To attend more than 75% of lecture and practical study.</i>			
Recommended prerequisites	<i>none</i>			

<p>Module objectives/intended learning outcomes</p>	<p><u>1. Knowledge:</u></p> <p>1-1 To recognize the salient features and the structure of fungi, internal structures and systematic of fungi based on the theoretical keys of systematic.</p> <p>1-2 To recognize different divisions of fungi in nutrition, growth, reproduction, life cycle, signs and symptoms of the disease-infected plants.</p> <p>1-3 To identify ecologically the different habitat on which different types of fungi live</p> <p><u>2. cognitive</u></p> <p>2-1 1-Investigate theories and the basics related naming and divisions of fungi.</p> <p>2-2 Devise the biological and the economic importance of fungi.</p> <p>2-3 To compare between the pathogenic fungi and useful fungi.</p> <p><u>3. Interpersonal Skills & Responsibility</u></p> <p>3-1 1- Interact by group discussion and bear self learning responsibility.</p> <p>3-2 2-Use modern technology for required references search to do duties.</p> <p><u>5- Psychomotor</u></p> <p>5-1 Conduct procedural, academic and practical skills for isolation and purification pathogenic fungi</p>
---	--

Content	List of Topics	N. of weeks	Contact hrs	%
	<i>1-The general and the morphology characteristics of fungi, fungi cell structure and explain the structure differences by the basics of the application studied experimentally.</i>	1	4	7.69
	<i>2-Nutrition types of fungi and media used in laboratory.</i>	1	4	7.69
	<i>3-Types of reproduction in fungi (sexual and asexual) and identify different isolation methods used in laboratory.</i>	1	4	7.69
	<i>4-Bases of fungi classification and study examples of Myxomycota, Ascomycetes, Basidiomycetes and Deuteromycetes fungi with their life cycles and the diseases which they caused.</i>	5	20	38.46
	<i>5-Economic importance of fungi: Spoiled food, cereals, cause more plant and animal diseases and to identify the symptoms and signs of disease.</i>	1	4	7.69
	<i>6-Fungal toxins (mycotoxins): Aflatoxins, ergot isolation of fungus poison mushroom, the practical application of aspects toxins and isolation causes fungus.</i>	1	4	7.69
	<i>7- Useful aspects of fungi: yeast Penicillin, production of organic acids, vitamins, enzymes, mushrooms and truffles.</i>	2	8	15.38
	<i>8-The role of decomposers fungi on organic material with experience proved parasite on some vegetables and fruits.</i>	1	4	7.69

<p>Study and examination requirements and forms of examination</p>	<p><i>1- Theoretical 1st test - During semester-10%</i></p> <p><i>Theoretical 2nd test - During semester-10%</i></p> <p><i>2- Practical test+ diverse activities -During semester-10%</i></p> <p><i>3- Final practical test- During semester - 20%</i></p> <p><i>4- Final theoretical test - During semester - 50%</i></p>
<p>Media employed</p>	<p><i>1. Accommodation</i></p> <p><i>Buildings (lecture halls, laboratories, etc ...).</i></p> <p><i>50 seats in class room</i></p> <p><i>Microbiology laboratory (special for fungi)</i></p> <p><i>2. Computing resources</i></p> <p><i>Computer connected to a smart board.</i></p> <p><i>3. Other resources</i></p> <p><i>A computer connected to smart board and projectors, fixed in class room.</i></p> <p><i>Equipped laboratories and special commensurate with the requirements for the course.</i></p> <p><i>Isolation room</i></p> <p><i>General media, especially for bacteria</i></p> <p><i>Sterilization Mechanical Equipment (Seitz filter, cellulose filter)</i></p> <p><i>Projectors</i></p> <p><i>Peti dishes Dyes, Centrifuges.</i></p>

Reading list

1. List Required Textbooks:

١. د. عبد الله الخليل و بن صالح (١٩٩٣). الأساس العملي للفطريات . جامعة الملك سعود.
٢. أبو هيلة و عبد الله ناصر (١٩٩٣): أساسيات علم الفطريات . جامعة الملك سعود.
٣. مجدي سعد (١٩٩١): السموم الفطرية . الهيئة المصرية العامة للكتاب . مصر .
٤. الخليل و ابن صالح (١٩٩٩): الأساس العملي لبيئة الأحياء الدقيقة . دار الخريجي . الرياض.

2. List Essential References Materials:

١. د. عبد الله الخليل و بن صالح (١٩٩٣). الأساس العملي للفطريات . جامعة الملك سعود.
٢. أبو هيلة و عبد الله ناصر (١٩٩٣): أساسيات علم الفطريات . جامعة الملك سعود.
٣. مجدي سعد (١٩٩١): السموم الفطرية . الهيئة المصرية العامة للكتاب . مصر .

3. List Recommended Textbooks and Reference Material:

١. د. عبد العزيز البوني (١٩٩٠) - أساسيات الفطريات العملي - Koeltz Scientific Books - ألمانيا الاتحادية.

4. List Electronic Materials: Related websites to the course.

5. Other learning material :

Microsoft Office – word ,power pointetc

Module name:	Flora and Fauna at KSA			
Module level, if applicable	8 th level			
Code, if applicable	BIO 424			
Subtitle, if applicable	NA			
Courses, if applicable	NA			
Semester(s) in which the module is taught	1st semester and 2nd semester			
Person responsible for the module	Ms. Hanan Khaled Al- Mutairi			
Lecturer	Ms. Hanan Khaled Al- Mutairi			
Language	Arabic			
Relation to curriculum	Compulsory course for biology program			
Type of teaching, contact hours	<p>Total Contact hours/semester:58 hrs.</p> <ul style="list-style-type: none"> • Lecture:28 • Laboratory:30 <p>-Class size for lecture:20-25 students -Class size for Lab:10-17 students</p>			
Workload	<i>Total-contact hours</i>	<i>Self-study</i>	<i>Discussion</i>	<i>Total workload</i>
	58	58	15	131
Credit points	4.5 ECTS-3Ksa.			
Requirements according to the examination regulations	To attend more than 75% of lecture and practical study			
Recommended prerequisites	NA			
Module objectives/intended learning outcomes	<p>Knowledge: the students are able to</p> <ol style="list-style-type: none"> 1. Identifying meaning of flora and fauna term 2. Identifying patterns of habitats and elements of animal and plant communities and economical importance thereof in the Kingdom of Saudi Arabia <p>Cognitive Skills: the students are able to</p> <ol style="list-style-type: none"> 1. Comparing between systems and structures of floral and faunal community 2. Executing surveys to study theories related with flora and fauna science such as studying spread of some animals and plants in the Kingdom and how to utilize the same economically <p>Interpersonal Skills & Responsibility: the students are able to</p> <ol style="list-style-type: none"> 1. Taking part in cooperative group work. <p>Communication, Information Technology, Numerical:the students are able to</p> <ol style="list-style-type: none"> 1. Mastering use of technology and information technology in conveying information to others such as internet and preparing researches and presentations <p>Psychomotor:the students are able to</p> <ol style="list-style-type: none"> 1. Sampling animals and plants from environment and classifying the same 			

Content				
	<i>Content</i>	<i>Wks. No</i>	<i>Contact hours</i>	<i>%</i>
	-Studying terrains, climate and geographical place of the Kingdom. Historical profile on development of animal wildlife studies in the Kingdom.	1	4	7
	-Floral and faunal structure and various systems thereof	1	4	7
	-Relation of elements of Saudi flora and fauna with fauna elements in adjacent states. Identifying plant and animal species in the Kingdom in terms of geographical distribution, density and classification	1	4	7
	-Identifying species of scarce, endemic, immigrant, invasive and endangered plants and animals. Effects of animals over plants.	3	12	21
	- Mid-term exam 1+Feedback	1	2	3
	-Threats to animal and plant species in the Kingdom. Significance of Saudi flora and fauna in encouraging environmental tourism. Decorating flora as adornment plants	2	8	14
	-Effect of human on wild animals. Role of animal in the ecological system. Flora plants of environmental and economical importance. Identifying animal and plant species in the Kingdom in terms of geographical distribution, density and classification.	1	4	7
	- Mid-term exam 2+Feedback	1	2	3
	- Flora plants of environmental and economical importance. Plant vegetation condition in the Kingdom. Most significant reasons behind decreased number of animals. Methods of protecting wild animals against threats.	3	14	24
	- Maintaining flora and fauna of Saudi Arabia	1	4	7
Study and examination requirements and forms of examination	<p><i>. 20 degrees for two Midterm exams</i></p> <p><i>10 degrees for Practical activities, lecture participation, continuous appraisal and preparing research</i></p> <p><i>20 degrees for final practical Exam</i></p> <p><i>50 degrees for final theoretical Exam</i></p>			

<p>Media employed</p>	<p>Size of auditorium is compatible with number of students.</p> <p>Auditorium shall be provided with cutting-edge educational technologies and multiple projecting equipment including smart interactive whiteboard and e-platform.</p> <p>Lights at auditorium and laboratory shall be sufficient and proper.</p> <p>Providing equipment at laboratory such as microscopes; one microscope for each student, samples and models related to the practical aspect of the course.</p>
<p>Reading list</p>	<p>-Flora of Saudi Arabia book; Dr. Ahmad Mohammad Mujahed, King Saud Printing press, latest edition</p> <p>-Fauna of Saudi Arabia(vol1-17), National commission for wild life conservation & development Riyadh.</p> <p>-Flora of Eastern Saudi Arabia, s. Collenette.</p> <p>-Flora of Eastern Saudi Arabia,James,P.,Mandy,V.P.,1995:International ,London, New York, jointly with national commission for wild life development, Riyadh</p>

Module name:	Flowering plants Taxonomy			
Module level, if applicable	8 th level			
Code, if applicable	BOT 423			
Subtitle, if applicable	NA			
Courses, if applicable	NA			
Semester(s) in which the module is taught	1st semester and 2nd semester			
Person responsible for the module	Ms. Hanan Khaled Al- Mutairi			
Lecturer	Ms. Hanan Khaled Al- Mutairi			
Language	Arabic			
Relation to curriculum	Compulsory course for biology program			
Type of teaching, contact hours	Total Contact hours/semester:58 hrs. <ul style="list-style-type: none"> • Lecture:28 • Laboratory :30 -Class size for lecture:20-25 students -Class size for Lab:10-17 students			
Workload	<i>Total-contact hours</i>	<i>Self-study</i>	<i>Discussion</i>	<i>Total workload</i>
	58	30	15	133
Credit points	4.5 ECTS-3KSA			
Requirements according to the examination regulations	To attend more than 75% of lecture and practical study			
Recommended prerequisites	BOT 122			

<p>Module objectives/intended learning outcomes</p>	<p>Knowledge: the students are able to</p> <ol style="list-style-type: none"> 1. Giving overview on history of plant taxonomy and development scale thereof 2. Describing floral structure and formation of sexual organs thereof <p>Cognitive Skills: the students are able to</p> <ol style="list-style-type: none"> 1. Interpreting pollination, fertilization, fruit and seeds formation processes 2. Classifying flower on the basis of floral receptacles positioning thereon <p>Interpersonal Skills & Responsibility: the students are able to</p> <ol style="list-style-type: none"> 1. Showing interest in responding to colleagues during assignments, presentations and group researches. <p>Communication, Information Technology, Numerical:the students are able to</p> <ol style="list-style-type: none"> 1. Mastering use of information technology in research and writing 2. Using internet in satisfying required tasks subsequent to each lecture <p>Psychomotor:the students are able to</p> <ol style="list-style-type: none"> 1. Training on flower anatomy, writing laws thereof and drawing floral projections thereof 																																
<p>Content</p>	<table border="1"> <thead> <tr> <th style="background-color: #4F81BD; color: white;">Content</th> <th style="background-color: #4F81BD; color: white;">Wks. No</th> <th style="background-color: #4F81BD; color: white;">Contact hours</th> <th style="background-color: #4F81BD; color: white;">%</th> </tr> </thead> <tbody> <tr> <td>-Introduction to taxonomy history and comparative study of multiple taxonomy systems. Identifying good and poor classification characteristics conception</td> <td style="text-align: center;">3</td> <td style="text-align: center;">12</td> <td style="text-align: center;">21</td> </tr> <tr> <td>- Identifying taxonomical analytical keys and methods of use, studying taxonomical units,</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> <td style="text-align: center;">13.8</td> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">3</td> <td style="text-align: center;">5</td> </tr> <tr> <td>-Mid-term exam1+feedback</td> <td></td> <td></td> <td></td> </tr> <tr> <td>- studying plant scientific naming laws and identifying herbariums</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> <td style="text-align: center;">13.8</td> </tr> <tr> <td>- Studying resources of apparent classification characteristics: shoot, flowering set, blooms, fruits and seeds.part1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> <td style="text-align: center;">13.8</td> </tr> <tr> <td>- Mid-term exam2+feedback.</td> <td style="text-align: center;">1</td> <td style="text-align: center;">3</td> <td style="text-align: center;">5</td> </tr> </tbody> </table>	Content	Wks. No	Contact hours	%	-Introduction to taxonomy history and comparative study of multiple taxonomy systems. Identifying good and poor classification characteristics conception	3	12	21	- Identifying taxonomical analytical keys and methods of use, studying taxonomical units,	2	8	13.8		1	3	5	-Mid-term exam1+feedback				- studying plant scientific naming laws and identifying herbariums	2	8	13.8	- Studying resources of apparent classification characteristics: shoot, flowering set, blooms, fruits and seeds.part1	2	8	13.8	- Mid-term exam2+feedback.	1	3	5
Content	Wks. No	Contact hours	%																														
-Introduction to taxonomy history and comparative study of multiple taxonomy systems. Identifying good and poor classification characteristics conception	3	12	21																														
- Identifying taxonomical analytical keys and methods of use, studying taxonomical units,	2	8	13.8																														
	1	3	5																														
-Mid-term exam1+feedback																																	
- studying plant scientific naming laws and identifying herbariums	2	8	13.8																														
- Studying resources of apparent classification characteristics: shoot, flowering set, blooms, fruits and seeds.part1	2	8	13.8																														
- Mid-term exam2+feedback.	1	3	5																														

	<p>- Studying resources of apparent classification characteristics: shoot, flowering set, blooms, fruits and seeds. part 2 2 8 13.8</p> <p>- Studying some examples of plant families of monocotyledons and dicotyledon 2 8 13.8</p>
Study and examination requirements and forms of examination	<p><i>20 degrees for two Midterm exams</i></p> <p><i>10 degrees for Reports, assignments and oral questions</i></p> <p><i>20 degrees for final practical Exam</i></p> <p><i>50 degrees for final theoretical Exam</i></p>
Media employed	<p>Auditoriums, laboratories</p> <p>Auditorium equipped with Smart board and Data show accommodating 40-50 students, Computer connected to smart board</p> <p>Slides for ready plant samples and others for plant sections</p> <p>Plant sections solids</p> <p>Optical microscope</p>
Reading list	<ul style="list-style-type: none"> - Flowering plants. Dr. Shukri Ibrahim Saad, Dar Al-Fikr Al-Arabi, Nassr City, 1994 - Vascular plants in the Kingdom of Saudi Arabia, 1st volume Shaudry, Shawkat Ali, Ministry of Agriculture Water and National Herbarium, National Centre for Agriculture and Water Researches, Riyadh 1990 - Flowering Plants in the Kingdom of Saudi Arabia, Colint, Shella, the Saudi Commission for Protecting and Growing Wildlife, Riyadh 1991 - Introduction to Plant Classification, Al-Sa'ar, Qassem Fouad, Al-Dar Al-Arabia and Distribution, Cairo, 1987 - Classification of Flowering Plants, Ibrahim Showkry, Al-Anglo Library, Cairo 1994