

Module name:	<i>Arthropoda , Mollusca and Echinodermata</i>			
Module level, if applicable	<i>4th</i>			
Code, if applicable	<i>ZOO 221</i>			
Subtitle, if applicable	<i>NA</i>			
Courses, if applicable	<i>NA</i>			
Semester(s) in which the module is taught	<i>1st semester and 2nd semester</i>			
Person responsible for the module	<i>Prof. Dr : Hala Ali Abdel Salam Saleh</i>			
Lecturer	<i>Prof. Dr: Hala Ali Abdel Salam saleh</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 for lecture:20-25 students</i> <i>-Class size for Lab:10-17 students</i>			
Workload	<i>Total-contact hrs</i>	<i>Self-study</i>	<i>Discussion</i>	<i>Total workload</i>
	<i>58</i>	<i>46</i>	<i>20</i>	<i>124</i>
Credit points	<i>4.2ECTs-3KSA.</i>			
Requirements according to the examination regulations	<i>To attend more than 75% of lecture and practical study</i>			
Recommended prerequisites	<i>Animal Taxnomy ZOO121</i>			

<p>Module objectives/intended learning outcomes</p>	<p>Knowledge: the students are able to</p> <ol style="list-style-type: none"> 1. Recognize an integrated and comprehensive on the characteristics and classification of the members of arthropods and mollusks and echinoderms <p>Cognitive Skills: the students are able to</p> <ol style="list-style-type: none"> 1. Compare between different classes of each phylum with examples of animals of each class. 2. Explain the mechanism of respiration, digestion, excretion and other biological processes in arthropods, mollusks and echinoderms. 3. Illustrate the relationship among members of arthropods, mollusks and echinoderms. <p>Interpersonal Skills & Responsibility: the students are able to</p> <ol style="list-style-type: none"> 1. Participate effectively in team during preparation of collective research papers or presentations. <p>Communication, Information Technology, Numerical: the students are able to</p> <ol style="list-style-type: none"> 1. Demonstrate the Preparation of research papers or presentation with reaching to useful sites on the Internet to increase knowledge of the contents of the course. <p>Psychomotor: the students are able to</p> <ol style="list-style-type: none"> 1. Dissect one of arthropod animals (shrimp) with the identification of internal systems and examination of practical animal models. 																																							
<p>Content</p>	<table border="1"> <thead> <tr> <th data-bbox="657 1169 1145 1211">Content</th> <th data-bbox="1145 1169 1257 1211">WKS No.</th> <th data-bbox="1257 1169 1385 1211">Contact hours</th> <th data-bbox="1385 1169 1457 1211">%</th> </tr> </thead> <tbody> <tr> <td data-bbox="657 1211 1145 1391"><i>Location of arthropods in animal kingdom, general characters, taxonomy, studying characters of each class, Trilobita, taxonomy of myriapoda animals including their morphology and internal anatomy</i></td> <td data-bbox="1145 1211 1257 1391">2</td> <td data-bbox="1257 1211 1385 1391">8</td> <td data-bbox="1385 1211 1457 1391">13.79</td> </tr> <tr> <td data-bbox="657 1391 1145 1480"><i>Study morphology of shrimp , different appendages and internal anatomy include the "life-cycle</i></td> <td data-bbox="1145 1391 1257 1480">2</td> <td data-bbox="1257 1391 1385 1480">8</td> <td data-bbox="1385 1391 1457 1480">13.79</td> </tr> <tr> <td data-bbox="657 1480 1145 1570"><i>Study of some models of crustaceans with their classification such as Daphnia, crabs, hermit crabs,</i></td> <td data-bbox="1145 1480 1257 1570">1</td> <td data-bbox="1257 1480 1385 1570">4</td> <td data-bbox="1385 1480 1457 1570">6.90</td> </tr> <tr> <td data-bbox="657 1570 1145 1659"><i>Study of some models of crustaceans with their classification such as Cypris, Lepas, Balanus.</i></td> <td data-bbox="1145 1570 1257 1659">1</td> <td data-bbox="1257 1570 1385 1659">4</td> <td data-bbox="1385 1570 1457 1659">6.90</td> </tr> <tr> <td data-bbox="657 1659 1145 1704"><i>Mid Term 1+ Feedback</i></td> <td data-bbox="1145 1659 1257 1704">1</td> <td data-bbox="1257 1659 1385 1704">3</td> <td data-bbox="1385 1659 1457 1704">5.17</td> </tr> <tr> <td data-bbox="657 1704 1145 1794"><i>Study of some models of crustaceans with their classification such as some parasitic arthropods such as ticks and mites</i></td> <td data-bbox="1145 1704 1257 1794">1</td> <td data-bbox="1257 1704 1385 1794">4</td> <td data-bbox="1385 1704 1457 1794">6.90</td> </tr> <tr> <td data-bbox="657 1794 1145 1906"><i>Taxonomical, anatomical and physiological study included morphology and internal structures of spider and scorpion</i></td> <td data-bbox="1145 1794 1257 1906">1</td> <td data-bbox="1257 1794 1385 1906">4</td> <td data-bbox="1385 1794 1457 1906">6.90</td> </tr> <tr> <td data-bbox="657 1906 1145 1998"><i>General characteristics of the Phylum Mollusca, taxonomical, anatomical and physiological study on Chiton</i></td> <td data-bbox="1145 1906 1257 1998">1</td> <td data-bbox="1257 1906 1385 1998">4</td> <td data-bbox="1385 1906 1457 1998">6.90</td> </tr> </tbody> </table>				Content	WKS No.	Contact hours	%	<i>Location of arthropods in animal kingdom, general characters, taxonomy, studying characters of each class, Trilobita, taxonomy of myriapoda animals including their morphology and internal anatomy</i>	2	8	13.79	<i>Study morphology of shrimp , different appendages and internal anatomy include the "life-cycle</i>	2	8	13.79	<i>Study of some models of crustaceans with their classification such as Daphnia, crabs, hermit crabs,</i>	1	4	6.90	<i>Study of some models of crustaceans with their classification such as Cypris, Lepas, Balanus.</i>	1	4	6.90	<i>Mid Term 1+ Feedback</i>	1	3	5.17	<i>Study of some models of crustaceans with their classification such as some parasitic arthropods such as ticks and mites</i>	1	4	6.90	<i>Taxonomical, anatomical and physiological study included morphology and internal structures of spider and scorpion</i>	1	4	6.90	<i>General characteristics of the Phylum Mollusca, taxonomical, anatomical and physiological study on Chiton</i>	1	4	6.90
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	<p><i>Mid Term 2+Feedback</i></p> <p><i>Taxonomical, anatomical and physiological study on desert snails, fresh and marine calms and cuttlefish.</i></p> <p><i>General characteristics and classification of the Phylum Echinodermata.</i></p> <p><i>Taxonomical, anatomical and physiological study on Astropecten, Ophicoma, Holothuria</i></p>	<p>1</p> <p>2</p> <p>1</p> <p>1</p>	<p>3</p> <p>8</p> <p>4</p> <p>4</p>	<p>5.17</p> <p>13.79</p> <p>6.90</p> <p>6.90</p>
Study and examination requirements and forms of examination	<p><i>20 degrees for two Midterm exams (Midterm 1& Midterm 2)</i></p> <p><i>10 degrees for homeworks, lab reports and reseach papers</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><i>-Classrooms be equipped with smart board and e-podium and laboratories provided with smart board Saving devices such as microscopes in the lab, microscopic specimens, practical models and other laboratory requirements.</i></p>			
Reading list	<p><i>- Mohammed Hassan Al-Hamoud (2007): Biology of invertebrates</i></p> <p><i>- . Mahmoud, Abdul Aziz Abdul Rahman and Mahmoud El-Borai(2008): Invertebrates</i></p> <p><i>- Ruppert,Edward,E. and Robert,D., Barnes, 1994: Invertebrates zoology, 6thed. Stunders College publishing.</i></p> <p><i>- German Egyptian Society Journal of invertebrates.</i></p>			

Module name:	<i>Bacteriology</i>			
Module level, if applicable	<i>Fourth</i>			
Code, if applicable	<i>BOT 222</i>			
Subtitle, if applicable	<i>none</i>			
Courses, if applicable	<i>none</i>			
Semester(s) in which the module is taught	<i>All semester</i>			
Person responsible for the module	<i>Dr Enas Shaban Ahmed</i>			
Lecturer	<i>Dr Enas Shaban Ahmed</i>			
Language	<i>Arabic</i>			
Relation to curriculum	<i>compulsory,</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>53</i>	<i>18</i>	<i>129</i>
Credit points	<i>4.4ECTs-3KSA.</i>			
Requirements according to the examination regulations	<i>Attendance 75%</i>			
Recommended prerequisites	<i>BIO 123</i>			

<p>Module objectives/intended learning outcomes</p>	<p><i>Knowledge</i></p> <ul style="list-style-type: none"><i>1- Familiar with the basics of microbiology and science branching from it..</i><i>2- Describes the bacterial cell structure and organelles</i> <p><i>Cognitive Skills</i></p> <ul style="list-style-type: none"><i>1- Distinguish between and Moving bacteria</i><i>2- comparing the different types of bacteria in terms of the look and usability of the different pigments group discussion</i> <p><i>Interpersonal Skills & Responsibility</i></p> <ul style="list-style-type: none"><i>1- Interact collective discussion and take responsibility for self-learning.</i> <p><i>Communication, Information Technology, Numerica</i></p> <ul style="list-style-type: none"><i>1- Use modern techniques to search for the required references for work duties</i> <p><i>Psychomotor</i></p> <ul style="list-style-type: none"><i>1- Apply different experiments related to the course and present short report.</i>
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Content	<i>List of Topics</i>	<i>No. of Weeks</i>	<i>Contact Hours</i>	<i>%</i>
	<i>1- Introduction to Microbiology science + prokaryotic and eukaryotic cells and different shapes of bacteria.</i>	<i>1</i>	<i>2</i>	<i>3.4</i>
	<i>2- Cell structure (external structure , cytoplasmic organelles, composition and function of bacterial structures</i>	<i>1</i>	<i>4</i>	<i>6.8</i>
	<i>3- Bacterial motility in diverse bacterial model systems.</i>	<i>2</i>	<i>4</i>	<i>6.8</i>
	<i>Mid-term Exam1+Feedback</i>	<i>1</i>	<i>1</i>	<i>2</i>
	<i>4- Chemical basis for interaction with the pigments of bacteria and assortment of bacteria on the basis of these pigments.</i>	<i>2</i>	<i>4</i>	<i>6.8</i>
	<i>5- Bacterial growth and factors affecting growth curve - methods of estimating growth</i>	<i>2</i>	<i>4</i>	<i>6.8</i>
	<i>Mid-term Exam2+Feedback</i>	<i>1</i>	<i>1</i>	<i>2</i>
	<i>6- Reproduction of bacteria (sexual and asexual reproduction).</i>	<i>1</i>	<i>2</i>	<i>3.4</i>
	<i>8- Metabolism (hydrolyzed starch, hydrolyzed cellulose, hydrolyzed gelatin, hydrolyzed casein, Alooxidz production, the production of catalase, nitrate reductase)</i>	<i>2</i>	<i>4</i>	<i>6.8</i>
	<i>9- Bacterial genetics</i>	<i>1</i>	<i>2</i>	<i>3.4</i>
	<i>10- bacterial genera and species -basis of classification</i>	<i>1</i>	<i>2</i>	<i>3.4</i>
	<i>Practical part</i>	<i>1</i>	<i>2</i>	<i>3.4</i>
	<i>1- Laboratory safety guidance – sterilization and disinfection for microbiology</i>			
	<i>2- Composition of culture media (natural and artificial culture media.</i>	<i>1</i>	<i>2</i>	<i>3.4</i>
	<i>3- Isolation bacteria from nature (water, milk, soil, etc.)</i>	<i>2</i>	<i>4</i>	<i>6.8</i>
	<i>4- Cultivation of bacteria and dilutions work to get a pure colonies of bacteria</i>	<i>1</i>	<i>2</i>	<i>3.4</i>
	<i>5- Study bacterial colony shapes and study bacterial morphology (stain bacteria with different stain.</i>	<i>4</i>	<i>8</i>	<i>13.8</i>
	<i>6- Study bacterial movement.</i>	<i>1</i>	<i>2</i>	<i>3.4</i>
	<i>7- Metabolic activities (hydrolyzed starch, hydrolyzed cellulose, hydrolyzed gelatin....etc</i>	<i>4</i>	<i>8</i>	<i>13.7</i>
	<i>8- General Review</i>	<i>1</i>	<i>2</i>	<i>3.4</i>
	<i>8- General Review.</i>			

<p>Study and examination requirements and forms of examination</p>	<p><i>First term exam 10%</i> <i>Second term exam10%</i> <i>Homework activities During semester 10%</i> <i>Practical exam At the end of semester 20%</i> <i>Final exam At the end of semester 50</i></p>
<p>Media employed</p>	<p><i>Class room provide with smart board, computer, internet connection, and enough seats .</i> <i>Lab provide with to required devices, light microscopes and slides for demonstration</i> <i>D2I and email es.ahmed@mu.edu.sa</i></p>
<p>Reading list</p>	<ul style="list-style-type: none"> • <i>Mashni and Joseph (1990) Microbiology (Part I) future Jordan House</i> • <i>Ibrahim Yusuf (2001) Agricultural Microbiology King Saud University, Riyadh</i> • <i>Recep honest and son (1995) practical experiences in the foundations of Microbiology King Saud University, Riyadh</i> • <i>Textbook of Microbiology (2007) R. Vasanthakumar, BL Publication Pvt Ltd New Delhi.</i>

Module name:	Biochemistry				
Module level, if applicable	4th				
Code, if applicable	CHEM 202				
Subtitle, if applicable	NA				
Courses, if applicable	NA				
Semester(s) in which the module is taught	1st semester & 2nd semester				
Person responsible for the module	A. Wafa Al-Mansi				
Lecturer	A. Wafa Al-Mansi				
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:27 students				
Workload	Total-contact hours	Self-study	Discussion	Total workload	
	58	55	14	127	
Credit points	4.3 ECTS-3KSA				
Requirements according to the examination regulations	To attend more than 75% of lecture and practical study				
Recommended prerequisites	non				

<p>Module objectives/intended learning outcomes</p>	<p>Knowledge: <i>the students are able to</i> - Interpretation of the chemical structure of the items sugars, proteins, lipids, nucleic acids, vitamins and hormones Explains the general properties of enzymes as catalysts</p> <p>Cognitive Skills: <i>the students are able to</i> - analyzes the compounds and distinguish between them</p> <p>Interpersonal Skills & Responsibility: <i>the students are able to</i> -Mastered the use of information technology in research and survey -Mastered the conducting of statistical processes using specialized programs</p> <p>Communication, Information Technology, Numerical: <i>the students are able to</i> -know how to Communicate properly using advanced technology.</p> <p>Psychomotor: <i>the students are able to</i> use Conducted efficiently biochemical tests using the tools and raw materials and laboratory devices</p>
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Content	List of Topics	No. of Weeks	Contact Hours	%
		Carbohydrates	2	4
	Fats and oils	2	4	13.3
	Proteins	2	4	13.3
	Mid-term exam1+feedback	1	2	6.6
	Enzymes	2	4	13.3
	Hormones	2	4	13.3
	Mid-term exam2+feedback	1	2	6.6
	Nucleic acids	1	2	6.6
	Vitamins	1	2	6.6
	A comprehensive review of textbook	1	2	6.6
	Test list (practical part)			
	Carbohydrates:			
	1. Solubility test.			
	2. Molesh test (General)	3	6	23.07
	3. shorthand tests (test Benedict, Vhlnj test, Tulane test)			
	Barvojed test to distinguish between monosaccharaides and shorthand bilateral sugars			
	4. formation Alooazon test	2	4	15
	5. Silvanov test for ketone mono sugars.			
	6. Iodine test for polysaccharides.			
	Comprehensive review of the tests for carbohydrates	1	2	7.5
	The practical exam of the year.	1	2	7.5
	Oils and fats:			
	1. The solubility test.			
	2. Acrolein test to statement of contain the fat on glycerol associated with fatty acids by ester link.			
	3. Saponification test.	2	4	15
	4. fatty patch test			
	A comprehensive review for oils and fats tests	2	4	15

Study and examination requirements and forms of examination	<p><i>20 degrees for two Midterm exams</i></p> <p><i>10 degrees for assignments, Class work and reseach</i></p> <p><i>50 degrees for final theoretical Exam</i></p> <p><i>20 degrees for final practical Exam</i></p>
Media employed	<p><i>classroom provided with smartboard , computer , internet connection and enough seats</i></p> <p><i>Lab provided with the required devices ,</i></p>
Reading list	<ul style="list-style-type: none"> - <i>Biochemistry Dr. Fared Shukri. Dr. Dalia Fouad Mohamed, 2007. Third Edition. Al-Roshod Library. Riyadh McGraw-Hill Companies,23 th ed.</i> - <i>•Biochemistry (synthetic Biochemistry and Physiological Biochemistry), Dr. Abdel-Rahman Ahmed Al-Hamalawy, Dar Al-Qalam, Kuwait, third edition.</i>

Module name:	<i>Biostatistics</i>				
Module level, if applicable	<i>4th</i>				
Code, if applicable	<i>STAT 101</i>				
Subtitle, if applicable	<i>NA</i>				
Courses, if applicable	<i>NA</i>				
Semester(s) in which the module is taught	<i>1st semester & 2nd semester</i>				
Person responsible for the module	<i>A. Wafa Al-Mansi</i>				
Lecturer	<i>A. Wafa Al-Mansi</i>				
Language	<i>Arabic</i>				
Relation to curriculum	<i>Compulsory course for biology program</i>				
Type of teaching, contact hours	<i>Contact hours:44</i> <ul style="list-style-type: none"> • <i>Lecture:14</i> • <i>Exercises :30</i> • <i>Additional learning hours (e-learning,, assignment) : 50</i> <i>Class size:27 students</i>				
Workload	<i>Total-contact hours</i>	<i>Self-study</i>	<i>Discussion</i>	<i>Total workload</i>	
	<i>44</i>	<i>50</i>	<i>15</i>	<i>109</i>	
Credit points	<i>3.7 ECTS-2KSA</i>				
Requirements according to the examination regulations	<i>To attend more than 75% of lecture and practical study</i>				
Recommended prerequisites	<i>non</i>				

<p>Module objectives/intended learning outcomes</p>	<p>Knowledge: the students are able to</p> <ul style="list-style-type: none"> - Review the different ways to collect, display and data analysis - describes the random experience, probability, independence, probability distribution function, mathematical expectation. Some Discrete Probability Distributions <p>Cognitive Skills:</p> <p>the students are able to</p> <ul style="list-style-type: none"> - Assess the importance of statistics and its relation to biology <p>Interpersonal Skills & Responsibility: the students are able to</p> <ul style="list-style-type: none"> -Participate in group activities with colleagues. -Show a trend towards self-education and responsibility <p>Communication, Information Technology, Numerical: the students</p> <ul style="list-style-type: none"> - Mastered the use of information technology in research and survey -Mastered the conducting of statistical processes using specialized programs 																																
<p>Content</p>	<table border="1"> <thead> <tr> <th data-bbox="480 763 1214 875">List of Topics</th> <th data-bbox="1214 763 1294 875">No. of Weeks</th> <th data-bbox="1294 763 1406 875">Contact Hours</th> <th data-bbox="1406 763 1497 875">%</th> </tr> </thead> <tbody> <tr> <td data-bbox="480 875 1214 958">Brief about the statistics; definition of Biometry, society, the sample, statistical data and collection sources.</td> <td data-bbox="1214 875 1294 958">2</td> <td data-bbox="1294 875 1406 958">6</td> <td data-bbox="1406 875 1497 958">13.6</td> </tr> <tr> <td data-bbox="480 958 1214 1106">Showing Statistical data: presentation of statistical data, frequency for distributions, frequency for distributions, frequency for accumulated distributions, graphic representation of the frequency distributions and forms.</td> <td data-bbox="1214 958 1294 1106">3</td> <td data-bbox="1294 958 1406 1106">9</td> <td data-bbox="1406 958 1497 1106">20.4</td> </tr> <tr> <td data-bbox="480 1106 1214 1155">Mid-term exam1 + feedback</td> <td data-bbox="1214 1106 1294 1155">1</td> <td data-bbox="1294 1106 1406 1155">2</td> <td data-bbox="1406 1106 1497 1155">4.5</td> </tr> <tr> <td data-bbox="480 1155 1214 1368">Measures of central tendency (arithmetic mean, and the geometric mean, token,) some of the advantages and disadvantages of previous measurements, the relationship between the center, token and mean), measures of dispersion, Chebyshev theorem, skewness and kurtosis measures</td> <td data-bbox="1214 1155 1294 1368">4</td> <td data-bbox="1294 1155 1406 1368">12</td> <td data-bbox="1406 1155 1497 1368">27.6</td> </tr> <tr> <td data-bbox="480 1368 1214 1417">Mid-term exam2 + feedback</td> <td data-bbox="1214 1368 1294 1417">1</td> <td data-bbox="1294 1368 1406 1417">2</td> <td data-bbox="1406 1368 1497 1417">4.5</td> </tr> <tr> <td data-bbox="480 1417 1214 1599">Probabilities: a randomized trial, the definition of probability, independence, probability distribution function, mathematical expectation. Some Discrete Probability distributions (intermittent regular distribution, binomial distribution.</td> <td data-bbox="1214 1417 1294 1599">3</td> <td data-bbox="1294 1417 1406 1599">10</td> <td data-bbox="1406 1417 1497 1599">22.6</td> </tr> <tr> <td data-bbox="480 1599 1214 1682">Percentage, rate, mortality statistics, diseases and fertility.</td> <td data-bbox="1214 1599 1294 1682">1</td> <td data-bbox="1294 1599 1406 1682">3</td> <td data-bbox="1406 1599 1497 1682">6.8</td> </tr> </tbody> </table> <p>The description should clearly indicate the weighting of the content and the level.</p>	List of Topics	No. of Weeks	Contact Hours	%	Brief about the statistics; definition of Biometry, society, the sample, statistical data and collection sources.	2	6	13.6	Showing Statistical data: presentation of statistical data, frequency for distributions, frequency for distributions, frequency for accumulated distributions, graphic representation of the frequency distributions and forms.	3	9	20.4	Mid-term exam1 + feedback	1	2	4.5	Measures of central tendency (arithmetic mean, and the geometric mean, token,) some of the advantages and disadvantages of previous measurements, the relationship between the center, token and mean), measures of dispersion, Chebyshev theorem, skewness and kurtosis measures	4	12	27.6	Mid-term exam2 + feedback	1	2	4.5	Probabilities: a randomized trial, the definition of probability, independence, probability distribution function, mathematical expectation. Some Discrete Probability distributions (intermittent regular distribution, binomial distribution.	3	10	22.6	Percentage, rate, mortality statistics, diseases and fertility.	1	3	6.8
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Probabilities: a randomized trial, the definition of probability, independence, probability distribution function, mathematical expectation. Some Discrete Probability distributions (intermittent regular distribution, binomial distribution.	3	10	22.6																														
Percentage, rate, mortality statistics, diseases and fertility.	1	3	6.8																														
<p>Study and examination requirements and forms of examination</p>	<p>30 degrees for two Midterm exams</p> <p>10 degrees for assignments, Class work and reseach</p> <p>60 degrees for final theoretical Exam</p>																																

Media employed	<i>classroom provided with smartboard , computer , internet connection and enough seats</i>
Reading list	<ul style="list-style-type: none">- <i>Introduction to Statistics, Mohamed Sobhi Abu Saleh, Adnan Awad</i>- <i>Principles of Statistics, Dr. Ibrahim Saeed Aqel</i>- <i>Principles of statistics and probability, Adnan Majid Berri, Mahmoud Mohammed Hindi, Anwar Ahmed Abdullah</i>

Module name:	General Genetics				
Module level, if applicable	4 th				
Code, if applicable	BOT 223				
Subtitle, if applicable	NONE				
Courses, if applicable	none				
Semester(s) in which the module is taught	2 nd				
Person responsible for the module	Dr. Amira Elmaghawry				
Lecturer	Dr. Amira Elmaghawry				
Language	Arabic				
Relation to curriculum	compulsory				
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:25 students</p>				
Workload	Total-contact hours	Self-study	Discussion	Total workload	
	58	55	15	128	
Credit points	4.4 ECTS-3 KSA				
Requirements according to the examination regulations	Absence not exceed 25% (attendance at least 75%)				
Recommended prerequisites	BIO 123				

<p>Module objectives/intended learning outcomes</p>	<ul style="list-style-type: none"> - Knowledge: - <i>On completing this course, students will be able to:</i> - <i>Explain the chemical structure of the DNA and its replication</i> - <i>Apply Mendel's laws of inheritance on the basis of genetic traits in different organisms.</i> - Cognitive Skills - <i>Design the Family pedigree for some diseases in human</i> - <i>Compare between dominance types and gene interaction</i> - Interpersonal Skills & Responsibility - <i>Explore recent information related to genetics</i> - Communication, Information Technology, Numerical - <i>Able to introduce a presentation in front of others</i> - <i>Interest in e-learning system and its different activities</i> - Psychomotor - <i>Innovate in the use of models to explain the genetic concepts</i> 																																																
<p>Content</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #00838f; color: white;"> <th style="text-align: center;">List of Topics</th> <th style="text-align: center;">No. of Weeks</th> <th style="text-align: center;">Contact Hours</th> <th style="text-align: center;">%</th> </tr> </thead> <tbody> <tr> <td>Mendel's Genetics: Laws, segregation</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> <td style="text-align: center;">15.39</td> </tr> <tr> <td>Gene interaction and epistasis</td> <td style="text-align: center;">1</td> <td style="text-align: center;">4</td> <td style="text-align: center;">7.69</td> </tr> <tr> <td>Dominance, lethal; semi lethal genes</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> <td style="text-align: center;">15.39</td> </tr> <tr> <td>Mid-term exam1+ feedback</td> <td style="text-align: center;">1</td> <td style="text-align: center;">3</td> <td></td> </tr> <tr> <td>Multiple alleles, pseudoalleles and the multiple effects of the gene</td> <td style="text-align: center;">1</td> <td style="text-align: center;">4</td> <td style="text-align: center;">7.69</td> </tr> <tr> <td>sex determination, sex related characters inheritance</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> <td style="text-align: center;">15.39</td> </tr> <tr> <td>Linkage, crossing over and the genetic map</td> <td style="text-align: center;">1</td> <td style="text-align: center;">4</td> <td style="text-align: center;">7.69</td> </tr> <tr> <td>Mid-term exam 2+ feedback</td> <td style="text-align: center;">1</td> <td style="text-align: center;">3</td> <td></td> </tr> <tr> <td>Family pedigree and some simple genetic diseases in human</td> <td style="text-align: center;">1</td> <td style="text-align: center;">4</td> <td style="text-align: center;">7.69</td> </tr> <tr> <td>Chemical composition of the genetic material</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> <td style="text-align: center;">15.39</td> </tr> <tr> <td>Extranuclear genetics</td> <td style="text-align: center;">1</td> <td style="text-align: center;">4</td> <td style="text-align: center;">7.69</td> </tr> </tbody> </table>	List of Topics	No. of Weeks	Contact Hours	%	Mendel's Genetics: Laws, segregation	2	8	15.39	Gene interaction and epistasis	1	4	7.69	Dominance, lethal; semi lethal genes	2	8	15.39	Mid-term exam1+ feedback	1	3		Multiple alleles, pseudoalleles and the multiple effects of the gene	1	4	7.69	sex determination, sex related characters inheritance	2	8	15.39	Linkage, crossing over and the genetic map	1	4	7.69	Mid-term exam 2+ feedback	1	3		Family pedigree and some simple genetic diseases in human	1	4	7.69	Chemical composition of the genetic material	2	8	15.39	Extranuclear genetics	1	4	7.69
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Study and examination requirements and forms of examination	<p><i>1st mid-term Exam</i> <i>6th week 10 marks</i></p> <p><i>2nd mid-term Exam</i> <i>11th week 10 marks</i></p> <p><i>Reports+ assignments+ oral questions + e-learning</i> <i>10 marks</i></p> <p><i>Final practical</i> <i>16th week 20 marks</i></p> <p><i>Final theoretical</i> <i>16- 19th week 50 marks</i></p>
Media employed	<p><i>classroom provided with smartboard , computer , internet connection and enough seats.Lab provided with the required devices.</i></p>
Reading list	<ul style="list-style-type: none"> <i>•Principals of genetics, El-Seehy(2012), Dar El-Gameayin, Alex., Egypt.</i> <i>•Principals of genetics, El-Seehy,(2012) Dar El-Gameayin, Alex., Egypt.</i> <i>•Principals of genetics, Fawzy; et al., (2006) El-Shanhoby Library, Egypt.</i> <i>•Basics of genetics, Tantawy, A. (1976) National Library, Egypt.</i>