جامعة المجمعة
Majmaah University

Institution:	..... College of Education.....
Academic Department :	.....Biology.....
Programme :	.....Biology.....
Course :	.....Bacteriology.....
Course Coordinator :	.....Dr Enas Shaban Ahmed.....
Programme Coordinator :	.....Dr Mona Makkeia.....
Course Specification Approved Date :	30/ 11/ 1433 H

Course Specifications

Muharram 1437 H

A. Course Identification and General Information

1 - Course title : Bacteriology.	Course Code: ..BOT 222
2. Credit hours : 3 Hours (2 h lecturer + 2 h practical)	
3 - Program(s) in which the course is offered:	Biology.
4 – Course Language : ..... Arabic.	
5 - Name of faculty member responsible for the course:	Dr Enas Shaban Ahmed.
6 - Level/year at which this course is offered :	Fourth level
7 - Pre-requisites for this course (if any) : • .....BIO 123.....	
8 - Co-requisites for this course (if any) :	

- .....Not required.....

9 - Location if not on main campus :

(.....)

10 - Mode of Instruction (mark all that apply)

A - Traditional classroom		What percentage?	…50 %
B - Blended (traditional and online)		What percentage?	10 %
D - e-learning		What percentage?	…10%
E - Correspondence		What percentage?	……. %
F - Other	lab	What percentage?	30 %

Comments :

.....

B Objectives

What is the main purpose for this course?

1- Define the terminology of Bacteriology, relate the identification of parts of bacterial cell to their significant functions.
2- Classified bacterial groups depending on the chemical and physical factors.
3- Know how to prepare culture media to isolation and purification of bacteria and detection the bacterial movement.
4- Discuss the development and evolution in the field of Bacteriology and assess the roles performed by bacteria in environment.

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

1- Take advantage of the Web sites associated with the topics scheduled.
2- Use of Power point in teaching.
3- Use the Internet to update course content.
4- Spare more working hours on e-learning, where some lectures and short exams will be delivered online.
5- Work on the exchange of experiences between the university and scientific centers of the relevant.

C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
1- Introduction to Microbiology science + prokaryotic and eukaryotic cells and different shapes of bacteria.	1	2
2- Cell structure (external structure , cytoplasmic organelles, composition and function of bacterial structures) .	2	4
3- Bacterial motility in diverse bacterial model systems.	2	4
Mid-term Exam1+Feedback	1	1
4- Chemical basis for interaction with the pigments of bacteria and assortment of bacteria on the basis of these pigments. .	2	4
5- Bacterial growth and factors affecting growth curve - methods of estimating growth	2	4
Mid-term Exam2+Feedback	1	1
6- Reproduction of bacteria (sexual and asexual reproduction).	1	2
8- Metabolism (hydrolyzed starch, hydrolyzed cellulose, hydrolyzed gelatin, hydrolyzed casein,		

Alooxidz production, the production of catalase, nitrate reductase)	2	4
9- Bacterial genetics 10- bacterial genera and species -basis of classification	1	2
practical part		
1- Laboratory safety guidance – sterilization and disinfection for microbiology	1	2
2- Composition of culture media (natural and artificial culture media.	1	2
3- Isolation bacteria from nature (water, milk, soil, etc.)	2	4
4- Cultivation of bacteria and dilutions work to get a pure colonies of bacteria	1	2
5- Study bacterial colony shapes and study bacterial morphology (stain bacteria with different stain- examine bacteria by an oil immersion microscope lens)	4	8
6- Study bacterial movement.	1	2
7- metabolic activities (hydrolyzed starch, hydrolyzed cellulose, hydrolyzed gelatin, hydrolyzed casein, Alooxidz production, the production of catalase, nitrate reductase)	4	8
8- General Review	1	2

2. Course components (total contact hours and credits per semester):

	Credit	Contact - Hours			Self-Study	Other	Total
		Lecture	Laboratory	Practical			
NCAAA	3 ch	28	30	-	-	-	58
ECTS	4.4 cp	28	30	-	53	18	129

3. Additional private study/learning hours expected for students per week.

3 hours

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

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1.1	Familiar with the basics of microbiology and science branching from it.	Brain storming and E-learning	Study papers Written tests discussions
1.2.1	Describes the bacterial cell structure and organelles	Problem solving and discussions	Study papers Written tests discussions
2.0	Cognitive Skills		
2.1.1	Distinguish between and Moving bacteria	Problem solving and discussions E- learning	Worksheets reports Note Research papers written tests and discussions

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
2.2.1	comparing the different types of bacteria in terms of the look and usability of the different pigments group discussion	Problem solving and discussions E- learning.	Worksheets reports Note Research papers written tests Discussions
3.0	Interpersonal Skills & Responsibility		
3.2.1	Interact collective discussion and take responsibility for self-learning.	Problem solving using internet- E- learning	Notes Presentations Practical tests
4.0	Communication, Information Technology, Numerical		
4.1.1	Use modern techniques to search for the required references for work duties	Problem solving using internet.	Notes Presentations Practical tests
5.0	Psychomotor		
5.1.1	Apply different experiments related to the course and present short report.	Lab strategies	Practical testes and reports

5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	First term exam	6th week	10%
2	Second term exam	11th week	. 10%
3	Home work activities	During semester	10%
4	Practical exam	16th week	20%
5	Final exam	17-19th week	60%

D. Student Academic Counseling and Support

Dr Enas Shaban Ahmed

E.mail: es.ahmed@mu.edu.sa

office hours : 6

Acadimic counseling and support : 4 hours

E. Learning Resources

1. List Required Textbooks :

- Shukri and Mehdi (1998) Principles of bacteria and plant diseases Valletta Malta
- Mashni and Joseph (1990) Microbiology (Part I) future Jordan House
- Ibrahim Yusuf (2001) Agricultural Microbiology King Saud University, Riyadh
- Recep honest and son (1995) practical experiences in the foundations of Microbiology King Saud University, Riyadh
- Dean Anderson (1992), laboratory exercises in the science of Microbiology University of Omar Mukhtar Libya ....

2. List Essential References Materials :

- Abou El Dahab et al. (1997) bacteria Part I Egypt Knowledge House
- Abou El Dahab et al. (1984) exercises the basic practical knowledge Egypt Dar

3. List Recommended Textbooks and Reference Material :

- Bergey's Manual of systematic Bacteriology (2010) David Hendricks Bergey, Noel R. Krieg, John G. Holt . ISBN 0683090615, 9780683090611
- Textbook of Microbiology (2007) R. Vasanthakumar, BL Publication Pvt Ltd New Delhi.
- .....

4. List Electronic Materials :

- Online Toda's Bacteriology
- -http://www.attra.org/taxonomy
- http://www.ipm.uiuc.edu/taxonomy/

5. Other learning material :

- Data show and power point
- E- learning D2L
- .....

F. Facilities Required

1. Accommodation
   - buildings (lecture halls, laboratories, the ...
   - 50 fixed seat hall
   - Microbiology Laboratory (special lab for bacteria

2. Computing resources
   - a fixed Hall of teaching computer connected smart Balsborh and projectors available.
   - .....
   - .....

3. Other resources
   - isolation room
   - Autoclave – oven – incubator
   - 4 sterilization Mechanical Equipment (Seitz filter, cellulose filter)
   - monitors labs- Petri dishes
   - pigments variety- centrifuges
   - PH meter – glasses for lab- microscopes

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching: • The distribution of questionnaires given to students from decision with multiple axes school • Analysis of scores of students in the tests statistically and interpreted. • The number of posts the students during the explanation is an indication of the effectiveness of teaching
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor : • Through model Course Evaluation • Annual reports prepared by the Management Section
3 Processes for Improvement of Teaching : • The application of modern technologies in education • e-learning D2l • to benefit from the expertise of accredited colleges debate
4. Processes for Verifying Standards of Student Achievement • Review papers that have been corrected by the professor scheduled and another member of the section • Review a sample of pamphlets answered by an external member
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement : • Regular meeting of the members of the teaching staff based on the course to enhance the strengths and address weaknesses • Taking views of students about the scheduled topics and teaching methods available through objective questionnaires • Review study plans and developed according to modern data • Course evaluation through questionnaires

Course Specification Approved

Department Official Meeting No (6) Date 30 / 11 / 14 *H*

Course's Coordinator		Department Head	
Name :	Dr Enas Shaban Ahmed	*Name* :	Dr Mona Makkeia
Signature :	.....	*Signature* :	.....
Date :	12/ 4 / 1437 *H*	*Date* :	…./ … / …… *H*

Institution:	Education in Majmaah
Academic Department :	Biology
Programme :	Biology
Course :	Biochemistry
Course Coordinator :	A. Wafa Al-Mansi
Programme Coordinator :	D. Mona Makiya
Course Specification Approved Date :	٣٠/ ١١ / ١٤٣٣ H

A. Course Identification and General Information

1 - Course title : Biochemistry	Course Code: CHEM 202
2. Credit hours : 3(2 theoretical +1practical)	
3 - Program(s) in which the course is offered: Biology	
4 – Course Language : Arabic	
5 - Name of faculty member responsible for the course: A. Wafa Al-Mansi	
6 - Level/year at which this course is offered : Forth	
7 - Pre-requisites for this course (if any) : • None	
8 - Co-requisites for this course (if any) : • None	
9 - Location if not on main campus : (Not applicable)	

10 - Mode of Instruction (mark all that apply)

A - Traditional classroom	✓	What percentage?	60 %
B - Blended (traditional and online)	✓	What percentage?	10 %
D - e-learning		What percentage?	..... %
E - Correspondence		What percentage?	..... %
F - Other	✓	What percentage?	30 %

Comments :

.....

B Objectives

What is the main purpose for this course?

Teach students the basics of biochemistry related to the chemical composition and methods of description and methods of partition for both of carbohydrates, proteins and lipids and the most important biochemical reactions, the study also includes the importance of vitamins in this biochemical reactions in addition to the study of the general properties of enzymes and nucleic acids, hormones.

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

Briefly describe any plans to be implemented to develop and improve the course,

- Approval of interactive teaching method by smart blackboard and PowerPoint presentations.
- Approval of interactive assessment method via academic page for Professors.
- Approval of the method seminars and interactive education with students.
- Approval of self-learning to search for some vocabulary in information sources and sites of scientific research related to the content of the textbook.

- Updated vocabulary regularly.
- Sharing experiences with more experienced colleagues.

C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Carbohydrates	2	4
Fats and oils	2	4
Proteins	2	4
Mid-term exam1+feedback	1	2
Enzymes	2	4
Hormones	2	4
Mid-term exam2+feedback	1	2
Nucleic acids	2	2
Vitamins A comprehensive review of textbook	1	2
Test list (practical part)		
Carbohydrates: 1. Solubility test. 2. Molesh test (General) 3. shorthand tests (test Benedict, Vhlnj test, Tulane test) Barvojed test to distinguish between monosaccharaides and shorthand bilateral sugars	2	4
4. formation Aloozazon test 5. Silvanov test for ketone mono sugars. 6. Iodine test for polysaccharides.	2	4
Comprehensive review of the tests for carbohydrates	1	2
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.	2	4
3. Saponification test. 4. fatty patch test	1	2
A comprehensive review for oils and fats tests	1	2
Amino acids and proteins: 1- Ninhydrin test 2. Xanthoproteic test 3- Sakaguch test for a group of proteins in guanidine. Degree of solubility of protein.	2	4
4- Biuret test (in proteins). 5. Detection of sulfur in protein 6. Deposition of proteins salts in heavy metals. Deposition of proteins with Alkaloids test	2	4

A comprehensive review of proteins tests	1	2
Detection of the unknown	1	2

2. Course components (total contact hours and credits per semester):

	Credit	Contact Hours			Self-Study	Other	Total
		Lecture	Laboratory	Practical			
NCAAA	3 ch	28	30	-	-	-	58
ECTS	4.2 cp	28	30	-	55	14	127

3. Additional private study/learning hours expected for students per week.

3 hours

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

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1.1	Interpretation of the chemical structure of the items sugars, proteins, lipids, nucleic acids, vitamins and hormones	Lecture	Written tests
1.2.1	Explains the general properties of enzymes as catalysts	Lecture and brainstorming	Evaluation of research activities and duties
2.0	**Cognitive Skills**		
2.1.1	analyzes the compounds and distinguish between them	lecture	written test
3.0	**Interpersonal Skills & Responsibility**		
3.4.1	Show a trend towards self-education and take responsibility	Brainstorming	Evaluation of seminars
4.0	**Communication, Information Technology, Numerical**		
4.2.1	Mastered the use of information technology in research and survey	Write a short scientific research using computer	Evaluating written research
4.3.1	Mastered the conducting of statistical processes using specialized programs	Homework and arrange individual Presentations and discussed	Evaluation of homework and presentations

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
		collectively	
5.0	Psychomotor		
5.1.1	Conducted efficiently biochemical tests using the tools and raw materials and laboratory devices	Work in small groups	Measure the steps of work test

5. Schedule of Assessment Tasks for Students during the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	Reports, scientific duties and research activities - verbal question	Weekly	%١٠
2	1st mid-term theoretical exam	7th week	%١٠
3	2nd mid-term theoretical exam	12-11th week	%١٠
4	Final practical exam	16th	%٢٠
5	Final Exam	17th -19th	%٥٠

D. Student Academic Counseling and Support

Email: w.almansi@mu.edu.sa

Office hours: 8 hours

E. Learning Resources

1. List Required Textbooks :

o Biochemistry Dr. Fared Shukri. Dr. Dalia Fouad Mohamed, 2007. Third Edition. Al-Roshod Library. Riyadh

2. List Essential References Materials :

- Biochemistry (synthetic Biochemistry and Physiological Biochemistry), Dr. Abdel-Rahman Ahmed Al-Hamalawy, Dar Al-Qalam, Kuwait, third edition.

3. List Recommended Textbooks and Reference Material :

1-Biochemistry by Donald Voet and Judith G.Voet (Last edition)John Wiely &Sons Inc. (New York ,

Chichester ,Toronto , Singapore)

2- Biochemistry by Lubert Stryer (Last edition)W.H.Freeman and Company (New York)

3-Principles of Biochemistry by Albert L.Lehninger, David L. Nelson & Michael M.Cox (Last edition) Worth Publishers (New York).

4. List Electronic Materials :

- Internet sites with topic relevant to the textbook.

5. Other learning material :

- Software application in the chemistry field.
- Microsoft Office programs (software).

F. Facilities Required

1. Accommodation

- Facilities equipped with a sufficient number of chairs for students with an interactive system and e-learning.
  Chemistry laboratory equipped with all glassware and laboratory furniture
  Library equipped with modern references

2. Computing resources

- Computer for professor

3. Other resources

- Water bath - PH-meter - electric heater - delicate balance - Electric Dryer -Equipment distillation - metal holder – glassware with different sizes - chemical reagents and solvents

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Give a questionnaire to the students to evaluate the Textbook at the end of the semester

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :

- Evaluation of the colleagues in the department to perform of a faculty member in the assessment of the textbook and the effectiveness of the tools that used to presenting.
- Internal periodic review to the textbook.
- Self-evaluation of the program.
- Annual performance report prepared by the head of the department.

3 Processes for Improvement of Teaching :

- Apply of e-learning

- Apply of new technologies
- Information technology in teaching
- Taking the recommendations of the review outcome to the textbook.
- Taking the recommendations of the relevant committee of quality unit about the textbook.
- under the guidance of department head about the performance of a faculty member based on direct observations

4. Processes for Verifying Standards of Student Achievement

- Review all the papers that have been corrected by the professor / department head / special committee according to what was decided by department management when needed at the end of each semester

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

- Hold regular meetings for faculty members to the scientific material
- The scientific material compared with similar scientific materials in a similar section
- Update of learning resources for scientific material to keep abreast of developments in the same field
- The results of the statistical report with evaluating the scientific material

Course Specification Approved
Department Official Meeting No (6) Date 30 / 11 / 1435 *H*

Course's Coordinator		Department Head	
Name :	A. Wafa Al-Mansi	***Name :***	D. Mona Makiya
Signature :	.....	***Signature :***	.....
Date :	7/ 4 / 1437 *H*	***Date :***	7/ 4 / 1437 H

Institution:	Education in Majmaah
Academic Department :	Biology
Programme :	Biology
Course :	Biostatistics
Course Coordinator :	A. Wafaa Al-Mansi
Programme Coordinator :	D. Mona Makkia
Course Specification Approved Date :	٣٠/ ١١ / ١٤٣٣ H

A. Course Identification and General Information

1 - Course title : Biostatistics	Course Code: STAT 101
2. Credit hours : (2)	
3 - Program(s) in which the course is offered: Biology	
4 – Course Language : Arabic	
5 - Name of faculty member responsible for the course: A. Wafaa Al-Mansi	
6 - Level/year at which this course is offered : Forth	
7 - Pre-requisites for this course (if any) : • None	
8 - Co-requisites for this course (if any) : • None	
9 - Location if not on main campus : (Not applicable)	

10 - Mode of Instruction (mark all that apply)

A - Traditional classroom	✓	What percentage?	50 %
B - Blended (traditional and online)	✓	What percentage?	30 %
D - e-learning		What percentage?	..... %
E - Correspondence		What percentage?	..... %
F - Other	✓	What percentage?	20 %

Comments :

.....

B Objectives

What is the main purpose for this course?

The student recognize the Biometry, and mention the types of fixed or changed characteristics which include descriptive or quantitative characteristics, measures of central tendency, and measures of dispersion, the basic rules of probability, distribution with two models and natural distribution, and the degree of confidence of the average and median, various statistical tests.

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

Briefly describe any plans to be implemented to develop and improve the course,

- Use Computer in the education, use electronic books
- Training the students on SPSS program.

C. Course Description

1. Topics to be Covered (Theortical+Practical)

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
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
Mid-term exam1 + feedback	1	2
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
Mid-term exam2 + feedback	1	2
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
Percentage, rate, mortality statistics, diseases and fertility.	1	3

2. Course components (total contact hours and credits per semester):

	Credit	Contact Hours			Self-Study	Other	Total
		Lecture	Laboratory	Practical			
NCAAA	2 ch	14		30	-	-	44
ECTS	3.7 cp	14		30	50	15	109

3. Additional private study/learning hours expected for students per week.

2.6 hours

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

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1.1	Review the different ways to collect, display and data analysis	Demo	Duties
1.2.1	The student describes the random experience, probability, independence, probability distribution function, mathematical expectation. Some Discrete Probability Distributions	Brainstorming	Tests

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
2.0	**Cognitive Skills**		
2.1.1	Assess the importance of statistics and its relation to biology	lecture	written test
3.0	**Interpersonal Skills & Responsibility**		
3.2.1	Participate in group activities with colleagues.	Dialogue and discussion	Assess the verbal discussions in seminars
3.3.1	Show a trend towards self-education and responsibility	Brainstorming	Evaluation of seminars
4.0	**Communication, Information Technology, Numerical**		
4.2.1	Mastered the use of information technology in research and survey	Write a short scientific research using computer	Evaluating written research
4.3.1	Mastered the conducting of statistical processes using specialized programs	Homework and arrange individual Presentations and discussed collectively	Evaluation of homework and presentations
5.0	**Psychomotor**		

5. Schedule of Assessment Tasks for Students during the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	1st mid-term exam	The 6th week	15
2	2nd mid-term exam	The 11th week	15
3	Duties by providing an electronic copy within a maximum two days before the lecture.	Weekly	5
4	Attendance and participation	Weekly	5
5	Final Exam	17th -19th week	60

D. Student Academic Counseling and Support

Email: w.almansi@mu.edu.sa

E. Learning Resources

1. List Required Textbooks : • Introduction to Statistics, Mohamed Sobhi Abu Saleh, Adnan Awad
2. List Essential References Materials : • Principles of Statistics, Dr. Ibrahim Saeed Aqel • Principles of statistics and probability, Adnan Majid Berri, Mahmoud Mohammed Hindi, Anwar Ahmed Abdullah
3. List Recommended Textbooks and Reference Material : • Introductory Biostatistics for health Science ,Chernick & Friser 2000 • Presenting Medical Statistics Janet & Peacock 2006
4. List Electronic Materials : • http://en.wikipedia.org/wiki/Biostatistics
5. Other learning material : • **SPSS**

F. Facilities Required

1. Accommodation • lecture hall
2. Computing resources • Computer for faculty member
3. Other resources • None

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching: • Give a questionnaire to the students to evaluate the Textbook at the end of the semester
2 Other Strategies for Evaluation of Teaching by the Program/Department

Instructor :

- Evaluation of the colleagues in the department to perform of a faculty member in the assessment of the textbook and the effectiveness of the tools that used to presenting.
- Internal periodic review to the textbook.
- Self-evaluation of the program.
- Annual performance report prepared by the head of the department.

3 Processes for Improvement of Teaching :

- Apply of e-learning
- Apply of new technologies
- Information technology in teaching
- Taking the recommendations of the review outcome to the textbook.
- Taking the recommendations of the relevant committee of quality unit about the textbook.
- under the guidance of department head about the performance of a faculty member based on direct observations

4. Processes for Verifying Standards of Student Achievement

- Review all the papers that have been corrected by the professor / department head / special committee according to what was decided by department management when needed at the end of each semester

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

- Hold regular meetings for faculty members to the scientific material
- The scientific material compared with similar scientific materials in a similar section
- Update of learning resources for scientific material to keep abreast of developments in the same field
- The results of the statistical report with evaluating the scientific material

Course Specification Approved
Department Official Meeting No (6) Date 30 / 11 / 1435 *H*

Course's Coordinator		Department Head	
Name :	B. Wafa Al-Mansi	***Name :***	D. Mona Makkia
Signature :	.....	***Signature :***	.....
Date :	12/ 4 / 1437 *H*	***Date :***	/ / H

Institution:	College of Education.
Academic Department :	Biology Department
Programme :	Biology Program
Course :	Arthropoda , Mollusca and Echinodermata (ZOO221)
Course Coordinator :	Prof. Dr. Hala Ali Abd- El Salam Saleh
Programme Coordinator :	Dr. Mona bdul Latif Makkie
Course Specification Approved Date :	30/ 11 / 1433 H

A. Course Identification and General Information

. 1 - Course title : Arthropoda , Mollusca and Echinodermata	Course Code: ZOO221
2. Credit hours : 3 hrs (2 th + 1 P)	
3 - Program(s) in which the course is offered: Biology Program	
4 – Course Language : Arabic language	
. 5 - Name of faculty member responsible for the course: Prof. Dr. Hala Ali ABD-El Salam Saleh.	
. 6 - Level/year at which this course is offered : Fourth level	
7 - Pre-requisites for this course (if any) : • ZOO 121	
8 - Co-requisites for this course (if any) : • ZOO 311	
9 - Location if not on main campus : (-)	

10 - Mode of Instruction (mark all that apply)

A - Traditional classroom	✓	What percentage?	60 %
B - Blended (traditional and online)	✓	What percentage?	-
D - e-learning	✓	What percentage?	10%
E - Correspondence	-	What percentage?	-
F - Other	✓	What percentage?	30 %

Comments :

Other : includes teaching the practical part, which deals with practical lessons and the application the theoretical part.

B Objectives

What is the main purpose for this course?

The student recognizes the characteristics of members of arthropods, mollusks and echinodermates including their classification, general characters , morphology and internal anatomy.

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

Updating the course materials based on the latest developments in the field of specialization for example(updating the course presentation, pictures, videos and lab.

C. Course Description

1. Topics to be Covered (Theoretical+ Practical)

List of Topics	No. of Weeks	Contact Hours
Location of arthopods in animal kingdom, general characters, taxonomy, studying characters of each class, Trilobita, taxonomy of myriapoda animals including their moropholgy and internal antomy	2	8
Study morphology of shrimp , different appendages and internal anatomy include the "life-cycle	2	8
Study of some models of crustaceans with their classification such as *Daphina*, crabs & hermit crabs	1	4
Study of some models of crustaceans with their classification *Cypris Lepas* and *Balanus*	1	4
Mid-term1+ Feedback	1	3
Study of some models of crustaceans with their classification of some parasitic arthropods such as ticks and mites	1	4
Taxonomical, anatomical and physiological study included morphology and internal structures of spider and scorpion	1	4
General characteristics of the Phylum Mollusca Taxonomical, anatomical and physiological study on Chition	1	4
Mid-term 2+ Feedback	1	3
Taxonomical, anatomical and physiological study on desert snails, fresh and marine calms and cuttlefish	2	8
General characteristics of the Phylum Echinodermata	1	4
Taxonomical, anatomical and physiological study on *Astropecten*, *Ophicoma*, *Holothuria*	1	4

2. Course components (total contact hours and credits per semester):

	Credit	Contact Hours			Self-Study	Others	Total
		Lecture	Laboratory	Practical			
NCAAA	3 ch	28	30	-	-	-	58
ECTS	4.2 cp	28	30	-	46	20	124

3. Additional private study/learning hours expected for students per week.

2hours

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

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1.1	Recognize an integrated and comprehensive on the characteristics and		

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
	classification of the members of arthropods and mollusks and echinoderms	Lectures	-Homework -Written Exams
2.0	**Cognitive Skills**		
2.1.1	Compare between different classes of each phylum with examples of animals of each class	-Lectures -Brain storm - e-learning	-Written Exams - Assessment questions (Homework)
2.2.1	Explain the mechanism of respiration, digestion, excretion and other biological processes in arthropods, mollusks and echinodermates	-Lectures - e-learning	-Exams - Homework
2.3.1	Illustrate the relationship among members of arthropods, mollusks and echinodermates	-Brain storm - Lectures -Class discussion	Written Exams
3.0	**Interpersonal Skills & Responsibility**		
3.2.1	Participate effectively in team during preparation of collective researche papers or presentations	Cooperative learning	Research Papers
4.0	**Communication, Information Technology, Numerical**		
4.2.1	Demonstrate the Preparation of research paper and presentation with reaching to useful sites on the Internet to increase knowledge of the contents of the course	Self-education	Evaluation of presentation and research papers
5.0	**Psychomotor**		
5.1.1	Dissect one of arthropod animals(shrimp) with the identification of internal systems and examination of practical models.	Lab strategy	-Practical exam - lab. reports.

5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	1st Mid-term exam	7th week	10%
2	2nd Mid-term exam	11 th week	10%
3	Activities (assignment, homework, reports, continuous evaluation in lab through lab reports)	During the semester.	10%
4	Practical exam	16th week	20%

5	Final theoretical exam	17-19 th week	50%

D. Student Academic Counseling and Support

- Email : hala.ali2010@yahoo; h.saleh.mu.edu.sa
- There will be a schedule for office hours of each staff declared to the students.
- Private electronic gate teaching university site staff
- E- learning gate.

E. Learning Resources

1. List Required Textbooks :

- Mohammed Hassan Al-Hamoud(2007): Biology of invertebrates
- . Mahmoud, Abdul Aziz Abdul Rahman and Mahmoud El-Borai(2008): Invertebrates

2. List Essential References Materials :

- Mahmoud, Abdul Aziz Abdul Rahman and Mahmoud El-Borai(2008): Invertebrates

3. List Recommended Textbooks and Reference Material :

- Ruppert,Edward,E. and Robert,D., Barnes, 1994: Invertebrates zoology, 6th ed. Stunders College publishing.
- German Egyptian Society Journal of invertebrates

4. List Electronic Materials :

- http://en.wikipedia.org/wiki Invertebrates
- http://en.wikipedia.org/wiki Arthropoda ; Mollusca;Echinodermata
- Encycopedia- Arthropoda ; Mollusca;Echinodermata

5. Other learning material :

computer-based programs/CD, professional standards or regulations and software

F. Facilities Required

1. Accommodation

- The number of seats in classrooms and lab. is suitable and no need for extra seats.
- 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 and other laboratory requirements

2. Computing resources

- The classrooms provided with smart board and e-podium and laboratories provided with smart board.

3. Other resources

- The lab. is in need to complete set of laboratory requirements

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Questionnaire to measure student achievement in decision
- Questionnaire to measure the quality of scientific references

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :

- Evaluating faculty member by students through the questionnaire.
- Evaluation of the course by students through the distribution of questionnaires at the end of the semester

3 Processes for Improvement of Teaching :

- The provision of modern scientific references and scientific journals the library.
- Provide access to the Internet for students Library.
- Programs and training sessions for faculty members outside official working hours.
- ensuring Saving facilities and laboratory supplies required for the course

4. Processes for Verifying Standards of Student Achievement

- Check marking by an independent member
- Forming exam committee from the department members to review the course exam

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

- Regular meetings between students for the positive and negative aspects
- Determine the strengths and weaknesses to overcome disadvantages
- Review and study plans
- The opinions of students and accept constructive criticism.

Course Specification Approved
Department Official Meeting No (6) Date 30 / 11 /1433 *H*

Course's Coordinator		Department Head	
Name :	Hala Ali Saleh	***Name :***	Mona Makkie
Signature :	Hala Ali	***Signature :***	Mona Makkie.
Date :	12./ 4 / 1437 *H*	***Date :***	12./ 4 / 1437 *H*

Institution:	Majmaah University
Academic Department :	Biology
Programme :	Biology
Course :	General Genetics
Course Coordinator :	Dr. Amira Elmaghawry
Programme Coordinator :	Dr. Mona Makkie

Course Specification Approved Date :	30/ 11 / 1430 H

A. Course Identification and General Information

1 - Course title :	General Genetics — Course Code: BOT 223
2. Credit hours :	(3)
3 - Program(s) in which the course is offered:	Biology
4 – Course Language :	Arabic
5 - Name of faculty member responsible for the course:	Dr. Amira Elmaghawry
6 - Level/year at which this course is offered :	Fourth

7 - Pre-requisites for this course (if any) :

- **BIO 123**

8 - Co-requisites for this course (if any) :

- .....

9 - Location if not on main campus **:**

(.....)

10 - Mode of Instruction (mark all that apply)

A - Traditional classroom	√	What percentage?	**60 %**
B - Blended (traditional and online)		What percentage?	**……. %**
D - e-learning	√	What percentage?	**10 %**
E - Correspondence		What percentage?	**……. %**
F – practical Lectures	√	What percentage?	**30 %**

Comments :

.....

B Objectives

What is the main purpose for this course?

Study the factors and genetic traits and how to transition from generation to generation and study of the foundations and the laws that explain genetic phenomena and give students a functional perspective of genetic material, in addition to supplying them with a simplified explanation of the basis for and the laws of genetics.

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

Provide the course topics with the recent research results and use of the e-learning for more students interaction

C. Course Description

1. Topics to be Covered (Theoretical+ Practical)

List of Topics	No. of Weeks	Contact Hours
Mendel's Genetics: Laws, segregation	2	8
Gene interaction and epistasis	1	4
Dominance, lethal; semi lethal genes	2	8
Mid-term exam1+ feedback	1	3
Multiple allels, pseudoalleles and the multiple effects of the gene	1	4
sex determination, sex related characters inheritance	2	8
Linkage, crossing over and the genetic map	1	4
Mid-term exam2+feedback	1	3
Family pedigree and some simple genetic diseases in human	1	4
Chemical composition of the genetic material	2	8
Extranuclear genetics	1	4

2. Course components (total contact hours and credits per semester):

	Credit	Contact Hours			Self-Study	Other	Total
		Lecture	Laboratory	Practical			
NCAAA	3 ch	28	30	-	-	-	58
ECTS	4.4 cp	28	30	-	55	15	128

3. Additional private study/learning hours expected for students per week.

3hrs.

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

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1.1	**Explain the chemical structure of the DNA and**	lectures	written exams

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
	its replication		
1.2.1	**Apply Mendel's laws of inheritance on the basis of genetic traits in different organisms.**	Theoretical and practical lectures	Assessment of assignments and D2L activities
2.0	**Cognitive Skills**		
2.3.1	**Design the Family pedigree for some diseases in human**	Learning Objects (video)	Weekly assignments to solve genetic problems
2.4.1	**Compare between dominance types and gene interaction**	Theoretical and practical lectures	Periodic and final exams
3.0	**Interpersonal Skills & Responsibility**		
3.4.1	**Explore recent information related to genetics.**	Research and survey	Provide presentations and give the student the feedback
4.0	**Communication, Information Technology, Numerical**		
4.1.1	**Able to introduce a presentation in front of others**	- Use presentations - Teaching by electronic platforms	Evaluate the use of modern technology in the collection and interpretation of information (data) and ideas
4.2.1	**Interest in e-learning system and its different activities**	E-learning D2L	Use D2L student Progress
5.0	**Psychomotor**		
5.2.1	**Innovate in the use of models to explain the genetic concepts.**	Learning Objects (video)	assessment of lab manual

5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	**Reports+ assignments+ oral questions + e-learning**	weekly	10%
2	**1st midterm exam**	(6th week)	10%
3	**2nd midterm exam**	(11th week)	10%
4	**final practical exam**	16th week	20%
5	**Final written exam**	17-19th week	50%

D. Student Academic Counseling and Support

Dr. Amira M. Elmaghawry
E-mail: a.almaghawry@mu.edu.sa
Office hours: According to schedule

E. Learning Resources

1. List Required Textbooks :

- **Principals of genetics, El-Seehy(2012), Dar El-Gameayin, Alex., Egypt.**

2. List Essential References Materials :

- **Principals of genetics, El-Seehy,(2012) Dar El-Gameayin, Alex., Egypt.**
- **Principals of genetics, Fawzy; *et al*., (2006) El-Shanhoby Library, Egypt.**
- **Basics of genetics, Tantawy, A. (1976) National Library, Egypt.**

3. List Recommended Textbooks and Reference Material :

- **New versions of previous references and new books**

4. List Electronic Materials :

- **http://learn.genetics.utah.edu/**
- **http://gslc.genetics.utah.edu/**
- **http://ghr.nlm.nih.gov/**
- **http://genetics.thetech.org/**
- **http://www.genome.gov/10000464**
- **http://www.amnh.org/explore/ology/genetics**
- **http://www2.edc.org/weblabs/WebLabDirectory1.html**

5. Other learning material :

- **Use of information technology devices (computer, I-pad, mobile phone)**

F. Facilities Required

1. Accommodation

- The size of the room should be suitable with the number of the students
- Provide enough seats and should be fixed
- Modern rooms equipped with modern technologies for education and various display devices.
- Provide models and equipment for the lab

2. Computing resources

- one computer and smart blackboard or electronic platforms.

3. Other resources

- Viewing students evaluation electronically
- Departmental annual report prepared by the head of the department.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Magnitude of students discussions (participation) during the lectures is an indication of the effectiveness (instructiveness) of teaching

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :

- Viewing students evaluation electronically

3 Processes for Improvement of Teaching :

- Provide recent literature and scientific journals in the library
- Provide terminal with internet in the library
- Provide Programs and training courses for staff members.

4. Processes for Verifying Standards of Student Achievement

- Reviewing of examination sheets "that have been evaluated by the professor" by another member of the department in addition to check sample by external reviewer .

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

- Periodical meeting of staff members to determine the strengths and weaknesses.
- Continuous follow up of the subject websites.
- Development of study plans in the light of contemporary trends and to meet the needs of the community.

- **Assessment of the course.**
- **Regular reviewing of plans of study.**
- **Reviewing of students opinion through questionnaires about subject contents, topics and methods of teaching.**

Course Specification Approved
Department Official Meeting No (6) Date 30 / 11 / 1433 *H*

Course's Coordinator		**Department Head**	
Name :	Dr. Amira Elmaghawry	***Name :***	Dr. Mona Makkie
Signature :	Amira	***Signature :***	Mona
Date :	12/ 4 / 1437 *H*	***Date :***	…./ … / …… *H*

Institution:	College of Education.
Academic Department :	Biology Department
Programme :	Biology Program
Course :	Arthropoda , Mollusca and Echinodermata (ZOO221)
Course Coordinator :	Prof. Dr. Hala Ali Abd- El Salam Saleh
Programme Coordinator :	Dr. Mona bdul Latif Makkie
Course Specification Approved Date :	30/ 11 / 1433 H

A. Course Identification and General Information

1 - Course title : Arthropoda , Mollusca and Echinodermata	Course Code: ZOO221
2. Credit hours : 3 hrs (2 th + 1 P)	
3 - Program(s) in which the course is offered: Biology Program	
4 – Course Language : Arabic language	
5 - Name of faculty member responsible for the course: Prof. Dr. Hala Ali ABD-El Salam Saleh.	
6 - Level/year at which this course is offered : Fourth level	
7 - Pre-requisites for this course (if any) : • ZOO 121	
8 - Co-requisites for this course (if any) : • ZOO 311	
9 - Location if not on main campus : (-)	

10 - Mode of Instruction (mark all that apply)

A - Traditional classroom	✓	What percentage?	60 %
B - Blended (traditional and online)	✓	What percentage?	-
D - e-learning	✓	What percentage?	10%
E - Correspondence	-	What percentage?	-
F - Other	✓	What percentage?	30 %

Comments :

Other : includes teaching the practical part, which deals with practical lessons and the application the theoretical part.

B Objectives

What is the main purpose for this course?

The student recognizes the characteristics of members of arthropods, mollusks and echinodermates including their classification, general characters , morphology and internal anatomy.

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

Updating the course materials based on the latest developments in the field of specialization for example(updating the course presentation, pictures, videos and lab.

C. Course Description

1. Topics to be Covered (Theoretical+ Practical)

List of Topics	No. of Weeks	Contact Hours
Location of arthopods in animal kingdom, general characters, taxonomy, studying characters of each class, Trilobita, taxonomy of myriapoda animals including their moropholgy and internal antomy	2	8
Study morphology of shrimp , different appendages and internal anatomy include the "life-cycle	2	8
Study of some models of crustaceans with their classification such as *Daphina*, crabs & hermit crabs	1	4
Study of some models of crustaceans with their classification *Cypris Lepas* and *Balanus*	1	4
Mid-term1+ Feedback	1	3
Study of some models of crustaceans with their classification of some parasitic arthropods such as ticks and mites	1	4
Taxonomical, anatomical and physiological study included morphology and internal structures of spider and scorpion	1	4
General characteristics of the Phylum Mollusca Taxonomical, anatomical and physiological study on Chition	1	4
Mid-term 2+ Feedback	1	3
Taxonomical, anatomical and physiological study on desert snails, fresh and marine calms and cuttlefish	2	8
General characteristics of the Phylum Echinodermata	1	4
Taxonomical, anatomical and physiological study on *Astropecten*, *Ophicoma*, *Holothuria*	1	4

2. Course components (total contact hours and credits per semester):

	Credit	Contact Hours			Self-Study	Others	Total
		Lecture	Laboratory	Practical			
NCAAA	3 ch	28	30	-	-	-	58
ECTS	4.2 cp	28	30	-	46	20	124

3. Additional private study/learning hours expected for students per week.

2hours

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

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1.1	Recognize an integrated and comprehensive on the characteristics and		

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
	classification of the members of arthropods and mollusks and echinoderms	Lectures	-Homework -Written Exams
2.0	**Cognitive Skills**		
2.1.1	Compare between different classes of each phylum with examples of animals of each class	-Lectures -Brain storm - e-learning	-Written Exams - Assessment questions (Homework)
2.2.1	Explain the mechanism of respiration, digestion, excretion and other biological processes in arthropods, mollusks and echinodermates	-Lectures - e-learning	-Exams - Homework
2.3.1	Illustrate the relationship among members of arthropods, mollusks and echinodermates	-Brain storm - Lectures -Class discussion	Written Exams
3.0	**Interpersonal Skills & Responsibility**		
3.2.1	Participate effectively in team during preparation of collective researche papers or presentations	Cooperative learning	Research Papers
4.0	**Communication, Information Technology, Numerical**		
4.2.1	Demonstrate the Preparation of research paper and presentation with reaching to useful sites on the Internet to increase knowledge of the contents of the course	Self-education	Evaluation of presentation and research papers
5.0	**Psychomotor**		
5.1.1	Dissect one of arthropod animals(shrimp) with the identification of internal systems and examination of practical models.	Lab strategy	-Practical exam - lab. reports.

5. Schedule of Assessment Tasks for Students During the Semester:

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- http://en.wikipedia.org/wiki Arthropoda ; Mollusca;Echinodermata
- Encycopedia- Arthropoda ; Mollusca;Echinodermata

5. Other learning material :

computer-based programs/CD, professional standards or regulations and software

F. Facilities Required

1. Accommodation

- The number of seats in classrooms and lab. is suitable and no need for extra seats.
- 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 and other laboratory requirements

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- Review and study plans
- The opinions of students and accept constructive criticism.

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Department Official Meeting No (6) Date 30 / 11 /1433 *H*

Course's Coordinator		Department Head	
Name :	Hala Ali Saleh	***Name :***	Mona Makkie
Signature :	Hala Ali	***Signature :***	Mona Makkie.
Date :	12./ 4 / 1437 *H*	***Date :***	12./ 4 / 1437 *H*