



Course Specifications

Course Title:	Graduation Project
Course Code:	4014923-5
Program:	BSc Biology
Department:	Biology Department
College:	Applied science
Institution:	Umm Al-Qura university

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A. Course Identification

1. Credit hours:
2. Course type
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 4th Year / Summer semester
4. Pre-requisites for this course (if any):
5. Co-requisites for this course (if any):

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom		
2	Blended		
3	E-learning		
4	Correspondence		
5	Other		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	Lecture	
2	Laboratory/Studio	
3	Tutorial	
4	Others (specify)	
	Total	
Other Learning Hours*		
1	Study	
2	Assignments	
3	Library	
4	Projects/Research Essays/Theses	
5	Others (specify)	
	Total	

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

At the end of this course student should be able to evaluate the different approaches used and suggest future experiments or alternative strategies for addressing the problem. The student should be able to conversant with writing a scientific report and presenting scientific data in a clear accessible manner. The skills learnt will be applicable to problem solving exercises encountered in all types of employment.

2. Course Main Objective

After completing this course student should be able to:

- Gain practical and/or theoretical knowledge about particular area of biology.
- Work independently on the research project under the supervision of academic member of staff, and should be able to design experiments to answer the particular question posed, and critically analysed the results. There will be scope for initiative in this element of the project. Be able to set the work in the context of work done by other experimentalists, and provide a concise summary of relevant literature.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge:	
1.1	Gain practical and theoretical knowledge about particular area of biology.	
1.2	Work independently on the research project under the supervision of academic member of staff, and should be able to design experiments to answer the particular question posed, and critically analysed the results. There will be scope for initiative in this element of the project.	
1.3	Be able to set the work in the context of work done by other experimentalists, and provide a concise summary of relevant literature.	
2	Skills :	
2.1	Displaying and organizing different types of data. Representing the data.	
2.2	Reading relevant research and review articles.	
3	Competence:	
3.1	Developing oral presentations.	
3.2	Communicating personal ideas and thoughts.	
3.3	Work independently and as part of a team to finish some assignments.	
3.4	Communicate results of work to others.	

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to research project	1
2	Where and how I start?: Thinking of research ideas, Purpose of research, Research questions or hypothesis, Are these questions/hypothesis feasible to achieve?, Problems with research questions/hypothesis, research title.	6
3	Project preparing: Project management, project timeline, project ethics	2
4	The literature review: Primary and secondary sources, quality of sources, Your literature review should tell a story, how to make it a story?, Speed	9

	reading and taking notes, Critical awareness while reading, How to search for information, Managing references, Various style of referencing systems.	
5	Research methodology I: Research design, Research approach, building your way from research purpose, to question, to approach, to data gathering.	3
6	Methodology II: Types of research methods: experimental, Case studies, Cross-sectional studies, Longitudinal studies, surveys, Comparative studies, How to structure and write up your methodology?	3
7	Results analysis: Types of results, comparative analysis, statistical analysis, results presentation (tables, graphs, figures)	3
8	Concluding and writing up: Writing a discussion, writing a conclusion, writing an abstract and finalizing the title, general points about writing a research/review article and presentation coda	3
9	Set up a small project at (laboratory or field) parallel with theoretical lectures, for each student or a group of three students to begin to implement theoretical ideas on the ground (small training research point), collecting their own actual data, analyzing, representing the collected data, commenting, and critical discussing it and writing an essay about it. This essay will be revised by supervisor and critically discussed with the student/students group by examiners board (usually two departmental scientific staff members).	
Total		30 hrs

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge		
1.1	Gain practical and theoretical knowledge about particular area of biology.		
1.2	Work independently on the research project under the supervision of academic member of staff, and should be able to design experiments to answer the particular question posed, and critically analysed the results. There will be scope for initiative in this element of the project.	-The collection and presentation of information through the Internet connection. -Open meetings, served research articles and discussions	Home business to assess and discuss the students. -Assess the skills of preparing research.
1.3	Be able to set the work in the context of work done by other experimentalists, and provide a concise summary of relevant literature.		
2.0	Skills		
2.1	Displaying and organizing different types of data. Representing the data.	The use of computers and the internet.	Home business to assess and discuss the students.
2.2	Reading relevant research and review articles.	-Research submitted by students.	-Assess the skills of preparing research.

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
3.0	Competence		
3.1	Developing oral presentations.	Oral presentations. <input type="checkbox"/> Internet search assignments and essays. <input type="checkbox"/> Incorporating the use and utilization of computer in the course requirements. <input type="checkbox"/> Students will be asked for delivering a summary regarding certain topics related to the course.	Evaluation of student essays and assignments. <input type="checkbox"/> Evaluating the laboratory written reports. <input type="checkbox"/> Marks given to for good reports and presentations <input type="checkbox"/> Evaluating during the discussion in lecture and reports. Part of the grad is put for student's written participation
3.2	Communicating personal ideas and thoughts.		
3.3	Work independently and as part of a team to finish some assignments.		
3.4	Communicate results of work to others.		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Writing a literature review, and a proposal for research	7	30%
2	Participation / discussion/ set up of small research project	All weeks	25%
3	Writing a brief assay for a graduation project	15	45%
4			
5			
6			
7			
8			

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

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

Office hours: 10 hrs.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	
Essential References Materials	Writing Scientific Research Articles: Strategy and Steps. 2nd Edition. by Margaret Cargill , Patrick O'Connor, ISBN-13: 978-1118570708. 2013. Wiley-Black Well Press. Enjoy Writing Your Science Thesis or Dissertation: A Step by Step Guide to Planning and Writing a Thesis or Dissertation for

	Undergraduate and Graduate Science Students. 2nd Edition by Elizabeth M Fisher, Richard C Thompson. ISBN-13: 978-1783264216. 2014. Imperial College Press.
Electronic Materials	www.columbia.edu/cu/biology/ug/research/paper.html https://www.youtube.com/watch?v=0oAFVHb21HM https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3474301/
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms, laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	data show, Smart Board
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Strategies for Obtaining Student Feedback on Effectiveness of Teaching	the Instructor or by the Department	Discuss students
Other Strategies for Evaluation of Teaching	the Instructor or by the Department	Peer consultation by departmental specialized committee. Self-evaluation of the program by the departmental plan committee.

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	