APPROVED

PROJ S8007: Biopharma Research Project

Module Details	
Module Code:	PROJ \$8007
Full Title:	Biopharma Research Project APPROVED
Valid From::	Semester 1 - 2013/14 (September 2013)
Language of Instruction:	
Duration:	2 Semesters
Credits::	20
Module Owner::	Breda Brennan
Departments:	Unknown
Module Description:	The aims of this laboratory based research project module are to provide an opportunity for students to integrate the knowledge and practical skills they have acquired to date and further develop their skills in the research, planning, implementation, interpretation and presentation of a defined body of scientific work. This module will foster independence, confidence and a sense of personal responsibility for the work researched and executed.

Module Learning Outcome				
On successful completion of this module the learner will be able to:				
#	Module Learning Outcome Description			
MLO1	Describe and critically interpret the scientific knowledge base in a defined subject area and apply it to a specific area of scientific study.			
MLO2	Design, present and justify a suitable programme of laboratory based investigation and present a comprehensive and viable research plan.			
MLO3	Apply knowledge and practical skills in a research laboratory and employ advanced data analysis and synthesis techniques within the scope of the project.			
MLO4	Solve complex technical problems associated with the execution of the project.			
MLO5	Work independently within defined time and resource boundaries.			
MLO6	Maintain accurate and complete records of project-based activities and present the results of this research in high quality oral and written formats			
Pre-requisite learning				

Module Recommendations This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named DkIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).

No recommendations listed

Module Indicative Content

Semester 1

Each student will be assigned a supervisor who will be responsible for overseeing the research project for the duration of the academic year. Each student will be assigned a supervisor will guide the work of a 'team' of

students who are working on interrelated projects, which have a common theme. • Students who express interest in a specific project area will be allocated supervisors with corresponding expertise. Other students will be allocated a project supervisor by random ballot. • Project titles will be agreed by mutual consent after discussion. • Each student will collect, collate, review and present an academic rationale for the design of their proposed research project. They will also prepare a detailed project plan incorporating a

Each student with context, contact, review and process an experimental process and process an

Students must maintain a laboratory notebook in which they should record thoughts, plans, methods, raw data, calculations and other details of practical activities during the course of project and for both Semesters.
Students will meet with their project supervisor for approximately one hour per week to discuss the planning, experimental design and progress of the work. Supervisors will employ a combination of individual student meetings and 'team' meetings. During weekly meetings, the project supervisor may add remarks or suggestions to the laboratory notebook.
Refresher library tutorials will be provided to improve information retrieval skills and ensure compliance with the Institute Academic Integrity Policy.

Semester 2

• Students will be provided with 8 hours per week of supervised laboratory time for the execution of their project. • Students will meet with their project supervisor for approximately one hour per week to discuss the progress of the work, data analysis and preparation of the thesis and oral presentation. . • Students must submit a typed, bound, project thesis of 8,000 (+/- 2,000) words using an approved format and perform and defend a 10-minute oral presentation of their work.

Sample Project Titles

• The synthesis of a some simple derivatives of a suitable compound and a study on their lipid solubility and membrane penetration • The development of an immunoassay for a suitable drug • The comparison of a range of methods (eg uv/visible spectroscopy, GC, HPLC) for the analysis of a set of related drugs • A study of the biological bacteriocidal specificity of a range of related antibiotics • The effect of a range of smooth muscle or other drugs on earthworm contraction • Studies on the effect of food additives (eg colourants) on the heart rate of Daphnia

Module Assessment						
Assessment Breakdown	%					
Course Work	100.00%					
Module Special Regulation						

Assessments

Full Time On Campus								
Course Work								
Assessment Type	Presentation	% of Total Mark	15					
Marks Out Of	0	Pass Mark	0					
Timing	Week 8	Learning Outcome	1,2,5					
Duration in minutes	0							
Assessment Description The student will be required to make a 10 minute presentation in which they will outline the academic rationale for their proposed research project making reference to relevant literature. They should also outline the proposed aims and objectives of the study. This will be followed by questions. The presentation will be assessed by the project supervisor and another member of the programme team.								
Assessment Type	Written Report	% of Total Mark	15					
Marks Out Of	0	Pass Mark	0					
Timing	Week 12	Learning Outcome	1,2,3,6					
Duration in minutes	0							
Assessment Description The student will be required to submit a plan of work for their proposed project including project objectives, methods used in the laboratory sessions, data analysis, weekly activities and requirements for key chemicals and capital equipment. This should also include a risk assessment of the proposed research project in line with the requirements of the Safety, Health & Welfare (Chemical Agents) Regulations,2001. (2,000 +_ 500 words).								
Assessment Type	Project	% of Total Mark	50					
Marks Out Of	0	Pass Mark	0					
Timing	Week 26	Learning Outcome	1,3,4,5,6					
Duration in minutes	0							
Assessment Description Project Thesis. The student will be required to submit a comprehensive thesis containing a literature review, methodology, results, data analysis and conclusions of their project using an approved format (8,000 ± 2,000 words). This should be presented in the form of a peer reviewed publication. This report will be assessed by the project supervisor, a second reader appointed from the team of supervisors and the external examiner.								
Assessment Type	Presentation	% of Total Mark	10					
Marks Out Of	0	Pass Mark	0					
Timing	Week 28	Learning Outcome	1,4,5,6					
Duration in minutes	0							
Assessment Description The student will be required to present the research project findings in the form of an illustrated oral presentation of 10-15 minutes duration, followed by questions. This will be attended and assessed by the entire team of supervisors and the external examiner will be invited.								
Assessment Type	Performance Evaluation	% of Total Mark	10					
Marks Out Of	0	Pass Mark	0					
Timing	Sem 2 End	Learning Outcome	3,5,6					
Duration in minutes	0							
Assessment Description Supervisor's report. The project supervisor (in consultation with the laboratory supervisor) will issue a report based on the student's performance during the course of the project. This will be based on criteria such as attendance, diligence, motivation and initiative as well as laboratory technique, safety and problem solving skills. The student's laboratory notebook will be assessed as part of the supervisor's report.								
No Project								
No Practical								
No Final Examination								
Reassessment Requirement								
No repeat examination								

Module Workload									
Workload: Full Time On Campus									
Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours				
Lecturer Supervised Learning	Contact	Meeting with supervisor	Every Week	1.00	1				
Independent Study	Non Contact	Literature review and thesis preparation	Every Week	7.00	7				
Practical	Contact	Method development and experimental work	Every Week	6.00	6				
	14.00								
				Total Weekly Contact Hours	7.00				
This module has no Part Time On Campus workload.									

Module Resources

Recommended Book Resources

Ruxton, G.D. and Colegrave, N.. (2010), Experimental design for the life sciences, 3rd ed.. Oxford Press.

Denscombe, M.. (2010), The good research guide, 4th ed.. Open University Press.

Sambrook, J. and Russell, D.W.. (2001), Molecular cloning: A laboratory manual, Cold Spring Harbor Laboratory Press.

Blaxtor, L., Hughes, C. and Tight, M.. (2010), How to research, 4th ed.. Open University Press.

Jacobs, D.T.. (2008), The authentic dissertation, Routledge.

Bonner, P and Hargreaves, A.. (2011), Basic bioscience laboratory techniques: A pocket guide, Wiley-Blackwell.

This module does not have any article/paper resources

Other Resources

Website, European Biopharmaceutical Enterprises, http://www.ebe-biopharma.org/ Website, European Medicines Agency, http://www.ema.europa.eu/oma/ Website, United States Food and Drug Administration, http://www.fda.gov Website, National Center for Biotechnology Information (Entrez / PubMed), http://www.ncbi.nlm.nih.gov/ Website, Science Direct, http://www.sciencedirect.com Website, DkIT Library Summon, https://www.dkit.ie/library Website, Laboratory Health and Safety / Laboratory Rules, https://www.dkit.ie/library Website, School of Health & Science, DkIT Safe Work Practice Sheets, http://www.dkit.ie/health-science/health-safety / Link, Library Catalogue, http://tinyurl.com/qbb5dph