

Biomedical Science Research Project

Module Code:	BIS6026-D
Academic Year:	2018-19
Credit Rating:	40
School:	School of Chemistry and Biosciences
Subject Area:	Biomedical Science
FHEQ Level:	FHEQ Level 6
Module Leader:	Professor Anne Graham

Additional Tutors:

Dr Anna Snelling, Dr Jonathan Fletcher, Maureen Pinder, Dr Steven Picksley, Dr Martin Brinkworth, Dr Sobia Kauser, Mrs Pamela Dunn, Dr Desmond Tobin, Dr Kevin Adams

Pre-requisites:	Developing Professional Skills II 2017-18
Co-requisites:	

Contact Hours

Type	Hours
Lectures	28
Tutorials	4
Laboratory	160
Directed Study	208

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Academic Year (Sept - May)

Module Aims

This module will provide an opportunity for students to develop research skills in a number of areas including experimental design and execution, data analysis and presentation and critical evaluation of the published literature.

Outline Syllabus

Methods used in Biomedical research, including PCR, SDS-PAGE, Western blotting, tissue culture and immunohistochemistry. Statistics for Biomedical Scientists, COSHH and biological safety assessments; Good laboratory practice; Ethics in research; The Human Tissue Act, drug licensing, intellectual property, patenting, bioimaging and bioinformatics. Use of referencing software, scientific writing, literature searching. In conjunction with the careers service, employability skills and job applications will also be covered.

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1 Critically describe, explain and make appropriate judgements around a current research topic in Biomedical Sciences whilst evaluating approaches used to investigate this topic (HCPC standards 1, 13).
- 2 Plan and execute a programme of original research (HCPC standards 4,14).
- 3 Assess the chemical, biological & ethical aspects of research in accordance with local policy and laboratory safety protocols. (HCPC standards 2, 2.8,3,14,15).
- 4 Select appropriate statistical techniques for a range of scientific analyses.
- 5 Conduct appropriate experiments competently and demonstrate practical skills appropriate to the project undertaken (HCPC standards 14).
- 6 Construct and maintain laboratory records appropriately (HCPC standard 10).
- 7 Analyse & evaluate the information collected (HCPC standard 14). Perform effective literature searches.
- 8 Clearly convey information or results to the appropriate level of detail.
- 9 Compile a scientific report that presents and interprets data in a clear and effective way using correct biomedical and medical language and terminology (HCPC standards 8).

Learning, Teaching and Assessment Strategy

Lectures, seminars, tutorials and demonstrations will be used to provide relevant information on a variety of aspects associated with preparing for and conducting research, analysing data and carrying out literature searches. Standard laboratory procedures such as (RT) PCR, SDS-PAGE, Western blotting, tissue culture and immunohistochemistry will be covered in lectures, as will scientific writing, laboratory Health & Safety, Ethics in research, GLP, IP and patenting. The application of statistical methods, covered in the DPS2 module at stage 2, will be revisited in lectures and computer-based formative tutorials. Drop-in tutorials will also be delivered on the use of the University's selected referencing software (currently EndNote).

Each student will be assigned an individual research topic and will be allocated a supervisor. Students will produce COSHH and biological safety forms and a draft Introduction section using feedback from their supervisor before these elements are submitted for summative

assessment. Evaluation of experimental design and research strategy will be achieved through the submission of a `Research Portfolio` assignment on the topic of the research project which is summatively assessed. A 4 week, full-time laboratory project will allow the students to demonstrate their practical skills and their ability to design and implement experiments resulting in a supervisor's mark.

During directed study hours, students are expected to undertake reading to consolidate and expand on the content of formal taught sessions; research and prepare for assessments and undertake specific elements of reading as directed. Communication skills, understanding and data analysis and interpretation will be summatively assessed through a written project report, following draft submission and feedback from the supervisor.

The supplementary assessment will consist of a written, critical reflection on the failed component or re-submission of a revised draft of the failed report.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Referral	Coursework	Critical reflection on the research portfolio (LO1-4, 7-8)	0-1500 words	20%	No
Referral	Coursework	Critical reflection on laboratory performance (LO 1,2, 5 & 6)	0-1500 words	20%	No
Referral	Coursework	Re-submission of a revised draft of the failed report (LO 1-9)	0-5000 words	60%	Yes
Summative	Coursework	Preparation of a 'Research Portfolio' based upon research project topic (LO 1-4, 7-8)	0-1500 words	20%	No
Summative	Coursework	Supervisor's assessment of student's performance in	Performance evaluated over 4 weeks of	20%	No

		laboratory. (LO 1,2, 5 & 6)	laboratory work		
Summative	Coursework	Project Report (LO 1-9)	0-5000 words	60%	Yes

Legacy Code (if applicable)

BM-3008K

Reading List

To view Reading List, please go to [rebus:list](#).