

BIM304

Pathways to Biomedical Research

School: School of Health - Biomedicine

2028 | Trimester 2

UniSC Sunshine Coast
UniSC Moreton Bay**BLENDED
LEARNING**

Most of your course is on campus but you may be able to do some components of this course online.

Please go to unisc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

BIM304 is an advanced research-oriented course providing students with advanced laboratory skills relevant to contemporary biomedical research. Students undertake two laboratory-based projects centred around one of four themes: molecular biology, immune-laboratory methods, cell biology or metabolism. Students will gain experience with high-end research techniques, and develop research skills including experimental design, statistical analysis and scientific communication. BIM304 is ideal for students with a foundation in biomedical science, and an interest in pursuing further research studies.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Tutorial/Workshop 1 – Course and project orientation sessions	3hrs	Week 1	3 times
Tutorial/Workshop 2 – Student project presentations	3hrs	Week 12	2 times
Laboratory 1 – Lab project 1 and 2	8hrs	Week 3	8 times

1.3. Course Topics

- Advanced techniques and instrumentation in Biomedical Science research in project areas including cell biology, molecular biology, immunology and biochemistry
- Maintaining accurate laboratory records
- Research proposal writing
- Science research communication
- Analysis of scientific research data

2. What level is this course?

300 Level (Graduate)

Demonstrating coherence and breadth or depth of knowledge and skills. Independent application of knowledge and skills in unfamiliar contexts. Meeting professional requirements and AQF descriptors for the degree. May require pre-requisites where discipline specific introductory or developing knowledge or skills is necessary. Normally undertaken in the third or fourth full-time study year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES		GRADUATE QUALITIES
On successful completion of this course, you should be able to...		Completing these tasks successfully will contribute to you becoming...
1	Demonstrate a comprehensive understanding of advanced research techniques used in biomedical science.	Knowledgeable Applying technologies
2	Apply skills to carry out experiments and troubleshoot problems in a research setting, including relevant risk management and ethical considerations.	Empowered Problem solving
3	Competently analyse and interpret experimental data using statistical tools and software and present findings in a clear and concise manner.	Creative and critical thinker Applying technologies
4	Effectively communicate research findings through a written report and an oral presentation, adhering to scientific standards and conventions.	Creative and critical thinker Communication
5	Demonstrate collaborative skills by working in teams to plan and execute research projects, fostering an environment of cooperation and shared knowledge.	Engaged Collaboration

5. Am I eligible to enrol in this course?

Refer to the [UniSC Glossary of terms](#) for definitions of “pre-requisites, co-requisites and anti-requisites”.

5.1. Pre-requisites

BIM207 and enrolled in SC355 or SC357. Completion of at least 144 units of study with a GPA > 4.5.

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

5.5. Microcredential Information

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

Students will receive formative feedback on laboratory notebook maintenance during week 1 and 2 workshops, with additional feedback in weeks 4-6.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Artefact - Professional	Individual	20%	Varies, approximately 500-700 words per project.	Throughout teaching period (refer to Format)	Online Assignment Submission with plagiarism check
All	2	Report	Individual	40%	2500 words	Week 7	Online Assignment Submission with plagiarism check
All	3	Oral	Individual	40%	15 minutes, plus 5 minutes questions.	Week 12	Online Assignment Submission with plagiarism check and in class

All - Assessment Task 1: Laboratory notebook

GOAL:	To develop skills in the documentation of research experiments, maintaining clear and accurate records in compliance with Good Laboratory Practice (GLP) requirements.		
PRODUCT:	Artefact - Professional		
AUTHORSHIP STATEMENT:			
FORMAT:	Submission of lab notebooks to teaching team in weeks 4, 6, 9 and 11. Formative feedback will be provided on the weeks 4 and 6 submissions to inform future submissions.		
CRITERIA:	No.		Learning Outcome assessed
	1	Maintenance of clear and accurate laboratory notebooks, demonstrating an understanding of Good Laboratory Practice (GLP) requirements.	2 3
GENERIC SKILLS:	Communication, Organisation		

All - Assessment Task 2: Project 1 Lab Report

GOAL:	To develop your skills in data analysis, interpretation and scientific communication, completing a lab report based on your first project.					
PRODUCT:	Report					
AUTHORSHIP STATEMENT:						
FORMAT:	Students will prepare a scientific report, adopting the formatting requirements of a selected peer-review journal. Further guidelines and rubrics will be available on Canvas.					
CRITERIA:	No.		Learning Outcome assessed			
	1	Clear and accurate understanding and communication of advanced research methods and their analysis.	1	3	5	
	2	Appropriate scientific literature utilised and referenced correctly.	2	3	4	
	3	Clear and accurate presentation of data, analysis of results and their interpretation.	1	2	3	4
	4	Adherence to journal formatting guidelines, including correct use of reference management software.	3	4		
GENERIC SKILLS:	Communication, Problem solving, Organisation, Information literacy					

All - Assessment Task 3: Project 2 Oral Presentation

GOAL:	To develop your skills in data analysis, interpretation and scientific communication, completing an oral presentation based on your second project. You will learn about engaging with the scientific community by attending all presentations in a conference style setting.			
PRODUCT:	Oral			
AUTHORSHIP STATEMENT:				
FORMAT:	PowerPoint slides submitted via Canvas, and accompanying oral presentation. You will be allocated to present in one of the two scheduled sessions, but will be required to attend both sessions at your campus of study.			
CRITERIA:	No.		Learning Outcome assessed	
	1	Clear and accurate communication of research methods and analysis.	1	3 4
	2	Presentation includes core scientific elements including background, aims, methods, results and discussion.	3	4
	3	Clear delivery, effective use of visual presentation aids, and responses to questions demonstrating subject knowledge.	1	4
	4	Effective engagement in scholarly practice through collaborative lab work, conference style participation and peer review.	5	
GENERIC SKILLS:	Communication, Problem solving, Information literacy			

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

There are no required/recommended resources for this course.

8.2. Specific requirements

Students will be required to complete all relevant laboratory inductions before commencing lab work. Students must adhere to PPE and safety requirements relevant to their laboratory of attendance. Some laboratory locations may have additional requirements such as proof of vaccination.

9. How are risks managed in this course?

Risk assessments have been performed for all laboratory classes and a moderate level of health and safety risk exists. Moderate risks are those associated with laboratory work such as working with chemicals and hazardous substances. You will be required to undertake laboratory induction training and it is also your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the [online induction training for students](#), and following the instructions of the University staff

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:

- (a) The final mark is in the percentage range 47% to 49.4%; and
- (b) The course is graded using the Standard Grading scale

10.3. Assessment: Submission penalties

Late submissions may be penalised up to and including the following maximum percentage of the assessment task's identified value, with weekdays and weekends included in the calculation of days late:

- (a) One day: deduct 5%;
- (b) Two days: deduct 10%;
- (c) Three days: deduct 20%;
- (d) Four days: deduct 40%;
- (e) Five days: deduct 60%;
- (f) Six days: deduct 80%;
- (g) Seven days: A result of zero is awarded for the assessment task.

The following penalties will apply for a late submission for an online examination:

Less than 15 minutes: No penalty

From 15 minutes to 30 minutes: 20% penalty

More than 30 minutes: 100% penalty

10.4. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit <https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching>

10.5. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The [Student Charter](#) sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.6. General Enquiries

For course-specific questions, contact your teaching staff or Course Coordinator.

For other enquiries or to access support, please contact Student Central:

- [UniSC Student Central](#)
- [UniSC Adelaide Student Central](#)