

BIM202 Medical Genetics

School: School of Health - Biomedicine

2025 | Semester 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

Medical genetics will provide you with an overview of the role of genetic factors in human health and disease. Rapid advancements in technology, including human genome sequencing, are allowing genetics to play an increasingly important role in medicine. Medical genetics uses inquiry-based learning in laboratory and tutorial classes to explain concepts such as: personalised medicine, the genetics of cancer, epigenetics, immunogenetics, human microbiome, reproductive genetics, genetic counselling and ethics, and common molecular and cytogenetic diagnostic techniques.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Tutorial/Workshop 1 – Option to attend either in-class or online.	1hr	Week 1	13 times
Learning materials – Asynchronous e-modules delivered online	2hrs	Week 1	13 times
Tutorial/Workshop 2 – Option to attend either in-class or online.	1hr	Week 1	7 times
Laboratory 1 – In-class on campus laboratory classes.	3hrs	Week 2	6 times

1.3. Course Topics

- Molecular tools for diagnosis and research
- Heritability of genetic diseases
- Ethical implications in medical genetics and genetic counselling
- Cancer genetics
- Biochemical genetics
- Immunogenetics
- Genetic screening
- Reproductive genetics
- Microbiome
- Epigenetics

2. What level is this course?

200 Level (Developing)

Building on and expanding the scope of introductory knowledge and skills, developing breadth or depth and applying knowledge and skills in a new context. May require pre-requisites where discipline specific introductory knowledge or skills is necessary. Normally, undertaken in the second or third full-time year of an undergraduate programs.

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 Describe and explain the concepts and principles behind the genetic regulation of health and disease and how our understanding of these processes can lead to improved health outcomes for individuals and communities.	Knowledgeable
2 Collect, accurately record, interpret and draw conclusions from scientific data.	Empowered
3 Describe and critically analyse ethical issues associated with genetic research, counselling and diagnostics.	Ethical
4 Gather, synthesise and critically evaluate information from a range of sources.	Empowered

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

LFS100 or LFS103 or SCI100

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

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

It is recommended that students have some prerequisite knowledge of basic cell biology, and research methods

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

You will receive both formative and summative feedback on assessment items that are designed to allow you to apply your medical genetics knowledge in both written and practical contexts. BIM202 will include early formative feedback with the completion of weekly learning materials, tutorial and laboratory class activities. An in-class quiz in Week 4 will be the first summative low stakes assessment item.

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	Portfolio	Individual	45%	3 hours	Throughout teaching period (refer to Format)	In Class
All	2	Artefact - Creative, and Written Piece	Individual or Group	30%	700 words	Week 9	Online Assignment Submission with plagiarism check
All	3	Examination - Centrally Scheduled	Individual	25%	2 hours	Exam Period	Online Assignment Submission with plagiarism check

All - Assessment Task 1: Tutorial and practical portfolio

GOAL:	You will actively engage in and demonstrate learning of the theoretical and practical concepts of medical genetics that have been delivered in the learning materials, tutorial and laboratory classes.		
PRODUCT:	Portfolio		
AUTHORSHIP STATEMENT:			
FORMAT:	The theoretical and practical portfolio assessment will be delivered in the practical classes in weeks 4, 8 and 12 and invigilated. Assessable skills will include demonstration of theoretical knowledge, data analysis and problem solving in concepts relevant to medical genetics.		
CRITERIA:	<p>No.</p> <p>1 You will be assessed on the following:</p> <ul style="list-style-type: none"> demonstration of depth and breadth of knowledge of the theoretical content ability to critically analyse and solve medical genetics problems ability to collect, accurately record, and interpret data 	<p>Learning Outcome assessed</p> <p>1 2 3</p>	
GENERIC SKILLS:	Problem solving, Applying technologies		

All - Assessment Task 2: Medical Genetics assignment

GOAL:	You will explore and develop an understanding of the concepts associated with medical genetics, and will gain skills in the review and critical analysis of relevant literature, and the communication of information to a broader audience. If you opt to work in a group you will also gain skills in team work.		
PRODUCT:	Artefact - Creative, and Written Piece		
AUTHORSHIP STATEMENT:			
FORMAT:	You will work as either an individual or in a group to review scientific literature and produce a 700-word written assignment, with the incorporation of appropriate diagrams, to describe the molecular mechanisms associated with a genetic disorder. Detailed instructions along with other resources will be available on Canvas. The assignment with in-text references and reference list will be submitted to Turnitin (text matching software for plagiarism checking) in Week 9.		
CRITERIA:	No.		Learning Outcome assessed
	1	critical analysis of the topic and synthesis of information,	1 3 4
	2	the scientific merit of the factual information presented,	4
	3	communication skills including writing style (grammar, vocabulary, spelling, logical order)	4
GENERIC SKILLS:	Communication, Collaboration, Information literacy		

All - Assessment Task 3: End of semester examination

GOAL:	Task 3 will assess your understanding of and ability to apply theoretical knowledge of the concepts relevant to medical genetics.		
PRODUCT:	Examination - Centrally Scheduled		
AUTHORSHIP STATEMENT:			
FORMAT:	An individual, 2-hour final examination, consisting of multiple choice and short answer style questions.		
CRITERIA:	No.		Learning Outcome assessed
	1	You will be assessed on demonstration of knowledge, critical analysis and ability to provide correct answers to questions on the theoretical content covered in the course.	1
GENERIC SKILLS:	Communication, Problem solving, Applying technologies		

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

You need regular access to the resource(s) below. Many texts are available as ebooks through the [Library](#) at no additional cost.

REQUIRED?	AUTHOR	YEAR	TITLE	EDITION	PUBLISHER
Required	Peter D Turpenny,Sian Ellard,Ruth Cleaver	2021	Emery's Elements of Medical Genetics and Genomics	16th Edition	Elsevier

8.2. Specific requirements

Laboratory coat, safety glasses, covered shoes and the BIM202 laboratory manual are required for practical classes.

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

In person:

- **UniSC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **UniSC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **UniSC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **UniSC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **UniSC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **UniSC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

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