



FPBI002

Biology 2

IBT2 2015

Macquarie City Campus

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Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

General Information

Unit convenor and teaching staff

Trevor Corkin

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Credit points

3

Prerequisites

FPBI001

Corequisites

Co-badged status

Unit description

The study of genetics has progressed a long way since the work of Mendel. The first part of this course studies in detail the biochemical nature of gene structure. The transcription of genetic information into functional proteins that affect the structure, operation and development of an organism is also studied. The biological and ethical aspects of applying genetic therapies are studied. Continuing from this understanding the course looks at the issues of health and disease. It begins with genetic disorders and the difference between infectious and non-infectious diseases. The causes of various classes of disease; their transmission, prevention and treatment are investigated in detail.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

Design a methodology to and carry out an experiment and write a Scientific Report

Outline the relationship between gene structure, the inheritance of characteristics and the process of protein synthesis.

Explain the meaning of a healthy organism and how work in the 19th Century led to the link between microbes and disease.

Describe the methods by which the body protects itself from disease with emphasis on the immune system.

Describe the strategies developed to prevent and control the spread of disease.

Discuss the ethical, social and biological implications of different therapies used in the treatment of disease.

General Assessment Information

Missed Assessments

The only exception to not sitting an in-class test or examination at the designated time or handing in an assessment on the due date is because of a serious or unavoidable disruption.

Students who miss a formal assessment held in class or a final examination due to a serious and unavoidable disruption which commenced after the start of the study period must lodge a [Disruption to Studies](#) Notification via ask.mq.edu.au within five (5) working days of the commencement of the disruption in order to apply for Special Consideration. The notification must be supported by appropriate [evidence](#).

In submitting a Disruption to Studies Notification, a student is acknowledging that they may be required to undertake additional work. The time and date, deadline or format of any required extra assessable work as a result of a Disruption to Studies Notification is not negotiable. Further, in submitting a Disruption to Studies Notification, a student is agreeing to make themselves available so that they can complete any extra work as required.

Students will be advised of the outcome of their [Disruption to Studies](#) Application via ask.mq.edu.au.

Please refer to the [Disruption to Studies Policy](#) for further details.

Extensions & Late Submissions

To apply for an extension of time for submission of an assessment item, students must submit a notification of Disruptions to Studies via ask.mq.edu.au.

Grounds for extensions are usually serious illness, accident, disability, bereavement or other compassionate circumstances and must be substantiated with relevant evidence (e.g. professional authority form).

Late submissions without an approved extension will be penalised at a rate of **10% per day (weekend inclusive)**. This applies to assessments completed outside of class such as essays and assignments.

Final Examinations and Final Assessment Tasks

Final exams and final assessments typically take place in Week 13 and the first 3 days of week 14. **Please note that you must pass the final exam or final assessment task in order to pass this unit.** You are expected to present yourself for examination at the time and place designated in the Final Examination Timetable. Please note that no special consideration will be given to students who have booked flights out of the country prior to the conclusion of the examination period.

The Final Examination Timetable will be available in provisional form on the MQC Student Portal

Noticeboard at <https://student.mqc.edu.au/NoticeBoard.htm> in approximately week 10 of this Session. You will have 1 week to give feedback to the Student Administration Manager should you have concerns or note any clashes in your final exam timetable. From week 12, you will also be able to view your personal final exam timetable via the [MQC Student Portal](#).

The examination timetable is produced to provide the maximum number of students with the least number of consecutive examinations. It is not uncommon for students of Macquarie University at both the City and North Ryde Campuses to be required to sit two consecutive examinations. A maximum of three consecutive exams is also permitted (for example, two on one day, and one the following morning). However, no student is required to sit four consecutive exams and if any student discovers their examination timetable contains four consecutive exams, they should immediately contact the [Student Administration Manager](#) to have an exam rescheduled.

Prior to the examination period, you should ensure that you are familiar with the [Examination Rules](#). You can find these under Exam Information on the MQC [Student Portal Noticeboard](#). A breach in any of these rules will lead to disciplinary action being undertaken.

Students who miss a final exam or final assessment will be awarded a mark of 0 for the task and cannot pass the unit, except for cases where a Disruption to Studies Notification is lodged and a Special Consideration is awarded. Please note that in submitting a Disruption to Studies Notification, a student is acknowledging that they may be required to undertake additional work. The time and date, deadline or format of any required extra assessable work as a result of a Disruption to Studies Notification is not negotiable.

Supplementary Examinations

Supplementary final examinations are held during the scheduled Supplementary Final exam Period in the lead up to the subsequent teaching period.

Please note that results for supplementary exams may not be available until the conclusion of Week 2 of the subsequent teaching session and until supplementary results are released, continuing students may be prevented from enrolling in certain units in the subsequent teaching session.

Students in their final semester of study who undertake supplementary final exams should note that Formal Completion of the Foundation Program will not be possible until supplementary results are released and this may impact on their ability to enrol subsequent programs of study on time.

Retention of Originals

It is the responsibility of the student to retain a copy of any work submitted and produce another copy of all work submitted if requested. Copies should be retained until after the release of final results each Session.

In the event that a student is asked to produce another copy of work submitted and is unable to do so, they may be awarded zero (0) for that particular assessment task.

The University also reserves the right to request and retain the originals of any documentation/

evidence submitted to support notifications of disruptions to studies. Requests for original documentation will be sent to the applicant's University email address within six (6) months of notification by the student. Students must retain all original documentation for the duration of this six (6) month period and must supply original documents to the University within ten (10) working days of such a request being made.

Turnitin

Students may be requested to submit assessments via Turnitin and in such instances any hard copies submitted without a Turnitin Report will not be marked.

Step by step guidance for Turnitin submissions can be found [here](#). Should you experience any difficulties with Turnitin submission, please see a Lab Demonstrator in Lab 311 at MQC.

If you experience difficulties submitting through Turnitin on the due date, you must email your work in electronic format to your lecturer using the email address provided in the unit guide. Late submissions will be penalised at 10% per day.

Grading & Requirements to pass

This unit will use the following grading system:

- HD - High Distinction (85-100)
- D – Distinction (75-84)
- CR – Credit (65-74)
- P – Pass (50-64)
- F – Fail (0-49)

Grade descriptors and other information concerning grading are contained in the Macquarie University Grading Policy which is available [here](#).

To pass this unit, you must attempt all assessable components of the unit, pass the final exam and attain an overall mark of at least 50%. Failure to do so will result in an F (fail) grade being recorded.

Please note that this is a level 2 elective unit. **All** attempts at a level 2 elective unit will count towards your Macquarie University Average (MQA), including failed and withdraw fail results. If you need academic advice, please see a Student Adviser prior to the Academic Penalty Date (Friday Week 8).

For further information on progression to an Undergraduate degree, please see ***Progression into Undergraduate studies*** section below.

Provision of Feedback

Marks awarded for assessment items will generally be available within fourteen (14) days of the due date.

If you wish to receive further feedback from your instructor, you should contact them directly using the contact details provided in this guide.

Students may seek general feedback about their performance in a unit up to 6 months following results release.

Contacting Staff and Getting Help

Foundation students may approach teaching staff for one-on-one help in one of three ways:

- During Consultation sessions. For details about consultation sessions and Consultation times, please refer to timetabled provided on the Macquarie [City Campus Portal Noticeboard](#).
- Using the "Questions for your instructor" dialogue provided in Week 0 of the respective unit in [iLearn](#).
- Using the instructor's email address provided in the Unit Guide of the respective unit.

For all university related correspondence, students are required to use their official MQ student email account which may be accessed via the [Macquarie University Student Portal](#). Inquiries from personal email accounts will not be replied to.

Assessment Tasks

| Name | Weighting | Due |
|-----------------------------------|-----------|--------------------|
| Class Quizzes | 20% | Weeks 3-11 |
| Practical Test | 20% | Week 7-8 |
| Research Project | 20% | Week 11 |
| Final Examination | 40% | Examination Period |

Class Quizzes

Due: **Weeks 3-11**

Weighting: **20%**

5 class quizzes will be conducted at the beginning of notified lessons, starting week 3. Quizzes will review information covered in the previous classes. Tests will be marked and feedback provided in the following week. All 5 quizzes will count towards the final mark.

On successful completion you will be able to:

- Design a methodology to and carry out an experiment and write a Scientific Report
- Outline the relationship between gene structure, the inheritance of characteristics and the process of protein synthesis.
- Explain the meaning of a healthy organism and how work in the 19th Century led to the link between microbes and disease.

- Describe the methods by which the body protects itself from disease with emphasis on the immune system.
- Describe the strategies developed to prevent and control the spread of disease.
- Discuss the ethical, social and biological implications of different therapies used in the treatment of disease.

Practical Test

Due: **Week 7-8**

Weighting: **20%**

For this task, students will be required to design and conduct an experiment to collect and grow microbes over a period of two weeks. Assessment will include the submission of a written practical report. Students will be provided with a template to follow for the report.

On successful completion you will be able to:

- Design a methodology to and carry out an experiment and write a Scientific Report
- Discuss the ethical, social and biological implications of different therapies used in the treatment of disease.

Research Project

Due: **Week 11**

Weighting: **20%**

Students will select a topic in consultation with the teacher which will involve researching the life, research and scientific contributions of a scientist working in the area of disease.

This assessment must be submitted through Turnitin in iLearn. Step by step guidance for Turnitin submissions will be provided in class, instructions have been provided on iLearn and can also be found here: http://mq.edu.au/iLearn/student_info/assignments.htm#how. Should you experience any difficulties with Turnitin submission, please see a Lab Demonstrator in Lab 311 at MQC. Late submissions will be penalised at 10% per day.

On successful completion you will be able to:

- Explain the meaning of a healthy organism and how work in the 19th Century led to the link between microbes and disease.
- Describe the methods by which the body protects itself from disease with emphasis on the immune system.
- Describe the strategies developed to prevent and control the spread of disease.
- Discuss the ethical, social and biological implications of different therapies used in the treatment of disease.

Final Examination

Due: **Examination Period**

Weighting: **40%**

The final examination paper will be two and a half hours, and will consist of a multiple choice section and a number of extended answer questions. The final exam will be held during the final examination period in either Week 13 or 14. **Please note that you must pass the final exam in order to pass this unit.**

On successful completion you will be able to:

- Design a methodology to and carry out an experiment and write a Scientific Report
- Outline the relationship between gene structure, the inheritance of characteristics and the process of protein synthesis.
- Explain the meaning of a healthy organism and how work in the 19th Century led to the link between microbes and disease.
- Describe the methods by which the body protects itself from disease with emphasis on the immune system.
- Describe the strategies developed to prevent and control the spread of disease.
- Discuss the ethical, social and biological implications of different therapies used in the treatment of disease.

Delivery and Resources

Classes

Weekly contact will be 5 hours consisting of a 2.5 hour lecture, and a 2.5 hour lab / tutorial.

Classes will take place at **St Andrew's Cathedral School**, which is located near Town Hall station (483 George St, Sydney NSW 2000).

The lecturer will meet students at MQC in Week 1 (in the room indicated on the students' timetable) and take them down to St Andrew's. Students will be expected to make their way to St Andrew's from thereon. Please make sure you allow sufficient time to make your way to the School. If you have a class immediately prior to your Science lesson at St Andrew's, you are permitted to leave that class **15 minutes** early in order to arrive at Sta Andrew's on time.

While at St Andrew's, students will be expected to comply with the school's rules and procedures.

During Lectures, new content will typically be presented and explained by the lecturer. During laboratory work and tutorials participants will have more opportunities to engage in discussion and activities. (This unit will not comprise any consultation sessions.) Attendance of both sessions (lectures & tutorials) is compulsory.

Timetables for lectures and tutorials as well as consultation sessions can be found on the

Noticeboard on the [City Campus Student Portal](#).

If any scheduled class falls on a public holiday a make-up lesson may be scheduled, usually on a Saturday. Scheduled make-up days are noted in the Teaching Schedule of the Unit Guide and attendance is compulsory. Where appropriate the instructor may require students to complete alternative activities on-line rather than attending a make-up lesson.

Learning and Teaching Activities

Classes will consist of a mixture of theory and practical activities and will involve the use of chemicals and other laboratory equipment. For this reason, students are required to wear closed shoes for their lessons in the Laboratory.

It is expected that all students purchase the prescribed text and read in advance to ensure that they are well prepared for the content covered in each lecture.

iLearn will also be used to post lecture and tutorial materials and also communicate with students so it is expected that students will check this resource on a regular basis.

iLearn

[iLearn](#) is Macquarie's online learning management systems. The following unit specific information will be available on the website:

- Announcements
- Staff contact details
- Lecture notes and recordings
- Learning and teaching activities and resources
- Assessment information
- Tutorial questions and solutions
- Assessment submission tools such as Turnitin
- Other relevant material

Please note that you must enrol in a unit via [eStudent](#) in gain access to the unit in iLearn.

You are required to regularly check the website and use it as an information and resource centre to assist with your learning.

Ensure that when you have finished using the website, you log out. Failure to do so could allow unauthorised access to your account.

Please contact the IT helpdesk (Ph. 02 9850 4357) or lodge a ticket using [OneHelp](#) if you need assistance accessing iLearn.

Required and Recommended Texts and Materials

Prescribed textbook(s):

- Heineman Biology (Third Edition), Brotherton, J. and Mudie, K. Pearson Secondary,

2010, ISBN: 978 144 251 794 3

All prescribed textbooks will be made available to students to purchase at the Phillip Street Coop Bookshop. Students can view a full list of textbooks for all units on the [Macquarie City Campus Student Portal Noticeboard](#).

Technology Used and Required

In the classroom students will be required to develop skills and safe practices in a variety of areas. Included are microscope work, biological materials and chemical testing. This equipment will be provided in the laboratory.

Students will be required develop expertise in research and presentation technologies. This will include the use of MS PowerPoint and possibly Microsoft Excel.

iLearn will be utilised to put up lecture slides and additional resources, so students should login to the system on a regular basis.

Unit Schedule

| Week | Topic | Readings |
|------------------------------|--|---|
| Beginning: | | |
| Week 1 Mon 22 June | Scientific models and protein synthesis | Pages 150 - 155 |
| Week 2 Mon 29 June | The relationship between genes and the DNA code The role of multiple alleles and the inheritance of multiple genes DNA extraction and DNA fingerprinting | Pages 371 - 386 Pages 133-138 Pages 387 |
| Week 3 Mon 6 July | Electrophoresis Inheritance of genes located on different chromosomes and its role in gene mapping Dihybrid crosses In class quizzes begin | Pages 394-398 Pages 389-393 |
| Week 4 Mon 13 July | The Human Genome Project and its impact upon gene therapies Technological impacts and limitations Gene Therapies | Pages 399-406 Pages 407-412 |

| | | |
|--|---|--|
| <p>Week 5</p> <p>Mon 20 July</p> | <p>The mechanism of genetic change</p> <p>The role of selective breeding, cloning and genetic engineering in changing the genetic nature of a species</p> | <p>Pages 413-420</p> <p>Pages 421-442</p> <p>Pages 201-209</p> |
| <p>Week 6</p> <p>Mon 27 July</p> | <p>Aseptic Techniques</p> <p>Microbiology practical work</p> | <p>Teacher resources</p> <p>Pages 216-221</p> |
| <p>Week 7</p> <p>Mon 3 August</p> | <p>The methods of disease transmission and physical barriers</p> <p>Practical Task</p> | <p>Pages 210-216</p> <p>Pages 247-251</p> |
| <p>Week 8</p> <p>Mon 10 August</p> | <p>The work of Pasteur and Koch</p> <p>The role of the immune response in fighting infection</p> <p>Practical Task</p> | <p>Pages 228-238</p> <p>Pages 254-258</p> |
| <p>Week 9</p> <p>Mon 17 August</p> | <p>The work done in the mid-20th Century that helped better understand the immune system</p> | <p>Teacher resources</p> <p>Pages 259-264</p> |
| <p>Week 10</p> <p>Mon 24 August</p> | <p>Strategies developed to prevent and control the spread of disease</p> <p>The vaccination debate</p> <p>Antibiotic resistance</p> | <p>Pages 282-292</p> <p>Pages 242 -244</p> |
| <p>Week 11</p> <p>Mon 31 August</p> | <p>Malaria – A case study</p> <p>Non infectious diseases; genetic, environmental</p> <p>Research Project Due</p> | <p>Pages 239-240</p> <p>Pages 272- 279</p> |
| <p>Week 12</p> <p>Mon 7 September</p> | <p>The role and methodology of epidemiological studies</p> <p>Complete LEU surveys in class</p> | <p>Pages 270/71</p> <p>-280/81</p> |

| | |
|---------------------|--|
| Week 13 | Final Exam |
| Mon 14 September | (Final Exams may be Held in Week 13 or 14, during the scheduled final exam period. Please refer to the Information Provided on the Portal Noticeboard) |

Other Important Dates

| |
|---|
| Public holidays & make-up days No public holidays will fall on Session 2 teaching days (Please note that online lessons may be organised in lieu of make-up day). |
| Census Dates Financial Census Date (last day to withdraw without financial penalty) - Friday Week 4, 17 July Academic Census Date (last day to withdraw without academic penalty) - Friday Week 8, 14 August |
| Exam Period: Monday 14 September 2015 – Wednesday 23 September 2015 inclusive. Please note you must be available on these days to take exams. |
| Results Release: Session 2 2015 results are scheduled to be released to students via e-Student and MQC Student Portal on Friday 9 October 2015 |

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Grievance Management Policy http://mq.edu.au/policy/docs/grievance_management/policy.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au.

Academic Honesty

The nature of scholarly endeavour, dependent as it is on the work of others, binds all members of the University community to abide by the principles of academic honesty. Its fundamental principle is that all staff and students act with integrity in the creation, development, application and use of ideas and information. This means that:

- all academic work claimed as original is the work of the author making the claim
- all academic collaborations are acknowledged
- academic work is not falsified in any way
- when the ideas of others are used, these ideas are acknowledged appropriately.

Further information on the academic honesty and schedule of penalties that will apply to breaches please consult the [Academic Honesty Policy](#).

If you are unsure about how to incorporate scholarly sources into your own work, please speak to your Instructor or the Student Services team well in advance of your assessment. You may also enrol in [StudyWise](#) or visit the University's [Library Webpage](#) for more resources.

Final Examination Script Viewings and Grade Appeals

If, at the conclusion of the unit, you have performed below expectations, and are considering lodging an appeal of grade and/or viewing your final exam script please refer to http://www.city.mq.edu.au/new_and_current_students/appeals/ for information about associated cut off dates.

Please note that any requests to view exam papers must be booked in immediately following results release.

Before submitting a Grade Appeal, please ensure that you read the [Grade Appeal Policy](#) and noted valid grounds for appeals.

Attendance

Please refer to the [Attendance Policy for Foundation Students](#).

A minimum level of 80% attendance is compulsory for all classes, including consultation sessions and any make-up classes scheduled on weekends. Attendance will be recorded in every lesson and note made of any lateness or period of absence from class.

Where a student is present for only for a minor portion of a lesson (for example arrives late, leaves early, leaves the class frequently or for lengthy periods, engages in inappropriate or unrelated activities or does not participate actively in the majority of the lesson) the instructor reserves the right to mark a student absent for that particular lesson and make note of such incidents.

Students should note that absenteeism (including partial absenteeism) not only has a negative impact on not only their overall attendance record and their academic progress, but could also have ramifications for their visas or eligibility for social benefits where relevant.

In cases of unavoidable non-attendance due to illness or circumstances beyond control, students are advised to lodge a [Disruption to Studies](#) Notification via ask.mq.edu.au even if they have not missed a formal assessment task so that appropriate records of the reasons for unavoidable attendance can be made on their record.

Course Progression

Macquarie City Campus monitors Foundation students' course progress. Please refer to the [Course Progress Policy](#).

To maintain satisfactory program performance students are required to pass 50% or more of their enrolled units in each session.

Students who fail to make satisfactory course progress will be classified as "at risk" students and may have conditions placed upon their enrolment.

International students must comply with the Course Progress policy in order to meet the conditions of their visa.

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

Student Support at Macquarie City Campus

Macquarie City Campus students who require assistance or support are encouraged to contact Student Services (studentadvisor@city.mq.edu.au) or make an appointment to see a student advisor at Reception on Level 2.

Macquarie University Campus Wellbeing services are also available at the City Campus. If you

would like to make an appointment, please email info@city.mq.edu.au or visit their website at: <http://www.campuslife.mq.edu.au/campuswellbeing>.

Academic Support at Macquarie City Campus

Macquarie city campus provides free tutoring / support classes to its student. Support is available for Accounting, numeracy and essay and report writing, research presentation and referencing skills.

Students who are experiencing difficulties in these areas are advised to attend these classes on a drop-in basis. So that the tutor can assist best, students must bring the work (e.g. assignment draft, essay draft, homework problem) with which that they are having difficulties.

For further information about tutoring services, please refer to the [City Campus Portal Noticeboard](#) under Timetables, Tutor Availability.

If you require additional support with university skills, you may also consider enrolling in [UNIWIS E](#). UNIWIS E is an iLearn resource which provides:

- Online learning resources and academic skills workshops
- What is expected of you as a student at Macquarie University
- Personal assistance with your learning & study related questions
- Key strategies and tips that you can use to achieve successful learning both in and out of the classroom
- The definitions and examples of the types of assignments you will encounter in your units

Additional study spaces are also available on Level 1.

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit <http://informatics.mq.edu.au/help/>.

When using the University's IT, you must adhere to the [Acceptable Use Policy](#). The policy applies to all who connect to the MQ network including students.

IT Help at Macquarie City Campus

A lab demonstrator is situated in Lab 311 and can help you with any usage of university systems or resetting your password.

You may also refer to the Online Systems Password Document which has been made available on the [City Campus Student Portal Noticeboard](#).

Whilst utilising the City Campus IT facilities, students are expected to act responsibly. The following regulations apply to the use of computing facilities and online services:

- Accessing inappropriate web sites or downloading inappropriate material is not permitted.
- Material that is not related to coursework for approved unit is deemed inappropriate.
- Downloading copyright material without permission from the copyright owner is illegal, and strictly prohibited. Students detected undertaking such activities will face disciplinary action, which may result in criminal proceedings.

Non-compliance with these conditions may result in disciplinary action without further notice.

Equipment available for loan

Students may borrow headphones for use in the Macquarie City Campus computer labs (210, 307, 311, 608) or a video recorder.

Please ask at Level 2 Reception for details. You will be required to provide your MQC Student ID card which will be held as a deposit while using the equipment.

Graduate Capabilities

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcome

- Design a methodology to and carry out an experiment and write a Scientific Report

Assessment tasks

- Class Quizzes
- Practical Test
- Research Project
- Final Examination

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to

handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcomes

- Design a methodology to and carry out an experiment and write a Scientific Report
- Outline the relationship between gene structure, the inheritance of characteristics and the process of protein synthesis.
- Describe the strategies developed to prevent and control the spread of disease.

Assessment tasks

- Class Quizzes
- Practical Test
- Research Project
- Final Examination

Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

Learning outcomes

- Describe the strategies developed to prevent and control the spread of disease.
- Discuss the ethical, social and biological implications of different therapies used in the treatment of disease.

Assessment tasks

- Class Quizzes
- Practical Test
- Research Project
- Final Examination

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able

to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Design a methodology to and carry out an experiment and write a Scientific Report
- Outline the relationship between gene structure, the inheritance of characteristics and the process of protein synthesis.
- Explain the meaning of a healthy organism and how work in the 19th Century led to the link between microbes and disease.
- Describe the methods by which the body protects itself from disease with emphasis on the immune system.
- Describe the strategies developed to prevent and control the spread of disease.
- Discuss the ethical, social and biological implications of different therapies used in the treatment of disease.

Assessment tasks

- Class Quizzes
- Practical Test
- Research Project
- Final Examination

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- Design a methodology to and carry out an experiment and write a Scientific Report
- Outline the relationship between gene structure, the inheritance of characteristics and the process of protein synthesis.
- Explain the meaning of a healthy organism and how work in the 19th Century led to the link between microbes and disease.
- Describe the methods by which the body protects itself from disease with emphasis on the immune system.

- Describe the strategies developed to prevent and control the spread of disease.
- Discuss the ethical, social and biological implications of different therapies used in the treatment of disease.

Assessment tasks

- Class Quizzes
- Practical Test
- Research Project
- Final Examination

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- Design a methodology to and carry out an experiment and write a Scientific Report
- Outline the relationship between gene structure, the inheritance of characteristics and the process of protein synthesis.
- Describe the methods by which the body protects itself from disease with emphasis on the immune system.
- Describe the strategies developed to prevent and control the spread of disease.
- Discuss the ethical, social and biological implications of different therapies used in the treatment of disease.

Assessment tasks

- Class Quizzes
- Practical Test
- Research Project
- Final Examination

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication

technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- Design a methodology to and carry out an experiment and write a Scientific Report
- Outline the relationship between gene structure, the inheritance of characteristics and the process of protein synthesis.
- Describe the methods by which the body protects itself from disease with emphasis on the immune system.
- Describe the strategies developed to prevent and control the spread of disease.

Assessment tasks

- Class Quizzes
- Practical Test
- Research Project
- Final Examination

Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

Learning outcomes

- Explain the meaning of a healthy organism and how work in the 19th Century led to the link between microbes and disease.
- Discuss the ethical, social and biological implications of different therapies used in the treatment of disease.

Assessment tasks

- Class Quizzes
- Practical Test
- Final Examination

Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work

with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

Learning outcomes

- Describe the strategies developed to prevent and control the spread of disease.
- Discuss the ethical, social and biological implications of different therapies used in the treatment of disease.

Assessment tasks

- Class Quizzes
- Practical Test
- Final Examination

Progression into Undergraduate studies

Completing the Foundation Program

When you successfully complete your Macquarie Foundation Program to the required level, you can articulate into a bachelor's degree at Macquarie University, either the North Ryde campus or the City Campus. Students who successfully complete the Macquarie University Foundation Program but are not eligible for direct admission into an undergraduate degree can still apply to study an [SIBT diploma](#) either at Macquarie University or city campus.

How is entry into Macquarie Undergraduate degrees assessed?

In the Macquarie Foundation Program, students' performance is measured against the MQA (Macquarie University Average). This MQA score is used to determine whether a student is eligible for entry into their chosen bachelor degree at Macquarie University. The MQA is calculated as the average of each student's performance in their level 2 elective units only.

For further information about the MQA and progression into your Undergraduate degree, please see the [Entry pathways to Macquarie University](#) webpage.

Exiting Foundation Student Information Session

An information session will be held in Week 10 for students in their final session of the Foundation Program. You will receive an invitation to attend this session in Week 9 of your final semester, via your student email. At the session you will be provided with information on how to apply for your preferred degree and will be given an opportunity to ask questions, so it is strongly recommended that you attend the Information Session for Finishing Foundation Students.