



BIOL1210

Human Biology

Session 1, In person-scheduled-weekday, North Ryde 2023

School of Natural Sciences

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Disclaimer

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General Information

Unit convenor and teaching staff

Lindsay Parker

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Credit points

10

Prerequisites

Corequisites

Co-badged status

Unit description

This unit is for anyone interested in humans, and how humans interact with the rest of the living world. The subjects covered include basic anatomy, genetics, physiology, disease, reproduction, and human evolution. BIOL1210 will give you the ability to think critically about the major problems of our times, which are often biological in nature. To understand issues such as genetic engineering, global climate change, bioterrorism, cloning, assisted reproductive technologies, antibiotic resistance or the emergence of new human diseases requires a familiarity with modern biological knowledge. In particular, it is increasingly important for anyone involved in human health or medicine to understand ecological and evolutionary processes. We aim to equip you with this knowledge, and at the same time give you an appreciation for the mystery and diversity of life on this planet. The unit content is dealt with in such a way that students without prior studies in biology will not be at a disadvantage, however biology students are also encouraged to take this unit.

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:

ULO1: Demonstrate an understanding and working knowledge of key biological terms

ULO2: Explain physiological processes in the human body starting at the genetic level and working through the biochemistry, cell and tissue functions to a physical outcome

ULO3: Outline the complex interactions between organ systems that result in homeostasis

ULO4: Apply biological concepts to a range of contemporary issues

ULO5: Find scientific articles and critically evaluate the design and conclusions of biological experiments

ULO6: Summarize key findings related to complex biological topics

General Assessment Information

Assessment in this Unit

Assessment for this unit consists of a mixture of assignments, short tests, and a final examination. Submission of all assignments and completion of all tests is strongly recommended, since failure to complete assessment tasks will make it difficult to pass the unit. Students must receive at least 50% overall to pass this subject.

Assessment at a glance

Task	Weight	Due Date	Learning Outcome	Graduate Capabilities	Description
Writing Task	4%	Week 2	6-7	2-4	A 300 word statement on human biology
Online Quizzes	40%	Weekly	1-4	1,4-5	Multiple Choice Quizzes covering lectures from the previous weeks
Reference List	16%	Week 8	1-7	1-5, 7	A 300 word interpretation of papers and correctly formatted reference list
Final Exam	40%	Exam period	1-4, 6-7	1, 3-7	A 2 hour test on the unit content, containing multiple choice and short answer questions

Assessment #1 Writing Task

This is an early assessment task to introduce you to thinking about human biology, it is worth 4% of your total assessment. It will not be given a formal mark – if you hand it in on time, you get 4%, simple as that.

The writing task is to be a single paragraph, approximately 300 words long, on the following topic: **“Reflect on the Unit lecture topics and discuss how they will make an impact setting**

up your degree?” It should be written directly from your own point of view about your study interests relating to biology or other subjects. You do not need to consult any references, nor is a bibliography needed. Opportunities will be provided to ask assignment related questions at Week 1 Q & A sessions.

Assessment #2 Reference List

This is an exercise designed to introduce you to the processes you must go through to write a review of a scientific topic. It is worth 16% of your assessment marks. Firstly, you will be asked to find appropriate reference material using on-line databases of scientific papers discussing an aspect of the relationship between climate change and human health. You will submit a screenshot of the online scientific database search results with your assignment. You will write an approximately 300 word single paragraph summary incorporating relevant points from 4-5 references that includes appropriate in text citations. This word limit will exclude words from your reference list. You will construct a reference list in the correct format for the Biological Sciences on your page. Detailed instructions will be given closer to the due date, students will have the opportunity to choose from 3 subtopics, which will be decided from class input at the Week 6 Q & A sessions.

Assessment #3 On-Line Quizzes

These will cover material presented in the previous week’s lectures. There will be 10 quizzes, each consisting of 20 multiple choice questions, drawn randomly from a question pool of 30 questions. Each Quiz is worth 4% of your total marks. Questions will be based on material in the lecture slides. Once you open the quiz via the iLearn link, you will have one hour to complete it.

Quizzes will sequentially open for completion each week from Week 3 until the end of term. Quizzes will generally cover the lecture material given 2 weeks previously, although can include any material from previous lectures, especially towards the end of the Unit. Final scores will be calculated from the 8 highest quiz scores obtained throughout the Unit. There will be no special considerations for this task unless you have missed 3 or more quizzes.

Details, Dates and Content of On-Line Quizzes

QUIZ #	Opens week	Covers		Lecture Topics
		Week	Lectures	

1	3	1	1 to 3	Scientific Process Basic Chemistry Cell structure and organelles
2	4	2	4 to 6	Cell membranes Cells to Tissues Human organization
3	5	3	7 to 9	Cell metabolism Respiration and Photosynthesis Digestive system and nutrition
4	6	4	10 to 12	Urinary system Cardiovascular system Respiratory system
5	7	4, 5	11 to 15	Muscles and skeletons Nervous system and senses Endocrine system and Hormones
6	8	5, 6	14 to 18	Immune system, Immunization Cell Division, Cell cycle, Mitosis and Meiosis Reproduction, birth control, STIs, Sexual attraction
7	9	6, 7	18 to 21	DNA and the genetic code Molecular basis of inheritance Protein synthesis
8	10	7, 8	20 to 24	Genes to Phenotype Chromosome abnormalities Genetic Diseases
9	11	8, 9	22 to 25	Cancer, Why we have to die Gene cloning and DNA technology Genetic modification, Cloning, Biodiversity
10	12	10, 11, 12	26 to 33	Diseases, Microbiome, Useful Microorganisms, Symbiosis, The Anthropocene, Evolution, Origins of Life, Human Evolution

SUBMITTING YOUR ASSIGNMENTS: IMPORTANT

Assignment submission

The submission time for all uploaded assessments is 11:55 pm. A 1-hour grace period will be provided to students who experience a technical concern.

All assignments will be submitted as electronic copies via the BIOL1210 iLearn page. There will be a Turnitin link for each assignment, in the appropriate week. Turnitin will check your assignment for plagiarism.

Late Assessment Submission Penalty

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark of the task) will be applied for each day a written assignment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. A 1-hour grace period will be provided to students who experience a technical concern.

For any late submission of time-sensitive tasks, such as scheduled exams, please apply for Special Consideration.

Checklist for written assignments (Important!!!)

1. Assignment is typewritten
2. Text is double spaced
3. Text is the required length
4. Text has been proofread and/or spell-checked
5. References are reputable sources (not web sites)
6. References are cited at appropriate points within the text
7. Formatting of references in the text and in the reference list is correct
8. Assignment is your own work – not copied from reference sources or other students or from your previous assignments
9. Assignment has been submitted to Turnitin and the submission number recorded
10. Assignment submitted on time

Return of assignments

We try to return assignments within four weeks of the due date. We will let you know when results are available via an announcement on iLearn. Comments will be available on the iLearn version of your assignment. Grades will be available on your Gradebook, also found on iLearn.

Other material relevant to written assignments

COVID Information

For the latest information on the University's response to COVID-19, please refer to the Coronavirus infection page on the Macquarie website: <https://www.mq.edu.au/about/coronavirus-faqs>. Remember to check this page regularly in case the information and requirements change during semester. If there are any changes to this unit in relation to COVID, these will be communicated via iLearn.

Disruptions to Study:

Where there has been unavoidable and unpredictable disruption to your studies, such as sickness or accident, you can apply for special consideration, extension or supplementary exams through the ask@mq web site (<https://ask.mq.edu.au/>). You need to contact the convenor as soon as possible, and within three days of any missed tests and exams. You may need supporting documents such as a Professional Authority Form (PAF) filled out by their health care professional.

Link to policies and procedures here:

<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/special-consideration>

Definition of Plagiarism and Departmental Policy on Plagiarism

Plagiarism is theft of another person's writing, and will not be tolerated in this, or any other Unit at this University. Heavy penalties may apply, including exclusion from further study. Incidences of plagiarism will, in the first instance, require an interview with the unit convenor, who may decide to pass the case on to University Disciplinary Committee.

Final examination

The final examination is 2 hours in duration and will cover all the material presented in the Unit. It will be conducted at a time to be organized by the examinations section and will be worth 40% of your final mark.

The exam will consist of multiple choice questions in a similar format to the questions in the on-line quizzes and short answer labelling or drawing tasks. To pass the unit, you must obtain more than 50% overall, and therefore passing the final examination will be essential.

The questions will involve an understanding of biological terms and structures. Questions may also ask you to integrate information from different parts of the Unit, and to demonstrate practical application of your biological knowledge to particular problems. Some questions may ask you to use your critical judgment on various statements about biological systems.

Examples of multiple choice questions and labelling or drawing tasks will be available on iLearn.

If you miss the final exam through illness or misadventure:

If you apply for Disruption to Study for your final examination, you must be available to take a supplementary exam. If you receive special consideration for the final exam, a supplementary exam will be scheduled in the interval between the regular exam period and the start of the next session. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application. You can check the supplementary exam information page in iLearn for dates, and approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

Lecture Notes and Textbook:

Lecture notes containing copies of material used in lectures will be available for download as pdf files from iLearn. I strongly recommend that you print out or download notes before listening to lectures. The textbook for the course is optional:

Mader, Sylvia M. *Inquiry into Life* McGraw-Hill Publishers.

Any of the recent editions of this text are suitable (2004-2022). There is no textbook that is entirely appropriate for this unit, but *Inquiry into Life* has a number of useful features that are

relevant to the general philosophy behind BIOL1210. Almost any recent introductory biology textbook can also provide useful background to this unit. Popular scientific journals such as *New Scientist* and *Scientific American* contain articles written in a style that is easy to read and understand. Such journals are a good source for summaries of recent developments in human biology.

Assessment Tasks

Name	Weighting	Hurdle	Due
Final Exam	40%	No	Exam Period
Reference List	16%	No	Week 8
Writing Task	4%	No	Week 2
Online Quizzes	40%	No	Week 3 to start of final exam period (June 6 2023)

Final Exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 45 hours

Due: **Exam Period**

Weighting: **40%**

A final invigilated exam will be held during the Formal Examination period at the end of semester. This may consist of multiple choice and short answer questions.

On successful completion you will be able to:

- Demonstrate an understanding and working knowledge of key biological terms
- Explain physiological processes in the human body starting at the genetic level and working through the biochemistry, cell and tissue functions to a physical outcome
- Outline the complex interactions between organ systems that result in homeostasis
- Apply biological concepts to a range of contemporary issues
- Find scientific articles and critically evaluate the design and conclusions of biological experiments
- Summarize key findings related to complex biological topics

Reference List

Assessment Type ¹: Annotated bibliography

Indicative Time on Task ²: 19 hours

Due: **Week 8**

Weighting: **16%**

Summary of papers and correctly formatted reference list

On successful completion you will be able to:

- Demonstrate an understanding and working knowledge of key biological terms
- Apply biological concepts to a range of contemporary issues
- Find scientific articles and critically evaluate the design and conclusions of biological experiments
- Summarize key findings related to complex biological topics

Writing Task

Assessment Type **1**: Non-academic writing

Indicative Time on Task **2**: 5 hours

Due: **Week 2**

Weighting: **4%**

A short writing task, consisting of a statement on human biology

On successful completion you will be able to:

- Demonstrate an understanding and working knowledge of key biological terms
- Apply biological concepts to a range of contemporary issues

Online Quizzes

Assessment Type **1**: Quiz/Test

Indicative Time on Task **2**: 45 hours

Due: **Week 3 to start of final exam period (June 6 2023)**

Weighting: **40%**

Multiple Choice Quizzes covering lectures from the previous week

On successful completion you will be able to:

- Demonstrate an understanding and working knowledge of key biological terms

- Explain physiological processes in the human body starting at the genetic level and working through the biochemistry, cell and tissue functions to a physical outcome
 - Outline the complex interactions between organ systems that result in homeostasis
 - Apply biological concepts to a range of contemporary issues
 - Summarize key findings related to complex biological topics
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¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

The iLearn Website

All lectures in this unit will be recorded and available through the iLearn web site:

(<https://ilearn.mq.edu.au/login/index.php>).

Your username is your Student ID number (8 digits on your student card).

Your password is your Macquarie OneID student password (sent to you when you enrolled).

There is a help page available: (http://www.mq.edu.au/iLearn/student_info/).

If you are still having trouble logging on, you should contact Student IT Help on:

help@mq.edu.au +61 2 9850-HELP (also known as x4357)

On the iLearn site you will find links to pdf files of each week's lecture notes. You will also find links to Video recordings of every lecture. The page also contains important details about assessments and tests, an Announcement Page and a Bulletin Board. You will submit assignments through the iLearn page via the Turnitin link.

You MUST log on to iLearn several times each week to:

- Check for subject announcements

- Download or view lecture notes (available as pdf files)
- Download or view lecture recordings
- Complete weekly On-Line Quizzes
- Post messages and questions on the Bulletin Board
- Check your grades

Unit Schedule

Unit Structure & Timetable

BIOL1210 is offered in Semester 1 as a series of 36 lectures.

There are three lectures per week, although you can work at a faster pace if you want to. All lecture notes and recordings are available via iLearn. Q & A sessions to discuss Unit lecture and assignment topics/tasks will be held twice per week in person on campus. Q & A attendance is not compulsory but is strongly recommended to strengthen your understanding of the concepts covered in the Unit.

It is important to listen to all the lectures. Students who do not do this find it difficult to pass the Unit.

There are no practical sessions in this course. For those students who want some experience with experimental biology and laboratory work, the other first year Biology courses (BIOL1310, Organisms to Ecosystems & BIOL1110, Genes to Organisms) are recommended.

Lecture Schedule

Week 1: ATOMS TO CELLS

Lecture 1: Introduction and Outline; Scientific Process; Characteristics of Living things.

Lecture 2: Basic chemistry; Biological molecules.

Lecture 3: Cell structure; Prokaryotic and Eukaryotic cells; Cellular organelles.

Week 2: CELLS IN ACTION

Lecture 4: Cellular organelles continued; Cell function; Cell membranes.

Lecture 5: Organisation of Cells into Tissues; Human organisation.

Lecture 6: Organisation of Cells into Tissues; Human organisation.

Week 3: BODY BITS: METABOLISM & HUMAN ORGAN SYSTEMS

Lecture 7: Cell metabolism, Respiration and Photosynthesis.

Lecture 8: Cell metabolism, Respiration and Photosynthesis.

Lecture 9: Digestive System and Nutrition

Week 4: GETTING IT TOGETHER: THE HUMAN INDIVIDUAL

Lecture 10: Urinary System and Excretion, Cardiovascular System.

Lecture 11: Respiratory system, Muscles, and Skeletons.

Lecture 12: Nervous System and Senses.

Week 5: HORMONES, IMMUNITY AND REPRODUCTION

Lecture 13: The Endocrine System; Hormones, Steroids.

Lecture 14: The Immune System; Immunisation; Breast feeding.

Lecture 15: Cell Division; Mitosis and the Cell Cycle, Meiosis and Fertilisation.

Week 6: HUMAN REPRODUCTION; LOVE MAKES THE WORLD GO ROUND

Lecture 16: Reproduction, Birth Control, Sexually Transmitted Diseases.

Lecture 17: Theories of Sexual Attraction, The Physiological basis of Love.

Lecture 18: The molecular basis of Inheritance; DNA and the genetic code.

Week 7: THE BASIS OF INHERITANCE

Lecture 19: DNA and the Genetic Code (continued), Protein Synthesis.

Lecture 20: From Genes to Phenotype; Introduction to Genetics, Review of Meiosis.

Lecture 21: Chromosome Abnormalities and Genetic Diseases.

Week 8: DNA MANIPULATION, BIOTECHNOLOGY, BIODIVERSITY

Lecture 22: Gene cloning and Recombinant DNA technology.

Lecture 23: Genetically Modified Organisms; Cloning of Whole Animals.

Lecture 24: The Diversity of Living things; How many species are there?

Week 9: WHEN IT GOES WRONG, MICROORGANISMS GOOD AND BAD

Lecture 25: Cancers at the Cellular and DNA level; Aging; Why do we have to die?

Lecture 26: A tour of diseases, New and Emerging Diseases, Antibiotic resistance.

Lecture 27: The Human Microbiome.

Week 10: HUMANS AND MICROORGANISMS, SHARING THE PLANET

Lecture 28: Microorganisms in the service of Humankind

Lecture 29: Symbiosis: cooperation between genes, cells, and species

Lecture 30: Human effects on the Biosphere, Past, Present and Future.

Week 11: EVOLUTION, WHERE DID WE COME FROM AND WHERE ARE WE GOING?

Lecture 31: Understanding Evolution.

Lecture 32: On the Origin of Life on Earth (and elsewhere).

Lecture 33: Genetics of the great apes; Evolution of Man; What makes us Human?

Week 12: BIOLOGICAL LITERACY, REVIEW

Lecture 34: Critical thinking; Recent Breakthroughs in Biological Science.

Lecture 35: What's in the Exam; Review of Course.

Lecture 36: Revision and Zoom sessions.

Week 13: FINAL WEEK

No lectures

Policies and Procedures

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

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies \(https://students.mq.edu.au/support/study/policies\)](https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) 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 or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Student Support

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

The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)
- [Student Advocacy](#) provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

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

Changes from Previous Offering

Biology is a very dynamic subject and new discoveries are being made all the time. The lecture content of BIOL1210 is updated every year to reflect these advances. Student feedback on the unit is sought through questionnaires and personal discussion. The Unit style and content is modified, where appropriate, to reflect these suggestions.

Student Feedback and Unit Evaluation

This unit will provide you with written, online and verbal feedback on your assessment tasks. To monitor and improve our teaching, we seek feedback from students, which is then used to modify the unit content and presentation. Informal feedback is always welcome, and in addition, we conduct formal unit and teacher evaluation surveys at the end of each semester. These surveys are anonymous and have in the past contributed to Unit development through incorporation of student's suggestions and comments.