COURSE OUTLINE

LFS261 Microbiology

School: School of Science, Technology and Engineering

2026 | Trimester 1

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

This course introduces you to the world of microbiology, the basis of higher life forms. You learn the fundamental theory and laboratory skills needed to understand microbial isolation, growth, diversity, reproduction, physiology, metabolism and identification. You also study the distribution of microorganisms in nature, their relationship to each other and to other living things as well as their beneficial and detrimental effects. Gain of ethics and laboratory skills is an essential component of the course as well as understanding the theory behind each experiment.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Asynchronous learning materials	1hr	Week 1	12 times
Tutorial/Workshop 1 – Online Tutorial/Workshop	2hrs	Week 1	12 times
Laboratory 1 – On-campus Laboratory every fortnight	3hrs	Week 2	6 times

1.3. Course Topics

The Big Picture; Microbiology and its place in science and the world

Evolution of Earth and microorganisms

Detecting and isolating microorganisms

Microbial diversity, physiology, genetics and metabolism

Microbiological terminology and microbial systematics

Microbial interactions with higher organisms

Beneficial and detrimental effects of microorganisms

Laboratory skills, ethics, communication and professionalism

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 On successful completion of this course, you should be able to...		GRADUATE QUALITIES Completing these tasks successfully will contribute to you becoming...
1	Demonstrate and apply theoretical and foundational knowledge of microbiology and microorganisms | their occurrence, distribution, growth, life cycles, diversity, genetics, relationships and effects on humans, plants and animals	Knowledgeable Empowered
2	Demonstrate knowledge and interpret and analyse data and other information related to identification of micro-organisms, their nutrition requirements and issues related to growth and control of microbial growth	Empowered Ethical
3	Apply ethical codes of conduct to work safely while gaining laboratory skills and collecting data	Knowledgeable Ethical
4	Communicate scientific findings in a laboratory report	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

SCI100 or SCI103 or LFS100 or LFS103

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

MEP263 or MBT263

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

Introductory laboratory skills and scientific report writing

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

The exam will take place in week 4 covering the first 3 weeks of learning material of the course, this early assessment item will prepare students to the mid-term exam. In addition, in the early stages of the trimester students will be provided additional information on the laboratory report writing

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	Quiz/zes	Individual	5%	1 hour	Week 4	Online Test (Quiz)
All	2	Examination - not Centrally Scheduled	Individual	25%	2 hours	Week 7	In Class
All	3	Practical / Laboratory Skills	Individual	45%	a] 30 min online multiple-choice quizzes (20%) b] Laboratory report constructed in week 12 during the laboratory session (25%) (1.5hrs)	Throughout teaching period (refer to Format)	In Class
All	4	Examination - Centrally Scheduled	Individual	25%	2 hours	Exam Period	Online Test (Quiz)

All - Assessment Task 1: Early Assessment Quiz

GOAL:	This task is designed to give you early feedback on foundational theoretical knowledge and to give you an early progress indication for the course.This quiz will help you in preparing for the mid-term exam and it will cover the first 3 weeks of learning materials of the course.
PRODUCT:	Quiz/zes
AUTHORSHIP STATEMENT:	
FORMAT:	Multiple choice questions covering the contents of the learning material from the weeks 1-3
CRITERIA:	**No.** — **Learning Outcome assessed** 1 — You will demonstrate your understanding of the theoretical knowledge you gained related to the evolution, isolation and growing of microorganisms — 1
GENERIC SKILLS:	Communication, Information literacy

All - Assessment Task 2: Mid-term Exam

GOAL:	You will demonstrate your understanding of the theoretical knowledge you gained related to the origin of microorganisms, their ecology, isolation and their laboratory growth as well as introduction to medical microbiology and microbial growth control.
PRODUCT:	Examination - not Centrally Scheduled
AUTHORSHIP STATEMENT:	
FORMAT:	In class written exam with multiple choice and short essay questions covering the contents of the learning material from the weeks 1-6.

CRITERIA:

No.		Learning Outcome assessed
1	Knowledge of microorganisms, their ecology, isolation, growth, relationships and effects on humans	1 2
2	Information related to identify microorganisms, their nutrition requirements and issues related to control of growth	1 2

GENERIC SKILLS:	Communication, Information literacy

All - Assessment Task 3: Laboratory Portfolio

GOAL:	This assessment has been designed for you to specifically develop your competencies in the laboratory – which is an essential skill for Biomedical and Science students and related majors and minors that include microbiology and biotechnology as well as for students who will use laboratory components in their careers like school teachers.
PRODUCT:	Practical / Laboratory Skills
AUTHORSHIP STATEMENT:	
FORMAT:	Laboratory responses: a) Online laboratory quizzes: 30 min MCQ quizzes taking part after completion of each practical: weeks 4,6,8,10,12. Only students who actively participated in the laboratory activity can take these quizzes as a quiz cannot be taken in absentia, it is a skill based learning activity. Due to the resource issues catch ups cannot be provided for the missed lab sessions. b) Laboratory report: A report on practical number 3 (week 6), Part A (TESTING ANTIBACTERIAL MEDICINES) will be constructed in the final practical (week 12). Guidelines will be provided by the course coordinator.

CRITERIA:

No.		Learning Outcome assessed
1	demonstrate and apply theoretical and practical knowledge gained in the practicals	2 3 4
2	interpret and analyse data and other information gained in the practicals (e.g. microbial nutrition requirements, growth rates, microbial counts, antibiotic susceptibility measurements)	3 4
3	apply ethical codes of conduct to work safely while gaining laboratory skills and collecting data	3
4	communicate in writing in the form of a laboratory report that adheres to scientific standards and formats as well as complying with the rubric to be provided by the course coordinator	4

GENERIC SKILLS:	Communication, Collaboration, Problem solving, Organisation, Information literacy

All - Assessment Task 4: Final Exam

GOAL:	Demonstrate and apply theoretical and foundational knowledge of microbiology and microorganisms taxonomy, diversity, metabolism, genetics, relationships and effects on humans, plants and animals
PRODUCT:	Examination - Centrally Scheduled
AUTHORSHIP STATEMENT:	
FORMAT:	2 hour online final exam covering the contents of the learning material from the weeks 7-12
CRITERIA:	

No.		Learning Outcome assessed
1	demonstrate and apply theoretical knowledge of microorganisms (taxonomy, genetics) and relationships (to plants & animals) including	1
2	taxonomical groups of microorganisms	1
3	identification methods	1
4	nutritional requirements and microbial metabolism	1
5	bacterial genetics	1
6	microbial interactions with higher organisms	1
7	beneficial and detrimental effects on plants & animals	1

GENERIC SKILLS:	Communication, Applying technologies, 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

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	Gerard J. Tortora, Berdell, R. Funke, Christine L. Case	0	MICROBIOLOGY	Latest Global Edition	Pearson Education Ltd.
Required	John Lammert	0	Techniques for Microbiology: A Student Handbook	Latest edition	Pearson Education Ltd.
Recommended	Michael T. Madigan,Kelly S. Bender,Daniel H. Buckley,W. Matthew Sattley,David A. Stahl	2018	Brock Biology of Microorganisms	Latest Global Edition	Pearson Higher Education
Recommended	James G. Cappuccino, Chad T. Welsh	0	Microbiology	Latest Edition	Pearson Education Ltd.

8.2. Specific requirements

Protective clothing for laboratory and strict adherence to the laboratory safety guidelines. Students fail to adhere the code or do not present a hard copy of their online laboratory safety quiz results in the first laboratory practical will not be admitted to the laboratory.

9. How are risks managed in this course?

Risk assessments have been performed for all studio and laboratory classes and a low level of health and safety risk exists. Some risk concerns may include equipment, instruments, and tools; as well as manual handling items within the laboratory. It is your responsibility to review course material, search online, discuss with lecturers and peers and understand the 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