BIOL3330

Symbiosis in Health and Disease

Session 2, Infrequent attendance, North Ryde 2020

Department of Biological Sciences

Contents

Notice

As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and ot her small group learning activities on campus for the second half-year, while keeping an online ver sion available for those students unable to return or those who choose to continue their studies onli ne.

To check the availability of face-to-face and onlin e activities for your unit, please go to timetable vi ewer. To check detailed information on unit asses sments visit your unit's iLearn space or consult yo ur unit convenor.

General Information

Unit convenor and teaching staff
Lecturer
Michelle Power
michelle.power@mq.edu.au
Contact via biol3330@mq.edu.au

Credit points
10

Prerequisites
130cp at 1000 level or above including 30cp from BIOL units at 2000 level or above

Corequisites

Co-badged status

Unit description
Symbiotic interactions underpin all biological systems. Symbiosis is defined as two (or more) species living together. Symbiotic interactions may be mutualistic, with both organisms benefiting from the partnership, or parasitic, where one of the partners is harmed. The association may be short-term or for the life of the organisms, with many symbiotic interactions essential for survival of the organisms. In this unit we explore diverse symbiotic partnerships spanning microbial, plant and animal taxa. We will investigate symbiosis in the context of biological roles and outcomes including health and disease of diverse taxa, co-evolution, and immunity. We will also address current issues of significance to symbiosis such as antibiotic resistance, emerging disease, ecosystem health and global change. Students who are interested in medical science, marine biology, conservation, evolution and ecology will enjoy 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: Differentiate key taxonomic groups of commensal, mutualisitc and parasitic organisms

ULO2: Contrast life-cycles of organisms that lead a symbiotic way of life

ULO3: Critique origins of endosymbiotic organelles

ULO4: Describe how interactions with endemic microbial communities affects disease susceptibility

ULO5: Interpret laboratory testing results for disease surveillance

ULO6: Communicate impacts of symbiotic interactions to appropriate stakeholders

General Assessment Information

Assessment details

Details of assessments will be provided on iLearn and in class.

Assignment submission

All assignments will be digitally submitted through the appropriate Turnitin submission link on iLearn. An A3 printout of your poster is the only assessment that will be provided in hardcopy (and via Turnitin). All assessments need to be written in the student's own words.

Academic honesty

All assessments need to be written in the student's own words. The penalties imposed by the University for plagiarism are serious and may include expulsion from the University. Any evidence of plagiarism WILL be dealt with following University policy. Penalties for plagiarism will be imposed for each assessment and clearly defined in marking guides. Further penalties imposed by the Faculty disciplinary committee may range from a loss of all marks and awarding of a zero depending on the circumstances.

Extensions, penalties and Disruptions to Studies

The deadlines for assignments are not negotiable. If an assignment is submitted late a penalty of -10% of the mark allocated for the assignment will be deducted per day that any work is submitted late (i.e. 5 days late = -50% of marks available).

If you experience a serious and unavoidable disruption to your studies and require an extension for an assessment please submit a Disruptions to Studies notification via ask.mq.edu.au with supporting documentation, and a Professional Authority Form completed by your health care professional. If you anticipate a potentially serious and unavoidable disruption (e.g. upcoming surgery) speak to the unit convenor early and apply for an extension before the due date.

Unit completion

To pass this unit students need to:

1. achieve an overall minimum grade of 50%,
2. attend a minimum of nine lectorial classes and 6 practical classes is required. Note that the work undertaken in lectorial and practical classes form the basis of assessments, which cannot be completed without participation in relevant classes. A role will be taken for each class.

3. Complete of all hurdle assessments (online journal and practical class activities) to a satisfactory level or defined mark, is required

Assessment Tasks

Name	Weighting	Hurdle	Due
Poster - Symbiotic interactions	15%	No	OCS2
Mid-semester Test	20%	No	OCS3
Learning Journal	25%	Yes	OCS1, OCS2 and OCS3
Antimicrobial Resistance Fair	40%	No	OCS3
Practical report worksheets	0%	Yes	OCS1 and OCS2

Poster - Symbiotic interactions

Assessment Type [1]: Poster
Indicative Time on Task [2]: 15 hours
Due: **OCS2**
Weighting: **15%**

You will prepare a poster that describes the biology, impacts / benefits of an organism that leads a symbiotic way of life.

On successful completion you will be able to:

- Differentiate key taxonomic groups of commensal, mutualisitc and parasitic organisms
- Critique origins of endosymbiotic organelles
- Describe how interactions with endemic microbial communities affects disease susceptibility
- Communicate impacts of symbiotic interactions to appropriate stakeholders

Mid-semester Test

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 15 hours
Due: **OCS3**
Weighting: **20%**

Mid semester test covering content from weeks 1-7.

On successful completion you will be able to:

- Differentiate key taxonomic groups of commensal, mutualisitc and parasitic organisms
- Contrast life-cycles of organisms that lead a symbiotic way of life
- Critique origins of endosymbiotic organelles
- Describe how interactions with endemic microbial communities affects disease susceptibility
- Interpret laboratory testing results for disease surveillance

Learning Journal

Assessment Type [1]: Reflective Writing
Indicative Time on Task [2]: 20 hours
Due: **OCS1, OCS2 and OCS3**
Weighting: **25%**
This is a hurdle assessment task (see assessment policy for more information on hurdle assessment tasks)

Completion of a series of tasks and activities associated with the weekly lectorial and practical sessions (weeks 1-7). These tasks will prepare you for lectorial activities and demonstrate laboratory competencies, some also report on lectorial outcomes.

Tasks are diverse and include reading and summarising concepts in papers and videos, answering questions and reflections. More information is detailed in instructions for these activities will be provided under weekly iLearn schedules and during weekly classes.

The online journal is a hurdle. You must complete all tasks to pass the unit. A serious attempt must be evident in your submission.

On successful completion you will be able to:

- Differentiate key taxonomic groups of commensal, mutualisitc and parasitic organisms
- Contrast life-cycles of organisms that lead a symbiotic way of life
- Critique origins of endosymbiotic organelles
- Describe how interactions with endemic microbial communities affects disease susceptibility

Antimicrobial Resistance Fair

Assessment Type [1]: Design Task

Indicative Time on Task [2]: 30 hours
Due: **OCS3**
Weighting: **40%**

In small groups you will develop an interactive activity for virtual delivery to communicate a 'One Heath' issue associated with antimicrobial resistance. A series of activities will be undertaken at different stages of the project.

1. Using set questions survey an external group (family / friends) to gauge their knowledge of the issue (individual work).

2. Develop an activity as a group to showcase an issue of antimicrobial resistance. Time will be allocated in lectorials for this activity (group work).

3. Prepare a virtual delivery of the activity (group work)

4. Reflective report and survey summary - outcome of interviews and reflection on group activity (individual work)

On successful completion you will be able to:

- Interpret laboratory testing results for disease surveillance
- Communicate impacts of symbiotic interactions to appropriate stakeholders

Practical report worksheets

Assessment Type [1]: Participatory task
Indicative Time on Task [2]: 10 hours
Due: **OCS1 and OCS2**
Weighting: **0%**
This is a hurdle assessment task (see assessment policy for more information on hurdle assessment tasks)

A worksheet for each practical class will be completed during the practical sessions and submitted for feedback.

On successful completion you will be able to:

- Differentiate key taxonomic groups of commensal, mutualisitc and parasitic organisms
- Describe how interactions with endemic microbial communities affects disease susceptibility
- Interpret laboratory testing results for disease surveillance

[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

DELIVERY

BIOL3330 is divided into themes and material presented in weekly lectures (online), and a weekly lectorial and practical class. The content in each learning activity is aligned and students need to keep up to date with the material to do well in this unit.

For infrequent attendance students should take note of the material that needs to be completed before on campus sessions (OCS) as noted in iLearn under the relevant OCS tabs.

Lectures

Lectures provide broad overviews to the topics that we explore each week. The lecture material complements material presented in practical classes and lectorials. To ensure that your performance and understanding of material associated with practical and lectorial classes is optimal, we expect you to listen to the lectures before the lectorial and practical classes of the same week / OCS.

Lectorials

The lectorials delve deeper into the weekly unit themes. Lectorials comprise mini-lectures that are accompanied by small group tasks. Activities in the lectorial form the basis of content for your learning journal assessment.

Practical classes

There are four major practical themes that will be covered in BIOL3330.

Several practical classes are split in two due to limited space in glasshouses for plant processing and complexity of DNA extractions. Refer to class schedule and practical 1 session.

Some material required for the learning journal will be gathered in practical classes and major assessments are based on practical activities.

Dress for laboratory sessions

- You must wear sturdy shoes that cover your feet.
- You must wear a lab coat in every practical to protect your clothes.
- You MUST bring your own lab coat to every class. We will no longer provide

disposable lab coats as these are not environmentally friendly.

- Although the material that we will use has been rendered non-infectious good laboratory practice of wearing protective clothing when working with organisms that potentially cause disease is required. ALWAYS wash hands before leaving laboratory.
- **PLEASE NOTE**
    - **NO COAT = NO CLASS**
    - **Inappropriate shoes = no laboratory access**

RESOURCES

There is no required text book for BIOL3330 Symbiosis in Health and Disease. we will provide references to many research papers that will assist with weekly unit themes.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). 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
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

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

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/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/study/getting-started/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

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 help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- 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

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

If you are a Global MBA student contact globalmba.support@mq.edu.au

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.