School of Biological Sciences

BIOL104 Evolution, Biodiversity and Environment

Subject Outline
Autumn, 2016
On-Campus
Wollongong

Subject Information
Credit Points: 6
Pre-requisite(s): Subject Code to be entered from subject database
Co-requisite(s): Subject Code to be entered from subject database
Restrictions: As per subject database
Contact Hours: As per subject database

Subject Contacts

Subject Coordinator/Lecturer
Name: Dr Ben Gooden
Location: Building 35, Room 107
Telephone: 61 2 4221 4310
Email: ben_gooden@uow.edu.au
Consultation mode and times: Email for appointment

Lecturer/Demonstrator/Tutor
Name: A/Prof James Wallman
Location: Building 15, RoomG19c
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Consultation mode and times: Email for appointment

Lecturer/Demonstrator/Tutor
Name: A/Prof Todd Minchinton
Location: Building 35, RoomG09
Telephone: 61 2 4221 5188
Email: todd_minchinton@uow.edu.au
Consultation mode and times: Email for appointment

Student Support and Advice
For general enquiries please contact the StudentHub 41:
Location: 41.138B
Telephone: 61 2 4221 3492
Email: smah-students@uow.edu.au
Student Consultation and Communication

University staff receive many emails each day. In order to enable them to respond to your emails appropriately and in a timely fashion, students are asked to observe basic requirements of professional communication.

Please ensure that you include your full name and student number and identify your practical class or tutorial group in your email so that staff know who they are communicating with and can follow-up personally where appropriate.

Consider what the communication is about

- Is your question addressed elsewhere (e.g. in the subject outline or, on the eLearning site)?
- Is it something that is better discussed in person or by telephone? This may be the case if your query requires a lengthy response or a dialogue in order to address. If so, see consultation times above and/or schedule an appointment.
- Are you addressing your request to the most appropriate person?

Specific email subject title to enable easy identification of issue

- Identify the subject code of the subject you are enquiring about (as staff may be involved in more than one subject) put this in the email subject heading. Add a brief, specific query reference after the subject code where appropriate.

Professional courtesy

- Address the staff member appropriately by name (and formal title if you do not yet know them).
- Use full words (avoid ‘text-speak’ abbreviations), correct grammar and correct spelling.
- Be respectful and courteous.
- Allow 3 – 4 working days for a response before following up. If the matter is legitimately urgent, you may wish to try telephoning the staff member (and leaving a voicemail message if necessary) or inquiring at the School Office.
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Section A: General Information

Subject Learning Outcomes

On completion of this subject, students should be able to:

1. have a clear perception of the diversity of organisms present in nature;
2. recognise the anatomical and life-history characteristics of the major groups of organisms;
3. understand the operation of the evolutionary processes which have combined to produce the diversity;
4. understand the principles of intrinsic population growth and how it provides the potential for natural selection;
5. understand the way in which populations of different organisms combine to form communities, and be aware of the nature of the interactions which occur among organisms in a community;
6. understand the interactions between the physical and biotic components of ecosystems, and understand the importance of nutrient cycling and energy flow in ecosystem function;
7. design an experiment, take replicate samples, analyse results and present a concise, accurate scientific report; and be aware of some of the social and ethical implications of research in biology.
8. understand the fundamental principles of microscopy and be able to construct scientific diagrams as records of microscopic organisms.

Subject Description

This subject aims to provide students with a comprehensive introduction to whole organism biology, from species to populations, communities and ecosystems. Specifically, the subject explores the identity, anatomical and life-history characteristics of the main groups of organisms, their patterns of diversity across Earth, the processes of evolution and speciation, ecology and conservation biology. In addition, through a series of practical and tutorial classes, the subject equips students with an understanding of the scientific process, ways in which experiments are designed and implemented, the processes of data collection, analysis and hypothesis testing, and scientific writing.

eLearning Space

This subject has materials and activities available via eLearning. To access eLearning you must have a UOW user account name and password, and be enrolled in the subject. eLearning is accessed via SOLS (student online services). Log on to SOLS and then click on the eLearning link in the menu column. For information regarding the eLearning spaces please use the following link:
http://uowblogs.com/moodlelab/files/2013/05/Moodle_StudentGuide-1petpo7.pdf

Lecture, Tutorial, Laboratory Times

All timetable information is subject to variation. Check latest timetabling information on the ‘Current Student’ webpage on UOW website or log into SOLS to view your personal timetable prior to attending classes.

Timetable information can be accessed from

Key University Dates can be accessed from
Readings, References and Materials

Textbooks
The following text(s) will need to be accessed by students enrolled in this class; these can be purchased from the UniShop:


Prescribed Readings (includes eReadings)
Nil

Materials
The following materials are compulsory:

- Practical Manual A and Practical Manual B (Hard copy from UniShop, or PDF from eLearning site)
- Biology Instrument Kit
- Laboratory Coat

Recommended Readings
The following references complement the prescribed readings and textbooks:


Another useful guide to good writing (although not specific to biology) is:


The following books are also in the University Library’s reserve or reference collections and may be referred to when necessary:


Recommended readings are not intended as an exhaustive list, students should use the Library catalogue and databases to locate additional resources.

Recent Changes to this Subject
Nil
Ethical Objection to the Use of Animal and Animal Products

In order to achieve specific learning objectives, the use of animals, animal tissues, and or animal-derived products (such as sera) is inherent and unavoidable. Students with conscientious objections to this use should not enrol in this subject.

Students who intend to avoid a particular learning activity on the basis of conscientious objection should notify the subject coordinator in writing as soon as possible and not later than the end of Week 1 of the session. Students who do not participate in a particular learning activity are required to complete an alternative exercise (a CD-ROM is available) or attend the practical and "observe". The material involved is examinable and the prac must be written up and completed in your workbook. For further information, refer to http://www.uow.edu.au/about/policy/UOW058708.html

Laboratory Safety Guidelines

The rules below are general rules that are required in laboratories.

- Before commencing your project you are to ensure that you understand specific procedures for the laboratory in which you work. These will be outlined to you during the relevant practical classes.
- You will need to fill out a risk assessment form before commencing any experiments (confer with your laboratory supervisor).
- Never use any equipment or attempt any experiment without checking the safety implications with your laboratory supervisor or experienced delegated laboratory worker.
- Undergraduate students are not permitted to work after hours unless there is appropriate approval and supervision.

List of Topics Covered

The following are examples of the topics to be covered in this course. This is not an exhaustive list and will be subject to change.

Lecture Topics
- Introduction & Foundations in Biology
- Evolution, Speciation and Extinction
- Biodiversity & Classification
- Fungi
- Plants
- Animal Evolution
- Marine & Terrestrial Invertebrates
- Parasites
- Arthropods & Insects
- Vertebrates
- Ecology
- Conservation Biology & Climate Change

Practical Topics
- Intro to Pracs & Insect Project
- Scientific Experiments
- Micro-organisms
- Plants
- Marine Invertebrates
- Terrestrial Invertebrates
- Vertebrates
- Ecology

Tutorial Topics
- Scientific Method & Experimentation
- Data Collection and Synthesis
- Data Analysis 1
- Data Analysis 2
- Scientific Communication and Report Writing

A detailed timetable will be provided to students at the commencement of the subject, both during the introductory lecture and on Moodle.
Section B: Assessment

Assessment Summary

<table>
<thead>
<tr>
<th>Assessment Item</th>
<th>Form of Assessment</th>
<th>Due Date</th>
<th>Return/Feedback Due date</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment 1</td>
<td>Microscopes Quiz</td>
<td>Week 2</td>
<td>Within 21 days of due date</td>
<td>2%</td>
</tr>
<tr>
<td>Assessment 2</td>
<td>Statistics Quiz</td>
<td>Week 8</td>
<td>Within 21 days of due date</td>
<td>3%</td>
</tr>
<tr>
<td>Assessment 3</td>
<td>Mid-session Theory Quiz</td>
<td>Week 7</td>
<td>Within 21 days of due date</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment 4</td>
<td>Major Assignment - Insect Project</td>
<td>Week 9</td>
<td>Within 21 days of due date</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment 5</td>
<td>Major Assignment – Nest Report</td>
<td>Week 10</td>
<td>Within 21 days of due date</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment 6</td>
<td>Practical Mini-quizzes</td>
<td>Week 6 &amp; Week 11</td>
<td>Within 21 days of due date</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment 7</td>
<td>Practical Examination</td>
<td>During Exam Period</td>
<td>Release of results</td>
<td>20%</td>
</tr>
<tr>
<td>Assessment 8</td>
<td>Theory Examination</td>
<td>During Exam Period</td>
<td>Release of results</td>
<td>35%</td>
</tr>
<tr>
<td>Total Marks</td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Details of Assessment Tasks

Assessment tasks will be marked using explicit criteria that will be provided to students prior to submission.

**Assessment 1**
- **Microscopes Quiz**
  - **Due date**: To be completed by the end of Week 2 on Moodle
  - **Weighting**: 2%
  - **Submission**: Submit an electronic copy of your assessment online
  - **Type of Collaboration**: Individual Assessment
  - **Length**: Details provided in class
  - **Details**: Please refer to Subject Manual on Moodle
  - **Style and format**: Online Tutorial Exercises
  - **Subject Learning Outcomes**: 8
  - **Marking Criteria**: The marking criteria will be made available on your eLearning site by week 1 of session.

**Assessment 2**
- **Statistics Quiz**
  - **Due date**: To be completed by the end of Week 8 on Moodle
  - **Weighting**: 3%
  - **Submission**: Submit an electronic copy of your assessment online
  - **Type of Collaboration**: Individual Assessment
  - **Length**: Details provided in class
  - **Details**: Please refer to Subject Manual on Moodle
  - **Style and format**: Online Tutorial Exercises
  - **Subject Learning Outcomes**: 7
  - **Marking Criteria**: The marking criteria will be made available on your eLearning site by week 1 of session.
### Assessment 3
#### Mid-session Theory Quiz

| **Due date** | Week 7 during practical class |
| **Weighting** | 10% |
| **Submission** | Exam papers and answers must be submitted at the conclusion of the exam. |
| **Type of Collaboration** | Individual Assessment |
| **Length** | 35 multiple-choice questions; 45 minutes |
| **Details** | Multiple Choice Responses |
| **Style and format** | In-class test |
| **Subject Learning Outcomes** | 1,2,3,4 |
| **Marking Criteria** | The marking criteria will be made available on your eLearning site by week 1 of session. |

### Assessment 4
#### Major Assignment - Insect Project

| **Due date** | Week 9 |
| **Weighting** | 10% |
| **Submission** | Submission details will be available on Moodle |
| **Type of Collaboration** | Individual Assessment |
| **Length** | N/A |
| **Details** | For this project you will submit a collection consisting of 10 ADULT insects, each in association with evidence of some aspect of their biology that is adequately explained. Specific details on how to collect, identify, store and present your insects will be outlined during week 1 of session as well as in the subject manual available on Moodle. |
| **Style and format** | Report |
| **Subject Learning Outcomes** | 1,2,7 |
| **Marking Criteria** | The marking criteria will be made available on your eLearning site by week 1 of session. |

### Assessment 5
#### Major Assignment – Nest Report

| **Due date** | Week 10 |
| **Weighting** | 10% |
| **Submission** | Submit an electronic copy of your assessment via upload to Moodle |
| **Type of Collaboration** | Individual Assessment |
| **Length** | 1,500 words |
| **Details** | For this report you will write up the findings of the experiment you set up during the practical in Week 2 to determine whether the location of a nest (dense vs. open vegetation) affects the degree to which it suffers predation and how long this takes. You are expected to also analyse your results using the appropriate statistical tests that will be taught to you during the tutorial classes. Specific details on how to design and run the experiment, collect and analyse the data, and write the report will be outlined during week 1 of session as well as in the subject manual available on Moodle. The class data will be processed and made available to you on the BIOL104 e-site. |
| **Style and format** | Report |
| **Subject Learning Outcomes** | 5,6,7 |
| **Marking Criteria** | The marking criteria will be made available on your eLearning site by week 1 of session. |
Assessment 6  | Practical Mini-quizzes  
---|---  
**Due date** | Week 6 & Week 11 during practical time  
**Weighting** | 5% each (10% across both quizzes)  
**Submission** | Exam papers and answers must be submitted at the conclusion of the exam  
**Type of Collaboration** | Individual Assessment  
**Length** | Three short-answer questions; total of 15 minutes to complete  
**Details** | Short Answer Questions  
**Style and format** | Practical test  
**Subject Learning Outcomes** | 1, 2, 3, 8  
**Marking Criteria** | The marking criteria will be made available on your eLearning site by week 1 of session.  

Assessment 7  | Practical Examination  
---|---  
**Due date** | During exam period  
**Weighting** | 20%  
**Submission** | Exam papers and answers must be submitted at the conclusion of the exam.  
**Type of Collaboration** | Individual Assessment  
**Length** | 1 hour ten minutes; 6 questions  
**Details** | Short-answer questions  
**Style and format** | Final exam  
**Subject Learning Outcomes** | 1-8  
**Marking Criteria** | The marking criteria will be made available on your eLearning site by week 1 of session.  

Assessment 8  | Theory Examination  
---|---  
**Due date** | During exam period  
**Weighting** | 35%  
**Submission** | Exam papers and answers must be submitted at the conclusion of the exam.  
**Type of Collaboration** | Individual Assessment  
**Length** | 2 hours; 100 multiple-choice questions  
**Details** | Multiple Choice Responses  
**Style and format** | Final exam  
**Subject Learning Outcomes** | 1,2,3,4,5,6  
**Marking Criteria** | The marking criteria will be made available on your eLearning site by week 1 of session.  

**Minimum Requirements for a Pass in this Subject**  
To receive a clear pass in this subject a total mark of 50% or more must be achieved. In addition, failure to meet any of the minimum performance requirements is grounds for awarding a Technical Fail (TF) in the subject, even where total marks accumulated are greater than 50%.  

The minimum performance requirements for this subject are:  
- attempt all assessment tasks  
- meet the minimum participation requirements set out below.
Minimum Student Attendance and Participation
Student attendance at lecture is not compulsory but is strongly recommended.

Student attendance at tutorials, practicals, seminars and/or simulations is compulsory and students must attend at least 80% of classes. Absences will require the submission of an application for Academic Consideration via SOLS and the presentation of suitable documentation, for example a Medical Certificate, to Student Central as soon as practical. For further details about applying for academic consideration visit the Student Central webpage:

Scaling
Scaling may occur in this subject at the end of session by the Unit Assessment Committee and/or Faculty Assessment Committee (FAC). Marks will only be scaled to ensure fairness/parity of marking across groups of students. Scaling will not affect any individual student’s rank order within their cohort. For more information refer to Assessment Guidelines – Scaling:

Late Submission
Late submission of an assessment task without an approved extension of the deadline is not acceptable. If you are unable to submit an assessment due to extenuating circumstances (e.g. medical grounds or compassionate grounds), you can make an application of academic consideration. Not all circumstances qualify for academic consideration. For further details about applying for academic consideration visit the Student Central webpage:

Late Submission Penalty
Late submission of an assessment task without an approved extension of the deadline is not acceptable. Marks will be deducted for late submission at the rate of 10% of the total possible marks for that particular assessment task per day. This means that if a piece of work is marked out of 100, then the late penalty will be 10 marks per day (10% of 100 possible marks per day). The formula for calculating the late penalty is the total possible marks x 0.10 x number of days late. For the purposes of this policy a weekend (Saturday and Sunday) will be regarded as two days.

No marks will be awarded for work submitted after the assessment has been returned to the students.

Supplementary Assessments
Supplementary assessment may be offered to students whose performance in this subject is close to that required to pass the subject, and are otherwise identified as meriting an offer of a supplementary assessment. The precise form of supplementary assessment will be determined at the time the offer of a supplementary assessment is made.

Students can log on to SOLS and click on the link titled “Supplementary Assessment” to view any applicable offers. Addition information on supplementary assessments is available at:

System of Referencing Used for Written Work
The Author-Date (Harvard) referencing system should, unless otherwise specified for a particular assessment (check Details of Assessment Tasks), be utilised. A summary of the Harvard system can be accessed on the Library website at: http://public01.library.uow.edu.au/refcite/style-guides/html/
Use of Internet Sources
Students are able to use the Internet to access the most current information on relevant topics and information. Internet sources should only be used after careful critical analysis of the currency of the information, the role and standing of the sponsoring institution, reputation and credentials of the author, the clarity of the information and the extent to which the information can be supported or ratified by other authoritative sources.

Plagiarism
The full policy on Academic Integrity and Plagiarism is found in the Policy Directory on the UOW website.

“The University’s Academic Integrity and Plagiarism Policy, Faculty Handbooks and subject guides clearly set out the University’s expectation that students submit only their own original work for assessment and avoid plagiarising the work of others or cheating. Re-using any of your own work (either in part or in full) which you have submitted previously for assessment is not permitted without appropriate acknowledgement. Plagiarism can be detected and has led to students being expelled from the University.

The use by students of any website that provides access to essays or other assessment items (sometimes marketed as ‘resources’), is extremely unwise. Students who provide an assessment item (or provide access to an assessment item) to others, either directly or indirectly (for example by uploading an assessment item to a website) are considered by the university to be intentionally or recklessly helping other students to cheat. This is considered academic misconduct and students place themselves at risk of being expelled from the University.”

Submission of Assessments
Refer to the submission requirements under the details of the individual assessments. Students should ensure that they receive a receipt acknowledging submission. Students will be required to produce this in the event that an assessment task is considered to be lost. Students are also expected to keep a copy of all their submitted assessments in the event that re-submission is required.

Assessment Return
Students will be notified when they can collect or view their marked assessment. In accordance with University Policy marked assessments will usually only be held for 21 days after the declaration of marks for that assessment.
Section C: General Advice

Students should refer to the Faculty of Science, Medicine and Health website for information on policies, learning and support services and other general advice.

University Policies

Students should be familiar with the following University policies:

a. Code of Practice – Teaching and Assessment

b. Code of Practice – Research, where relevant

c. Student Charter

d. Code of Practice – Student Professional Experience, where relevant

e. Academic Integrity and Plagiarism Policy

f. Student Academic Consideration Policy

g. Course Progress Policy

h. Graduate Qualities Policy

i. Academic Complaints Policy (Coursework and Honours Students)

j. Policy and Guidelines on Non-Discriminatory Language Practice and Presentation

k. Workplace Health and Safety, where relevant

l. Intellectual Property Policy

m. Policy on Ethical Objection by Students to the Use of Animal and Animal Products in Coursework Subjects, where relevant

n. Animal Research Guidelines, where relevant

o. Student Conduct Rules and accompanying Procedures or Research Misconduct Policy for research students
Student Support Services and Facilities
Students can access information on student support services and facilities at the following link. This includes information on “Academic Support”, “Starting at University, “Help at University” as well as information and support on “Career’s and Jobs”. http://www.uow.edu.au/student/services/index.html

Peer Assisted Study Sessions
Peer Assisted Study Sessions are available for BIOL104 in Autumn semester in 2016.

Whether you are a top performer or could use some improvement, you will benefit from the skills and understanding gained from attending PASS. Think “Super Group” learning! PASS sessions are facilitated by senior students who have excelled in this subject. Many students each year find this subject challenging, and PASS has a strong record of helping students to succeed. In 2015, students who attended PASS five or more times for BIOL104 achieved 8 better on average than non-attending students. None of the students that attended weekly failed. To find out more about the multi award winning PASS Program, or to see the PASS timetable, go to: http://www.uow.edu.au/student/services/pass

Student Etiquette
Guidelines on the use of email to contact teaching staff, mobile phone use in class and information on the university guide to eLearning ‘Netiquette’ can be found at http://www.uow.edu.au/student/elearning/netiquette/index.html

Version Control Table

<table>
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<tr>
<th>Version Control</th>
<th>Release Date</th>
<th>Author/Reviewer</th>
<th>Approved By</th>
<th>Amendment</th>
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<td>20160120</td>
<td>Dr Ben Gooden – Subject Coordinator</td>
<td>Mrs Sonia Losinno – ADE Nominee</td>
<td>Transfer the textbooks list from Prescribed Texts to Textbooks</td>
</tr>
<tr>
<td>1</td>
<td>20151123</td>
<td>Dr Ben Gooden – Subject Coordinator</td>
<td>Mrs Sonia Losinno – ADE Nominee</td>
<td>FINAL BIOL104 Autumn 2016 Subject Outline</td>
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