Principles of Biology II

Class code
BIOL-UA 9012 – 006 (Lec)
BIOL-UA 9012 – 007 (Rec)

Instructor Details
Dr Sean Blamires
sjb22@nyu.edu
Consultations by Appointment
Please allow at least 24 hours for your instructor to respond to your emails.

Class Details
Spring 2017

Principles of Biology II

Wednesday 12:00 – 3:00pm (Lectures)
February 1 to May 10
Auditorium
NYU Sydney Academic Centre

Thursday 1:00 – 2:00pm (Recitations)
February 9 to May 11
Auditorium
NYU Sydney Academic Centre

Prerequisites
Principles of Biology I

Class Description
This course gives a broad overview of biology from an evolutionary perspective. Students will be introduced to the major biological forms and functions using a comparative approach. Particular emphasis will be given to how biological structures and systems are adapted to life history and ecology. Coursework will comprise of lectures and discussions.

Desired Outcomes
By the end of the course, students should be able to:
• Define the processes of evolution
• Describe the major morphological characteristics of the main groups of organisms and compare and contrast their biology
- Understand the scientific process of developing and testing hypotheses
- Effectively communicate biology using written and oral media
- Locate and critically assess scientific literature

**Assessment Components**

**First Exam 20% (Week 6, 1 hour during class time)**
Multiple choice and short-answer questions based on lectures during weeks 1-5.

**Oral Presentation and Abstract 25% (Abstracts due in Wk 9, Presentations in class starting in Wk 10)**
12 minute presentation in pairs + 3 minutes questions, and a 200 word abstract (worth 5% of mark)

**Second Exam 25% (Week 12, 1 hour during class time)**
Multiple choice and short-answer questions based on lectures during week 5-11

**Final Exam 30% (Exam Week: Wed 17 May, 12:00-2:00pm)**
Open book, extended answer questions based on all lectures. Topics to select from will be presented in week 14.

*Failure to submit or fulfill any required course component will result in failure of the class.

*For this course your total numerical score, calculated from the components listed above, is converted to a letter grade without rounding.*

**Assessment Expectations**

**Grade A:** Excellent work showing a thorough knowledge and understanding of the topics, with excellent use of scientific language, detailed analysis and clear logical explanations, showing insight, independent, original thought and reasoning.

**Grade B:** Good work with good general knowledge and understanding of the topics, accurate use of scientific language, good general analysis and coherent explanations showing some independent reasoning, reading and research.

**Grade C:** Satisfactory work, broadly correct both factually and analytically, with some explanation and reasoning: the work will typically demonstrate a basic understanding of the topic.

**Grade D:** Passable work, showing a general, superficial knowledge and understanding of the topic, lacking satisfactory use of scientific language or adequate analysis.

**Grade F:** Unsatisfactory work in all criteria.
For this course your total numerical score, calculated from the components listed above, correspond to the following letter grades:

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<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<tbody>
<tr>
<td>A</td>
<td>90 to 100</td>
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<tr>
<td>A-</td>
<td>86 to &lt; 90</td>
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<tr>
<td>B+</td>
<td>82 to &lt; 86</td>
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<tr>
<td>B</td>
<td>72 to &lt; 82</td>
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<tr>
<td>B-</td>
<td>68 to &lt;72</td>
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<tr>
<td>C+</td>
<td>64 to &lt;68</td>
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<tr>
<td>C</td>
<td>54 to &lt;64</td>
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<td>C-</td>
<td>50 to &lt;54</td>
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<td>D+</td>
<td>45 to &lt;50</td>
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<tr>
<td>D</td>
<td>40 to &lt;45</td>
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<tr>
<td>F</td>
<td>0 to &lt;40</td>
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 Submission of Work

Should work be submitted as a hard copy, or electronically?

Unless otherwise specified, all written work must be submitted as a hard copy. The majority of written assignments must also be submitted electronically via NYU Classes. All in-class presentations must be completed during class time.

Who may submit a student’s work?

Each student’s assigned work must be handed in personally by that student. The student may not nominate another person to act on his/her behalf.

When and where should the work be submitted?

The hard copy of any written work must be submitted to the instructor at the beginning of class on the date the work is due. If the assignment due date falls outside of class time, work must be submitted to the Staff Member on duty in Room 2.04 during prescribed Office Hours (11:30am-12:30pm and 2:30-3:30pm Mon-Thu), or by appointment with the Academic Programs Coordinator. Each submitted item of work received in Room 2.04 will be date and time stamped in the presence of the student. Work submitted in Room 2.04 will not be considered “received” unless formally stamped.

What is the Process for Late Submission of Work?

After the due date, work may only be submitted under the following conditions:

- Late work, even if an extension has been granted, must be submitted in person by appointment with the Academic Programs Coordinator. Each submitted item of work must be date and time stamped in order to be considered “received”.

- Work submitted after the submission time without an agreed extension receives a penalty of 2 points on the 100-point scale (for the assignment) for each day the work is late. Written work submitted beyond five weekdays after the submission date...
without an agreed extension receives a mark of zero, and the student is not entitled to feedback for that piece of work.

- Because failure to submit or fulfil any required course component will result in failure of the course, it is crucial for students to submit every assignment even when it will receive a mark of zero. Early departure from the program therefore places the student at risk of failing the course.

### Plagiarism Policy

The academic standards of New York University apply to all coursework at NYU Sydney. NYU Sydney policies are in accordance with New York University’s plagiarism policy. The presentation of another person’s words, ideas, judgment, images or data as though they were your own, whether intentionally or unintentionally, constitutes an act of plagiarism.

It is a serious academic offense to use the work of others (written, printed or in any other form) without acknowledgement. Cases of plagiarism are not dealt with by your instructor. They are referred to the Director, who will determine the appropriate penalty (up to and including failure in the course as a whole) taking into account the codes of conduct and academic standards for NYU’s various schools and colleges.

### Attendance Policy

Study abroad at Global Academic Centres is an academically intensive and immersive experience, in which students from a wide range of backgrounds exchange ideas in discussion-based seminars. Learning in such an environment depends on the active participation of all students. And since classes typically meet once or twice a week, even a single absence can cause a student to miss a significant portion of a course. To ensure the integrity of this academic experience, class attendance at the centres is mandatory, and unexcused absences will affect students' semester grades. The class roster will be marked at the beginning of class and anyone who arrives after this time will be considered absent. Students are responsible for making up any work missed due to absence.

For courses that meet once a week, one unexcused absence will be penalised by a two percent deduction from the student’s final course grade. For courses that meet two or more times a week, the same penalty will apply to two unexcused absences. Repeated absences in a course may result in failure.

Faculty cannot excuse an absence. Requests for absences to be excused must be directed to the Academic Programs Coordinator. Students must provide appropriate documentation for their absence. In the case of illness, students must contact the Academic Programs Coordinator on the day of absence. They must provide medical documentation to Academic Programs Coordinator within three days of the absence in order to be medically excused. The note must include a medical judgement indicating that the student was unfit to attend class/work on the specific day or dates of the absence. Faculty will be informed of excused absences by the Academic Programs staff.
**Classroom Expectations**

This is a seminar subject and requires the active participation of all students. It also requires engaged discussion, including listening to and respecting other points of view. Your behaviour in class should respect your classmates’ desire to learn. It is important for you to focus your full attention on the class, for the entire class period.

- Arrive to class on time.
- Once you are in class, you are expected to stay until class ends. Leaving to make or take phone calls, to meet with classmates, or to go to an interview, is not acceptable behaviour.
- Phones, digital music players, and any other communications or sound devices are not to be used during class. That means no phone calls, no texting, no social media, no email, and no internet browsing at any time during class.
- Laptop computers and tablets are not to be used during class except in rare instances for specific class-related activity expressly approved by your instructor.
- The only material you should be reading in class is material assigned for that class. Reading anything else, such as newspapers or magazines, or doing work from another class, is not acceptable.
- Class may not be recorded in any fashion – audio, video, or otherwise – without permission in writing from the instructor.

**Diversity, Inclusion and Equity**

NYU is committed to building a culture that respects and embraces diversity, inclusion, and equity, believing that these values – in all their facets – are, as President Andrew Hamilton has said, “...not only important to cherish for their own sake, but because they are also vital for advancing knowledge, sparking innovation, and creating sustainable communities.” At NYU Sydney we are committed to creating a learning environment that:

- fosters intellectual inquiry, research, and artistic practices that respectfully and rigorously take account of a wide range of opinions, perspectives, and experiences; and
- promotes an inclusive community in which diversity is valued and every member feels they have a rightful place, is welcome and respected, and is supported in their endeavours.

**Religious Observance**

Students observing a religious holiday during regularly scheduled class time are entitled to miss class without any penalty to their grade. This is for the holiday only and does not include the days of travel that may come before and/or after the holiday. Students must notify their professor and the Academic Programs Coordinator in writing via email one week in advance before being absent for this purpose.

**Provisions to students with Disabilities**

Students with disabilities who believe that they may need accommodations in a class are encouraged to contact the Moses Centre for Students with Disabilities at (212) 998-4980 as soon as possible to better ensure that such accommodations are implemented in a timely fashion. For more information, see Study Away and Disability.
Required Texts

It is a course expectation that you have done the required reading and have prepared sufficiently to discuss them in class.


Internet Research Guidelines

Internet resources are not acceptable as references. Peer-reviewed scientific papers are required. Information on appropriate referencing will be provided in the course.

WEEKLY SCHEDULE (Lectures and Recitations)

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture and Recitation Topics</th>
<th>Readings</th>
<th>Assignments</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Bacteria &amp; Archaea Protists</td>
<td>Ch. 27 &amp; Ch. 28</td>
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<tr>
<td>Wed 1 Feb (Lec)</td>
<td>No recitation</td>
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<tr>
<td>Week 2</td>
<td>Introduction to Animal Diversity &amp; Invertebrates</td>
<td>Ch. 32 &amp; Ch. 33</td>
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<td>Wed 8 Feb (Lec) Thu 9 Feb (Rec)</td>
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<td>Week 3</td>
<td>Vertebrates</td>
<td>Ch. 34</td>
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<tr>
<td>Wed 15 Feb (Lec) Thu 16 Feb (Rec)</td>
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<tr>
<td>Week 4</td>
<td>Principles of Animal Form &amp; Function Animal Nutrition</td>
<td>Ch. 40 &amp; Ch. 41</td>
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<td>Wed 22 Feb (Lec) Thu 23 Feb (Rec)</td>
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<tr>
<td>Week 5</td>
<td>Circulation and Gas Exchange</td>
<td>Ch. 42</td>
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<td>Wed 1 Mar (Lec) Thu 2 Mar (Rec)</td>
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<tr>
<td>Week 6</td>
<td>Osmoregulation and Excretion</td>
<td>Ch. 44</td>
<td>First Exam (1hr) (20%)</td>
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<td>Wed 8 Mar (Lec) Thu 9 Mar (Rec)</td>
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*SPRING BREAK: 13 – 17 March (Week 7)*
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<tr>
<th>Week 8</th>
<th>Animal Reproduction</th>
<th>Ch. 46 &amp; Ch. 45</th>
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<tr>
<td>Wed 22 Mar (Lec)</td>
<td>Hormones and the Endocrine System</td>
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<td>Thu 23 Mar (Rec)</td>
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<tr>
<td>Week</td>
<td>Lecture and Recitation Topics</td>
<td>Readings</td>
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<td>Week 9&lt;br&gt;Wed 29 Mar (Lec)&lt;br&gt;Thu 30 Mar (Rec)</td>
<td>The Immune System&lt;br&gt;Animal Development</td>
<td>Ch. 47</td>
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<td>Week 10&lt;br&gt;Wed 5 Apr (Lec)&lt;br&gt;Thu 6 Apr (Rec)</td>
<td>Neurons, Synapses and Signalling&lt;br&gt;Nervous Systems</td>
<td>Ch. 48 &amp; Ch. 49</td>
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<td>Week 11&lt;br&gt;Wed 12 Apr (Lec)&lt;br&gt;Thu 13 Apr (Rec)</td>
<td>Sensory &amp; Motor Mechanisms</td>
<td>Ch. 50</td>
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<td>Week 12&lt;br&gt;Wed 19 Apr (Lec)&lt;br&gt;Thu 20 Apr (Rec)</td>
<td>Plant Diversity I &amp; II: How Plants&lt;br&gt;Colonised Land, The Evolution of&lt;br&gt;Seed Plants</td>
<td>Ch. 29 &amp; 30</td>
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<td>Week 13&lt;br&gt;Wed 26 Apr (Lec)&lt;br&gt;Thu 27 Apr (Rec)</td>
<td>Fungi (Online lecture)&lt;br&gt;FIELD TRIP: UNSW Museum of&lt;br&gt;Human Disease</td>
<td>Ch. 38 &amp; Ch.39</td>
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<td>Week 14&lt;br&gt;Wed 3 May (Lec)&lt;br&gt;Thu 4 May (Rec)</td>
<td>Plant Structure, Growth and&lt;br&gt;Development&lt;br&gt;Resource Acquisition &amp;&lt;br&gt;Transport in Plants</td>
<td>Ch. 35, 36 &amp; Ch. 37</td>
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<tr>
<td>Week 15&lt;br&gt;Wed 10 May (Lec)&lt;br&gt;Thu 11 May (Rec)</td>
<td>Soil and Plant Nutrition&lt;br&gt;Angiosperm Reproduction and&lt;br&gt;Biotechnology Plant Responses&lt;br&gt;to Signals</td>
<td>Ch. 31</td>
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<td>Exam Week&lt;br&gt;Wed 17 May</td>
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**Your Instructor**

Dr Sean J. Blamires (Ph.D., University of Sydney) is a Lecturer at the University of New South Wales. His major research interest is spider silk evolution and material properties at nano- to macro-scales. He has collaborative research links with the The Institute for Frontier Materials, Deakin University, Tunghai University, University of Akron, USA, Australian Synchrotron, and the National Synchrotron Radiation Research Centre, Taiwan. He has published over 40 scientific papers in a range of journals including *Current Biology, Royal Society Open Science, Biomacromolecules, and Journal of the Royal Society Interface.*