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<th>Location</th>
<th>NYU London</th>
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<td>Class code</td>
<td>UA 9012.001</td>
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<td>Instructor Details</td>
<td>Dr Valerie Wells</td>
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**Class Details**

Lecture: Monday 9am-12noon. Room 102, Bedford Square

Recitation: one of the following: Monday 4pm-5pm; Monday 5pm-6pm; Tuesday 5pm-6pm

**Prerequisites**

General Chemistry I and II; Principles of Biology I

**Class Description**

Introductory course for science majors designed to acquaint the student with the fundamental principles and processes of biological systems. Subjects include the basics of chemistry pertinent to biology, biochemistry and cell biology, genetics and molecular biology, anatomy and physiology, neurobiology, ecology, population genetics and history and classification of life forms and evolution.

Lectures, recitations, course essay, verbal presentation, field trip.

**Desired Outcomes**

An understanding of the Principles of Biology

**Assessment Components**

Coursework essay (2000 words) 20%;
Verbal presentation (10 minutes) and written synopsis (1000 words) 20%;
Participation in class 10%;
Midterm exams 20% (two exams, 10% each);
Final exam 30%

Failure to submit or fulfil any required course component results in failure of the class.

**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. Work should reveal a considerable degree of independent reading and research and coursework should include the use of peer reviewed primary reference material.

**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. Coursework may include the use of some peer reviewed primary reference material.

**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, lack of satisfactory use of scientific language or adequate analysis or reasoned explanations.

Grade F: Unsatisfactory work in assessed criteria

Grading of verbal presentations will also include an assessment concerning preparation, communication with the audience, effective use of any slides/images presented, and ability to answer questions. (Grade A, excellent/very good; B, good; C, satisfactory; D adequate in some aspects, not in others; F, unsatisfactory).

**Required Text(s)**

Required: Campbell Biology 11th edition text book (Urry, Cain, Wasserman, Minorsky, Reece (either hardback or e-text))

ADVISABLE: Text book and “Mastering Biology available as a package as follows:

- Campbell Biology book, 11th edition (Urry, Cain, Wasserman, Minorsky, Reece) hard back PLUS access to online “Mastering Biology” e-text access package card/code.
- OR Campbell Biology book, 11th edition (Urry, Cain, Wasserman, Minorsky, Reece) e-text PLUS access to online “Mastering Biology” e-text access package card/code.

Access package card/code provides online “Mastering Biology” material with practice multiple choice questions and challenge questions for private study to reinforce and to challenge learning.

A Study Guide to accompany Campbell text book provides practice multiple choice questions and challenge questions for private study, but these are less extensive than the “Mastering Biology” package

**Supplemental Texts(s) (not required to purchase as copies are in NYU-L Library)**

A list of supplemental texts in the NYU –L library collection which students may wish to read will be given at the beginning of the semester.

**Internet Research Guidelines**

Students are required to use peer reviewed sources accessed via the Bobst library science research portal. This will be fully discussed when the course assignments are given.

**Additional Required Equipment**

Calculator

**Session 1**

Bacteria and Archaea (27) Protists (28)

Numbers in brackets refer to text book chapters.

**Session 2**

Plant Diversity I: How Plants Colonized Land (29)
Plant Diversity II: The Evolution of Seed Plants (30)

**Session 3**

Angiosperm Reproduction and Biotechnology (38)
Plant Structure, Growth and Development (35)
Resource Acquisition and Transport in Vascular Plants (36)

Session 4

Resource Acquisition and Transport in Vascular Plants (36)
Soil and Plant Nutrition (37)
Fungi (31)

Session 5

Midterm exam, 1 hour 15 minutes; multiple choice questions, and short written answers (100-150 words)
Overview of Animal Diversity (32), Animal Development (47)
Coursework essay topic assigned to students (see note in co-curricular activities). Essay approximately 2000 words.

Session 6

An Introduction to Invertebrates (33)
The Origin and Evolution of Vertebrates (34)

Session 7

The Origin and Evolution of Vertebrates (continued) (34)
Animal Form and Function (40)
Animal Nutrition (41)

Students’ verbal presentations, together with written synopsis (1000 words), (20% of assessment component) will be given in recitation groups between session 8 (March 12th) and session 13 (April 23rd). The precise session will be arranged with each student at the beginning of the semester as the date of the presentation will depend on the topic that each student chooses to present.

Session 8

Circulation and Gas Exchange (42)

Session 9

Osmoregulation and Excretion (44)
Animal Reproduction (46), Animal Development (47)

Session 10

Midterm exam, 1 hour 15 minutes; multiple choice questions, and short written answers (100-150 words).
Animal Reproduction (46), Animal Development (47) (continued)

Session 11

Plant Responses to Internal and External Signals (39)
Neurons, Synapses and Signaling (48)

Session 12

Nervous Systems (49)
Sensory and Motor Mechanisms (50)

Hand in course essay (end of break in lecture class)

Session 13

Sensory and Motor Mechanisms continued (50)
Hormones and the Endocrine System (45)
**Session 14**

The Immune System (43)

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**Session 15**

FINAL EXAM Two hours and 30 minutes. 9.30am-12noon

Multiple choice questions, short written answers (100-150 words) and longer essays (200-250 words).

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**Classroom Etiquette**

Toilet breaks should be taken before or after class or during class breaks.

Food & drink, including gum, are not to be consumed in class.

Mobile phones should be set on silent and should not be used in class except for emergencies.

Laptops are only to be used with the permission of the teacher.

Please kindly dispose of rubbish in the bins provided.

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**Required Co-curricular Activities**

**Mandatory weekend visit** to the Eden Project, Cornwall from early morning Friday March 16th to late evening Saturday 17th. This visit extends the work of several class lectures on Ecology. Coursework essay (20%) will be based on class studies and a scientific lecture/tour of the Humid Tropical and the Temperate Biomes at the internationally renowned Eden Project. The essay will be assigned before the visit.

Travel and accommodation costs are provided. Students required only to purchase their own food.

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**Suggested Co-curricular Activities**

Students will be advised of other current interesting co-curricular activities.

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**Your Instructor**

Valerie Wells is research scientist. Her research is focused on defining differences in the signalling pathways which operate in normal and cancer cells, in order to exploit differences in their genetic makeup which can be targeted to selectively activate programmed cell death in cancer cells while leaving normal cells unharmed. A novel cytokine, beta-GBP (beta-galactoside binding protein), has been identified and cloned and has been found to selectively induce apoptosis in cancer cells and in colon cancer human tumor xenografts in mice. Valerie Wells is currently investigating the molecular signalling pathways activated by βGBP leading to programmed cell death.

Recent publications


Recent participation in International conferences


NYU GLOBAL ACADEMIC POLICIES

Policies and procedures for Global Academic Centres, including policies on academic integrity and the Study Away Standard, can be found here: https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/student-services.html

Absences: Key information on NYU London’s absence policy, how to report absences, and what kinds of absences can be excused can be found here: http://www.nyu.edu/london/academics/attendance-policy.html

NYU London work submission policies can be found here: http://www.nyu.edu/london/academics/academic-policies.html

Classroom conduct: Academic communities exist to facilitate the process of acquiring and exchanging knowledge and understanding, to enhance the personal and intellectual development of its members, and to advance the interests of society. Essential to this mission is that all members of the University Community are safe and free to engage in a civil process of teaching and learning through their experiences both inside and outside the classroom. Accordingly, no student should engage in any form of behaviour that interferes with the academic or educational process, compromises the personal safety or well-being of another, or disrupts the administration of University programs or services.

Please refer to the NYU London Disruptive Student Behaviour Policy at https://goo.gl/Nvt5Vu for examples of disruptive behaviour and guidelines for response and enforcement.