**Location** | NYU London  
---|---
**Class code** | BIOL-UA 9011-001  
---|---
**Instructor Details** | Dr Valerie Wells  
---|---
**Class Details** | Lecture class:  
Recitation class  
---|---
**Prerequisites** | High School Chemistry  
---|---
**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, 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** | Participation in class 10%  
Coursework essay (2000 words) (20%)  
Verbal presentation: analysis of data from assigned scientific literature (10 minutes) (20%)  
Mid term exams  20% (two exams, each one hour and 15 minutes; 10% each)  
Final exam ( two hours and 30 minutes) 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 primary peer reviewed 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 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, lacking satisfactory use of scientific language or adequate analysis or reasoned explanations.

Grade F: Unsatisfactory work in assessed criteria.

Assessment of verbal presentations will also include assessment concerning preparation, communication with the audience, effective use of 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)**


Advisable: Campbell Biology 11th edition (Urry, Cain, Wasserman, Minorsky, Reece) with access to online “Mastering Biology” 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.


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

A list of supplemental texts which students may wish to read will be given at the beginning of the semester. Copies of these texts are in the NYU in London library collection.

**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 essay is assigned.

**Additional Required Equipment**

Calculator

**Session 1**

Exploring Biology (1); The Chemical Context of Life (2); Water and Life (3); Carbon and the Molecular Diversity of Life (4). Figures in brackets refer to the text book chapters.

**Session 2**

Structure and Function of Large Biological Molecules (5); Membrane Structure and Function (7)

**Session 3**

An Introduction to Metabolism (8); Cellular Respiration and Fermentation (9)

**Session 4**

Photosynthesis (10); Cell Communication (11)

**Session 5**

9am-10.15am: Midterm exam. 1 hour and 15 minutes. Multiple choice questions and short written answers.
10.45am-12noon: Cell Communication (continued); The Cell Cycle (12)
<table>
<thead>
<tr>
<th>Session 6</th>
<th>The Cell Cycle (12) (continued); Meiosis and Sexual Life Cycles (13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 7</td>
<td>Molecular Basis of Inheritance (16); Mendel and the Gene Idea (14)</td>
</tr>
<tr>
<td>Session 8</td>
<td>Mendel and the Gene Idea (14); The Chromosomal Basis of Inheritance (15) 2000 word course essay assigned.</td>
</tr>
<tr>
<td>Session 9</td>
<td>Gene Expression: From Gene to Protein (17)</td>
</tr>
<tr>
<td>Session 10</td>
<td>DNA Tools and Biotechnology (20); Regulation of Gene Expression (18)</td>
</tr>
</tbody>
</table>
| Session 11 | 9am-10.15am: Midterm exam. One hour and 15 minutes. Multiple choice questions and short written answers.  
10.45-12 noon: Regulation of Gene Expression (18) (continued)  
Scientific literature for verbal presentations assigned in recitation class (Verbal presentations (10 minutes) from data from the assigned scientific literature will be presented in recitation class on December 4th) |
| Session 12 | Genomes and Their Evolution (21); Descent with Modification: A Darwinian View of Life (22)  
Hand in course essay |
| Session 13 | The Evolution of Populations (23); The Origin of Species (24) |
| Session 14 | The History of Life on Earth (25); Phylogeny and the Tree of Life (26)  
Verbal presentations (10 minutes) from data from assigned scientific literature will be presented in recitation class on December 4th |
| Session 15 | Final Exam. Two and a half hours. Multiple choice questions, short written answers and longer essays. |
| Classroom Etiquette | 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 may be used with the permission of the teacher.  
Please kindly dispose of rubbish in the bins provided. |
Visit to Charles Darwin’s House, Down House, Downe, Kent.

9am-3.30pm Saturday November 11th

None; travel and entrance costs provided by NYU

Visit to Grant Museum, University Street, London WC1
Visit to Natural History Museum
Visit to Science Museum.

Valerie Wells is a 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. 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.