Principles of Biology I

**Class code**
BIOL-UA 9011 - 001

**Instructor Details**
Dr Valerie Wells  
Office hour – Bedford Square, Wednesdays, 6pm-7pm, room 207

**Class Details**
Fall 2013  
Lecture: Monday, 9am-12noon  
Laboratory: Wednesday 1.30pm-4.30pm, Birkbeck main building, room 319, 3rd floor  
Recitation: one hour; one of the following: Monday 3.30pm-4.30pm (freshmen only); Monday, 4.40pm-5.40pm (upperclassmen only); Wednesday, 5pm-6pm (upperclassmen only)  

Location to be confirmed.

**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, anatomy and physiology, neurobiology, ecology, population genetics and history and classification of life forms and evolution. Laboratory exercises illustrate the basics of experimental biology, molecular biology and biochemistry as well as the diversity of life forms and organ systems.

Lectures, recitations, course essay, laboratory experimental work, scientific writing based on laboratory experimental work, verbal presentation, field trip(s).

**Desired Outcomes**
An understanding of the Principles of Biology  
Observational, experimental and analytical skills

**Assessment Components**
Participation in class 10%  
Scientific writing – based on selected laboratory experiment (1500-2000 words) (15%)  
Coursework essay (1500-2000words) (15%)  
Verbal presentation from data from assigned scientific literature (10 minutes) (10%)  
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. Failure to submit or fulfil any required course component results in failure of the class.
Be as specific as possible about your expectations regarding student work

**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 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

**Grade Conversion**

NYU in London uses the following scale of numerical equivalents to letter grades:

- A=94-100
- A-=90-93
- B+=87-89
- B=84-86
- B-=80-83
- C+=77-79
- C=74-76
- C-=70-73
- D+=67-69
- D=65-66
- F=below 65

Where no specific numerical equivalent is assigned to a letter grade by the class teacher, the mid point of the range will be used in calculating the final class grade (except in the A range, where 95.5 will be used).

**Grading Policy**

NYU in London aims to have grading standards and results in all its courses similar to those that prevail at Washington Square.

**Attendance**

NYUL has a strict policy about course attendance. No unexcused absences are permitted. While
Policy

students should contact their class teachers to catch up on missed work, you should NOT approach them for excused absences.

Excused absences will usually only be considered for serious, unavoidable reasons such as personal ill-health or illness in the immediate family. Trivial or non-essential reasons for absence will not be considered.

Excused absences can only be considered if they are reported in accordance with guidelines which follow, and can only be obtained from the appropriate member of NYUL's staff.

Please note that you will need to ensure that no make-up classes – or required excursions - have been organised before making any travel plans for the semester. See also section 11.1 - Make up days.

Absence reporting for an absence due to illness

1. On the first day of absence due to illness you should report the details of your symptoms by e-mailing absences@nyu.ac.uk including details of: class(es) missed; professor; class time; and whether any work was due including exams. Or call free (from landline) 0800 316 0469 (option 2) to report your absences on the phone.

2. Generally a doctor’s note will be required to ensure you have sought treatment for the illness. Contact the Gower Street Health Centre on 0207 636 7628 to make an appointment, or use HTH general practitioners if you cannot get an appointment expediently at Gower Street.

3. At the end of your period of absence, you will need to complete an absence form online at http://bit.ly/NuCl5K. You will need to log in to NYU Home to access the form.

4. Finally you must arrange an appointment to speak to Nigel Freeman or Donna Drummond-Smart on your first day back at class. You must have completed the absence form before making your appointment.

Supporting documentation relating to absences must be submitted within one week of your return to class.

Absence requests for non-illness reasons

Absence requests for non-illness reasons must be discussed with the Academic Office prior to the date(s) in question – no excused absences for reasons other than illness can be applied retrospectively. Please come in and see us in Room 308, 6 Bedford Square, or e-mail us at academics@nyu.ac.uk.

Further information regarding absences

Each unexcused absence will be penalized by deducting 3% from the student’s final course mark. Students are responsible for making up any work missed due to absence. Unexcused absence from recitation class will incur a 1% deduction from the final course mark.

Unexcused absences from exams are not permitted and will result in failure of the exam. If you are granted an excused absence from an examination (with authorisation, as above), your lecturer will decide how you will make-up the assessment component, if at all (by make-up examination, extra coursework, viva voce (oral examination), or an increased weighting on an alternate assessment component, etc.).

NYUL also expects students to arrive to class promptly (both at the beginning and after any breaks) and to remain for the duration of the class. If timely attendance becomes a problem it is the prerogative of each instructor to deduct a mark or marks from the final grade of each late arrival and each early
departure.

Please note that for classes involving a field trip or other external visit, transportation difficulties are never grounds for an excused absence. It is the student’s responsibility to arrive at an agreed meeting point in a punctual and timely fashion.

Please refer to the Student Handbook for full details of the policies relating to attendance. A copy is in your apartment and has been shared with you on Google Docs.

Late Submission of Work

Written work due in class must be submitted during the class time to the professor. Late work should be submitted in person to a member of NYU London staff in the Academic Office (Room 308, 6 Bedford Square) during office hours (Mon – Fri, 10:30 – 17:30). Please also send an electronic copy to academics@nyu.ac.uk for submission to Turnitin.

Work submitted within 5 weekdays after the submission time without an agreed extension receives a penalty of 10 points on the 100 point scale.

Written work submitted more than 5 weekdays after the submission date without an agreed extension fails and is given a zero.

Please note end of semester essays must be submitted on time.

Plagiarism Policy

Plagiarism: the presentation of another piece of work or words, ideas, judgements, images or data, in whole or in part, as though they were originally created by you for the assignment, whether intentionally or unintentionally, constitutes an act of plagiarism.

Pleaserefer to the Student Handbook for full details of the plagiarism policy.

All students must submit an electronic copy of each piece of their written work to www.turnitin.com and hand in a printed copy with the digital receipt to their professor. Late submission of work rules apply to both the paper and electronic submission and failure to submit either copy of your work will result in automatic failure in the assignment and possible failure in the class.

Electronic Submission

The Turnitin database will be searched for the purpose of comparison with other students’ work or with other pre-existing writing or publications, and other academic institutions may also search it.

In order for you to be able to submit your work onto the Turnitin website, you will need to set up an account:

1) Go onto the Turnitin website http://www.turnitin.com
2) Click ‘Create Account’ in the top right hand corner
3) Select user type of ‘student’
4) Enter your class ID & Turnitin class enrolment password (these will be e-mailed to you after the drop/add period, or contact academics@nyu.ac.uk if you have misplaced these).
5) Follow the online instructions to create your profile.

To submit your work for class, you will then need to:
1) Log in to the Turnitin website
2) Enter your class by clicking on the class name
3) Next to the piece of work you are submitting (please confirm the due date), click on the ‘submit’ icon
4) Enter the title of your piece of work
5) Browse for the file to upload from wherever you have saved it (USB drive, etc.), please ensure your work is in Word or PDF format, and click ‘submit’
6) Click ‘yes, submit’ to confirm you have selected the correct paper (or ‘no, go back’ to retry)
7) You will then have submitted your essay onto the Turnitin website.
8) Please print your digital receipt and attach this to the hard copy of your paper before you submit it to your professor (this digital receipt appears on the website, immediately after you submit your paper and is also sent to your e-mail address). Please also note that when a paper is submitted to Turnitin all formatting, images, graphics, graphs, charts, and drawings are removed from the paper so that the program can read it accurately. Please do not print the paper in this form to submit to your lecturers, as it is obviously pretty difficult to read! You can still access the exact file you uploaded by clicking on the ‘file’ icon in the ‘content’ column.

Please also see the Late Submission of Work policy, above.

Students must retain an electronic copy of their work for one month after their grades are posted online on Albert and must supply an electronic copy of their work if requested to do so by NYU in London. Not submitting a copy of a piece of work upon request will result in automatic failure in the assignment and possible failure in the class. NYU in London may submit in an electronic form the work of any student to a database for use in the detection of plagiarism, without further prior notification to the student.

Penalties for confirmed cases of plagiarism are set out in the Student Handbook.

Required Text(s)


Supplemental Texts(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 scientific writing and course essays are assigned.

Additional Required Equipment
Calculator

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

Laboratory classes each week reinforce the material covered in the lecture classes.

Session 2
Structure and Function of Large Biological Molecules (5); Membrane Structure and Function (7).

September 9th

Session 3
The Cell (6); An Introduction to Metabolism (8).

September 16th
1500-2000 word scientific writing (based on laboratory experiment) assigned.

Session 4
Cellular Respiration (9); Photosynthesis (10).

September 23rd

Session 5
Photosynthesis (10); Cell Communication (11).

September 30th

Session 6
NB FRIDAY 4th October – Make up day for Monday of Fall break.

FRIDAY October 4th
Midsessional exam. 1 hour and 15 minutes. Multiple choice questions and short written answers. The Cell Cycle (12).

Session 7
Meiosis and Sexual Life Cycles (13); The Molecular Basis of Inheritance (16).

October 7th
NB Laboratory class on Wednesday 9th October-laboratory experiment for scientific writing coursework.

Session 8
Mendel and the Gene Idea (14). The Chromosomal Basis of Inheritance (15)

October 14th

Session 9
From Gene to Protein (17)

October 21st
1500-2000 word course essay assigned.

Hand in Scientific Writing, 1.30pm Wednesday, 23rd October.

FRIDAY
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<tr>
<th>Date and Session</th>
<th>Event</th>
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<tbody>
<tr>
<td>October 25th</td>
<td>NB FRIDAY 25th October - Make up day for Wednesday of Fall break Biotechnology (20)</td>
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<td><strong>Session 10</strong></td>
<td>Midsessional exam. One hour and 15 minutes. Multiple choice questions and short written answers.</td>
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<td>October 28th</td>
<td>Regulation of Gene Expression (18)</td>
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<td><strong>Session 11</strong></td>
<td>Regulation of Gene Expression (18); Genomes and Their Evolution (21)</td>
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<td>November 11th</td>
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<td><strong>Session 12</strong></td>
<td>Evolution: Darwin (22). Hand in course essay, 1.30pm Wednesday 21st November.</td>
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<td>November 18th</td>
<td>Assigned scientific literature data resources for student verbal presentations handed out and discussed in recitation class.</td>
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<td><strong>Session 13</strong></td>
<td>The Evolution of Populations (23); Origin of species (24)</td>
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<td>November 25th</td>
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<td><strong>Session 14</strong></td>
<td>History of Life on Earth (25); Phylogeny (26) Verbal presentations (10 minutes) from data from assigned scientific literature will be presented in recitation class the week beginning December 2nd</td>
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<td>December 2nd</td>
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<td><strong>Session 15</strong></td>
<td>Final Exam. Two and a half hours. Multiple choice questions, short written answers and longer essays. NB WEDNESDAY 11th December, 1.30-4pm (No class Monday December 9th – class replaced by office hour)</td>
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<td><strong>Classroom Etiquette</strong></td>
<td>Food &amp; 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.</td>
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Required Co-curricular Activities
Visit to Fuller’s Brewery to supplement studies on fermentation and biotechnology. This takes place on a Wednesday afternoon during laboratory class time.

Suggested Co-curricular Activities
Visit to Charles Darwin’s House
Visit to Natural History Museum
Visit to Science Museum.

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-GGBP (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
2012 AACR Annual Conference, Chicago, USA, April 2012. Killing of Kras mutant colon cancer cells by the beta-GGBP cytokine, a physiological PI3K inhibitor therapeutically effective in vivo.