

## **BIO 105: Introduction to Biology Lab (1 Credit)**

### **BIO 105-1**

**Instructor: Dr. Andy Crofts (AC)**

**Office: A3-11**

**Email: [acrofts@aiu.ac.jp](mailto:acrofts@aiu.ac.jp)**

**Office Hours: Wed 15:00-18:00**

### **BIO 105-2**

**Instructor: Dr. Naoko Crofts (NC)**

**Office: Preparation room for experiments (next to 1<sup>st</sup> Lab)**

**Email: [ncrofts@aiu.ac.jp](mailto:ncrofts@aiu.ac.jp)**

### **Spring 2010**

BIO 105-1	(Fri) 9:30-12:00	(AC)	<b>1<sup>st</sup> Lab</b>	2 Field Trips - TBA
BIO 105-2	(Fri) 13:00-15:30	(NC)	<b>1<sup>st</sup> Lab</b>	2 Field Trips - TBA

This lab class (BIO 105) is designed to be complementary to the lecture course (BIO 100) and you are strongly recommended to take both courses at the same time.

### **Course Description:**

The **BIO 105 lab class** is designed to give you firsthand exposure to the scientific method which involves experimental design, careful observation and the building and testing of hypotheses. A total of six lab classes (averaging 2.5 hours each) will be given. In at least one lab class, a problem-based learning approach will be used in which you will be presented with a written scenario and appropriate biological materials. You will then be asked to design and perform your own experiments and to make conclusions as to the meaning of your results. Guidance will be offered where appropriate to ensure that you are on the right track. Two field trips to areas of natural beauty are planned to allow you to appreciate the natural world and your place within it.

### **Objectives:**

Through this course, you will learn about the experimental nature of science and develop your critical thinking skills. Through the field trips, it is hoped that you will deepen your appreciation of the value of nature and its importance for humankind.

**Study Materials:** Course textbook (recommended and available at the Kiosk on Campus)



#### **Biology: Concepts and Applications, 7th Edition**

Cecie Starr

ISBN-10: 0495119814 | ISBN-13: 9780495119814 | 912 Pages | Paperbound | © 2008 | Published

Alternate Formats : Cloth Edition

Course materials including lab handouts and links to important resources will be made available on the **Introduction to Biology - Lab Class** course page on the AIMS website (<http://aims.aiu.ac.jp/aims>). Please check this site and your email account regularly for updates on lab and field trip contents and scheduling.

**Assessment:**

You will be assessed on your participation in the lab and on the content of eight written reports (of varying format), each describing the experiments performed in the six laboratory classes or knowledge acquired during the two field trips. An example lab report will be provided together with grading criteria during the first lab class on Friday 9<sup>th</sup> April. Field trip reports will have additional weighting (see below).

Lab reports	(6 - 10% each)	60%
Field trip reports	(2 - 20% each)	40%
Total		100%

**Grade boundaries (%)\*:**

A+:	100	
A:	95-99	Excellent
A-:	90-94	
B+:	87-89	
B:	83-86	Good
B-:	80-82	
C+:	77-79	
C:	73-76	Satisfactory
C-:	70-72	
D+:	66-69	
D:	60-65	Poor
F:	59 % or lower	Failure

\* If required, grades will be adjusted appropriately to reflect difficulty.

**Expected Academic Background:**

If possible you should take the Introduction to Biology lecture course (BIO 100) in the same semester as this lab class as it will help provide the necessary academic knowledge for you to understand the experiments you will perform.

## **BIO 105: Introduction to Biology – Lab Class**

<b>Topic</b>	<b>Date</b>
<b>1. DNA Extraction: Kitchen Science Method</b>	<b>04/09/10</b>
<b>2. Microscopy: Cellular exploration</b>	<b>04/23/10</b>
<b>3. Plant pigments: Why are leaves green?</b>	<b>05/21/10</b>
<b>4. Proteins and Enzymes</b>	<b>05/28/10</b>
<b>5. Life and Death on a Petri dish - Part 1</b>	<b>06/25/10</b>
<b>6. Life and Death on a Petri dish - Part 2</b>	<b>07/09/10</b>

<b>Field Trip</b>	<b>Date</b>
<b>1. Shirakami Mountains World Heritage Site</b>	<b>TBA</b>
<b>2. Snorkeling in the Sea of Japan</b>	<b>TBA</b>

Field trips will take place on either a Saturday or Sunday between 9AM until 5PM. Further details will be provided when available, but you can get a good idea of what to expect by asking any of the student who took BIO 105 in Fall 2009.