Biology 1222 **Course Outline** 2009/10

Note: Bio 1222, taught through the Department of Biology, helps build a suitably strong background for those intending to continue in various Biology-related undergraduate and professional programs. Bio 1222 content is similar to that of Bio 1223. Bio1222 and Bio 1223 provide identical academic credits as first-year Biology courses.

However, Bio1222 is restricted to those students who: 1) took senior high school biology less than four years ago **and** 2) had at least 80% in that senior high school biology.

Lecturers: Denis Maxwell <dmaxwell@uwo.ca> (Bio 1222 Chair)
Tom Haffie <thaffie@uwo.ca>
Beth MacDougall Shackleton <emacdoug@uwo.ca>

Required: - **Text**: *Biology: The Dynamic Science***,** 1 ed.
P. J. Russell et al (~$135 for all three parts)
- **Lab manual**., (~$32), - **Clicker** (~$45)
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Lectures: UW/001 Mon/Wed 10:30 am. (NCB 101)
UW/002 Tue/Thu 10:30 am. (NCB 101)

Please visit
http://webct.uwo.ca/
for lecture notes and course information

http://instruct.uwo.ca/biology/1222-23/
for much more.

IMPORTANT: Activate your UWO email address. Bio1222 and many UWO courses may not answer personal enquiries from non-UWO accounts.

Laboratories and Tutorials

This course offers a series of practical laboratory and tutorial sessions that alternate each week; laboratories are 3 hours, tutorials are 1 hour. Starting the week of September 15, half of the Bio 1222 class will begin their series with Laboratory 1, the other half of the class will begin their series with Tutorial 1. Whether your series begins with Laboratory 1 or Tutorial 1 depends on your Lab Section as indicated on your official Western timetable. Find your Lab Section in the table below to confirm your particular laboratory/tutorial schedule.

Find your lab section below and circle it.

If your lab section is listed in this box,	If your lab section is listed in this box,
La/ 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76 you will have Laboratory 1 the week of September 21 and Tutorial 1 the week of Sep 28.	**La/ 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91** you will have Tutorial 1 the week of September 21 and Lab 1 the week of Sep 28..
Laboratories meet in one of three rooms: NCB 309, 310, 320	Tutorials meet in one of three rooms: NCB 285, 296, 340
To find out when and where your lab section meets for laboratory, please consult Bio 1222 WebCT Home page, <Course Information> <Lab Schedule> or http://instruct.uwo.ca/biology/1222-23/inform/lab/schedule/ or Hallway bulletin board near NCB 318	To find out when and where your tutorial section meets for tutorials, please consult Bio 1222 WebCT Home page, <Course Information> <Tutorial Schedule> or http://instruct.uwo.ca/biology/1222-23/inform/tutorial/schedule/ or Hallway bulletin board near NCB 318

Term Tests, Examinations And Mark Distribution

Term Test 1 (15**%) Saturday, October 31/09** , 2:00 4:00 p.m.
Term Test 2 (15%) 2 hr, TBA during the Dec Exam Period (Dec 11–22) ***Do not plan travel during this time.***
Term Test 3 (15%) **Friday, March 5/10**,- 7:00-9:00 p.m.
Final Exam (35%) 3 hr, TBA during the Final Exam Period (Apr 12–30) ***Do not plan travel during this time.***
Lab Assignments (10%) Average of ten lab assignments (lab attendance is mandatory)
Tutorials (5%) Based on literacy assignments
Participation (5%) Based on clicker responses in lecture throughout the year

Use of Clickers in Biology 1222

A personal response unit (commonly known as a "clicker") is a small radiofrequency transmitter that resembles a TV remote. You purchase your clicker in the Bookstore, program it with your unique UWO UserID and then use it in all classes using this technology.

In class, instructors can ask a variety of structured questions to which you may respond by pressing the appropriate button on your respective clicker. Individual responses are collected and displayed as a graph at the front of the room. If the instructor chooses, these responses may also be saved for future analysis.

In this course, clickers will be used primarily to promote engagement during lecture. They will also provide you with credit and feedback on your lecture preparation and/or participation. The information below provides further details.

Clicker Responsibility

It is your responsibility to ensure that your clicker is functioning properly. See the instructions in the box or the <**presswestern.uwo.ca**> site for details of how to program your Western UserID into the unit and confirm that it is working properly. (Your "userID" is the section of your UWO email address before the "@uwo.ca".) If you have problems with your clicker, consult the ITS Help Desk. Since all clickers on campus look identical, it may be best for you to customize yours in ways that make it identifiable to you. Questions or comments regarding clicker use should be posted to the course WebCT Discussion Board.

Clicker Academic Record

In this course, your clicker use will be recorded in class and will become part of your academic record. As such, your clicker record will be afforded the same degree of security, confidentiality and transparency that is customary for test marks etc.

You can earn course credit through clicker participation as follows. Clicker participation questions will be asked during lecture as instructors decide. At various times during the term, we will determine the total number of clicker questions asked. The proportion of questions that you answered will determine the fraction of the available participation grade (5%) that you earned as shown above. Clicker participation requires only that you try; <u>you don't have to get the questions right</u> to get this part of your course grade. Notice that <u>you can miss 20% of the clicker questions</u> (for any reason) without affecting your grade. You can monitor your cumulative clicker record as described in class. ***Please Note***: Since each lecture in Biology 1222 is offered twice, you can choose to attend and click in either one. However, if you click in <u>both</u> offerings of a given lecture, <u>only the second session will be recorded</u>.

% Questions Answered	Participation Grade
1 – 20	1
21 – 40	2
41 – 60	3
61 – 79	4
80 and above	5

Clicker Privacy

Although clickers may be used in the classroom for polling opinions and/or collecting some types of personal data (e.g. How many people have ever seen a manatee?) such responses will not become part of your academic record and will not "count" toward clicker participation grade. Such non-academic data will either be recorded anonymously or not at all. (A simple anonymization exercise will invite you to swap clickers with a neighbour for the moment.)

Clicker Research

Your clicker data will not be used for research or non-academic purpose without your consent. For any research study in which you are invited to participate, you will be provided with a Letter of Information with an opportunity to give or withhold consent. Such research will not replace the usual end of term Course Evaluation given by the University.

Conflicts /Problems see Dan Lajoie NCB 301 <dlajoie@uwo.ca>

1) Conflict with a term test, please see us at least **three days befor**e the test.
2) Missing a term test because of illness, accident, etc., please notify us **ASAP**.
3) Requiring religious accommodation, please notify us at least **two weeks before** the test.

- Makeup tests occur 5 or 6 days after the regularly scheduled test. If a makeup cannot be arranged, all other grades will be reweighed as outlined on WebCT.
- We do require **<u>WRITTEN DOCUMENTATION</u>** which may be verified through your Dean's Office as outlined on WebCT.

Academic Integrity

Plagiarism is a serious academic offence. Please review the definition of plagiarism and its penalties as outlined by the general UWO policy and the specific Bio 1222 policies as outlined on WebCT. Furthermore, computer marked multiple-choice tests use software that will flag unusual coincidences in answer patterns that may indicate cheating

The use of a clicker with a UserID other than your own is an academic offense. In a test, lab, lecture or tutorial, possession of more than one clicker, or one programmed with the UserID of another student, will be interpreted as intent to commit an academic offense.

Week of	Lec #	Biology 1222 Lecture Outline 2009/10	Instructor
Sept 7	1	Welcome and Introduction (Thu, Sep 10 only)	All
Sept 14	1	Welcome and Introduction (repeated from Sep 10)	All
	2	Integrated lecture – Influenza	All
Sept 21	3	**What is Life?**	Denis Maxwell
	4	How did Life get started on Earth? Will we likely find life elsewhere in the galaxy?	
Sept 28	5	**Genetic Inheritance: Sameness vs. Difference**	Tom Haffie
	6	How is genetic diversity minimized during cell division but maximized during sexual reproduction?	
Oct 5	7		
	8		
Oct 12		Thanksgiving (Mon and Tue lectures cancelled, Wed and Thu lectures as usual)	
	9	Topics include cell cycling, stem cells, DNA replication and recombination, as well as bacterial and Mendelian genetics.	
Oct 19	10		
	11		
Oct 26	12	**Lego of Life**	Denis Maxwell
	13		
Oct 31		***October Term Test*** *2:00 – 4:00 pm (Lec 1 to 11) Rooms TBA*	
Nov 2	14	What fundamental biochemistry and structure makes life possible on a cold Earth?	
	15		
Nov 9	16	**Evolution: Fact and Theory**	Beth MacDougall - Shackleton
	17		
Nov 16	18		
	19	Why are there so many different kinds of organisms? Why do they usually appear so well suited to their environment? Topics include natural selection and adaptation; sexual selection; evolution and human health; speciation and extinction.	
Nov 23	20		
	21		
Nov 30	22		
	23		
Dec 7	24		
Dec 11 - 22		***Dec Exam Period*** *(Lec 12 to 24) Do not book travel within these dates*	
Jan 4	25	**Ecology: Getting along in The House**	Beth MacDougall - Shackleton
	26		
Jan 11	27	A look at the relationships between organisms and their environments. Topics include interactions within populations, within communities, within ecosystems and within the biosphere; biodiversity, conservation and climate change.	
	28		
Jan 18	29		
	30		
Jan 25	31	**Bioenergetics: Redox and Paradox**	Denis Maxwell
	32		
Feb 1	33	A look at the fundamental metabolic processes and molecules that are involved in energy transformation in living things. Topics include enzymes, membranes, respiration, photosynthesis, gas exchange, nitrogen and oxygen metabolism.	
	34		
Feb 8	35		
	36		
Feb 15		***Conference Week*** *(lectures, labs, tutorials cancelled)*	
Feb 22	37	Bioenergetics continued	
	38		
Mar 1	39	**Genes and Genomes: Green Mice and Golden Rice**	Tom Haffie
	40		
Mar 6		***March Term Test*** *7:00 – 9:00 pm (Lec 25 to 38) Rooms TBA*	
Mar 8	41	What are the types of information encoded in DNA? What are the specific implications for cancer and various applications to genetic technologies? Topics include: gene structure, expression and mutation; transgenics, genomics and biotechnology.	
	42		
Mar 15	43		
	44		
Mar 22	45		
	46		
Mar 29	47		
	48		
Apr 5	49	TBA	All
	50	TBA	All
Apr 12 – 30		***Final Exam Period*** *Do not book travel within these dates*	