Biology 1002B (Biology for Sciences II)
Winter 2017/2018 Course Outline Summary

Course Description

Biology 1001A (fall) and 1002B (winter) are designed to help students in the Faculty of Science build on the knowledge and skills acquired in Secondary School Biology as preparation for success in second year programs in the Biological Sciences.
Students enrolled outside the Faculty of Science are encouraged to choose Biology 1202B (General Biology I).

Educational Outcomes

By engaging in this learning environment, students can expect to enhance their ability to:

1. Build productive academic relationships with diverse members of the FY Bio community.
2. Collaborate with peers and/or instructors to create consensus around diverse ideas (e.g. during classes, studying, preparing team assignments, and collaborative testing).
3. Apply effective learning strategies to academic work.
4. Demonstrate a broad understanding, application, and analysis, of biological principles pertaining to the evolution and molecular mechanisms of energy transduction systems as well as the evolution, structure, function and regulation of genes and genomes.
5. Communicate scientific ideas to an audience of peers and/or instructors in written, oral and graphic formats.
6. Apply scientific experimental design, equipment, skills and analyses to test hypotheses.
7. Locate, evaluate, and extract scientific ideas from academic and non-academic literature; ethically incorporate such ideas into academic work.

Blended Collaborative Course Design

This course invites students to engage in a "blended" learning environment in which face-to-face Classes and team-based Skill Development Sessions are complemented by significant learning using online tools and platforms such as the OWL course site for administration, Microsoft *Office Suite* for documents management and collaboration, *Kountu* for classroom participation, *MindTap* for etext reading and self-testing, *Labster* for simulations and *CATME* for team building. Additional details regarding access codes, educational best practices and associated costs are posted to OWL.

Course Scheduling

Lectures:
Section 200: Mon and Wed 10:30-11:20 am in North Campus Building (NCB) 101
Section 201: Tues and Thurs 10:30-11:20 am in North Campus Building (NCB) 101

Skill Development Sessions:
Skill Development Sessions (traditionally known as "Labs") are presented as five mandatory Modules that begin either the week of January 15 (for students with odd-numbered Lab Sections) or the week of January 22 (for students with even-numbered Lab Sections). Locations for weekly Skills Sessions are shown on OWL.
(If you are repeating this course, you need to repeat the Skills Component as well; see Beata in Rm NCB 301 as soon as possible.)

See additional information regarding accessibility, mental health, academic integrity etc. on the course OWL site

Instructional Team

Instructors Instructors will be available to help with class material as announced on OWL.	**Denis Maxwell** **NCB 406** **dmaxwell@uwo.ca**	**Tom Haffie** **NCB 301G** **thaffie@uwo.ca**
Skill Development Support	Winona Gadapati, Jeni Duro, Sheila Nicol, Daisy Wong	

Course Materials (same as already purchased for Biology 1001A last term)

1. ***Website:*** https://owl.uwo.ca/. Log in with your UWO username and password. Find course information and policies, get help, post questions, download lecture slides, take quizzes etc.

2. ***Textbook:*** Russell *et al.* 2015. *Biology: Exploring the diversity of life*. 3rd Canadian Ed. Nelson Education, Ltd: Toronto. **The *current edition* of the online etext version of this textbook, available through the *MindTap* platform, is a required resource for testable assigned readings and feedback.** See the Textbook and MindTap tab on OWL for further information and access.

3. ***Additional Materials:*** **Biology Blended Learning Resource Package is required**. This package provides individually registered access to a variety of essential online tools. If you do not already have this package from Biology 1001A last term, see Beata in Rm 301 NCB for assistance with the Blended Learning Resource Package for this term. **Safety glasses and a lab coat are also required.**

Assessment

The majority of course grade falls on the two Term Tests and Final Exam.

Course Component		Schedule
Skill Development	25%	Five Modules as scheduled by your "Lab Section"
MindTap Quizzes+	3%	On MindTap
Guided Study Quizzes++	5%	On OWL; open 24 hr preceding Mon/Tues lectures
February Term Test +++	12%	Multiple Choice Test: 10:00 am–12:00, Saturday, February 10
March Term Test +++	20%	Multiple Choice Test: 10:00 am–12:00, Saturday, March 17
Final Exam +++	35%	Multiple Choice and Short Answer. During the April exam period. (Do not pre-book travel during Apr. 14 - 30)

+ MIndTap Quizzes are for feedback only. Participation, rather than correct answers, are recorded. See OWL for details.
++ a 10% bonus will be added to GSQ grades to provide accommodation for missed Quizzes, technical difficulties etc.
+++All Term Tests and the Final Exam are cumulative and feature both an individual and a collaborative group component.
Alternative weighting will transfer some weight from Term Tests to the Final Exam if this results in a higher course grade. See OWL for details.

Academic Conflicts and Accommodations

The first point of contact for all administrative issues in this course is the Biology Administrative Assistant, Beata Malczewski. You should contact Beata in person in Rm 301 NCB, if possible. If you can't see Beata in person and must email her (fybioadmin@uwo.ca), be sure to put 1001A, your full name, and a clear description of your issue in your email. Use your official Western email address. If you have known conflicts or require religious accommodation for Skills Sessions or Test/Exam,

contact Beata well in advance (i.e. two weeks). Contact Beata as soon as possible if you miss a Skills Session or Test/Exam due to illness, accident, etc. Written documentation presented to an Academic Counselor in your Faculty's Dean's Office is required for missed Skills Sessions, Tests/Exams etc. **See the course OWL site for detailed policy and deadlines.**

Class Cycle Schedule

Class topics will be presented in "Cycles" usually beginning on Wed/Thurs and finishing on the following Mon/Tues. Slides, Guided Study Assignments and Quizzes will be available under the Class Cycle tab on OWL in advance of each class. Section 200 (Mon/Wed) classes are repeated for Section 201 (Tues/Thurs); students may attend in either section but must complete the online Guided Study Quizzes for their registered section. Class screenshots with audio will be captured and then posted to OWL as Archives.

<table>
<tr><th>Week Of</th><th>Cycle #</th><th>Lec #</th><th>Class Outline</th><th>Instructor</th></tr>
<tr><td>Jan. 8</td><td rowspan="3">1</td><td>1</td><td rowspan="10">Evolution of Solar Powered Life

A series of classes will look at the origin of life on Earth and the evolution of the ability to capture light as energy and information. Specific topics will include fundamental cell structure of the three domains of life, the biochemistry and cell physiology of photoreception, integrated thermodynamics of energy flow in photosynthesis and respiration as well as endosymbiosis and lateral gene transfer. These classes will showcase the single-celled alga, Chlamydomonas, as well as Elyssia (the solar powered sea slug.)</td><td rowspan="10">Denis Maxwell</td></tr>
<tr><td></td><td>2</td></tr>
<tr><td>Jan. 15</td><td>3</td></tr>
<tr><td rowspan="2">Jan. 22</td><td rowspan="2">2</td><td>4</td></tr>
<tr><td>5</td></tr>
<tr><td rowspan="2">Jan. 29</td><td rowspan="2">3</td><td>6</td></tr>
<tr><td>7</td></tr>
<tr><td rowspan="2">Feb. 5</td><td rowspan="2">4</td><td>8</td></tr>
<tr><td>9</td></tr>
<tr><td></td><td>5</td><td>10</td></tr>
<tr><td colspan="5">February Term Test. 12 % Saturday, February 10, 10 am – 12</td></tr>
<tr><td rowspan="2">Feb. 12</td><td></td><td>11</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>6</td><td>12</td></tr>
<tr><td colspan="5">February 19 Reading Week (No classes or Skills Sessions)</td></tr>
<tr><td rowspan="2">Feb. 26</td><td></td><td>13</td><td rowspan="3"></td><td rowspan="3"></td></tr>
<tr><td rowspan="2">7</td><td>14</td></tr>
<tr><td>Mar. 5</td><td>15</td></tr>
<tr><td rowspan="2">Mar. 12</td><td>8</td><td>16</td><td rowspan="3">Genes and Genomes
These classes will highlight the evolution, structure, function and regulation of genes and genomes.</td><td rowspan="3"></td></tr>
<tr><td>17</td></tr>
<tr><td>9</td><td>18</td></tr>
<tr><td colspan="5">March Term Test. 20% Saturday, March 17, 10 am – 12</td></tr>
<tr><td>Mar. 19</td><td></td><td>19</td><td rowspan="8">Specific topics will include fundamental signals important in gene expression in prokaryotic vs. eukaryotic cells, synthetic biology, DNA technology as well as emerging insights into regulatory networks, comparative and personal genomics, epigenetics, programmed cell death and cancer.</td><td rowspan="8">Tom Haffie</td></tr>
<tr><td>10</td><td>20</td></tr>
<tr><td>Mar. 26</td><td></td><td>21</td></tr>
<tr><td></td><td>11</td><td>22</td></tr>
<tr><td>Apr. 2</td><td></td><td>23</td></tr>
<tr><td></td><td>12</td><td>24</td></tr>
<tr><td>Apr. 9</td><td></td><td>25</td></tr>
<tr><td colspan="5">Comprehensive Final Exam 35% (Date and Time TBA, Apr. 14 – 30)</td></tr>
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