

APBI 3135 / BIOL 3135 – Molecular Genetics

Course Outline Fall 2013

Instructor

Dr. Heidi Schraft
Biology, CB4015
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Office hours

Wednesday: 2 – 3pm
You can also email me to make an appointment.

Lab-Instructor

Lab-Instructor:

Christina Richard
Email: crichar3@lakeheadu.ca

Lectures and Laboratory

Lectures

Monday and Wednesday
11:30 – 13:00
ATAC 2006

Laboratory

Friday
8:30 – 11:30
CB 3012

Evaluation

Description	Value
Class Participation (i>clicker)	5%
Laboratory	30%
Mid-Term Tests (3 @ 10%)	30%
Final Exam	35%

Textbook, Required Materials and Resources

Required Textbook:

Concepts of Genetics

Author: Robert J. Brooker Publisher: McGrawHill.

ISBN: 978-0-07-352533-4

Required i>clicker2 In addition to the book, you will need an i>clicker2

- i>clicker2 is available at the bookstore. You may be able to buy a used i>clicker from another student.
- to have your i>clicker performance counted towards the course grade, you will need to register it on-line. There is no registration fee.

NOTE: Starting Fall 2013, only i>clicker will be used in Biology courses.

Required Laboratory Manual: Available in the bookstore.

In addition, relevant journal articles and books will be placed on reserve in the library and/or posted on the Desire2Learn Course site (see below).

INSTRUCTIONS FOR i>clicker REGISTRATION

To complete the student registration, go to www.iclicker.com and follow these steps:

1. Enter first name and last name in the appropriate fields.
2. Enter LU-email-username in the student ID-field (**DO NOT use your numeric student ID**).
3. Enter your i>clicker remote ID. The remote ID is the 8-character alphanumeric code printed below the barcode on the back of their remote.



Sample i>clicker remote ID

4. Enter the letters or numbers in the captcha security image on the screen.
5. Click the Enter button. An on-screen message confirms that registration was successful. Your student ID is now tied to your unique i>clicker remote ID, and your clicker performance can be synchronized with the D2L grade-book.

DESIRE2LEARN

You will have access to a course homepage through Desire2Learn where you'll find course updates, slides discussed during class, assignments and links to selected web-sites.

To log into your course website:

1. Go to <http://mycourselink.lakeheadu.ca>
2. Enter your Login/ID (your Lakehead University e-mail username) and your Password/PIN number.
3. Click on the course title to enter the course.

If you encounter any difficulties logging into the course site, please contact the Office of Continuing Education and Distributed Learning at 346-7730 or email cedl@lakeheadu.ca

Academic Dishonesty and Plagiarism

This course will have a zero-tolerance for academic dishonesty and plagiarism. For further information, please refer to the Code of Student Conduct and the Lakehead University Calendar (Section IX).

What is Plagiarism?

Plagiarism is taking the ideas or words of others and passing them off as your own. Plagiarism is a type of intellectual theft.

Plagiarism can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. Plagiarism can have serious consequences, so it is important that students be aware of what it is, and how to avoid it.

It is also plagiarism, to submit an assessment item that has already been submitted for academic credit elsewhere, or to knowingly permit your work to be copied by another student.

There are very serious penalties for plagiarism, ranging from re-submission, reduction of marks (including to zero), failure of the course, and exclusion from the university.

Schedule for Lectures

	Date	Topic	Textbook	Tests and Materials due
1	Mon, Sept. 9	Introduction & GAPDH Project	Ch 1	
2	Wed, Sept. 11	GAPDH Project	Ch 19	
3	Mon, Sept. 16	Plasmids & Conjugation	Ch 9	
4	Wed, Sept. 18	Plasmids & Conjugation	Ch 9	Sept. 20: last day to add
5	Mon, Sept. 23	Transduction	Ch 9	From this day on, i>clicker work counted
6	Wed, Sept. 25	Transformation	Ch 9	
	Mon, Sept. 30	Mid-Term Test 1		Mid-Term Test 1
7	Wed, Oct. 2	DNA & RNA structure	Ch 11	
8	Mon, Oct. 7	DNA Replication	Ch 13	
9	Wed, Oct. 9	DNA Replication	Ch 13	
	Mon, Oct. 14	Thanksgiving		
10	Wed, Oct. 16	Recombination	Ch 13	
11	Mon, Oct. 21	Transposons	Ch 21	
	Wed, Oct. 23	Mid-Term Test 2		Mid-Term Test 2
12	Mon, Oct. 28	Mutations	Ch 18	
13	Wed, Oct. 30	Mutations	Ch 18	
14	Mon, Nov. 4	Repair	Ch 18	Nov. 4 : Final date for course withdrawal without academic penalty
15	Wed, Nov. 6	Repair	Ch 18	
16	Mon, Nov. 11	Transcription & Gene regulation	Ch 14 & 16	
17	Wed, Nov. 13	<i>lac</i> and <i>trp</i> operon	Ch 16	
	Mon, Nov. 18	Mid-Term Test 3		Mid-Term Test 3
18	Wed, Nov. 20	Lambda phage	Ch 10	
19	Mon, Nov. 24	Lambda phage	Ch 10	
20	Wed, Nov. 27	Regulons & Operons		
21	Mon, Dec. 2	Genomics & Proteomics	Ch 21 & 22	

Schedule for Laboratory

Date	Experiments and Lab Manual Reference	Tests & Materials due
Sept 13	Lab Safety & Gel Doc Training	
Sept 20	DNA Extraction & Initial PCR (Ch. 1 & 2)	Pre-Lab Questions Focus Questions Ch. 1
Sept 27	Nested PCR (Ch. 2) Pour Agarose Gels (App. A) Prepare Broth & Plates for Transformation (App. A)	Pre-Lab Questions
Oct 4	Electrophoresis & Purification of PCR Products (Ch. 3 & 4)	Pre-Lab Questions Focus Questions (Ch. 2, 3, 4)
Oct 11	Ligation & Transformation (Ch. 5 & 6) Pour Agarose Gels (App. A)	Pre-Lab Questions Focus Questions (Ch. 5 & 6)
Oct 18	Plasmid Purification (Ch. 7)	Pre-Lab Questions Focus Questions (Ch. 7)
Oct 25	Gel Electrophoresis of Plasmid Purification (Ch. 7) Prepare Sequencing Reactions (Ch. 8)	Pre-Lab Questions Focus Questions (Ch. 8)
Nov 1	No Lab: Wait for Sequencing Results	
Nov 8	No Lab: Wait for Sequencing Results	
Nov 15	Bioinformatics of sequence data (Ch. 9)	Pre-Lab Questions Focus Questions (Ch. 9)
Nov 22	Bioinformatics of sequence data (Ch. 9)	Pre-Lab Questions
Nov 29	No Lab	

Breakdown of Laboratory Grade (worth 30% of course grade)

<i>Description</i>	<i>Value</i>
Pre-lab Questions (8 @ 1%)	8%
Focus Questions and Lab Assignments	16%
Laboratory Performance and Participation	6%