

APBI 3135 / BIOL 3135 – Molecular Genetics

Course Outline Fall 2014

Instructor

Dr. Heidi Schraft
Biology, CB4015
Phone: 343-8351
Email: heidi.schraft@lakeheadu.ca

Office hours

Wednesday: 11am - Noon
You can also email me to make an appointment.

Lab-Instructor and TAs

Lab-Instructor:

Christina Richard, Office CB2028A, Email: crichar3@lakeheadu.ca

Lab-TA:

Stefanie Puukila, Email: spuukila@lakeheadu.ca

Marking Assistant:

Bal Ram Adhikari, Email: badhikar@lakeheadu.ca
Office: CB2029, Office hours are Monday 2 – 3pm

Lectures and Laboratory

Lectures

Tuesday and Thursday
10:00 - 11:30
RB 1021

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
Tue, Sept. 9	Introduction & GAPDH Project	Ch 1	
Thu, Sept. 11	GAPDH Project	Ch 19	
Tue, Sept. 16	Plasmids & Conjugation	Ch 9	
Thu, Sept. 18	Plasmids & Conjugation	Ch 9	Sept. 19: last day to add
Tue, Sept. 23	Transduction	Ch 9	From this day on, i>clicker work counted
Thu, Sept. 25	Transformation	Ch 9	
Tue, Sept. 30	Mid-Term Test 1		Mid-Term Test 1
Thu, Oct. 2	Transformation		
Tue, Oct. 7	DNA and RNA structure	Ch 11	
Thu, Oct. 9	DNA Replication	Ch 13	
Tue, Oct. 14	DNA Replication	Ch 13	
Thu, Oct. 16	Recombination	Ch 13	
Tue, Oct. 21	Recombination	Ch 13	
Thu, Oct. 23	Mid-Term Test 2		Mid-Term Test 2
Tue, Oct. 28	Transposons	Ch 21	
Thu, Oct. 30	Mutations	Ch 18	
Tue, Nov. 4	Repair	Ch 18	Nov. 4 : Final date for course withdrawal without academic penalty
Thu, Nov. 6	Repair	Ch 18	
Tue, Nov. 11	Transcription & Gene regulation	Ch 14 & 16	
Thu, Nov. 13	<i>lac</i> and <i>trp</i> operon	Ch 16	
Tue, Nov. 18	<i>lac</i> and <i>trp</i> operon		
Thu, Nov. 20	Mid-Term Test 3		Mid-Term Test 3
Tue, Nov. 25	Genomics & Proteomics	Ch 21 & 22	
Thu, Nov. 27	Genomics & Proteomics	Ch 21 & 22	

Schedule for Laboratory

Date	Experiments and Lab Manual Reference	Tests & Materials due
Sept 12	Lab Safety & Gel Doc Training	
Sept 19	DNA Extraction & Initial PCR (Ch. 1 & 2)	Pre-Lab Quiz Focus Questions Ch. 1
Sept 26	Nested PCR (Ch. 2) Pour Agarose Gels (App. A) Prepare Broth & Plates for Transformation (App. A)	Pre-Lab Quiz
Oct 3	Electrophoresis & Purification of PCR Products (Ch. 3 & 4)	Pre-Lab Quiz Focus Questions (Ch. 2, 3, 4)
Oct 10	Ligation & Transformation (Ch. 5 & 6) Pour Agarose Gels (App. A)	Pre-Lab Quiz Focus Questions (Ch. 5 & 6)
Oct 17	Plasmid Purification (Ch. 7)	Pre-Lab Quiz Focus Questions (Ch. 7)
Oct 24	Gel Electrophoresis of Plasmid Purification (Ch. 7) Prepare Sequencing Reactions (Ch. 8)	Pre-Lab Quiz Focus Questions (Ch. 8)
Oct 31	No Lab: Wait for Sequencing Results	
Nov 7	No Lab: Wait for Sequencing Results	
Nov 14	Bioinformatics of sequence data (Ch. 9)	Pre-Lab Quiz Focus Questions (Ch. 9)
Nov 21	Bioinformatics of sequence data (Ch. 9)	Pre-Lab Quiz
Nov 28	No Lab	

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

Description	Value
Pre-lab Questions	6.4%
Focus Questions	7.1%
Lab Assignments	9.5%
Lab Notebook	6%
Laboratory Performance and Preparedness	1%