APBI 3135 / BIOL 3135 - Molecular Genetics

Course Outline Fall 2009

Instructor

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

Office hours

Friday: 10:00 - 11:00 am
You can also email me to make an appointment.

Lab-Instructor and Teaching Assistant

Lab-Instructor and Teaching Assistant:
Lauren Davey
Email: ldavey@lakeheadu.ca

Lectures and Laboratory

Lectures Laboratory
Tuesday and Thursday Friday
14:30 - 16:00 11:30 - 14:30
ATAC 1006 CB 3010B
<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Participation</td>
<td>Class Participation (CPS)</td>
<td>10%</td>
</tr>
<tr>
<td>Laboratory</td>
<td>Laboratory</td>
<td>30%</td>
</tr>
<tr>
<td>Mid-Term Tests</td>
<td>Mid-Term Tests (2 @ 15%)</td>
<td>30%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Final Exam</td>
<td>30%</td>
</tr>
</tbody>
</table>
Textbook, Required Materials and Resources

Required Textbook:

Fundamental Bacterial Genetics
ISBN: 9780632044481
Author: Trun, Nancy Jo Publisher: Blackwell Science, Inc.
Edition: 1
Price: $101.99 (used $76.95)

Required Classroom Performance System (CPS): In addition to the book, you will need a CPS clicker and access code. Please see info below on options to purchase those.

NOTE: CPS clickers are DIFFERENT from the iClickers used in Dr. Law’s Biochemistry course!

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 Web-CT Course site (see below).

Purchasing of CPS clicker and access code

In addition to the textbook, you will need to purchase a CPS clicker and CPS access.

The CPS clicker is available in the bookstore @ CDN $26.00.

When you register the clicker on-line, you will have to pay access fee of approx. US $15.00.

Alternatively to paying the access fee on-line, you can purchase access at the bookstore for CDN $24.95
If you already have a CPS clicker (through Education or from another course), you only need to register the clicker and pay the access fee of approx. US $15.00, or buy access from the bookstore for CDN $24.95.

If you are taking both Biology 3770 and APBI / BIOL 3135 concurrently, you can use the same clicker in both classes. In this case, you should purchase access on-line (not the book discounted one). The discounted access will only be good for Biology of Food Safety (Biol 3770), while the “regular” access purchased on-line will be valid for all CPS courses you are taking in Fall 2009, i.e. both Biol 3770 AND APBI/BIOL 3135.
Web-CT

You will have access to a course homepage through Web-CT where you'll find course updates, slides discussed during class, assignments and links to selected websites. The site is expected to be available to students registered in the course on the first day of classes.

To log into your course website:

Go to My Info (WebAdvisor) http://myinfo.lakeheadu.ca

1. Enter your Login/ID (your Lakehead University e-mail username) and your Password/PIN number.
2. Click on the course title to enter the course.
3. Alternatively, you can go to http://mycourselink.lakeheadu.ca (then enter your Lakehead University e-mail username and password).
4. 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 of Lecture
Textbook
Tests and Materials
due
Thu, Sept. 10
Course Introduction
Bacterial Cell & DNA
Ch 1 & 2

Tue, Sept. 15
Bacterial Cell & DNA, GAPDH
Ch 1 & 2

Thu, Sept. 17
Mutations and DNA Repair
Ch 1 & 2

Tue, Sept. 22
Mutations and DNA Repair
Ch 3 & 4

Thu, Sept. 24
Mutations and DNA Repair
Ch 3 & 4
Last day to add
Tue, Sept. 29
Mutations and DNA Repair
Ch 3 & 4

From this day on, CPS work counted

Thu, Oct. 1
Recombination & Transposition
Ch 3 & 4

Tue, Oct. 6
Recombination & Transposition
Ch 5 & 6

Thu, Oct. 8
Mid-Term Test 1
Ch 5 & 6
Mid-Term Test 1

Tue, Oct. 13
Recombination & Transposition
Ch 5 & 6

Thu, Oct. 15
Bacteriophage & Transduction
Ch 7 & 8

Tue, Oct. 20
Bacteriophage & Transduction
Ch 7 & 8
Thu, Oct. 22
Plasmids and Conjugation
Ch 9 & 10

Tue, Oct. 27
Plasmids and Conjugation
Ch 9 & 10

Thu, Oct. 29
Mid-Term Test 2
Ch 9 & 10
Mid-Term Test 2

Tue, Nov. 3
Plasmids and Conjugation
Ch 9 & 10

Thu, Nov. 5
Transformation
Ch 11

Nov. 6: Final date for course withdrawal without academic penalty

Tue, Nov. 10
Transformation
Ch 11

Thu, Nov. 12
Gene expression and regulation
Ch 12
Tue, Nov. 17
Gene expression and regulation
Ch 12

Thu, Nov. 19
Gene expression and regulation
Ch 12

Tue, Nov. 24
Bioinformatics and Proteomics
Ch 15

Thu, Nov. 26
Bioinformatics and Proteomics
Ch 15

Tue, Dec. 1
Bioinformatics and Proteomics
Ch 15
## Schedule for Laboratory

<table>
<thead>
<tr>
<th>Date</th>
<th>Experiments and Lab Manual Reference</th>
<th>Tests &amp; Materials due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept 11</td>
<td>Lab Safety &amp; Gel Doc Training</td>
<td></td>
</tr>
<tr>
<td>Sept 18</td>
<td>DNA Extraction &amp; Initial PCR (Ch. 1 &amp; 2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre-Lab Questions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Focus Questions Ch. 1</td>
<td></td>
</tr>
<tr>
<td>Sept 25</td>
<td>Nested PCR (Ch. 2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pour Agarose Gels (App. A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prepare Broth &amp; Plates for Transformation (App. A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre-Lab Questions</td>
<td></td>
</tr>
<tr>
<td>Oct 2</td>
<td>Electrophoresis &amp; Purification of PCR Products (Ch. 3 &amp; 4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre-Lab Questions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Focus Questions (Ch. 2, 3, 4)</td>
<td></td>
</tr>
<tr>
<td>Oct 9</td>
<td>Ligation &amp; Transformation (Ch. 5 &amp; 6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pour Agarose Gels (App. A)</td>
<td></td>
</tr>
</tbody>
</table>
Pre-Lab Questions
Focus Questions (Ch. 5 & 6)
Oct 16
Plasmid Purification (Ch. 7)
Pre-Lab Questions
Focus Questions (Ch. 7)
Oct 23
Gel Electrophoresis of Plasmid Purification (Ch. 7)
Prepare Sequencing Reactions (Ch. 8)
Pre-Lab Questions
Focus Questions (Ch. 7)
Oct 30
No Lab: Wait for Sequencing Results

Nov 6
No Lab: Wait for Sequencing Results

Nov 13
Bioinformatics of sequence data (Ch. 9)
Pre-Lab Questions
Focus Questions (Ch. 7)
Nov 20
Bioinformatics of sequence data (Ch. 9)
Pre-Lab Questions
Nov 27
No Lab, last day of classes
Breakdown of Laboratory Grade (worth 30% of course grade)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-lab Questions (8 @ 1.5%)</td>
<td>12%</td>
</tr>
<tr>
<td>Focus Questions (6 @ 2%)</td>
<td>12%</td>
</tr>
<tr>
<td>Laboratory Performance and Participation:</td>
<td>6%</td>
</tr>
</tbody>
</table>
INSTRUCTIONS FOR CPS REGISTRATION

AND USE OF PAD

Class Name: Molecular Genetics F09

Class Key: K53840K253

You will need:

. Class Key (from your instructor)
. Connection to the Internet
. Enrollment Code/coupon (from your school bookstore) or
. Method of Payment (Credit card or personal check)

Enrolling through CPSOnline

If you enroll through CPSOnline, you will first need to setup a CPSOnline account. If you already have an account, you can use that one.

Visit this website and follow instructions:

https://cpsonlinehe.einstruction.com/

If you prefer, you can also see detailed instructions in this pdf-file.

https://cpsonlinehe.einstruction.com/EnrollingThroughCPSOnline.pdf