

APBI 3135 / BIOL 3135 – Molecular Genetics

Course Outline Fall 2019

Instructor

Dr. Heidi Schraft
Biology, CB4015
Phone: 343-8351
Email: Please contact me through the email link in D2L.

Office hours

Tuesday: 8am – 10am
Thursday: 1pm – 3pm
You can also email me to make an appointment.

Lab-Instructor and TAs

Lab-Instructor:

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

Teaching Assistant:

Xuantong Chen (Tong)
Email: xchen24@lakeheadu.ca

Lectures and Laboratory

Lectures

Tuesday and Thursday
5:30 – 7pm
ATAC 2001

Laboratory

Tuesday
2:30 – 5:30pm
CB 3012

Evaluation

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

Textbook, Required Materials and Resources

Required Textbook:

Concepts of Genetics, 3rd edition

Author: Robert J. Brooker, Publisher: McGrawHill.

Refer to D2L for eBook options.

The 2nd edition is oK as well

Required iClicker2

In addition to the book, you will need an iClicker2 or the iClicker REEF app with a subscription

- iClicker2 is available at the bookstore. You may be able to buy a used iClicker from another student.
- iClicker REEF is available on-line.

For additional information, please refer to the iClicker section of the course outline.

Required Laboratory Manual:

You need to print all sections of the lab manual yourself and place them in a binder that can be wiped down. Please bring the lab-manual to each laboratory session.

The pdf files are available on the Desire2Learn Course site (see below).

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).

iClicker

I will be using the iClicker student response system in class. iClicker helps me understand what you know and gives everyone a chance to participate in class. Participation with iClicker will account for **5% of your final grade**. I will drop the 2 lowest scores to account for times you are not able to come to class or forget to bring your clicker to class.

To receive credit for the responses you submit to iClicker sessions, you **must register by Tue Sept. 17, 2019**. Students who register after this date will not receive credit.

Troubleshooting:

You can find the answers to many of your questions on the iClicker [student support](http://iclicker.com/student-support) site (iclicker.com/student-support). If you continue to experience issues, please contact support via phone (866.209.5698) or email (support@iclicker.com). Live support is available Monday - Thursday from 9AM - 11PM, ET and Friday from 9AM - 9PM, ET

Cheating:

I consider bringing a fellow student's iClicker remote to class to be cheating and a violation of the University Honor Code. If you are caught with a remote other than your own or have votes in a class that you did not attend, you will forfeit all clicker points and may face additional disciplinary action.

For additional information, please refer to the extended iClicker section at the end of this document.

Desire2Learn (D2L)

You will have access to a course homepage through Desire2Learn (D2L) 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

Accommodation for Disabilities

Lakehead University is committed to achieving full accessibility for persons with disabilities. Disabilities include physical disability, learning disability, mental disorder etc.

Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities.

If you think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) and register as early as possible. For more information, please visit: <http://studentaccessibility.lakeheadu.ca>

Academic Dishonesty and Plagiarism

This course has 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	Tests and Materials due
Tue	Sept 3	Introduction Unit 1: Overview genetics	
Thu	Sept 5	Unit 1: GAPDH Project	
Tue	Sept 10	Unit 2: Conjugation, Hfr	
Thu	Sept 12	Unit 2: Conjugation, Hfr	Mon Sept. 16: last day to add
Tue	Sept 17	Unit 3: Transduction	From this day on, iClicker work counted
Thu	Sept 18	Unit 4: Transformation	
Tue	Sept 24	Unit 4: Transformation	
Thu	Sept 26	Unit 5: DNA and RNA structure	
Tue	Oct 1	Mid-Term Test 1	Mid-Term Test 1
Thu	Oct 3	Unit 6: Replication chromosome	
Tue	Oct 8	Unit 7: Replication plasmids	
Thu	Oct 10	Unit 7: Replication plasmids	
Oct 14 - 18		Fall Study Break	
Tue	Oct 22	Unit 8: Recombination	
Thu	Oct 24	Unit 8: Recombination	
Tue	Oct 29	Unit 9: Transposition	
Thu	Oct 31	Mid-Term Test 2	Mid-Term Test 2
Tue	Nov 5	Unit 10: Mutations	
Thu	Nov 7	Unit 11: Repair	Fri Nov. 8: Final date for course withdrawal without academic penalty
Tue	Nov 12	Unit 11: Repair	
Thu	Nov 14	Unit 12: Transcription and Gene regulation	
Tue	Nov 19	Mid-Term Test 3	Mid-Term Test 3
Thu	Nov 21	Unit 12: Transcription and Gene regulation	
Tue	Nov 26	Unit 12: Transcription and Gene regulation	
Thu	Nov 28	Unit 12: Transcription and Gene regulation	

Schedule for Laboratory

Date	Experiments and Lab Manual Reference	Tests and Materials Due
Sept. 3	NO LAB	
Sept 10	Lab Overview, Lab Safety and Gel Doc Training	
Sept 17	DNA Extraction and Initial PCR (Ch. 1 & 2)	Pre-Lab Quiz Focus Questions (Ch. 1)
Sept 24	Nested PCR (Ch. 2) Prepare Broth and Plates for Transformation (App. A)	Pre-Lab Quiz
Oct 1	Pour Agarose Gels (App. A) Electrophoresis and Purification of PCR Products (Ch. 3 & 4)	Pre-Lab Quiz Focus Questions (Ch. 2, 3, 4)
Oct 8	Ligation and Transformation (Ch. 5 & 6)	Pre-Lab Quiz Focus Questions (Ch. 5 & 6)
Oct 22	Plasmid Purification (Ch. 7) Pour Agarose Gels (App. A)	Pre-Lab Quiz Focus Questions (Ch. 7)
Oct 29	Gel Electrophoresis of Plasmid Purification (Ch. 7) Prepare Sequencing Reactions (Ch. 8)	Pre-Lab Quiz Focus Questions (Ch. 8)
Nov 5	No Lab: Wait for Sequencing Results	
Nov 12	No Lab: Wait for Sequencing Results	
Nov 19	Bioinformatics of Sequence Data (Ch. 9)	Pre-Lab Quiz Focus Questions (Ch. 9)
Nov 25	No Lab	

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

Description	Value
Pre-Lab Quizzes	5.6%
Focus Questions	7.1%
Lab Assignments	10.3%
Lab Notebook	6%
Laboratory Performance and Preparedness	1%

Instructions and Information for iClicker

I will be using the iClicker Cloud classroom polling system in order to make our class time more engaging. This will help me understand what you know, give everyone a chance to participate, and increase how much you learn when we are in class together. It will also provide you with feedback on how well you comprehend course concepts, help you master challenging concepts, and allow you to review material after class.

Participating in my iClicker Cloud sessions will be counted towards your final grade.

You will earn 0.3 points for submitting a response and an additional 0.7 points for a correct response; this makes 1 point for each correct question you answer. Likely, 3 - 5 questions will be asked in each lecture period. Your final iClicker grade will be calculated as $(\text{points earned})/(\text{total possible points for the class}) \times 100$.

To account for times when you miss class, forget your device etc, the two iClicker sessions with the lowest grade will be dropped. You should not expect any additional accommodations for missed iClicker sessions.

You are required to bring a device to participate in my iClicker Cloud sessions during class. I will be allowing participation with the **iClicker Reef app** on a smartphone, tablet or laptop **OR iClicker remotes**. It is your responsibility to set up your iClicker Reef account and/or iClicker remote in a timely fashion and follow the steps below to properly register in my iClicker course. It is also your responsibility to regularly check your iClicker records for any discrepancies and bring them to my attention within 48 hours.

In order to participate in my iClicker Cloud sessions and ensure that your grades are properly reflected in the gradebook, follow the steps below:

1. If you do not already have an iClicker Reef account, [create one](#). It's free to create an account!

- You can do this by downloading and opening the iClicker Reef mobile app via the App Store or Google Play, or by visiting iclicker.com. If you already have an account, DO NOT create a new one; just proceed to step 2.
- If you are using an iClicker remote, you still need to have an iClicker Reef account.

2. Add my iClicker Cloud course to your iClicker Reef account, even if you are participating with an iClicker Remote.

- Use the + sign to search for my course in iClicker Reef.
- In the "Find Your Institution" field, enter Lakehead University-Thunder Bay
- In the "Find Your Course" field, enter APBI/BIOL 3135 FA – Molecular Genetics
- Ensure you select this course:
 - Molecular Genetics
 - Heidi Schraft
 - BIOL 3135 FA, Fall 2019
- Click "Add This Course" and it will be added to the main screen of your iClicker Reef account

3. Set up the device you plan to use in class to participate in my sessions

- You can download the iClicker Reef mobile app via the App Store or Google Play, or you can use iClicker Reef on your laptop at iclicker.com.
 - Connect to the classroom's wifi or use your cellular service
 - The recommended wifi is: Lakehead University
 - If you have trouble connecting to this wifi, please go to the TSC helpdesk
- In order to use an iClicker remote in my class, you still need an iClicker Reef account. Once your account is created, [add your iClicker remote ID number to the profile section of your iClicker Reef account](#). This will ensure your clicker responses show up in your iClicker Reef account and in my gradebook. Make sure you bring your remote with you to every class

4. Purchase an iClicker Reef subscription or enter an access code in order to participate in polling using iClicker Reef.

- Upon signing up with *iClicker Reef*, you will have a two week free-trial period for using the app for polling in class. **Before the free trial ends**, you need to [purchase an iClicker Reef subscription or obtain an access code](#) in order to continue participating with iClicker Reef on your mobile device, tablet, or laptop during polling sessions. iClicker Reef will let you know when your free trial has ended. If your free trial ends without completing this step, you will be unable to participate in polls until you purchase a subscription or enter an access code.
- If you are using an *iClicker remote* only, you don't need to buy access to iClicker Reef! Just make sure you add your iClicker remote ID number to the profile section of your iClicker Reef account.

5. Now the fun part! Participate in my sessions during each class.

- *iClicker Reef*: Each time our class meets, make sure you have selected my course from the main screen of your iClicker Reef account.
 - When I start a session, click the **Join** button that appears on your screen, then answer each question I ask in iClicker Reef.
 - For short answer and numeric questions, make sure you press **Send**.
- If you are using an *iClicker remote*, [make sure your remote frequency is set](#) to AA.
 - When I ask a question, use your remote to respond.
 - For short answer and numeric questions, make sure you click **Send** after punching in your answer.

6. Keep track of your attendance, review your work, and study after class in iClicker Reef, even if you are using an iClicker remote to participate.

- You can review your grades, performance, and participation in iClicker Reef
- You can use the questions I asked during class as flashcards or practice tests in the [Study Tools section of iClicker Reef](#).

Academic Integrity Information

iClicker activities fall under the provisions of the Lakahead University [academic dishonesty regulations](#). Students must not engage in academic dishonesty while participating in iClicker activities. This includes but is not limited to:

- Answering polling questions while not physically in class
- Having another student submit responses
- Registering or using more than one iClicker remote or account at a time

Any student found to be in violation of these rules will lose polling points for the entire term and will be reported to Enrolment Services according to the Student Code of Conduct - Academic Integrity.

Need help with iClicker Reef or your remote?

- If you are having issues connecting to iClicker Reef, check out these [iClicker Reef Connectivity Tips](#).
- If you are having issues seeing your iClicker Reef points, check out this [troubleshooting guide](#).
- Find answers to many of your questions and contact the iClicker Tech Support Team by visiting iclicker.com/support at any time.