

BIOLOGY OF FOOD SAFETY

Biology 3770

COURSE SYLLABUS FALL 2022

Instructor

Dr. Heidi Schraft, Biology

CB4015

Phone: 807-343-8010 Ext. 8351

Email: please contact me through the **email link in the D2L course page**

Office hours

Tue and Thu 1 pm - 2 pm

My office is in Thunder Bay, Centennial Building, room CB 4015

I aim to be in my office during the above office hours. However, occasionally, I may need to attend other meetings during these times and will not be available. Therefore, I recommend booking an appointment for a meeting.

Students at the Orillia campus can meet with me via Zoom.

To book an appointment please [click here](#).

Teaching Assistant

Courtney Ferris

Email: cferris1@lakeheadu.ca

Lectures

Tuesday and Thursday 4 pm – 5:30 pm

ATAC 5041 and OA 2020

Course Description and Learning Objectives

Selected topics in food safety, such as foodborne diseases and their prevention, genetically modified foods, and antibiotic/pesticide use in food production will be covered. The biological foundations and scientific literature of these food safety issues will be examined and the role of government regulations and consumer attitudes discussed.



LEARNING OBJECTIVES

Food Systems and Health

- Discuss the role of food systems in maintaining the health of humans, animals, and the environment.
- Compare and contrast communicable and non-communicable disease.
- Investigate and apply epidemiology and literature to develop an ePortfolio showcasing your learning.

One Health

- Discuss how the One Health concept applies to food systems and health.

Foodborne Infections

- Explain how food properties and the environment can impact microbial growth and discuss implications regarding, detection, risk and prevention of foodborne diseases.
- Explain the basic concepts of infection and infectious disease and discuss how these are applied in diagnosis, risk assessment and prevention of foodborne diseases.
- Describe the use of genomic technologies for investigating the epidemiology of foodborne disease.

Antimicrobials

- Describe the mechanism of action of antibiotics and the development of antimicrobial resistance.
- Discuss benefits and concerns of antimicrobial use in food systems.

Nutritional Patterns and Chronic Disease

- Discuss relationships between food properties, nutritional patterns and disease.
- Describe and discuss examples of age-related neurological, metabolic and cardiovascular diseases.
- Discuss dietary and lifestyle factors that have been reported to lower the risk of age-related diseases.

Immunology and Food

- Summarize the events involved in the adaptive immune response, from the maturation of lymphocytes to the development of their effector functions.
- Describe the pathogenesis, diagnosis, and treatment of food allergies and celiac disease.
- Discuss relationships of immunology and chronic disease.

Novel Foods

- Explain the terms “Products of Biotechnology in Agriculture” and “novel food”. Discuss how the Canadian Government approves these products.
- Investigate examples of novel foods developed to improve the health of humans, animals, and the environment.

Performance Evaluation

Activity	Weight
iClicker and D2L assignments iClicker each class, occasionally D2L	7.5%
ePortfolio Three assignments, refer to ePortfolio information	30%
Mid-term tests (2 x 15%)	30%
Final exam	32.5%

Textbook, Required Materials and Resources

Recommended Textbook:

Microbiology – The Human Experience. By Foster et al. Published by Norton. First edition. **Available at the bookstore.**

The preliminary edition is also acceptable.

Alternative textbooks:

Nester's Microbiology: A Human Perspective. By Denise Anderson; Sarah Salm; Deborah Allen
Published by McGraw-Hill Higher Education (International)

Microbiology: Canadian edition. By Wendy Keenleyside. Open Access eBook. Link in myReadings on the D2L course site

There will be required information to read/review from selected chapters of a microbiology book, and I strongly recommend that you have one of the above books available to you throughout the semester. Lecture slides and study guides will refer to the recommended textbook.

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).

Desire2Learn (D2L)

You will have access to the course homepage through Desire2Learn where you'll find course updates, all lecture slides, assignments, additional readings, and links to selected websites.

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 email mycourselink@lakeheadu.ca

iClicker

I will be using iClicker 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 in class. This will also provide you with feedback on how well you are comprehending course concepts, help you master challenging concepts, and allow you to review material after class.

Participating in my iClicker sessions will be counted towards the participation component of your final grade. It will be worth 7.5% of your final grade. You will earn 1 point for each correct question you answer and 0.5 points for each incorrect answer. Likely, 3 - 5 questions will be asked in a 1.5 hour lecture period. For the final iClicker grade calculation, I will drop the two lowest marks. We will start using iClicker in the first week of classes; however only sessions after the last day to add will be used towards the iClicker grade.

You are required to bring a device to participate in the iClicker sessions during class. I will be allowing participation with the iClicker student app, on a smartphone, tablet or laptop. It is your responsibility to set up your iClicker account in a timely fashion and 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 activities and ensure that your grades are properly reflected in the grade book, please register for iClicker by following the steps listed at the end of this syllabus.

Missed Exams, Late Assignments and Extensions

- There will be no extensions on assignments / quizzes posted on D2L that count towards the iClicker grade.
- I will also not give extensions for the ePortfolio Assignments. I will accept late submissions, but for each day after the due date, 5% will be deducted from the assignment grade.
- If you **miss a mid-term test**, you may only write a make-up test if you **inform me before the test** and **provide acceptable supporting documentation within 48h of the missed test**. If required, there will be one date for a make-up test, and no make-up test can be written after the test results have been returned to the class. This also applies to students registered with SAS.
- If you miss the final exam, you need to follow the protocol required by Enrolment Services. You can find it in the Calendar: [University Regulations](#) (scroll to Section IV Examinations)

However, if you do run into **time constraints or other difficulties during the term**, I encourage you to contact me (please use the D2L email for this), and I will work with you to find a solution.

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 Integrity

A breach of Academic Integrity is a serious offence. The principle of Academic Integrity, particularly of doing one's own work, documenting properly (including use of quotation marks, appropriate paraphrasing and referencing/citation), collaborating appropriately, and avoiding misrepresentation, is a core principle in university study. Students are strongly advised to familiarize themselves with the Student Code of Conduct - Academic Integrity ("[The Code](#)") - and, in particular, **sections 26 and 83 through 85**.

Non-compliance with the Code will NOT be tolerated in this course and the Code will be adhered to in terms of disciplinary action. The Code provides a full description of academic offences, procedures when Academic Integrity breaches are suspected and sanctions for breaches of Academic Integrity.

To help all students in the class understand application of Academic Integrity to course work, everyone will be required to complete the Academic Integrity Matters (AIM) course or the AIM Refresher Module and submit the Certificate of Completion to the Assignment Folder in D2L.

I will not grade any of your work unless you have submitted the Certificate.

Notice regarding Copyright

All students accessing materials of BIOL 3770 must agree to the following Copyright Compliance:

I understand and agree that all instructional, reference, and administrative materials to which I am given access in this course (the "course materials"), whether they consist of text, still or kinetic images, or sound, whether they are in digital or hard copy formats, and in whatever media they are offered, are protected in their entirety by copyright, and that to comply with this copyright and the law

(1) I may access and download the course materials only for my own personal and non-commercial use for this course; and

(2) "I am not permitted to download, copy, or store (in any medium) any text, image, or sound component of the course materials for any other purpose whatsoever, or to forward or share, transmit, broadcast, show, post or play in public, adapt, or change in any way any text, image, or sound component of the course materials, except as expressly authorized, and only to the extent authorized, in writing, by the course instructor."

I further understand and agree that, if I infringe the copyright of the course materials in any way, I may be prosecuted under the Lakehead University Student Code of Conduct – Academic Integrity, which requires students to act ethically and with integrity in academic matters and to demonstrate behaviours that support the University's academic values.

Notice for Recording Lectures and Class Activities

In BIOL 3770 instruction in the classroom will be recorded for confidential access by students registered in the course but who are unable to attend class due to the pandemic or other necessity. To the greatest extent possible only the image and voice of the instructor will be recorded for this purpose but, due to class interaction, the images and voices of students present in the classroom may be incidentally recorded and, thus, be available for access by course students in remote locations. These recordings, however, are strictly confidential and may be used only by the instructor and students registered in the course and only for purposes related to the course. They may otherwise not be used or disclosed. Students in the classroom who are concerned about being recorded in this fashion may request the instructor to exclude them from the recording to the greatest degree possible on the understanding that total exclusion cannot be guaranteed. The recordings are made under the authority of sections 3 and 14 of The Lakehead University Act, 1965.

Questions about the collection of the images and sounds in the recordings may be directed to the Chair of Biology (Dr. A. Mallik, email amallik@lakeheadu.ca, telephone 807-343-8010 Ext. 8927).

Schedule for Lectures

Week	Date		Content	Notes
1	Tue	Sep 6	Food Systems and Health	
	Thu	Sep 8	Epidemiology	
2	Tue	Sep 13	Literature & ePortfolio Introduction	
	Thu	Sep 15	Literature – Library Presentation	Mon, Sept. 19: last day to add
3	Tue	Sep 20	One Health	Sept 20: from this day onwards, iClicker submissions will count towards the final grade
	Thu	Sep 22	Foodborne Infections	
4	Tue	Sep 27		
	Thu	Sep 29		ePortfolio 1 due
5	Tue	Oct 4	Antimicrobial Resistance	
	Thu	Oct 6	Test #1 Content of weeks 1 to 4	Test #1
<div>Oct 10 - 14</div> <div>STUDY WEEK</div>				
6	Tue	Oct 18	Antimicrobials in Food Systems	
	Thu	Oct 20		
7	Tue	Oct 25	Nutritional Patterns and Chronic Disease	
	Thu	Oct 27		ePortfolio 2 due
8	Tue	Nov 1	Immunology and Food	
	Thu	Nov 3		Fri, Nov 4: last day to drop
9	Tue	Nov 8	Test #2 Content of weeks 5 to 8	
	Thu	Nov 10		Test #2
10	Tue	Nov 15	Immunology and Food	
	Thu	Nov 17	Novel Foods	
11	Tue	Nov 22		
	Thu	Nov 24		
12	Tue	Nov 29		
	Thu	Dec 1	ePortfolio Wrap-Up	
	Sun	Dec 5		ePortfolio 3 due

iClicker – Steps for Registration

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In order to participate in my iClicker activities and ensure that your grades are properly reflected in the grade book, please follow the steps below:

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

- You can do this by downloading and opening the iClicker student mobile app via the App Store or Google Play, or by visiting iclicker.com and creating an account as a student.
- **If you already have an account, DO NOT create a new one. You can only receive credit from one account.**
- When creating your iClicker account, make sure to **use your lakeheadu email**.
- Enter your name and email exactly as they appear in D2L account/Lakehead University student account.
- **IMPORTANT: In the "Student ID field", add the username of your lakeheadu email (the name before @lakeheadu.ca)**

2. Add my iClicker course to your iClicker account

- Log in to your iClicker account and use the + sign to search for my course.
- In the "Find Your Institution" field, enter **Lakehead University – Thunder Bay**
- In the "Find Your Course" field, enter BIOL 3770
- Double-check the details you see to make sure you select this course:
 - BIOL-3770-FA-FAO Biology of Food Safety
 - Heidi Schraft
 - Fall 2022
 - Meeting times: Tue, Thu: 4 pm
- Select "Add This Course" and it will be added to the main Courses screen of your iClicker account. You can also use this join code: <https://join.iclicker.com/2JF01>

3. Purchase an iClicker subscription or access code, or use an iClicker remote to participate in class.

- You may have an iClicker subscription from another course
- Upon signing up with iClicker, you will have a two-week free-trial period for using the app to participate in class activities. **Before the free trial ends**, you need to [purchase an iClicker subscription or obtain an access code](#) to continue participating in class with iClicker on your mobile device, tablet, or laptop. To [redeem an access code](#), you must visit the **Subscriptions** section of [the iClicker student web app](#) (**NOT** the mobile app). iClicker will let you know when your free trial is ending. If your free trial ends without completing this step, you will be unable to participate in class activities until you purchase a subscription or enter an access code.

4. Set up the device you'll use to participate in my class sessions.

- You can download the iClicker student mobile app via the App Store or Google Play, or you can use the iClicker web app by signing in as a student at [iclicker.com](#).
- Connect to our classroom's Wi-Fi:
 - The wireless network you should use in our classroom is the Lakehead University Wifi. Alternatively, you can use the TBayTel Wifi.
- In order to use an iClicker remote in my class, just make sure you [add your iClicker remote ID number to the profile section of your iClicker account](#). Remember to bring your voting device with you to every class!

5. Now the fun part! Participate in my class activities.

- When it's time for class, make sure you have selected my course from the main screen of your iClicker account.
 - When I start a session, select the **Join** button that appears on your screen, then answer each question I ask in iClicker.
 - For short answer, numeric, and target questions, make sure you select **Send**.

6. Keep track of your attendance, review your work, and study after class in iClicker.

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

Academic Integrity Information

iClicker activities fall under the provisions of our campus academic integrity code. Students must not engage in academic dishonesty while participating in iClicker activities. This includes but is not limited to:

- Checking in while not physically in class (except for ZOOM classes)
- Having another student check you into class
- Answering polling questions while not physically in class
- Looking at other students' devices while answering live questions. Using more than one iClicker device or account at a time

Any student found to be in violation of these rules will lose their iClicker points for the entire term and may be reported to the Office of Student Conduct.

Need help with the iClicker student app If you are having trouble with your iClicker access code, check out this [guide to access code errors](#).

- If you are having issues connecting to the iClicker student app, check out these [iClicker Connectivity Tips](#).
- If you are having issues seeing your iClicker 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.