COURSE OUTLINE: WINTER 2024

COURSE TITLE: BIOETHICS ISSUES FOR THE LIFE SCIENCES

COURSE CODE: BIOL 4372

CREDITS: 0.5

WEEKLY HOURS: 3.0 (2 lectures per week: **tues** & **thurs** 13h00 to 14h20)

ROOM: OA 2020 (Telepresence room)

REQUIRED TEXT: n/a all course material will be provided on D2L

SUGGESTED TEXT: Resnik, D.B. 1998. The Ethics of Science, Routledge, New York, NY, 198 pp.
ISBN 0-203-97906-0 Master e-book ISBN

PROFESSOR: DR. GERARDO REYES

OFFICE: OR 1035 (Residence Building 1st floor)

TELEPHONE: (705) 330-4008 x2698

E-MAIL: greyes@lakeheadu.ca

OFFICE HOURS: Tues & Thurs - by appointment (arrange via email)

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1. COURSE DESCRIPTION:

Contemporary issues in ethical decision-making as related to topical situations in the life sciences will be discussed and deliberated. Particular emphasis is placed on problems surrounding laboratory-based research approaches which are commonly used in biological/biomedical contexts today. Format will be based on student-led discussions debates and case study analysis. Notes: May only be taken by students who have successfully completed a Biology course with a laboratory component.

2. COURSE GOALS:

1. Gain knowledge of the basic concepts, terminology, and broad themes of bioethics
2. Understand the key ethical issues raised when researching biological phenomena
3. Develop skills for analysing a research protocol, appraising the ethical acceptability of its various elements, & raising questions about potential ethical issues associated with the protocol

Upon completion of BIOL 4372 you should have gained understanding of what it means to tackle ethical issues and problems in a systematic and objective fashion. Ultimately you will have the skills to design & implement an empirical or theoretical research project that recognises & accounts for any potential ethical issues & concerns.

3. MODES OF INSTRUCTION:

Assigned readings, lectures, and group discussions are employed. Students are expected to be prepared in advance prior to each lecture by completing assigned readings. Class time will build upon this base, focusing on important and/or more difficult concepts through *lecture and discussion.* Lectures will generally start with an introduction to the material by me, followed by a discussion and question period. Students should also take advantage of the lecture material accessed through the *MyCourseLink* site.

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Notice for Recording Lectures & Class Activities

In BIOL 4372, in the context of remote instruction and participation, video and audio recordings of class activities will be made to ensure students' and instructors' easy and comprehensive access to those activities. The recordings are confidential and are intended only for the use of the course students and instructors. They may otherwise not be used or disclosed. During recording, to protect others' privacy, each student should ensure that no one else is present in the location where they are being recorded without that non-student's consent. 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 Dr Azim Mallik, Chair of Biology, 955 Oliver Road, Thunder Bay, ON, Canada, P7B 5E1, (807) 343-8927.

https://www.lakeheadu.ca/sites/default/files/policies_procedures/Student%20Code%20of%20Conduct%20-%20Academic%20Integrity.pdf

4. COURSE OUTLINE:

Lectures are interactive (lecture, discussion, question & answer), thus requiring students to read the assigned material prior to class. The course is designed to encourage active participation; thus, its success (& fun!) will depend on coming to class prepared and engaging one another in friendly discussion & debate; n.b., group discussion periods** (beginning on week 4) will provide you an opportunity to apply knowledge gained through previous lectures and reading materials.

**Topics that could be addressed during discussion periods include: genetic engineering & transgenics, gender issues in science, artificial intelligence, euthanasia, use of animals in medical research, human cloning, eugenics, etc.

The tentative schedule is as follows:

Week 1	Jan 9	Welcome back!
	11	Introduction to bioethics
		Readings (R): Chap 1: Science & Ethics (Resnik 1998)
Week 2	Jan 16	Science & ethical conduct
	18	Ethical theory & applications – an ethical framework
		R: Chap 2 (Resnik 1998)
Week 3	Jan 23	Bioethics in Canada I; Research ethics I – science as a profession
	25	**QUIZ**
		R: Chap 3 (Resnik 1998)
Week 4	Jan 30	Research ethics II – standards of ethical conduct
	Feb 1	**D1:** ethical issues across religions & cultures
		R: A1
Week 5	Feb 6	Research ethics III – objectivity in research
	8	**D2:** genetic engineering & transgenics
		R: A2

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Week 6	Feb 13	Research ethics IV – issues in scientific publication
	15	***MIDTERM – in class***
Week 7	Feb 20	READING WEEK
	22	READING WEEK
Week 8	Feb 27	Research ethics V – issues in laboratory settings Assignment 1 & 2
	29	**D3:** animal rights, human responsibilities? R: A3
Week 9	Mar 5	Student presentations
	7	Student presentations
Week 10	Mar 12	Student presentations
	14	Student presentations
	17	****A1 due* (midnight)
Week 11	Mar 19	Student presentations
	21	Student presentations
Week 12	Mar 26	Student presentations
	28	**D4:** proprietary research & funding R: A4
Week 13	Apr 2	tba
	4	****A2 due* (midnight)
Exam period		…

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5. EVALUATION OF ACHIEVEMENT:

An exam, written assignments, term paper, discussion periods, and a presentation will reinforce student understanding of the topics covered in BIOL 4372. The mid-term exam will consist of multiple choice questions, definitions, and/or short answer questions. The written assignments will focus on analysing specific ethical issues and will require you to describe the action(s) that raises ethical questions, determine if the actions(s) conflict or violate relevant scientific conventions, identify the responsibilities of the actor in the situation, and discuss possible alternative actions that are either morally prohibitive or are acceptable as ethically responsible solutions.

QUIZ:	**5 %**
MIDTERM:	**30 %**
ASSIGNMENTS:	**25 %**
DISCUSSION PARTICIPATION:	**20 %**
PRESENTATION:	**20 %**

For your reference:

Participation: you will need to: (a) read & prepare notes on the assigned article(s), (b) arrive to class with ***one* (or more) *questions (with answers) or critical comments*** related to the article(s). Your Q&A should be printed or be readily available during the discussion period so that you can refer to it during class. Additionally, *an electronic copy of your Q&A (part b only) should be submitted via dropbox prior to the start of discussion*, and (c) *actively* participate.

Note: please ensure to reference the original article and any peer-reviewed article you cite to help support any statements &/or arguments you make in your response (in APA formatting). It is expected that at least one outside peer-reviewed source is referenced in your response.

Table 1. Due dates/times for all graded components of our course

	Assignment	Due date	Proportion of grade
1	QUIZ A	Thurs Jan 25	5
2	Discussion 1	Thurs Feb 1 (Q & A: due before class)	2
3		(Participation component)	3
4	Discussion 2	Thurs Feb 8 (Q & A: due before class)	2
5		(Participation component)	3
6	MIDTERM	Thurs Feb 15	30
7	Discussion 3	Thurs Feb 29 (Q & A: due before class)	2
8		(Participation component)	3
9	PRESENTATION	Various	20
10	Assignment 1	Sun Mar 17	10
11	Discussion 4	Thurs Mar 28 (Q & A: due before class)	2
12		(Participation component)	3
13	Assignment 2	Thurs Apr 4	15
	TOTAL		**100**

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GRADING SCHEME:

A+ A	90 to 100% 80 to 89%	Outstanding understanding of the course concepts including integration of materials and ideas, ability to apply knowledge to situations
B	70 to 79%	Above average to excellent knowledge, ability to apply knowledge to situations
C	60 to 69%	Satisfactory knowledge including ability to recognise and apply major course concepts, and to progress to next level of course
D	50 to 59%	Some grasp of course concepts; will likely encounter difficulty with higher levels
E	40 to 49%	Failed to meet minimum requirements of the course
F	1 to 39%	Failure
F	0	Failure resulting from academic dishonesty

6. NETIQUETTE

Much like in a regular classroom, it is important that a positive, safe, dynamic, and constructive online learning environment is maintained. Thus, a set of guidelines for maintaining Netiquette are listed below. While you may not always agree with your instructor's or one of your peer's posts on the discussion board, please remember that everyone's opinions, thoughts, and responses must be respected. So while you are strongly encouraged to comment, question, or critique a post, personal attacks on an individual are not permitted. Essentially, we wish to build and maintain an engaging and respectful online learning environment.

Our online classroom Netiquette guidelines are as follows:

- Do not dominate any discussion. Give other students the opportunity to join in the discussion.
- Do not use offensive language. Present ideas appropriately.
- Be cautious in using Internet language. For example, do not capitalize all letters since this suggests shouting.
- Popular emoticons such as 😊 or 🙁 can be helpful to convey your tone but do not overdo or overuse them.
- Avoid using vernacular and/or slang language. This could possibly lead to misinterpretation. Essentially, take some time to formulate your ideas. Be clear, concise, and complete.
- Never make fun of someone's ability to read or write.
- Share tips with other students.
- Keep an open-mind and be willing to express even your minority opinion. Minority opinions must be respected.
- Think and edit before you push the *send* button.
- Do not hesitate to ask for feedback.
- Using humor is acceptable but be careful that it is not misinterpreted. For example, are you being humorous or sarcastic?

Guidelines adapted from:

Mintu-Wimsatt, A., Kernek, C., & Lozada, H. R. (2010). Netiquette: Make it part of your syllabus. *Journal of Online Learning and Teaching* 6(1). Retrieved from http://jolt.merlot.org/vol6no1/mintu-wimsatt_0310.htm

7. WELLBEING

As a university student, you may sometimes experience mental health concerns or stressful events that interfere with your academic performance and negatively impact your daily activities.

All of us can benefit from support during times of struggle. If you or anyone you know experiences academic stress, difficult life events or feelings of anxiety or depression, Lakehead has resources available to you. Check in with the WellU Key to find the mental health resources you are looking for.

Remember that getting help is a smart and courageous thing to do - for yourself, for those you care about, and for those who care about you. Getting support sooner rather than later is almost always helpful.

8. STUDENT RESPONSIBILITIES

Students are expected to participate in all course activities and complete all assignments on time. Late assignments carry a 25% reduction in value per day, no exceptions. This may seem rather severe, but it's just not fair to those who hand assignments in on time.

General regulations

It is the responsibility of each student registered at Lakehead University to be familiar with, and comply with all the terms, requirements, regulations, policies and conditions in the Lakehead University Academic Calendar. This includes, but is not limited to, Academic Program Requirements, Academic Schedule of Dates, University and Faculty/School Policies and Regulations and the Fees and Refund Policies and Schedules

Student Support

There are many resources available to support our students. These include but are not limited to:

- Health and Wellness
- Student Success Centre
- Student Accessibility Centre
- Library
- Academic Support Zone (Writing and Math Tutoring Centre)

Lakehead University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities and/or medical conditions to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and 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 contact Student Accessibility Services http://studentaccessibility.lakeheadu.ca (SC0003, 343-8047 or sas@lakeheadu.ca)

Student Accessibility Services (SAS) (Thunder Bay) and Student Affairs (Orillia) coordinate services and facilitates reasonable academic accommodations for students with disabilities. Academic accommodations are provided on the basis of documentation of a disability. Additional information is available at the following campus websites:

Thunder Bay:	https://www.lakeheadu.ca/students/student-life/student-services/accessibility/
Orillia:	https://www.lakeheadu.ca/students/student-life/student-services/or

Exam/Assignment Integrity

I understand and agree that:

(a) Unless otherwise allowed by the course instructor, I must complete the assignments in this course without the assistance of anyone else.

(b) Unless otherwise allowed by the course instructor, I must not access any sources or materials (in print, online, or in any other way) to complete any course exam.

I further understand and agree that, if I violate either of these two rules, or if I provide any false or misleading information about my completion of course assignments or exams, 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.

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Academic dishonesty (plagiarism):

The most common offense under the Academic Code of Conduct is plagiarism.

This could be material copied word for word from books, journals, internet sites, professor's course notes, etc. It could be material that is paraphrased but closely resembles the original source. It could be the work of a fellow student, for example, an answer on a quiz, data for a lab report, a paper or assignment completed by another student. It might be a paper purchased through one of the many available sources. Plagiarism does not refer to words alone - it can also refer to copying images, graphs, tables, and ideas. "Presentation" is not limited to written work. It also includes oral presentations, computer assignments and artistic works. Finally, if you translate the work of another person into French or English and do not cite the source, this is also plagiarism.

I.E., DO NOT COPY, PARAPHRASE OR TRANSLATE ANYTHING FROM ANYWHERE WITHOUT CITING WHERE YOU OBTAINED IT!

University guidelines on the matter:

The University takes a most serious view of offences against academic honesty such as plagiarism, cheating and impersonation. Penalties for dealing with such offences will be strictly enforced.

A copy of the "Code of Student Behaviour and Disciplinary Procedures" including sections on plagiarism and other forms of misconduct may be obtained from the Office of the Registrar.

The following rules shall govern the treatment of candidates who have been found guilty of attempting to obtain academic credit dishonestly.
(a) The minimum penalty for a candidate found guilty of plagiarism, or of cheating on any part of a course will be a zero for the work concerned.
(b) A candidate found guilty of cheating on a formal examination or a test, or of serious or repeated plagiarism, or of unofficially obtaining a copy of an examination paper before the examination is scheduled to be written, will receive zero for the course and may be expelled from the University.

Students disciplined under the Code of Student Behaviour and Disciplinary Procedures may appeal their case through the Judicial Panel.

Note: "Plagiarism" shall be deemed to include:

1. Plagiarism of ideas as where an idea of an author or speaker is incorporated into the body of an assignment as though it were the writer's idea, i.e. no credit is given the person through referencing or footnoting or endnoting.
2. Plagiarism of words occurs when phrases, sentences, tables or illustrations of an author or speaker are incorporated into the body of a writer's own, i.e. no quotations or indentations (depending on the format followed) are present but referencing or footnoting or endnoting is given.
3. Plagiarism of ideas and words as where words and an idea(s) of an author or speaker are incorporated into the body of a written assignment as though they were the writer's own words and ideas, i.e. no quotations or indentations (depending on format followed) are present and no referencing or footnoting or endnoting is given.

A listing of University Regulations can be found at:

https://www.lakeheadu.ca/programs/graduate/regulations

The code of student behaviour and disciplinary procedures (effective May 1, 2019) can be found at:

https://www.google.com/url?client=internal-element-cse&cx=012906367850555877284:uxo0wfmf8ra&q=https://www.lakeheadu.ca/sites/default/files/uploads/106/Item%25204.1.1%2520c%2520-%2520Code%2520of%2520Student%2520Behaviour%2520and%2520Disciplinary%2520Procedures.pdf&sa=U&ved=2ahUKEwjE9-jzrb-AAxUrE1kFHcbiA0AQFnoECAEQAQ&usg=AOvVaw3GGLgjP1narXf2SciHB4y-

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AI Policy (GenAI use)

Generative artificial intelligence (Generative AI or GenAI) is a category of AI systems capable of generating text, images, or other media in response to prompts. These systems include ChatGPT and its variant Bing (built by OpenAI) and Bard (built by Google) among several others. Other generative AI models include artificial intelligence art systems such as Stable Diffusion, Midjourney, and DALL-E.

GenAI tools can provide valuable assistance and support in academic work. However, it is essential to use them responsibly and ethically. The following information and guidelines apply to the use of AI-based tools in this course:

a. **Student Responsibility** – It is the responsibility of the student to understand the limitations of AI-based tools. While these tools can provide suggestions and insights, final decisions and critical thinking should come from the student's own understanding and effort. Before submitting, review your work with this in mind. If you don't understand what type of GenAI usage is appropriate, ask the course instructor for clarification.
b. **Formative Usage** – In this class, you may use GenAI for formative, but not summative, work. That means it can be used as a "possibility engine" (brainstorm tool), a "study buddy," a "collaboration coach," a "guide on the side," a "personal tutor," a "co-designer," etc. to help you learn course content, but it cannot be used as the primary vehicle for any work that is submitted for marks or evaluation. (See UNESCO's "ChatGPT and Artificial Intelligence in Higher Education Quick Start Guide," page 9, for explanations and examples of these and other roles GenAI can productively serve in a formative capacity.)
c. **Error & Bias** – AI content is created by computer algorithms that have been trained using large amounts of data. The AI learns from patterns and examples in the data to generate new content that resembles what it has been trained on. If the training data used to train the AI model is biased or limited in scope, the AI may reproduce content that is inaccurate, incomplete, offensive, and/or biased. Students should weigh this as they consider material produced by AI.
d. **Trustworthiness** – Generative AI can be vulnerable to manipulation and misuse. It can be used to generate fake news, misinformation, or deepfake content, which can have harmful consequences. Students should check AI generated content against reputable sources.
e. **Plagiarism** – Since [writing and critical thinking ability] are learning outcomes of this course, all work submitted for evaluation must be the student's original work. Using the work of others (including content curated/generated by AI) without proper citation is considered plagiarism. See "Citing Artificial Intelligence" for assistance with correct documentation.

f. **Citation of Sources** – If you use material generated by an AI program for an assignment in this course, it must be cited like any other source (with due consideration for the quality of the source, which may be judged as poor). Failure to do so will be considered a violation of academic integrity. See Student Code of Conduct – Academic Integrity.

9. LAND ACKNOWLEDGEMENT:

Lakehead University respectfully acknowledges its campuses are located on the traditional lands of Indigenous peoples.

Lakehead Thunder Bay is located on the traditional lands of the Fort William First Nation, Signatory to the Robinson Superior Treaty of 1850. Lakehead Orillia is located on the traditional territory of the Anishinaabeg. The Anishinaabeg include the Ojibwe, Odawa, and Pottawatomi nations, collectively known as the Three Fires Confederacy.

Lakehead University acknowledges the history that many nations hold in the areas around our campuses, and is committed to a relationship with First Nations, Métis, and Inuit peoples based on the principles of mutual trust, respect, reciprocity, and collaboration in the spirit of reconciliation.