

WESTERN UNIVERSITY

Department of Philosophy

Undergraduate Course Outline 2024-25

PHILOSOP/BIOCHEM 4230G

Synthetic Biology and Philosophy

DESCRIPTION

Synthetic biology is the design and construction of new biological parts, devices, and systems, and the re-design of existing, natural biological systems for useful purposes. This relatively new field has generated a number of reactions, from the hope of curing diseases and solving environmental issues to the fear of seeing a new wave of eugenics. In this course, we will alternate between understanding various types of research and synthetic biology applications and discuss philosophical issues arising from these research and applications.

TEXTS

1. Articles and book chapters available on OWL (see Syllabus)

OBJECTIVES

This course is designed to allow students to learn about various types of research and applications of synthetic biology and reflect on philosophical issues arising from them. No prior background in synthetic biology is necessary, but a willingness to engage in philosophical reflection and a curiosity to explore science from different viewpoints is required. The course is structured like a seminar. It is a great opportunity for students to develop advanced critical thinking and communicative skills, including:

1. Identifying, evaluating, and formulating philosophical issues related to diverse synthetic biology applications
2. Writing balanced and well-supported argumentative essays or case studies
3. Leading focused discussions on issues related to reading materials
4. Presenting and challenging ideas in a respectful and constructive way

REQUIREMENTS

The final grade will be based upon the following scheme:

Paper Pitch (20%) In Week 11, you will do a short presentation of a plan for the final project (10% presentation and 10% for the plan).

Final Project (35%) Due last day of class (see Assignment for instructions)

Leading Discussions (20%) Twice during the semester (see Schedule and Assignment)

Reflective Pieces (15%) Best 3 out of 4 (must be completed between weeks 2-10, excluding weeks when you lead a discussion)

Participation (10%)

DEPARTMENT OF PHILOSOPHY POLICIES

The Department of Philosophy policies that govern the conduct, standards, and expectations for student participation in Philosophy courses are available in the Undergraduate section of the Department of Philosophy website <http://uwo.ca/philosophy/undergraduate/policies.html>.

It is your responsibility to understand the policies set out by the Senate and the Department of Philosophy, and thus ignorance of these policies cannot be used as grounds of appeal.

AUDIT

Students wishing to audit the course should consult with the instructor prior to or during the first week of classes.

ELECTRONIC DEVICES

No aids are permitted for exam and in-class assignments. Electronic devices of any kind (including calculators, cell phones and smart watches) are not permitted.

STATEMENT ON THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE (AI)

In this course, students are permitted to use AI tools exclusively for information gathering and preliminary research purposes. These tools are intended to enhance the learning experience by providing access to diverse information sources. However, it is essential that students critically evaluate the obtained information, exercise independent thinking, and engage in original research to synthesize and develop their own ideas, arguments, and perspectives. The use of AI tools can serve as a starting point for exploration; however, students are expected to uphold academic integrity by appropriately attributing all sources and avoiding plagiarism. Assignments should reflect the students' own thoughts and independent written work. By adhering to these guidelines, students contribute to a responsible and ethical learning environment that promotes critical thinking, independent inquiry and allows them to produce original written contributions.

ACADEMIC CONSIDERATION

Students may request academic consideration in cases of extenuating circumstances – that is, personal circumstances beyond the student's control that have a substantial but

temporary impact on the student's ability to meet essential academic requirements.

1. Requests for academic consideration are made to the Academic Advising office of Faculty in which the student is registered.

2. Requests for academic consideration include the following components:

- a. Self-attestation signed by the student;
- b. Indication of the course(s) and assessment(s) relevant to the request;
- c. Supporting documentation as relevant

Requests without supporting documentation are limited to one per term per course.

Documentation for medical illness, when required, includes the completion of a Western Student Medical Certificate (SMC) or, where that is not possible, equivalent documentation, by a health care practitioner. Requests linked to examinations scheduled by the Office of the Registrar during official examination periods as well as practice laboratory and performance tests typically scheduled in the last week of term always require formal supporting documentation.

Policy on Academic Consideration – Undergraduate Students in First Entry Programs

ACCOMMODATION

Students seeking academic accommodation on medical grounds for any missed tests, exams, participation components and/or assignments worth 10% or more of their final grade must apply to the Academic Counselling office of their home Faculty and provide documentation. Academic accommodation cannot be granted by the instructor or department. Documentation shall be submitted, as soon as possible, to the Office of the Dean of the student's Faculty of registration, together with a request for relief specifying the nature of the accommodation being requested. The UWO Policy on Accommodation for Medical Illness and further information regarding this policy can be found at

https://uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration.pdf

The Student Medical Certificate is available at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

RELIGIOUS ACCOMMODATION

Western's Policy on Accommodation for Religious Holidays can be found here:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf.

In the case of mid-term tests, notification is to be "given in writing to the instructor as early as possible, but not later than one week prior to the writing of the test".

COURSE ASSIGNMENT

The last day of scheduled classes in any course will be the last day on which course assignments will be accepted for credit in a course. Instructors will be required to return

assignments to students as promptly as possible with reasonable explanations of the instructor's assessment of the assignment.

SCHOLASTIC OFFENCES

Scholastic offences are taken seriously, and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Statement on the use of plagiarism-checking software

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

ACADEMIC ADVISING

Your Home Faculty's Academic Advising Office will support or refer whenever you have an issue that is affecting your studies, including information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters. Do not hesitate to reach out to them if you are struggling and unsure where to go for help. Contact info for all Faculties is here:

https://registrar.uwo.ca/faculty_academic_counselling.html

MENTAL HEALTH SUPPORT

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help. Immediate help in the event of a crisis can be had by phoning 519.661.3030 (during class hours) or 519.433.2023 after class hours and on weekends (24/7 availability).

GENDER-BASED AND SEXUAL VIOLENCE

Western University is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who is going through or has gone through these traumatic events. If you are experiencing or have experienced GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts at the following website:

https://www.uwo.ca/health/student_support/survivor_support/get-help.html. To connect with a case manager or set up an appointment, please contact support@uwo.ca.