

WESTERN UNIVERSITY
DEPARTMENT OF PHILOSOPHY
Undergraduate Course Outline 2022-23

PHILOSOP 4320
Synthetic Biology and Philosophy

Winter Term
F 9:30-12:30
AHB-1B08

Instructors: **Eric Desjardins**
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PREREQUISITE CHECKING

None, but background in philosophy of science and/or bioethics recommended.

“Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.”

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 several reactions, from the hope of curing diseases and solving environmental issues to the fear of seeing a new wave of eugenics and endangering native species. In this discussion-based course, we will alternate between understanding various types of research and applications of synthetic biology, followed by a discussion of philosophical issues arising from these research types and applications.

TEXTS

1. Davies, Jamie A. (2018) Synthetic Biology: A Very Short Introduction. Oxford University Press
2. Articles and book chapters available on OWL

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. By the end of the course, students should be able to:

1. Explain at a general level the approaches used to pursue objectives in synthetic biology

2. Identify, evaluate, and formulate philosophical issues related to diverse synthetic biology applications
3. Write balanced and well-supported argumentative essays
4. Lead a focused discussion on issues related to reading materials
5. Present and challenge ideas in a respectful and constructive way



METHOD OF EVALUATION

« The final grade will be based upon the following scheme. The requirement for minimal competence is to obtain a passing grade in both the written and oral assignments.

- **Essay 1**, (25%), on an issue of your choice discussed during the first half of the course.
- **Essay 2**, (35%), on an issue of your choice discussed during the second half of the semester.
- **Written reflective articles**, (15%, 5 at 3pts each)
- **Preparing and leading a discussion** (15%)
- **Participation** (10%) »

AUDIT

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

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.

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

http://uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

EVALUATION OF ACADEMIC PERFORMANCE

At least three days prior to the deadline for withdrawal from a course without academic penalty, students will receive an assessment of work accounting for at least 15% of their final grade. For 3000- or 4000-level courses in which such a graded assessment is impracticable, the instructor(s) must obtain an exemption from this policy from the Dean and this exemption must be noted on the corresponding course syllabus. In rare instances and at the Dean's discretion, other courses could

receive a similar exemption, which also must be noted in the course syllabus.

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.

ACADEMIC 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

PLAGIARISM CHECKING

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>.

SUPPORT SERVICES

Registrarial Services <http://www.registrar.uwo.ca>

Student Support Services <https://student.uwo.ca/psp/heprdweb/?cmd=login>

Services provided by the USC <http://westernusc.ca/services/>

Student Development Centre <http://www.sdc.uwo.ca/>

Students who are in emotional/mental distress should refer to Mental Health@Western <http://www.uwo.ca/uwocom/mentalhealth/> 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.