

**WESTERN UNIVERSITY
DEPARTMENT OF PHILOSOPHY
Outline 2020-21**

**Philosophy Course Number: 4310F/9xxxA
Synthetic Biology and Philosophy**

Fall 2021

Time: Friday 9:30-12:30

Instructor: Eric Desjardins

Office: WIRB 7158

Office Hours: TBA

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DESCRIPTION

Synthetic biology is a relatively new field, but its applications already range far and raise number of concerns. In brief, 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. In this course, we will alternate between understanding various types of research/application of synthetic biology, followed by a discussion of philosophical issues arising from that research/application. Below is a tentative list of topics that we will cover over the semester:

- 1- Intro and overview of the origin of synthetic biology
- 2- Minimal life
- 3- Meaning of life 2.0
- 4- Biobricks and open-source biology
- 5- Modularity and the adequacy of the engineering view of synthetic biology
- 6- Gene drive in the context of biological conservation
- 7- Critique of the command & control approach to ecological management
- 8- Synthetic vaccines and bioweapons
- 9- The ethics of bio-security and the misuse of knowledge
- 10- Human enhancement
- 11- Human flourishing in the age of gene editing
- 12- Reflections on the nature and role of technology in the synthetic age.

TEXTS

1. 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 within 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
3. Leading a focused discussion 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:

Essay 1 (30%) 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.

Leading a structured discussion (15%)

Preparation to weekly discussions (10%)

Participations (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** which govern the conduct, standards, and expectations for student participation in Philosophy courses is available in the Undergraduate section of the Department of Philosophy website at <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.

SELF-REPORTED ABSENCE FORM

Students who experience an unexpected illness or injury or an extenuating circumstance (48 hours or less) that is sufficiently severe to temporarily render them unable to meet academic requirements (e.g., attending lectures or labs, writing tests or midterm exams, completing and submitting assignments, participating in presentations) should self-declare using the online Self-Reported Absence portal. This option should be used in situations where the student expects to resume academic responsibilities within 48 hours or less.

The following conditions are in place for self-reporting of medical or extenuating circumstances:
http://westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#SubHeading_322

EVALUATION OF ACADEMIC PERFORMANCE

At least three days prior to the deadline for withdrawal from a course without academic penalty, students will receive 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.