

**WESTERN UNIVERSITY**  
**DEPARTMENT OF PHILOSOPHY**  
**Undergraduate Course Outline 2023-24**

PHILOSOP 2310G  
Philosophy of Physics

Winter Term 2024

Instructor: N/A

**PREREQUISITE CHECKING**

This course does not have prerequisites in physics nor in philosophy, beside exposition to basic high-school physics. The fundamental concepts will be introduced in an intuitive way through the course.

**DESCRIPTION**

This course provides a first encounter with questions at the intersection of philosophy and modern physics. It explores the profound impact that modern physics has had on different philosophical conceptions such as space, time, matter, and even the very notion of physical law. By examining the revolutionary significance of different theories —from Newtonian physics to thermodynamics, from special and general relativity to the quantum theory, and possibly beyond — we will delve into the philosophical quandaries that emerge from these frameworks, which challenge deeply ingrained philosophical intuitions based on common sense. Moreover, we will trace the reciprocal influence between these scientific theories and philosophical ideas regarding the nature of physical knowledge itself. We will engage with the fundamental questions raised by modern physics introducing fundamental physics concepts in a modern and accessible way, placing them in their historical context and analyzing their philosophical significance.

**TEXTS**

Online Readings:

The required texts will be posted on the course websites (OWL and Perusall).

Reference text:

David Wallace, *Philosophy of Physics: A Very Short Introduction*, Oxford University Press.

Recommended resource:

Entries in philosophy of physics on the online Stanford Encyclopedia of Philosophy.

Relevant articles/books for further readings are posted on the course websites.

## **OBJECTIVES**

- *To learn to examine the philosophical implications of modern physics.*
- *To be able to place modern scientific revolution in their historical context.*
- *To evaluate the how relativistic and quantum theories challenge simplistic notions of objectivity.*
- *To explore the nature of laws of physics, and their relation to determinism/indeterminism.*
- *To develop the skills to analyze original works by physicists and engage with contemporary philosophical interpretations.*

## **METHOD OF EVALUATION**

*Bi-weekly online reaction to reading assignments 10%*

*Bi-weekly short writing assignments 10%*

*Bi-weekly quizzes 10%*

*Final essay (take-home) (30%)*

*Final exam (in-class) (40%)*

## **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](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. The deadline for corpuses in the Fall Term 2024 is set to March 7.

## **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](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.