1 Course Details

1.1 Calendar Description
A common way of thinking of the world is that it consists of objects with properties that persist through time while changing in different ways. Yet there are deep puzzles about each of these basic, seemingly indispensable concepts. What does it take to be an object? How much can an object change without becoming a different object? Are some of an object’s properties essential to it? Metaphysics is the business of proposing and debating answers to these questions and related questions. This course introduces students to these debates.

Pre-Requisites: 1.50 credits in Philosophy or 7.50 credits

1.2 Course Description
This course examines the development of our metaphysical and scientific understanding of space, time and motion from the ancient Greeks to the present day. We begin with Plato and Euclid. We then focus on the classical debate about the reality of space in the work of Descartes, Newton, Leibniz and Berkeley. Finally, we study the impact of the conventionalist and relativistic theories of Poincaré and Einstein. Space and time are of interest not only as one of the central topics in metaphysics, but also as an exemplar of how research in metaphysics is done.

1.3 Timetable

<table>
<thead>
<tr>
<th>Activity Day</th>
<th>Activity Description</th>
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</thead>
<tbody>
<tr>
<td>Tuesday (except Jan. 12 &amp;</td>
<td>5:00 pm - Reading response quiz due in CourseLink</td>
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<tr>
<td>Feb. 9)</td>
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<tr>
<td>Tuesday (except Feb. 9)</td>
<td>5:00 pm - Video lecture released</td>
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</table>
Thursday (except Feb. 11)  2:30 pm to 3:50 pm - Zoom class meeting

Thursday  5:00 pm - Questions for next week’s reading response quiz released

1.4 Final Exam

There will be a take-home final exam, available 5:00 pm April 13 and due 11:59 pm April 16

2 Instructional Support

2.1 Instructional Support Team

Instructor: Andrew Wayne
Email: awayne@uoguelph.ca
Office Hours: Wednesdays, 11:00 - 12:00 and by appointment, over Zoom.

2.2 Teaching Assistants

Teaching Assistant: John Klasios
Email: jklasios@uoguelph.ca
Office Hours: TBA and by appointment, over Zoom

3 Learning Resources

3.1 Required Resources

Nick Huggett, Space from Zeno to Einstein (MIT Press, 1999) (Textbook)

3.2 Additional readings available on CourseLink

http://courselink.uoguelph.ca

4 Learning Outcomes

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Understand, explain and assess major moments in the development of conceptions of
space and time from the ancient Greeks to the present day.

2. Understand, explain and assess key philosophical concepts including realism and anti-realism, induction and justification.

3. Argue successfully for your own view and be able to identify and critically evaluate patterns of argumentative reasoning in the work of others.

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**5 Teaching and Learning Activities**

**5.1 Tentative Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Ancient views of space</strong></td>
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<tr>
<td>Jan. 12</td>
<td>Plato's account of space</td>
<td>Hugget, Ch. 1</td>
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<tr>
<td>Jan. 19</td>
<td>Euclid and the Euclidean hypothesis</td>
<td>Hugget, Ch. 2</td>
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<tr>
<td>2.</td>
<td><strong>Substantivalism vs. relationalism</strong></td>
<td></td>
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<tr>
<td>Jan. 26</td>
<td>Descartes' relationalism</td>
<td>Hugget, Ch. 6</td>
</tr>
<tr>
<td>Feb. 2</td>
<td>Newton's substantivalism</td>
<td>Hugget, Ch. 7</td>
</tr>
<tr>
<td>Feb. 9</td>
<td>No class; <em>take-home midterm available 5:00 pm Feb. 9 and due 11:59 pm Feb. 12.</em></td>
<td></td>
</tr>
<tr>
<td>Feb. 23</td>
<td>The Leibniz-Clarke correspondence</td>
<td>Hugget, Ch. 8</td>
</tr>
<tr>
<td>Mar. 2</td>
<td>Berkeley’s and Mach’s relationalism</td>
<td>Hugget, Ch. 9</td>
</tr>
<tr>
<td>3.</td>
<td><strong>The epistemology of geometry</strong></td>
<td></td>
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<tr>
<td>Mar. 9</td>
<td>Kant's <em>a priorism</em></td>
<td>Hugget, Ch. 12</td>
</tr>
<tr>
<td>Mar. 16</td>
<td>Poincaré’s conventionalism</td>
<td>Hugget, Ch. 13</td>
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<tr>
<td>Mar. 23</td>
<td>Reichenbach’s empiricism</td>
<td>Sklar, pp, 94-101, 113-123</td>
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<tr>
<td>4.</td>
<td><strong>The metaphysics of spacetime</strong></td>
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<tr>
<td>Mar. 30</td>
<td>Spacetime</td>
<td>Hugget, Ch. 10</td>
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<tr>
<td>Apr. 6</td>
<td>Einstein’s metaphysics</td>
<td>Hugget, Ch. 14</td>
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<tr>
<td>Week</td>
<td>Topic</td>
<td>Reading</td>
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<tr>
<td></td>
<td></td>
<td><em>Take-home final exam available 5:00 pm April 13 and due 11:59 pm April 16.</em></td>
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6 Assessments

6.1 Course Requirements

- 20% Reading responses (10 assignments, 2% per assignment, pass/fail)
- 30% Take-home midterm test submitted in PDF format via Dropbox
- 50% Take-home final exam submitted in PDF format via Dropbox

*Late reading responses and take-home tests will not be accepted.*

6.2 Additional Support

Students with special needs or requiring additional support are encouraged to speak with me as early in the term as possible to ensure that appropriate arrangements are made.

7 University Statements

7.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

7.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Graduate Calendar - Grounds for Academic Consideration
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions
https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml
7.3 Drop Date
Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml

Graduate Calendar - Registration Changes
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-regregchg.shtml

Associate Diploma Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml

7.4 Copies of Out-of-class Assignments
Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

7.5 Accessibility
The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website
https://www.uoguelph.ca/sas

For Ridgetown students, information can be found on the Ridgetown SAS website
https://www.ridgetownc.com/services/accessibilityservices.cfm

7.6 Academic Integrity
The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community-faculty, staff, and students-to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University’s policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

Graduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

7.7 Recording of Materials
Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

7.8 Resources
The Academic Calendars are the source of information about the University of Guelph’s procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars
https://www.uoguelph.ca/academics/calendars

7.9 Disclaimer
Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website (https://news.uoguelph.ca/2019-novel-coronavirus-information/) and circulated by email.

7.10 Illness
The University will not normally require verification of illness (doctor’s notes) for fall 2020 or
winter 2021 semester courses. However, requests for Academic Consideration may still require medical documentation as appropriate.