

<b>Course ID:</b>	<b>Course Title:</b>	<b>Winter 2023</b>
<b>PH 300</b>	<b>Philosophy of Science</b>	<b>Prerequisite: PH 125</b>
		<b>Credits: 3</b>

Class Information		Instructor Information		Important Dates	
<b>Delivery:</b>	IN-PERSON	<b>Instructor:</b>	KEN NICKEL, PHD	<b>First Day of Class:</b>	JAN 10
<b>Days:</b>	W & F	<b>Email:</b>	knickel@ambrose.edu	<b>Last Day to Add/Drop:</b>	JAN 22
<b>Time:</b>	11:15 AM	<b>Phone:</b>	403 410 2000 ext. 6903	<b>Last Day to Withdraw:</b>	MAR 31
<b>Room:</b>	L2084	<b>Office:</b>	2103	<b>Last Day to Apply for Coursework Extension:</b>	APR 3
<b>Lab/Tutorial:</b>	NONE	<b>Office Hours:</b>	DROP-IN / UPON REQUEST	<b>Last Day of Class:</b>	APR 14
<b>Final Exam:</b>	WEDNESDAY, APRIL 19 @ 9:00 AM				

## Course Description

The English term ‘science’ derives from the Greek term ‘*episteme*’, meaning ‘to know’, ‘to understand’. Epistemology is broadly the investigation of what knowledge is, and how or if it can be acquired. Philosophy of science is closely connected to that investigation. Science is conventionally thought to be a humanity’s best and surest sources of knowledge, largely because of the overwhelming success of ‘empiricism’. Deriving from another Greek term, ‘*emperia*’, the Latin derivative, ‘*experientia*’, gives us obvious English terms such as ‘experience’ and ‘experiment’. These two terms form the bedrock of values for our current understanding and applications of science in the modern era. This course will examine the degree and extent to which values can be distinct from science, and the degree and extent to which confidence in the deliverances of science are warranted. In a bygone era Theology was considered the ‘Queen of the Sciences’. This course will examine why that was and what, if any, hierarchy of scientific knowledge persists in the present. In general this course will look at the historical and scientific trajectory of concepts like ‘reality’, ‘causation’, ‘explanation’, ‘theory’, ‘fact’, and ‘truth’.

## Expected Learning Outcomes

1. Students should learn and understand the relationship of ‘science’ to other areas of philosophical investigation in epistemology, metaphysics, and ethics.
2. Students should learn and understand the relationship of ‘science’ to other areas of academic investigation in the Humanities and Theology.

3. Students should learn and understand the application of ‘science’ to other areas of social scientific investigation such as social psychology, political science, computer science, economics, and the pursuit of artificial intelligence.
4. Students should develop an appreciation for scientific methodologies, their strengths and their weaknesses, their capabilities and their limitations.

## Textbooks

Godfrey-Smith, Peter. *Theory and Reality: An Introduction to the Philosophy of Science*. Chicago, IL: The University of Chicago Press, 2021.

Abel, Donald C. (Ed.). (2012). *Fifty Readings in Philosophy* (4th ed.). New York, NY: McGraw-Hill.

### Recommended:

Vaughn, Lewis, and Jillian Scott McIntosh. *Writing Philosophy: A Guide for Canadian Students*. 2nd ed. New York, NY: Oxford University Press, 2013.

- ✓ This is an excellent resource, especially if a student plans to take additional courses in the discipline of Philosophy.

**Online Resource:** *Stanford Encyclopedia of Philosophy* (SEP)

- ✓ Our textbook of primary readings does not contain information/readings on all the important philosophers and philosophical ideas we will be covering during the term. The *SEP* is an excellent resource!

<http://plato.stanford.edu/contents.html>

## Course Schedule<sup>1</sup>

JAN 11 JAN 13	CHAPTER # INTRODUCTION
JAN 18 JAN 20	CHAPTER # 2 EMPIRICISM
JAN 25 JAN 27	CHAPTER # 3 EVIDENCE & INDUCTION
FEB 1 FEB 3	CHAPTER # 4 POPPER: CONJECTURE & REFUTATION
FEB 8 FEB 10	CHAPTER # 5 KUHN & ‘PARADIGM SHIFTS’
FEB 15 FEB 17	CHAPTER # 6 THEORIES AND FRAMEWORKS CHAPTER # 7 SOCIOLOGY OF SCIENCE
FEB 22 FEB 24	READING WEEK READING WEEK
MAR 1	CHAPTER # 8 SCIENCE IS POLITICAL

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<sup>1</sup> The Professor reserves the right to deviate from the proposed schedule to accommodate extenuating circumstances, timely topics, and student needs.

MAR 3

MAR 8 CHAPTER # 9 NATURALISTIC PHILOSOPHY  
MAR 10

MAR 15 CHAPTER # 10 SCIENTIFIC REALISM  
MAR 17 CHAPTER # 11 EXPLANATION, LAWS, CAUSES

MAR 22 CHAPTER # 12 PROBABILITY  
MAR 24

MAR 29 ARC - NO CLASS  
MAR 31 CHAPTER # 13 THE PROBLEM OF TRUTH

APR 5  
APR 7 GOOD FRIDAY -NO CLASS

APR 12 CHAPTER # 14 THE FUTURE  
APR 14

## Requirements:<sup>2</sup>

1. **Attendance & Participation** 10%
  - Please make every effort to be seated and prepared for class by 11:15. Attendance will be taken at the beginning of ALL classes. Students are expected to attend each class session with an engaged frame of mind. Students should be prepared to contribute thoughtful conversation to the topics under discussion.
  - Participation is welcomed in the form of in-class questions or comments, but all students are invited to give evidence of participation in Moodle Discussion forums, in-person or Zoom meetings, etc.
  - Students lose 1 mark for every absence. Two 'lates' is equivalent to ONE absence. Students who repeatedly abbreviate class attendance (e.g., arrive late, depart early, etc.) may also be deemed absent. Students whose 'attendance' is **perfect** but whose quality of engagement is negligible should anticipate nothing better than C (6.5 out of 10) for this portion of their grade.
  
2. **First Writing Assignment (1200-1400 words)** 15%
  - Due: Friday, February 3 @ 11:14 AM *before* class (electronic and paper submissions)
  - A separate document regarding topics, format and submission guidelines, and late policy will be available on Moodle. Papers will be submitted by the Instructor to "Turnitin" for originality assessment. Personal privacy is protected.
  - Students must submit this assignment to be eligible to write the Final Exam.
  
3. **Second Writing Assignment (1200-1400 words)** 15%
  - Due: Friday, March 3 @ 11:14 AM *before* class (electronic and paper submissions)
  - A separate document regarding topics, format and submission guidelines, and late policy will be available on Moodle. Papers will be submitted by the Instructor to "Turnitin" for originality assessment. Personal privacy is protected.
  - Students must submit this assignment to be eligible to write the Final Exam.

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<sup>2</sup> The Professor reserves the right to modify requirements, assignments, and exams in the event of any permanent transition to online delivery. The current requirements assume the semester will proceed as planned.

4. **Third Writing Assignment (2300 words (MIN): roughly 9 pages)** 25%
  - Due: **Monday, April 17 @ 4:00 PM** (electronic only – no paper submission required)
  - A separate document regarding topics, format and submission guidelines, and late policy will be available on Moodle. Papers will be submitted by the instructor to “**Turnitin**” for originality assessment. Personal privacy is protected.
  - Students who have not submitted all assignments will not be permitted to write the Final Exam.
  
5. **Comprehensive / Cumulative Final Exam** 35%
  - **Wednesday, April 19 @ 9:00 AM**
  - Students must pass the Final Exam to ensure a passing grade in the course. Even if a student’s accumulated grades are above 50%, the Professor reserves the right to withhold a passing grade for the course if the student fails the Final Exam.
  - Students should refrain from scheduling all other commitments (e.g., flights or travel of any sort) that will conflict with the Final Examination schedule. Final examinations will not be rescheduled to accommodate travel arrangements.

**Attendance:**

(See requirements)

**Grade Summary:**

Letter Grade	GPA	Description	Percentage
A+	4.0	EXCELLENT	96-100 %
A	4.0		91-95 %
A-	3.7		86-90 %
B+	3.3	GOOD	82-85 %
B	3.0		75-81 %
B-	2.7		72-74 %
C+	2.3	SATISFACTORY	68-71 %
C	2.0		63-67 %
C-	1.7		60-62 %
D+	1.3		56-59 %
D	1.0	MINIMAL PASS	50-55 %
F	0.0	FAIL	≤ 49 %

Because of the nature of the Alpha 4.00 system, there can be no uniform University-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the nature of the course and the instructor’s assessment of the level of each class, compared to similar classes taught previously.

Please note that final grades will be available on student registration system. Printed grade sheets are not mailed out.

**Other: (On a more personal note)**

- ✓ **Students are responsible to check the Moodle** course site and their **Ambrose e-mail** accounts regularly. I like to use Moodle and/or e-mail to remind students of upcoming topics and readings, or to pose questions in light of readings or lecture topics. E-mail and Moodle may be used to notify you of cancelled classes or other important and immediate details relating to the course.
- ✓ Please, **put cell phones away during class**. Please try to avoid non-essential technology during class.
  
- ✓ Students should not be confused about what paying tuition entitles them to. Paying tuition entitles no one to a **passing grade**. Passing grades, indeed all grades, are *earned*—not paid for.
- ✓ No university student consents to any small amount of violence in any classroom, but paying tuition and enrolling in a Philosophy course **implies consent** to a variety of things you may or may not like. ‘**Academic freedom**’ means you *will be* exposed to words and ideas, some of which will be distasteful to some students and possibly to all. It is impossible to identify and appreciate ‘good’ ideas without carefully considering ‘bad’ ideas. Students should consider *why* they are ‘bad’ and not merely ‘forbidden’.

- ✓ Philosophy students consent to the possibility that they might read and hear things that offend their sensibilities. You have every right *not* to be harmed in my class, but you have **NO right not to be offended**. The **pursuit of wisdom** equips students to better **cope** with life's inevitable challenges. No one on the planet—not God and certainly no Philosophy Professor at Ambrose—has the responsibility to make things **perfect** for you. Perfection is the enemy of the good. If you remain in *this* Philosophy class you **consent** to be challenged. You **consent** to think carefully about, among other things, Truth, Beauty, and Goodness in a world that is all too often deceptive, ugly, gritty, and unjust. The work of Philosophy takes **courage**, though, frankly, not very much.

## **Ambrose University Important Information:**

### **Communication**

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (cancelled class sessions, extensions, requested appointments, etc.) between class sessions.

### **Exam Scheduling**

Students who find a conflict in their exam schedule must submit a Revised Examination Request form to the Registrar's Office by the deadline date; please consult the Academic Calendar. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) the student has three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

### **Standards of Behaviour in the Classroom Setting**

Learning is an active and interactive process, a joint venture between student and instructor and between student and student. Some topics covered within a class may lead to strong reactions and opinions. It is important that Students understand that they are entitled to hold contradictory beliefs and that they should be encouraged to engage with these topics in a critical manner. Committing to this type of "active learning" significantly increases the learning experience for both teacher and student, and reflects the Christian imperative to pursue truth, which lies at the heart of the Ambrose educational experience. However, active discussion of controversial topics will be undertaken with respect and empathy, which are the foundations of civil discourse in the Classroom Setting. Primary responsibility for managing the classroom rests with the instructor. The instructor may direct a student to leave the class if the student engages in any behaviour that disrupts the classroom setting. If necessary, Ambrose security will be contacted to escort the student from class. Please refer to your professor regarding their electronic etiquette expectations.

### **Academic Integrity**

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to acknowledge to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

### **Academic Policies**

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. The academic calendar can be found at <https://ambrose.edu/content/academic-calendar-2>.

### **Privacy**

Personal information (information about an individual that may be used to identify that individual) may be required as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at [privacy@ambrose.edu](mailto:privacy@ambrose.edu).

### **Coursework Extensions**

Should a request for a time extension on coursework exceed the end of the term, a *Coursework Extension Application* must be completed and submitted to the Office of the Registrar. The extension (if granted) will be recorded on the student record. Extensions are granted at the discretion of the instructor and are normally granted for 30 days beyond the last day of the term.

Normally, Course Extension Applications will be considered only when all of the following conditions are met:

- the quality of prior course work has been satisfactory;
- circumstances beyond your control, such as an extended illness or death of a family member, make it impossible for you to complete the course work on time; and
- you submit *Coursework Extension Application* to the Office of the Registrar on or before the deadline specified in the Academic Schedule.

If granted, time extensions do not excuse you from a final examination where one has been scheduled for the course.

A temporary grade of TX will be assigned until a final grade is submitted in accordance with the new deadline. A final grade of F will apply to:

- all course work submitted after the end of the semester unless a coursework extension has been granted; and all course work submitted after the revised due date provided by an approved extension to coursework.

## Academic Success and Supports

### Accessibility Services

Academic accommodation is provided to Ambrose students with disabilities in accordance with the Alberta Human Rights Act and the Canadian Charter of Rights and Freedoms. Provision of academic accommodation does not lower the academic standards of the university nor remove the need for evaluation and the need to meet essential learning outcomes. Reasonable accommodations are tailored to the individual student, are flexible, and are determined by considering the barriers within the unique environment of a postsecondary institution. It can take time to organize academic accommodations and funding for disability-related services. Students with a disability who wish to have an academic accommodation are encouraged to contact Accessibility Services as early as possible to ensure appropriate planning for any needs that may include accommodations. Staff can then meet with students to determine areas to facilitate success, and if accommodations are required, ensure those accommodations are put in place by working with faculty.

### Ambrose Writing Services

Ambrose Writing services provides academic support in the four foundational literacy skills—listening, speaking, reading, and writing. It also assists students with critical thinking and the research process. Throughout the academic year, students can meet with a writing tutor for personalized support, or they can attend a variety of workshops offered by Academic Success. These services are free to students enrolled at Ambrose University. Academic Success serves all students in all disciplines and at all levels, from history to biology and from theatre to theology. To learn more, please visit <https://ambrose.edu/writingcentre>

### Ambrose Tutoring Services

Ambrose Tutoring Services provides support in specific disciplinary knowledge, especially in high-demand areas such as chemistry, philosophy, math and statistics, and religious studies. These tutors also coach students in general study skills, including listening and note-taking. During the academic year, Ambrose Tutoring Services offers drop-in tutoring for courses with high demand; for other courses, students can book a one-to-one appointment with a tutor in their discipline. These services are free to students enrolled at Ambrose University. To learn more, please visit <https://ambrose.edu/tutoring>.

### Mental Health Support

All of us need a support system. We encourage students to build mental health supports and to reach out when help is needed.

#### On Campus:

- Counselling Services: [ambrose.edu/counselling](https://ambrose.edu/counselling)
- Peer Supportive Listening: One-to-one support in Student Life office. Hours posted at [ambrose.edu/wellness](https://ambrose.edu/wellness).
- For immediate crisis support, there are staff on campus who are trained in Suicide Intervention and Mental Health First Aid. See [ambrose.edu/crisissupport](https://ambrose.edu/crisissupport) for a list of staff members.

#### Off Campus:

- Distress Centre - 403-266-4357
- Sheldon Chumir Health Care Centre - 403-955-6200
- Emergency - 911

### Sexual Violence Support

All staff, faculty, and Residence student leaders have received *Sexual Violence Response to Disclosure* training. We will support you and help you find the resources you need. There is a website with on and off campus supports – [ambrose.edu/sexual-violence-response-and-awareness](https://ambrose.edu/sexual-violence-response-and-awareness).

#### Off Campus:

- Clinic: Sheldon Chumir Health Centre - 403-955-6200
- Calgary Communities Against Sexual Abuse - 403-237-5888

**Note:** Students are strongly advised to retain this syllabus for their records.