

# Philosophy of Mathematics

PHIL375 (AO1)

Introduces problems in the philosophy of mathematics. Topics may include the nature of mathematical objects, the status of the infinite in mathematics, the relationship between mathematics and natural science/physical reality.

PREREQUISITES PHIL203, PHIL304A, PHIL370, MATH122, or MATH360.

INSTRUCTION Monday & Wednesday 2:30-3:50PM 📖 **TBA** **IN-PERSON ONLY**

INSTRUCTOR Professor Mike Raven ([raven@uvic.ca](mailto:raven@uvic.ca) • [raven.site](#)) **OFFICE**  
HOURS • **TBA** (or appointment) 📖 CLE B323

LMS [bright.uvic.ca/d2l/home/#####](https://bright.uvic.ca/d2l/home/#####) (Consult for updates and current course documents.)

TEXTS 📖 **REQUIRED** • [Frege, \*The Foundations of Arithmetic\*](#) trans. Austin (Wiley-Blackwell)  
📖 **REQUIRED** • [Shapiro, \*Thinking about Mathematics\*](#) (Oxford)

## EVALUATION

GRADES Students have completed the course upon their completion of all essential work (▶). A failing N course grade is earned if any essential work is not completed. All work earns a [grade](#) based on its craftsmanship ([RUBRIC](#)).

WORK ▶ INTEGRITY Online courses: [Integrity Matters](#) and [Integrity in Practice](#).  
▶ PROBLEM SETS [2/3] Short essay assignments (due dates: **TBA**)  
▷ CHECKPOINTS [1/6] Best 7 of 10 reading comprehension quizzes.  
▷ [ENGAGEMENT](#) [1/6] Weekly forum contribution: ≥6 posts and ≥6 replies for the term.

Work will be listed on, and submitted to, the LMS.

GRACE POINTS A **grace point** delays the due date of an essential work by 1 day. 5 are allotted and may be used in any combination without justification, but cannot be reused or traded. To use, state the number used when submitting your work.

LATENESS Unaccommodated late work submitted more than 5 days past the due date earns pass(50)/fail(49) credit and is not entitled to feedback.

## POLICIES

CONDUCT Enrolling binds you to a [social contract](#) with your instructor and classmates.  
• **Be prepared.** Consult course documents. Read assigned text before class.  
• **Be engaged.** [Class attendance is expected](#). Use office hours and tutorials.  
• **Be respectful.** Don't bully or distract others. Use devices only for class purposes.  
• **Be professional.** Check sources first. Follow etiquette. Allow time for replies.  
• **Demonstrate [academic integrity](#).** Learn the policies. Ignorance is no excuse.

PLANS Accessibility plans must be made through the [Centre for Accessible Learning](#).  
All academic concessions must be made by [official request](#).

RECORDINGS Classes are not recorded/streamed. No unauthorized recording/streaming.

GUESTS Guests permitted only with instructor's prior consent.

COPYRIGHT Course content/materials are [protected by copyright law](#).

## RESOURCES

[LAND ACKNOWLEDGEMENT](#) We acknowledge and respect the [Ikwéyáñan](#) peoples on whose traditional territory the university stands and the Songhees, Esquimalt and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day.

[WELLNESS](#) Take care of your mental and physical well-being! If your symptoms are related to this course, then please speak with the instructor.

[LEARN ANYWHERE](#) For student and academic support services.

## SCHEDULE

Consult [www.uvic.ca/calendar/dates/](http://www.uvic.ca/calendar/dates/) for important dates (including last add/drop dates).

**Required texts** (•) must be read *before* each class. **Optional texts** (°) are also most usefully read *before* each class.

Dates are tentative; consult LMS for updates.

<b>HISTORY</b>		• Shapiro, <i>Thinking About Mathematics</i> , chapters 3-4
SEP 4	• Introduction	
SEP 9	• Euclid, <i>Elements</i> , Book 1: Definitions, Postulates, Common Notions, Propositions 1,2,4,18,32,47	
SEP 11	• Kant, <i>Prolegomena to Any Future Metaphysics</i> , pp. 15-22,32-38	
SEP 16	• Mill, <i>A System of Logic, Ratiocinative and Inductive</i> , Book II, Chapter VI, §§1-3	
<b>LOGICISM</b>		• Shapiro, <i>Thinking About Mathematics</i> , chapter 5 §§1-2
SEP 18	• Frege, <i>The Foundations of Arithmetic</i> , Introduction, I-II	
SEP 23		
SEP 25	• Frege, <i>The Foundations of Arithmetic</i> , §§46,55-83	
	• Heck, "Frege's Theorem: An Introduction", §§1-4	
SEP 30	<b>No class</b>	
OCT 2	• Russell & Frege, "Letters"	
OCT 7	• Russell, <i>Introduction to Mathematical Philosophy</i> , chapters 1-3	
OCT 9		
OCT 14	<b>No class</b>	
<b>FORMALISM</b>		• Shapiro, <i>Thinking About Mathematics</i> , chapter 6 §§1-4
OCT 16	• Hilbert, "On the Infinite"	
OCT 21	• Boolos, "Gödel's Second Incompleteness Theorem Explained in Words of One Syllable"	
<b>INTUITIONISM</b>		• Shapiro, <i>Thinking About Mathematics</i> , chapter 7 §§1-3
OCT 23	• Brouwer, "Intuitionism and Formalism"	
OCT 28		
<b>REALISM</b>		• Shapiro, <i>Thinking About Mathematics</i> , chapter 8 §§1,3
OCT 30	• Benacerraf, "Mathematical Truth"	
NOV 4	• Maddy, "Perception and Mathematical Intuition", §3	
NOV 6	• Field, <i>Realism, Mathematics, and Modality</i> , §4.B	
NOV 11	<b>No class</b>	
NOV 13	<b>No class</b>	
<b>NEO-LOGICISM</b>		• Shapiro, <i>Thinking About Mathematics</i> , chapter 5 §4
NOV 18	• Wright, "On the Philosophical Significance of Frege's Theorem", §§1-II	
	• Heck, "Frege's Theorem: An Introduction", §5	
NOV 20		
<b>FICTIONALISM</b>		• Shapiro, <i>Thinking About Mathematics</i> , chapter 8 §2 & chapter 9 §§1,3
NOV 25	• Field, <i>Realism, Mathematics, and Modality</i> , §§1-3	
NOV 27		
<b>STRUCTURALISM</b>		• Shapiro, <i>Thinking About Mathematics</i> , chapter 10 §§1-3
DEC 2	• Benacerraf, "What Numbers Could Not Be", (skip the "digression" in 51-52)	
	• Field, <i>Realism, Mathematics, and Modality</i> , §4.A	
DEC 4		

