This syllabus is subject to revision, pending updates: 💻 www.uvic.ca/return-to-campus

Philosophy of Mathematics

PHIL375/MATH375

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.
INSTRUCTOR	Professor Mike Raven (✉ raven@uvic.ca • 💻 raven.site) **OFFICE HOURS** • Monday/Wednesday 1:00-2:00PM (or appointment) 🏛 CLE B323
INSTRUCTION	Wednesdays 2:30-5:20PM 🏛 Clearihue A207
LMS	💻 bright.uvic.ca/d2l/home/243329 (Consult for updates and current course documents.)
TEXTS	— **BEFORE BUYING:** TEXT(S) ARE ON RESERVE AND MANY ARE ALSO AVAILABLE ONLINE — 🕮 Frege, *The Foundations of Arithmetic* trans. Austin (Wiley-Blackwell) 🕮 Shapiro, *Thinking about Mathematics* (Oxford)

EVALUATION

RUBRIC: Grades (💻 UVic's scale) you earn are determined by the philosophical craftsmanship of your work for this course according to the RUBRIC: 💻 web.uvic.ca/~raven/teaching/Rubric.pdf

WORK

✦ INTEGRITY MATTERS	Short online course on academic integrity.
✦ PROBLEM SETS [$^2/_3$]	Short essay assignments (see SCHEDULE for due dates).
↗ CHECKPOINTS [$^1/_6$]	Best 7 of 10 online reading comprehension quizzes.
↗ ENGAGEMENT [$^1/_6$]	Contribute at least one substantive post to the forum weekly: 💻 web.uvic.ca/~raven/teaching/Engagement.pdf

A failing **N** grade will be earned if any essential work (✦) is not completed.

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, traded, or earned. To use # grace points, write '# grace points' at the top of your submission.

LATENESS: Work submitted after a due date will *not* be accepted (see ACCESSIBILITY for exceptions).

POLICIES

CONDUCT: Enrolling binds you to a social contract with your instructor and classmates. 💻 www.uvic.ca/services/advising/advice-support/academic-units/student-code-of-conduct

- **Be prepared**. Consult course documents. Read assigned text before class.
- **Be engaged**. Attend class. Use office hours and tutorials.
- **Be respectful**. Don't bully or distract others.
- **Be professional**. Check sources first. Follow etiquette. Allow ≥1 day for replies.
- **Demonstrate academic integrity**: 💻 www.uvic.ca/current-students/home/academics/academic-integrity/

REQUESTS: Accessibility arrangements must be made with CAL (see RESOURCES). Other requests (extra credit, extensions, makeup work) will *not* be considered, except for extraordinary cases (instructor's discretion; e.g. *not* technical/wifi issues) and when the request (and documents, if any are required) is received within 3 days of the due date.

GUESTS: Guests permitted only with instructor's prior consent.

COPYRIGHT: Course content/materials are protected by copyright law: 💻 www.uvic.ca/library/research-teaching/copyright

RESOURCES

INDIGENOUS SUPPORT	We acknowledge and respect the lək̓ʷəŋən peoples on whose traditional territory the university stands and the Songhees, Esquimalt and WSÁNEĆ peoples whose historical relationships with the land continue to this day. For more information and support: 💻 www.uvic.ca/services/indigenous/
ACCESSIBILITY	For accessibility support, consult the Centre for Accessible Learning (**CAL**): 💻 www.uvic.ca/services/cal/
WELLNESS	Take care of your mental and physical well-being! If your symptoms are related to this course, then please speak with the instructor. For cost-free, confidential support: 💻 www.uvic.ca/student-wellness/
LEARN ANYWHERE	For student and academic support services: 💻 onlineacademiccommunity.uvic.ca/LearnAnywhere/

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SCHEDULE

Consult 💻 www.uvic.ca/calendar/dates/ for important dates (including last add/drop dates).
Required texts (•) must be read *before* each class (including SEP 7).
Consult the STUDY GUIDE for guidance on topics to be discussed.
Dates are tentative; consult LMS for updates.

🚣	SEP 7	**HISTORY** • Shapiro, *Thinking About Mathematics*, **chapters 3-4** • Euclid, *Elements*, **Book 1: Definitions, Postulates, Common Notions, Propositions 1,2,4,18,32,47** • Kant, *Prolegomena to Any Future Metaphysics*, **pp. 15-22,32-38** • Mill, *A System of Logic, Ratiocinative and Inductive*, **Book II, Chapter VI, §§1-3**
🚣	SEP 14	• Frege, *The Foundations of Arithmetic*, **Introduction, I-II**
🚣	SEP 21	**LOGICISM** • Shapiro, *Thinking About Mathematics*, **chapter 5 §§1-2** • Frege, *The Foundations of Arithmetic*, **§§46,55-83** • Heck, "Frege's Theorem: An Introduction", **§§1-4**
🚣	SEP 28	• Russell & Frege, "Letters" • Russell, *Introduction to Mathematical Philosophy*, **chapters 1-3**
💻	SEP 30	✦ **DUE: INTEGRITY MATTERS**
💻	OCT 4	✦ **DUE: PROBLEM SET 1**
🚣	OCT 5	**FORMALISM** • Shapiro, *Thinking About Mathematics*, **chapter 6 §§1-4** • Hilbert, "On the Infinite" • Boolos, "Gödel's Second Incompleteness Theorem Explained in Words of One Syllable"
🚣	OCT 12	**INTUITIONISM** • Shapiro, *Thinking About Mathematics*, **chapter 7 §§1-3** • Brouwer, "Intuitionism and Formalism"
🚣	OCT 19	**REALISM** • Shapiro, *Thinking About Mathematics*, **chapter 8 §§1,3** • Benacerraf, "Mathematical Truth" • Maddy, "Perception and Mathematical Intuition", **§3** • Field, *Realism, Mathematics, and Modality*, **§4.B**
🚣	OCT 26	**NEO-LOGICISM** • Shapiro, *Thinking About Mathematics*, **chapter 5 §4** • Wright, "On the Philosophical Significance of Frege's Theorem", **§§I-II** • Heck, "Frege's Theorem: An Introduction", **§5**
💻	NOV 1	✦ **DUE: PROBLEM SET 2**
🚣	NOV 2	**FICTIONALISM** • Shapiro, *Thinking About Mathematics*, **chapter 8 §2 & chapter 9 §§1,3** • Field, *Realism, Mathematics, and Modality*, **§§1-3**
🚣	NOV 16	**STRUCTURALISM** • Shapiro, *Thinking About Mathematics*, **chapter 10 §§1-3** • Benacerraf, "What Numbers Could Not Be", **(skip the "digression" in 51-52)** • Field, *Realism, Mathematics, and Modality*, **§4.A**
🚣	NOV 23	**NEW WAVES** • Fine, "Our Knowledge of Mathematical Objects"
🚣	NOV 30	• Raven, "Ground" • Donaldson, "The (Metaphysical) Foundations of Arithmetic?"
💻	DEC 7	✦ **DUE: PROBLEM SET 3**