PHI 314: PHILOSOPHY OF MATHEMATICS Information Fall 2019

Instructors: John P. Burgess & Silvia De Toffoli, with JB being the main lecturer during the first and third quarters of the term, and SD being the main lecturer during the second and fourth quarters.

Communications:

JB	e-mail jburgess@princeton.edu	office 224 1879 Hall	hours MON 1-3
SD	e-mail silviadt@princeton.edu	office 208 Marx Hall	hours WED 2-4

Time & Place: Two classes. MW 11:00-12:20. Room 62 McCosh. Each 80-minute course meeting will be divided into roughly 55 minutes of lecture and 25 minutes of discussion, but students with questions should feel free to interrupt the lecture and not wait for the discussion period afterwards.

Readings: Readings will be available electronically, but it is advisable to obtain from on-line or other sources hard copies (hard or soft cover, new or used) of the anthology from which many will be taken: Benacerraf & Putnam, eds. *Philosophy of Mathematics* SECOND EDITION, Cambridge, 1984

Instructions for downloading readings will be sent to all officially enrolled students by e-mail through the Blackboard system. Others attending should e-mail JB.

Papers: Three 800-word papers will be required during the term, due on the dates marked on the syllabus. Each is to be written on one of a list of topic questions that will be circulated at least a week before the due date of the paper. A 1600-word paper is due on dean's date. It is to be written on a topic from a list that will be circulated by the last day of classes, or on a topic proposed by the student and submitted to the instructor for approval before the end of classes.

Students with little experience writing philosophy papers are advised to consult
«http://www.jimpryor.net/teaching/guidelines/writing.html»
and may request comments on a draft of the first paper before submissions if they make their request in a timely manner.

Submission: Papers should be submitted as an attachment to an e-mail addressed to BOTH instructors.

Acknowledgments: Each undergraduate paper should bear the words "This paper represents my own work in accordance with University regulations," followed by the student's signature. (Note the exact wording: There is no mention of "honor", since the honor system applies only to in-class examinations.) The relevant regulations are to be found in the University publication *Rights, Rules, and Responsibilities*, with which students should be familiar.

Lateness: There is a grade penalty of 1 point (on a scale of 100) per weekday to a maximum of 10 (or one full letter, e.g. from A- to B-) for unexcused lateness. By University policy, when extensions are sought on medical grounds, verification from University Health Services must be presented. Extensions for foreseeable reasons (such as scheduled extra-curricular activities requiring the student to be off-campus) should be sought in advance. Note that "Dean's Date" is so called because only deans can grant extensions past that date; individual faculty may not do so on their own authority; please don't even ask until you have spoken with your academic dean.

WED	11 SEP	Preview	NO READINGS
MON	16 SEP	Hahn	"The Crisis in Intuition"
WED	18 SEP	Hempel	"Geometry & Empirical Science"
MON	23 SEP	Poincaré	"The Nature of Mathematical Reasoning"
WED	25 SEP	Frege	*Foundations of Arithmetic*, selections
MON	30 SEP	Hempel	"The Nature of Mathematical Truth"
WED	02 OCT	Ayer	"The *A Priori*"
MON	07 OCT	White	"The Locus of Mathematical Reality"
WED	09 OCT*	Benacerraf	"Mathematical Truth"
MON	14 OCT	Baker	"Mathematical Explanations of Physical Phenomena"
WED.	16 OCT	Wigner	"Unreasonable Effectiveness"
MON	21 OCT	Benacerraf	"What Numbers Could not be"
WED	23 OCT	Carnap	"Empiricism, Semantics, and Ontology "
FALL RECESS			
MON	04 NOV	Heyting	"Intuitionist Foundations"
WED	06 NOV†	Hilbert	"On the Infinite"
MON	11 NOV	Newman	"Gödel's Proof"
WED	13 NOV	Lucas	"Minds, Machines, Gödel"
MON	18 NOV	Gödel	"Cantor's Continuum Problem"
WED	20 NOV	Macbeth	"Seeing How It Goes"
MON	25 NOV§	De Cruz/De Smedt	"Mathematical Symbols"
THANKSGIVING RECESS			
MON	02 DEC	Mancosu	"Mathematical Explanation"
WED	04 DEC	Fallis	"Probabilistic Proofs"
MON	09 DEC	Avigad	"Reliability of Mathematics"
WED	11 DEC	Review	NO READINGS
READING PERIOD			

Yellow = Lecture by JB
Orange = Lecture by SD

* 1ST PAPER DUE [on topic connected with readings 16 SEP - 02 OCT]
† 2ND PAPER DUE [on topic connected with readings 07 OCT - 23 OCT]
§ 3RD PAPER DUE [on topic connected with readings 04 NOV - 18 NOV]
# 4TH PAPER DUE DEAN'S DATE 14 JAN
[on topic connected with readings 29 NOV - 09 DEC or
a topic proposed by the student and approved by the instructors]