TENTATIVE SYLLABUS

All readings are available on Canvas

Date	Class topic	Quiz	Assignment (to be completed *before* class)
W 8 Sep	Introduction to the course and to logic	—	Read BBJ [i.e., Boolos, Burgess, & Jeffrey] §9.1
PART I: REVIEW OF FIRST-ORDER LOGIC (3 weeks)			
F 10 Sep	Syntax for first-order logic	—	Read BBJ §9.2
M 13 Sep	Solutions to Problem Set #1	1	Do Problem Set #1
W 15 Sep	Semantics for first-order logic	—	Reread BBJ pp. 104-105 & read BBJ pp. 114-117
F 17 Sep	Exercises on semantics and symbolization	—	Reread BBJ pp. 114-117 & read BBJ pp. 118-119
M 20 Sep	Solutions to Problem Set #2	2	Do Problem Set #2
W 22 Sep	Semantic metalogical notions	—	Read BBJ §10.2
F 24 Sep	Syntactic metalogical notions	—	Read BBJ pp. 166-169 (up to & includ. Table 14-3)
M 27 Sep	Solutions to Problem Set #3	3	Do Problem Set #3
PART II: POSITIVE METALOGICAL RESULTS (3 weeks)			
II.A: Soundness and completeness			
W 29 Sep	Sequent calculus	—	Read BBJ pp. 169-172
F 1 Oct	Exercises on sequent calculus	—	Read BBJ Examples 14.9-14.13 (pp. 173-174)
M 4 Oct	Solutions to Problem Set #4	4	Do Problem Set #4
W 6 Oct	Soundness and completeness	—	Read BBJ pp. 174-176 & 183-185
F 8 Oct	Review for Exam #1	—	Do Practice Exam #1
M 11 Oct	**Exam #1**	—	Review all material so far
II.B: The compactness and Löwenheim-Skolem theorems			
W 13 Oct	The compactness theorem	—	Read BBJ §12.1 & p. 147 (omit proofs)
F 15 Oct	The Löwenheim-Skolem theorems	—	Read Nagel & Newman pp. 7-36
M 18 Oct	Solutions to Problem Set #5	5	Do Problem Set #5; read Smith pp. 1-7
PART III: NEGATIVE METALOGICAL RESULTS (5 weeks)			
III.A: Gödel's First Incompleteness Theorem			
W 20 Oct	Gödel's First Incompleteness Theorem: Formulation	—	Read Franzén §§2.1-2.5
F 22 Oct	Gödel's First Incompleteness Theorem: Proof strategy	—	Read Goldstein pp. 155-188
M 25 Oct	Solutions to Problem Set #6	6	Do Problem Set #6
W 27 Oct	Peano arithmetic and Gödel numbering	—	Read George & Velleman pp. 173-184
F 29 Oct	Representability and decidability	—	Read George & Velleman pp. 184-190
M 1 Nov	Solutions to Problem Set #7	7	Do Problem Set #7
W 3 Nov	The fixed point lemma and the last stage of the proof	—	Read George & Velleman pp. 190-193
F 5 Nov	Gödel's First Incompleteness Theorem: Consequences	—	Read George & Velleman pp. 193-198
M 8 Nov	Solutions to Problem Set #8	8	Do Problem Set #8
III.B: Gödel's Second Incompleteness Theorem			
W 10 Nov	Gödel's Second Incompleteness Theorem: Formulation	—	Read Franzén §2.6 & §5.1
F 12 Nov	Gödel's Second Incompleteness Theorem: Proof strategy	—	Read George & Velleman pp. 198-200
M 15 Nov	Solutions to Problem Set #9	9	Do Problem Set #9; read Gödel *1931?
W 17 Nov	Computability: Turing machines and recursive functions	—	Read BBJ pp. 23-27 & 63-68
F 19 Nov	Review for Exam #2	—	Do Practice Exam #2
M 22 Nov	**Exam #2**	—	Review all material so far
PART IV: PHILOSOPHICAL IMPLICATIONS OF GÖDEL'S THEOREMS (3 weeks)			
IV.A: Implications for the philosophy of mathematics			
W 24 Nov	Hilbert's program	10	Read George & Velleman pp. 147-161
M 29 Nov	Gödel's theorems vs. Hilbert's program	11	Read George & Velleman pp. 161-171
W 1 Dec	Skepticism about consistency	12	Read Franzén §5.2 & §5.4 & DeLong pp. 216-219
IV.B: Implications for the philosophy of mind			
F 3 Dec	Lucas's argument—Version I	13	Read Franzén §6.1
M 6 Dec	Lucas's argument—Version II	14	Read Lucas 1968 & Lewis 1979
W 8 Dec	Gaifman's argument	15	Read Gaifman 2000
F 10 Dec	Penrose's argument	16	Read Franzén §§6.2-6.3
M 13 Dec	Review for Exam #3—Lessons from the course	17	Read Franzén Chapter 4 & Do Practice Exam #3
W 15 Dec	**Exam #3**	—	Review all material