

Philosophy 119
Intermediate Logic
Spring, 2018

Instructor: Richard Otte

Office: Cowell A-109

Office hours: T,Th 11:30-12:30, and by appointment

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email: otte@ucsc.edu (do not email me with specific questions about logic; please talk to me in person about those questions)

Text: *Computability and Logic* by Boolos and Jeffrey, editions 1,2, or 3. Do not get editions 4 or 5.

Incompleteness: The Proof and Paradox of Kurt Godel by Rebecca Goldstein,

Grades will be based on exams, homework, quizzes, and attendance. Homework will be due at the beginning of class; late homework is not accepted.

Students with Disabilities:

”If you qualify for classroom accommodations because of a disability, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me during my office hours or by appointment, preferably within the first two weeks of the quarter. Contact DRC by phone at 831-459-2089, or by email at drc@ucsc.edu for more information.”

A glossary of some definitions and theorems used in the class may be found on canvas.

Topics that will be covered (tentatively in this order)

Enumerability: enumerable and non-denumerable sets (chapters 1 & 2) (2 days)

Turing Machines (chapter 3) (1 day)

Halting problem (chapter 5) (1 day)

Semantics of first order logic (chapter 9) (5 days)

Undecidability of first order logic (chapter 10) (1.5 days)

Soundness of first order logic (lecture notes)(.5 day)

Completeness of first order logic (lecture notes) (2.5 days)

Lowenheim-Skolem theorems (chapter 13) (1 day)

Incompleteness results (lecture notes)