Recursion Theory

Math 291A/Phil 351A – Winter Quarter 2005-2006

(Enroll in Phil 351A)

Syllabus

Meeting times: Tu Th 11:00-12:15, Room 380-381T

Instructor: Solomon Feferman

Feferman office hours: Tu Th 1:45-2:30, Room 380-383Z

Course description: Theory of recursive functions and recursively enumerable sets. Register machines, Turing machines, and alternative approaches. Gödel's incompleteness theorems. Recursively unsolvable problems in mathematics and logic. Introduction to higher recursion theory.

Prerequisites: Phil 151, 152 and Math 161 or equivalents.

Course work: Regular assigned homework. No final examination, but in its place students will be required to prepare a paper of 8-12 pages summarizing the results of an article or part of a book in the literature of this subject.

Grading: Letter or CR/NC. 3 units

Text for the course (required): N. Cutland, *Computability*

On reserve in the Math/CS library:

N. Cutland, *Computability*

S. Feferman, *Lectures on Metamathematics*

S. C. Kleene, *Introduction to Metamathematics*

P. Odifreddi, *Classical Recursion Theory,* Vols. 1 and 2

H. Rogers, *Theory of recursive functions and effective computability*

J. R. Shoenfield, *Lectures on Recursion Theory*