

Misc Project Ideas

MISC 1

Example Text: *An Introduction to Gödel's Theorems* by Peter Smith

Project: Foundational mathematics contains many intriguing results with profound philosophical implications, some of which have made their way into the public awareness. The incompleteness theorems of Gödel are perhaps the most famous of these results. The aim of this project will be to explore the mathematics needed to state and prove these results, with the goal of better understanding what exactly the incompleteness theorems mean and perhaps also how they are proven. This project provides students with an opportunity to explore fascinating mathematics that they are unlikely to encounter in the rest of their conventional undergraduate mathematics education.

Suggested Prerequisites: Basic set theory, functions (at the level of MATH 381)

Keywords: *logic, incompleteness theorems, foundations of math, completeness, provability*