MHF 3202 - SETS AND LOGIC
2025 SUMMER B
SYLLABUS

INSTRUCTOR: Paul Robinson (paulr@ufl.edu)
CLASS ROOM: 205 Little Hall
CLASS TIME: MTuWThF period 3 (11:00-12:15)
OFFICE: 414 Little Hall (NE Corridor)
TEXT: Daniel Velleman, *How to Prove It* (third edition)

This course is based primarily on the adopted text: *How to Prove It*, by Velleman. If you prefer your textbook to be nice and new, then the third edition is the one for you. If you are less concerned about such things, the second edition also contains the material that we shall cover, with little change.

The Canvas page for the course will be singular and minimal: functional, not decorative; everything that is posted for the course (homework, practice material, notes, . . .) can be found on the home page. A supplementary text - *Book of Proof*, by Richard Hammack - has been kindly made available free-of-charge by the author; a copy is available for download on Canvas.
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The course material falls quite naturally into three sections.

The first section (chapters one and two of Velleman) is devoted to learning the languages of mathematical logic and set theory: the logic provides the tools with which to argue; sets provide something about which to argue. This will occupy roughly the first two weeks of the course.

The second section (chapter 3 of Velleman) assembles a variety of proof techniques, individual steps that are available for use in constructing full arguments to establish claims, along with guidance as to when and how to apply them; it also includes mathematical induction (chapter 6 of Velleman). This section will take up approximately the third and fourth weeks of class.

The third section covers infinite sets (chapter 8, with necessary background from chapter 5). This will take us to the end of the semester.

Grades will be based on performance in three equally-weighted in-class tests, one being held at the end of each even-numbered week. The grading scale: A (90%), B (80%), C (70%), D (60%), with +/- grades at 4%/3% increments/decrements (for example, 84% for B+ and 87% for A-).