COURSE ANNOUNCEMENT
MATHEMATICAL LOGIC
MATH 220A, UCLA, FALL 2022
MWF 11AM-11:50AM, MS 7608

Instructor: Artem Chernikov
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Final Exam: TBA

Description. This is the first in a three part series of courses on Mathematical Logic and Set Theory. This part focuses on the basics of First Order Logic and Model Theory, including as highlights Gödel's completeness theorem, the compactness theorem, applications of the compactness theorem, quantifier elimination, and basics on types, saturation and the omitting types theorem, countably categorical theories and if time permits, ideas from Morley's Categoricity Theorem.

Recommended pre-requisites: Logic 114L, 114S or similar, some course in algebra. Please contact me if in doubt.

Text. I will follow my own notes. The material will roughly follow along the same lines as in these sources, followed by the fundamentals of model theory:
- "A first journey through logic" by Martin Hils and François Loeser (Chapters 2 and 3),
- notes by van den Dries (https://faculty.math.illinois.edu/∼vddries/main.pdf),
- notes by Moschovakis (http://www.math.ucla.edu/∼ynm/lectures/lnl.pdf).

Other useful sources for later material include the books:
- "Model Theory, an Introduction" by Marker,
- "A Mathematical Introduction to Logic" by Enderton,
- "Mathematical Logic" by Shoenfield.

These books contain a lot more material than what is covered in 220A.

Grading. The final grade will be based on homework (60%) and a final exam (40%). Exam questions will typically ask for proofs or parts of proofs that were covered in class or homework assignments, or some variants of these.

Homework assignments. Bi-weekly assignments will be posted on the CCLE website of the course, and the solutions should be submitted on CCLE as well.