

Mathematical Logic I, Fall 2023 Syllabus

MHF6306/MAT4930

Class Periods: MWF, Period 6, 12:50 - 1:40 pm

Location: Little Hall 219

Instructor: Robin Tucker-Drob

Email: r.tuckerdrob@ufl.edu

Office Hours: Monday and Wednesday, 7:25 - 8:15 am in Little 416 (or by appointment).

Recommended Books: For the computability theory portion, *Computability Theory* by S. Barry Cooper. For the model theory portion, *Model Theory, an Introduction* by David Marker.

Course Description and objectives This is the first course in the one year graduate sequence in mathematical logic. The second course in the sequence deals with set theory, while this first course deals with computability/recursion theory and model theory, and is mostly independent from the second course. The recursion theory portion will include topics such as: models of computation, the halting problem, recursively enumerable sets, many-one reducibility, oracle Turing machines, Turing reducibility, and the arithmetical hierarchy. The model theory portion will include topics such as: the compactness theorem, complete theories, the Löwenheim-Skolem Theorem, decidable theories, quantifier elimination, the space of types, and Fraïssé limits.

Course Prerequisites: Students should have taken a standard undergraduate mathematical logic course.

Attendance Policy, Class Expectations, and Make-Up Policy:

University policy regarding class attendance, make-up exams, assignments, and other work can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Evaluation of Grades: There will be four problem sets throughout the term, and we will have four problem sessions where students will present their solutions to the class. I may also meet individually with students if there is not enough time during the problem sessions for everyone to present; students may also request to meet with me individually to present/discuss their solutions to problems. You will be assigned a letter grade based on your participation during class and problem sessions, and your solutions to problem sets.

More information on UF grading policy may be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodations:

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code.” On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you

are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Academic Integrity All work that you hand in must be written by you and in your own words. You may discuss homework with others, but if you collaborate or receive help on any homework problem(s) then you must indicate on your homework precisely who helped you and to what extent. If your work uses information obtained from any sources, then these sources must be properly cited and you must indicate exactly which information comes from which source. You may not copy work done by others, either in or out of class; copying work is an act of scholastic dishonesty and any student who copies work will be prosecuted to the full extent allowed by university policy.

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

Campus Resources:

Health and Wellness

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352-392-1575 so that a team member can reach out to the student.

- Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 352-392-1575.
- Student Health Care Center: 352-392-1161.
- University Police Department: 352-392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>

Academic Resources:

- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>.
- Career Resource Center, Reitz Union, 352-392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.
- Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center, Broward Hall, 352-392-2010 or 352-392-6420. General study skills and tutoring. <https://teachingcenter.ufl.edu/>.
- Writing Studio, 302 Tigert Hall, 352-846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>.
- Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.
- Online Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>.