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Department of Mathematics

College of Liberal Arts
and Sciences
(<http://clas.ufl.edu/>)

Foundations of Mathematics, Spring 2019

Titles and codes:

Foundations of Mathematics, MHF 4203/5207, Sections 3216 and 3F80

Meeting time and place:

MAT 0005, MWF 6th period

Instructor:

Ethan McCarthy

Office:

434 Little Hall, Office Hours: MWF 8th period

Contact:

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Textbook:

We will use a preliminary version of a Foundations of Mathematics textbook written by University of Florida faculty (especially Chris Porter, Douglas Cenzen, Jean Larson, and Jindrich Zapletal), available here: [download course notes] (http://people.clas.ufl.edu/ethanmccarthy/files/foundations_s19.pdf). A supplemental note on categoricity and definability is here: [download supplement] (http://people.clas.ufl.edu/ethanmccarthy/files/foundations_footnote_s19.pdf).

Brief description:

We will cover Chapter 1 through Chapter 6. This includes the syntax of

propositional and predicate calculus (also known as sentential logic and first order logic, respectively), the truth valuation semantics of sentential logic and the model theoretic semantics of first order logic (including Gödel's completeness theorem), computability theory, and decidability and undecidability of mathematical theories (including Gödel's incompleteness theorem).

Exams:

There will be four take-home exams covering each portion of the course. The first will cover propositional and predicate logic, with a preliminary due date of Feb. 6th. The preliminary topics and preliminary due-dates of the remaining exams are as follows: the second covers model theory, due Mar. 13th; the third covers automata and computability, due April 3rd; the fourth and final exam covers decidability, due May 1st (the Wednesday of exams week).

Grading:

The total grade will be determined using a straight scale (i.e. A=94-100, A-=90-93 etc.)

Further administrative matters:

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx> (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>). Students are expected to read ahead in the textbook before class, attend, and participate in class discussions.

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu> (<https://evaluations.ufl.edu>). Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/> (<https://evaluations.ufl.edu/results/>).

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

Honor pledge:

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 (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/> (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>)) specifies a number of behaviors that are in violation of the code and 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.

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