

# MHF 3302 LOGIC AND PROOF IN MATHEMATICS

## SYLLABUS AMENDMENT

### SPRING 2020

#### INSTRUCTOR INFORMATION

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Instructor: Feng Yu

Office: MSB 0305B

Office Hour: Tu & Th 10:30-12:00 AM or by appointment

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#### COURSE UPDATE

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This syllabus was modified on March 13th, 2020 to reflect course changes arising from the temporary movement of the course to an online modality that would last no later than April 3rd, 2020. Due to university regulation, the course continues online after April 3rd, 2020, one should expect further changes in the course syllabus.

This course follows the university policy when campus-wide extenuating circumstances occur. The changes made under campus-wide extenuating circumstances might include but are not limited to the course modality changes which can impact on the course delivery method or how exams are conducted, and/or checking class and/or MALL attendance. All the changes will be announced on the WebCourses. Students are responsible to read and follow the instructions in WebCourses announcements.

The following changes of this course may apply starting from March 16th and last at least two weeks.

1. This course is moving to online teaching from March 19th, Thursday.
2. We will hold same time for office hours but keep it online. Zoom will be used for office hours.
3. The third midterm exam is still set on April 7th in class. It may be postponed or transferred to take-home exam depending on the further instructions from UCF. Further announcements for quiz and midterm will be sent.
4. Assignments will be given after lectures. Check WebCourses for the updates.

#### COURSE INFORMATION

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**MEETING:** Face to face in MSB 406 on Tu & Th 1:30-2:50 PM

**COURSE DESCRIPTION:** Introduction to set theory, logic and various proof techniques used in mathematics along with concepts such as relations, functions and cardinality.

**COURSE SCOPE:** To introduce the basics of mathematical logic, as it applies to proofs in elementary mathematical problems.

**REQUIRED TEXTBOOK:** *Mathematical Proofs: A Transition to Advanced Mathematics (4th ed.)* by Chartrand, Polimeni, and Zhang, Pearson, 2018. We will cover chapters 1-11 and some selected sections from chapters 12-15.

**STUDENT LEARNING OUTCOMES:** A student who has taken this course are expected to:

- to understand a mathematical statement;
- to identify the tools needed in solving particular problems;
- to construct mathematical proofs based on logical inference;
- to write mathematical proofs exhibiting the logical inference in a clear manner.

**FIRST WEEK ACTIVITY:** All faculty members are required to document students' academic activity and engagement at the beginning of each course. In order to document that you began this course, you need to go to Webcourses@UCF and complete "Assignment for Financial Aid" no later than 5:00 PM on Friday, Jan 10th, 2020. Failure to do so will result in a delay in the disbursement of your financial aid.

**ATTENDANCE:** Attendance of all the lectures is mandatory. Once inside the classroom you must turn off all cell-phones and laptops, as they are not to be used during class. Avoid leaving early or arriving late as it is a distraction to your classmates and your instructor. If you must miss a class, it is your responsibility to find out all information from the class you missed, including any announcements that were made.

**GRADING POLICE:** Your assessment is based on the overall percentage earned in: homework (10%), quizzes (10%), three midterm tests ( $3 \times 15\%$ ), final exam (35%). Your score on the final will replace your lowest midterm test score provided that your final exam score is higher than the lowest score of the midterm tests. This policy can only apply once and includes a grade of zero due to a missed test. *This policy does not apply for a grade of zero as a penalty of an academic integrity violation.*

**GRADING SCALE:** 100-90 A, 89-80 B, 79-70 C, 69-60 D, 59-0 F

Plus grading system and NC grade will not be applied in this course.

**HOMEWORK:** Homework problems will be assigned and graded for completeness. A complete homework must detail the work done to obtain a final answer. Assignments will be announced in class and on Webcourses@UCF, and you are expected to complete by the suggested date. You **NEED** submit your homework on Webcourses@UCF, which means that you have to either type your homework in L<sup>A</sup>T<sub>E</sub>X or scan your works and upload a pdf version. If you choose to scan your works, your solutions should be carried out on A4 papers in a clean and clear manner. Not writing on A4 papers, uploading a non-pdf file, presenting works in messy would result in a grade of zero. *Late homework within 1 day will receive only half of scores as a penalty. Being late more than 1 day will not be accepted, i.e. a grade of zero automatically apply in this case.*

A subset of the assigned problems will be chosen for careful grading. Carefully graded problems will be worth 10 points each. Other problems will be worth 1 point each. If a carefully graded problem was left blank, then it will receive half credit.

**QUIZZES:** There are three quizzes, which are scheduled before the midterm weeks. They would be based on the materials including homework problems and lectures examples.

**MIDTERMS:** There are three midterm exams, which are tentatively scheduled on Feb 4th, March 3rd, and April 7th. The exact dates may be adjusted based on the pace of the course. Each of midterm exam will count 15% of your grade. Any question or mistake about grading must be solved within one week. After one week, your score would not change even the test is graded incorrectly. Don't alter a marked exam for re-grading and it would result in an alleged academic misconduct.

**FINAL EXAM:** It is comprehensive and weighs 35% of your grade. Failure to take the final exam will result in failure of the course. Your final exam score may replace your lowest score of the midterms (i.e. the lowest midterm is dropped and the final exam weighs 50%) provided that it is higher than the lowest score of the midterms. The final exam will be 1:00 PM – 3:50 PM on Tuesday, April 21, 2020.

**ELECTRONIC DEVICES:** Electronic devices (cell phones, electronic watches, music players, etc.) are not allowed to use during any quiz and test. Cell phones must be turned off (not on vibrate) before coming to class. Any violation of using an electronic device during a quiz or test (using a cell phone or listen music) will result in a grade of zero and possible disciplinary action.

**MAKE-UP POLICY:** Personal travel plans and personal or family emergencies are not typically valid reasons for taking tests at a time different from scheduled. However, exceptions can be made at the discretion of the instructor. If you want to request an exception, you must provide valid documentation (preferably in advance) and **no later than within one week of the missed exam**. Otherwise, a grade of zero for the missed exam will be factored into your course average. Authorized university event absences and religious observance absences are covered below:

- a. Students are frequently asked to represent the university in authorized events and activities. In some cases, this participation conflicts with the students to complete missed classroom deadlines or assignments, including written or oral examinations, quizzes, term papers, or other assignment and its grading scale. No penalty due to absence may be applied to these make-up assignments. More details and procedures can be found [here](#).
- b. It is the practice of the University of Central Florida to reasonably accommodate the religious observances, practices, and beliefs of individuals in regard to admissions, class attendance, and the scheduling of examinations and work assignments. A student who desires to observe a religious holy day of his or her religious faith must notify all of his/her instructors at the beginning of the term to be excused from classes to observe the religious holy day.

**ACCESSIBILITY ACCOMMODATIONS:** The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. This syllabus is available in alternate formats upon request. Students who need accommodations must be registered with Student Accessibility Services, Ferrel Commons Room 185, before requesting accommodations from the professor. Their website is <https://sas.sdes.ucf.edu/>.

**DEPLOYED ACTIVE DUTY MILITARY STUDENTS:** Students who are deployed active duty military and/or National Guard personnel and require accommodation should contact their instructors as soon as possible after the semester begins and/or after they receive notification of deployment to make related arrangements.

**ACADEMIC INTEGRITY:** Students should familiarize themselves with UCF's Rules of Conduct at [here](#). According to Section 1, "Academic Misconduct", students are prohibited from engaging in:

- a. Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course related material also constitutes cheating.
- b. Communication to another through written, visual, electronic, or oral means. The presentation of material which has not been studied or learned, but rather was obtained through someone else's efforts and used as part of an examination, course assignment or project.
- c. Commercial Use of Academic Material: Selling of course material to another person, student, and/or uploading course material to a third party vendor without authorization or without the express written permission of the University and the Instructor. Course materials include but not limited to class notes, Instructor's power points, tests, quizzes, labs, instruction sheets, homework, study guides, and handouts.
- d. Falsifying or misrepresenting the student's own academic work.
- e. Plagiarism: Whereby another's work is used or appropriated without any indication of the source, thereby attempting to convey the impression that such work is the student's own.
- f. Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.

- g. Any student who knowingly helps another violate academic behavior standards is also in violation of the standards.

**RESPONSES TO ACADEMIC DISHONESTY, PLAGIARISM OR CHEATING:** Students should also familiarize themselves with the procedures for academic misconduct in UCF's student handbook, [The Golden Rule](#). UCF faculty members have a responsibility for students' education and the value of a UCF degree, and so seek to prevent unethical behavior and when necessary respond to academic misconduct. Penalties can include a failing grade in an assignment or in the course, suspension or expulsion from the university, and/or a "Z Designation" on a student's official transcript indicating academic dishonesty, where the final grade for this course will be preceded by the letter Z. For more information about the Z Designation, see [here](#).

**CAMPUS SAFETY STATEMENT:** Emergencies on campus are rare, but if one should arise during class, everyone needs to work together. You should be aware of your surroundings and familiar with some basic safety and security concepts. In case of an emergency, dial 911 for assistance.

Every UCF classroom contains an emergency procedure guide posted on a wall near the door. You should make a note of the guide's physical location and review the online version at [here](#).

Students should know the evacuation routes from each of their classrooms and have a plan for finding safety in case of an emergency. If there is a medical emergency during class, you may need to access a first-aid kit or AED (Automated External Defibrillator). To learn where those are located, see <http://www.ehs.ucf.edu/AEDlocations-UCF>.

To stay informed about emergency situations, you can sign up to receive UCF text alerts by going to [my.ucf.edu](http://my.ucf.edu) and logging in. Click on "Student Self Service" (or Employee Self Service for faculty) located on the left side of the screen in the toolbar, scroll down to the blue "Personal Information" heading on the Student Center screen, click on "UCF Alert", fill out the information, including e-mail address, cell phone number, and cell phone provider, click "Apply" to save the changes, and then click "OK."

Students with special needs related to emergency situations should speak with their instructors outside of class. To learn about how to manage an active-shooter situation on campus or elsewhere, view [this video](#).