

UAB MATHEMATICS
SYLLABUS **CONTINUUM THEORY – MA 770** **FALL 2020**

JOHN C. MAYER

Course:	MA 770	Continuum Theory
Meetings:	days/times to be arranged	Zoom (link on Canvas)
Instructor:	John Mayer	Email: jcmayer@uab.edu
Secondary Instructor:	Lex Oversteegen	Email: overstee@uab.edu
Office Hours:	by appointment	Zoom office: 939-460-2319

Format of Course. This course will be conducted as a remote (online via Zoom) seminar course, with student presentations, but also with exercises and two examinations. Active participation will be essential. Presentations using LaTeX Beamer are encouraged but not required. Look into the online LaTeX platform *Overleaf* (basic version free). I will provide in Canvas in Files both the PDF and LaTeX files of my introductory Beamer slides for an example, and will meet individually with you in the process of preparing your presentation.

Notes: I will distribute through Canvas and by email PDF Notes on the topics we will cover. These will be modified and extended as we proceed through the course. The general layout and direction will approximate the optional textbook.

Optional textbook: *Continuum Theory, An Introduction*, Sam B. Nadler, Jr., PURE AND APPLIED MATHEMATICS SERIES, Dekker, NY, NY. ISBN 0-8247-8659-9. I will use the textbook for reference, but the Notes are intended to be complete as to definitions, examples, and theorems.

Exercises: There will be an embedded collection of exercises for each section of the Notes. Examples, theorems, lemmas, and propositions that are intended to be exercises will be so noted. Otherwise, they are considered part of the main presentation of that section of the Notes. Exercises will be posted to Canvas as Assignments, and your solutions that you wish to present should be uploaded to Canvas before class.

Class Meetings. It is intended that Zoom class meetings will be twice a week and scheduled to be about 1.25 hours long, they will be divided into two sessions: 45 minutes and 30 minutes with a 5 minute break between. The first session will be a student presentation and the second session exercise presentations.

- (1) Each presentation counts up to 10 Participation points for the presenter, depending upon quality of presentation. Beamer slides may be used for presentations. Any slides used or created should be posted to Canvas shortly after the class meeting. Credit for slides is 0-5 points of the presentation total of 10 points. The instructor will meet individually with you to provide help on preparing your slides.
- (2) Mere presence counts 1 Participation point per class meeting.
- (3) You are encouraged to ask questions. You may receive additional Participation points (1-2) for commenting on another's presentation, provided that it moves discussion forward.

Date: August 15, 2020.

1991 Mathematics Subject Classification. Primary: 30C35; Secondary: 54F20.

Key words and phrases. topology, continuum theory.

- (4) Each exercise presented and defended correctly counts 2–4 additional Participation points, depending upon quality of explanation/proof/defense. Which exercises you are prepared to present should be written out and uploaded to Canvas before class, according to the Assignment deadline (usually 2 hours before class).
- (5) Priority order for presenting exercises previously uploaded is determined by:
 - (a) Persons with lowest Participation point total, and uploaded before class.
 - (b) Persons with lowest Participation point total, but not uploaded.
 - (c) Persons who have not yet presented that day.
 - (d) Random experiments to break ties.
- (6) There are two examinations: midterm and final (see “Grading” below).

Grading. Items will be weighted the flexible amounts indicated below, by your choice, presumably so as to produce the best individual grade. You can (and may) rely entirely on Participation for your grade.

Participation	50–100%	rank-ordered subject to a minimum
Examination	0–50%	mid-term and final exams count equally

Possible grades are A:85%, B:70%, C:50%, F:below 50%.

Exercises and presentations count toward the final grade for Participation. You *are required* to take the mid-term exam, though it cannot hurt you if your Participation total is excellent. You *are not required* to take the final exam, but then Participation must count at least 75%.

Attendance. Attendance in class is required, as you are there not only to present your own results, but to critique the work of others. Participation is expected.

DSS Accessibility Statement. UAB is committed to providing an accessible learning experience for all students. If you are a student with a disability that qualifies under Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, and you require accommodations, please contact Disability Support Services for information on accommodations, registration and procedures. UAB Disability Support Services (DSS) has established a process for UAB students to request temporary adjustments based on the impact of COVID-19. Requests for reasonable accommodations involve an interactive process and consist of a collaborative effort among the student, DSS, faculty and staff. If you are registered with Disability Support Services, please contact DSS to discuss accommodations that may be necessary in this course. If you have a disability but have not contacted Disability Support Services, please call (205) 934-4205, visit their website, or their office located in Hill Student Center Suite 409.

Title IX Statement. The University of Alabama at Birmingham is committed to providing an environment that is free from sexual misconduct, which includes gender-based assault, harassment, exploitation, dating and domestic violence, stalking, as well as discrimination based on sex, sexual orientation, gender identity, and gender expression. If you have experienced any of the aforementioned conduct we encourage you to report the incident. UAB provides several avenues for reporting. For more information about Title IX, policy, reporting, protections, resources and supports, please visit UAB Title IX webpage for UABs Title IX, UABs Equal Opportunity, Anti-Harassment, Duty to Report, and Non-Retaliation policies.

UAB Policies and Resources

Add/Drop and Course Withdrawal

- *Drop/Add*: Deadlines for adding, dropping, or withdrawing from a course and for paying tuition are published in the Academic Calendar available online. Review the Institutional Refund Policy for information on refunds for dropped courses.
- *Withdrawal*: To avoid academic penalty, a student must withdraw from a course by the withdrawal deadline shown in the academic calendar and receive a grade of W (withdrawn). Failure to attend class does not constitute a formal drop or withdrawal.

UAB United: Safe Entry to Campus. Please go to the UAB United website for guidance and resources related to our safe entry to campus in Fall 2020, including information on:

- Testing
- Academic resources and in-depth information
- Student Affairs resources to support all students (housing, dining, extracurricular activities, parking, etc.)
- Health and safety resources and recommendations for on and off-campus
- Information for International Students

All students should use the Student COVID-19 Entry Checklist to see what they have to do in order to enter the campus safely. Non-compliance with the required items will result in students not being able to remain on campus or participate in any in-person classes, meetings, jobs, extracurricular activities, and events.

GuideSafe Event Passport Class Requirement. Faculty are required to verify all students who are present for in-person instruction or labs have a current Event Passport. Learn more at UAB GuideSafe Event Passport.

Mandatory Masks and Social Distancing Requirements. In accordance with CDC guidelines and for the health and well-being of all faculty, staff and students. Students, faculty and staff are required to wear cloth face coverings or face masks at all times and maintain social distancing (6 feet between individuals in traditional classrooms, or, in instructional laboratories and similar settings) while on the UAB campus.

E-mail address, John C. Mayer: jcmayer@uab.edu

(John C. Mayer) DEPARTMENT OF MATHEMATICS, UNIVERSITY OF ALABAMA AT BIRMINGHAM, BIRMINGHAM, AL 35294-1241