Fall 2018

For a detailed course schedule, see page 3 of this document.

Course information

Time and place: MWF 9:00-9:50 am, MS 5127.
Instructor: Marco Marengon (marengon@math.ucla.edu).
Office hours: Wednesday 11:00am-12:30pm, and Friday 1:30pm-3:00pm.
Course webpage: https://ccle.ucla.edu/course/view/18F-MATH115A-2
Topics: Techniques of proof, abstract vector spaces, linear transformations, and matrices; determinants; inner product spaces; eigenvector theory.
Requisite: Math 33A.

Teaching Assistant

Alexander Dobner  2A: GEOLOGY 6704 / Tuesday AND Thursday / 9:00am-9:50am

Grading: Your numerical score will be the maximum of the two scores computed using the two following schemes:

- **Scheme 1**: 1% Teaching evaluation + 9% Homework + 10% Quizzes + 40% Midterms + 40% Final exam;
- **Scheme 2**: 1% Teaching evaluation + 9% Homework + 5% Higher quiz score + 40% Midterms + 45% Final exam.

In both schemes, the lowest score homework will be dropped.

Requests for re-grading homework/quizzes/midterms are to be submitted in written form to me (marengon@math.ucla.edu), with a motivation stating why you believe the grade is incorrect/unfair. Such requests will be considered only within 7 days from the date they are handed back in class.

Final:
- Thursday December 13th 2018, 3pm-6pm.
Exams must be taken during the scheduled times. A grade of ‘F’ will be assigned to any student who misses the final. Incompletes (‘I’ grades) are reserved for those who have completed all of the work for the class, including the midterms, but who, for a legitimate, documented reason, miss the final. If you know that you are going to miss the final for a legitimate reason, you should let me know as soon as convenient.

Midterms:
- **Friday October 26th 2018, 9:00am-9:50am** and
- **Monday November 19th 2018, 9:00am-9:50am**.

As before, there will be NO makeup midterms with the exception of serious medical emergencies or university approved absences. If you know that you are going to miss a midterm for a legitimate reason, you should let me know as soon as convenient.

Quizzes: There will be two surprise quizzes during two discussion sections throughout the term. Each quiz will consist of an exercise from the assigned homework for the previous week, to be solved in 10 minutes.

**Homework:** Homework will be posted each Friday at [http://www.math.ucla.edu/~marengon/f18.115a/homework](http://www.math.ucla.edu/~marengon/f18.115a/homework). The starred exercises in each set of homework assignments are to be turned in on the following Friday just before or just after class. Selected exercises from the set of starred exercises will be graded each week. You can work on the homework problems together, but you should write the solutions on your own, with your own words. When you turn in your homework, please make sure that your name, surname, and UID are written on top of the front page, and that your homework is stapled together. For full credit, please ensure that your homework is clear and legible. The lowest score homework will be dropped when computing the final grade.

**Special Needs:** Students wanting extra accommodation should contact the Office for Students with Disabilities in Murphy A255, or online at [http://www.osd.ucla.edu](http://www.osd.ucla.edu)
Provisional course schedule

- F 09/28: Introduction + Logical quantifiers (p.607)
- M 10/01: Direct, converse, inverse, contrapositive. Proof techniques (p.616)
- W 10/03: Induction and strong induction (p.631)
- F 10/05: Vector spaces (1.2)
- M 10/08: Subspaces (1.3)
- W 10/10: Linear combinations, spans (1.4)
- F 10/12: Linear dependence (1.5-1.6)
- M 10/15: Bases and dimensions (1.6)
- W 10/17: Bases and dimensions (1.6)
- F 10/19: Bases and dimensions (1.6)
- M 10/22: Linear transformations, kernels and images (2.1)
- W 10/24: Linear transformations, kernels and images (2.1)
- F 10/26: Midterm 1. Examinable material: up to Section 1.6 (included).
- M 10/29: Matrix representation (2.2)
- W 10/31: Matrix representation (2.2), Compositions of linear maps (2.3)
- F 11/02: Compositions of linear maps (2.3)
- M 11/05: Invertibility and isomorphisms (2.4)
- W 11/07: Invertibility and isomorphisms (2.4)
- F 11/09: Change of basis (2.5)
- M 11/12: Veterans day
- W 11/14: Eigenvalues and eigenvectors (5.1)
- F 11/16: Eigenvalues and eigenvectors (5.1)
- M 11/19: Midterm 2. Examinable material: up to Section 2.5.
- W 11/21: Diagonalisability (5.2)
- F 11/23: Thanksgiving holiday
- M 11/26: Diagonalisability (5.2)
- W 11/28: Diagonalisability (5.2)
- F 11/30: Inner products (6.1)
- M 12/03: Inner products (6.1)
- W 12/05: Gram-Schmidt (6.2)
- F 12/07: Review

- Thursday 12/13, 3pm-6pm: Final. Examinable material: all topics covered up to W 12/05, with an emphasis on the last part of the course.