The formats of lectures, exams, and other aspects of this course are subject to change based on instructions and guidance from UCLA leadership.

**Course outline.** The course continues ECE133A, *Applied Numerical Computing*. It will focus on applications of eigenvalue and singular value decompositions, and on algorithms for constrained optimization. A tentative outline is as follows.

- Symmetric eigenvalue decomposition.
- Singular value decomposition.
- Schur decomposition.
- Kernel methods.
- Optimization with equality constraints.
- Linear and quadratic programming.

The techniques will be illustrated with applications from signal processing, control, system theory, statistics, and machine learning.

**Course material.** Self-contained lecture notes will be available on the course website. They will be supplemented with references to electronic resources in the UC library.

**Requirements.**

- Weekly homework assignments.
- A final project.

Approximate weights in final grade: homework 30%, project 70%.

**Office hours.**

- Prof. Vandenberghe: Tuesday, 2pm–3pm.
- Shadi Shahsavari: TBD.