

Matrix Analysis
MSM4A11
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There is no required text. The books "Matrix Analysis", Horn and Johnson, is useful as a reference though it is at higher level than the lectures. Meyer's book, "Matrix Analysis and Applied Linear Algebra" provides a good coverage of Norms, Orthogonality, and the SVD, and Perron-Frobenius. It is available to view on line at <http://matrixanalysis.com/DownloadChapters.html>. Your text and notes from Linear Algebra may provide useful reminders.

Notes, assignments, and other information will be available on the matrix analysis link on my web page.

This module is also offered as a MAGIC course for postgrads. However the continuous assessments and exam will be prepared with 4th year undergraduates in mind.

Syllabus: Matrix products, norms, Gerschgorin's Theorem, Non-negative matrices, Perron-Frobenius theory, Spectral theory for Hermitian Matrices, the singular value decomposition and best approximation problems, and functions of matrices.

Assessment

- Written exam during the summer examination period (80 %)
- Continuous assessment (20 %).