THE UNIVERSITY OF KENTUCKY
Department of Mathematics

MA 721 Topics in Numerical Analysis.
Fall 2015
MWF 1:00-1:50 - CB 347

Instructor: Dr. Qiang Ye
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Office Hours: MWF 2:00-3:00 pm

Class Home Page: `http://www.ms.uky.edu/~ qye/ma721/ma721.html`

Text: There is no required text.

Prerequisites: Good knowledge of numerical linear algebra at the level of MA522 or equivalent.

Grading: Homework: 30%,
    Presentation: 70%.
The following is a tentative scale for grading, subject to adjustment.

Grade	Minimum %
A	90
B	75
C	60

Syllabus: In this course, we study some advanced topics of current interest in numerical linear algebra and applications. The following is a list of topics that are planned.

- Orthogonal polynomials and Krylov subspace methods for nonsymmetric matrices;

- Nonnegative matrices and Perron-Frobenius Theorem;

- M-matrices and structured matrix algorithms, applications in Markov chains;

- Model reduction of large scale linear input-output systems;

- Machine learning and data mining