MA 721
Selected Topics in Numerical Analysis:
Fall 2014 · University of Kentucky

LECTURES:	MWF 1:00 PM - 1:50 PM, White Hall Classroom Building Room 343
INSTRUCTOR:	Russell Carden (russell.l.carden@uky.edu), POT 827, (859) 257-5746
PREREQUISITES:	Good knowledge of Numerical Linear Algebra, Numerical Analysis, Probability. Experience with a programming language: Matlab/Octave, C/C++, Java, Python.
TOPICS:	This course will cover one of the following topics:

- Linear Control Theory and Model Reduction,*Numerical Methods for Linear Control Systems* by Biswa Datta
- Compressive Sensing, *A Mathematical Introduction to Compressive Sensing* by Simon Foucart
- Multigrid, *Multigrid* by Ulrich Trottenberg, Cornelius W. Osterlee and Anton Schuller
- Discrete Inverse Problems *Discrete Inverse Problems: Insight and Algorithms* by Per Christian Hansen
- Randomized Algorithms for matrices and data *Randomized Algorithms for Matrices and Data* by Michael W. Mahoney

CLASS FORMAT:	The students and the instructor will take turns presenting material from the selected textbook. The instructor will present any important background material that may not be covered in the textbook. Occasionally class time will be used to present numerical examples.
GRADING:	Students will be evaluated on their participation in class, the quality and depth of presentation of the material, and chapter summaries.
ASSIGNMENTS:	For each chapter of the textbook that is covered in class, students must write a summary, highlighting the important and not so important concepts, pointing out things that were well covered in the text or in class, and also pointing out concepts that are still not clear. In their chapter summaries, students should incoprorate any numerical examples they attempted in particular, any numerical examples that they presented during class.
ATTENDANCE:	As the students will be presentnig material regularly attendance is required, and you are responsible for all lecture material and announcements made in class. Attendance will be recorded. Legitimate reasons for missing class include serious illness, illness or death of a family member, university-related trips, and major religious holidays. Students should let me know of any
CLASSROOM DECORUM:	Students are expected to be attentive and courteous during class. During class, please put away newspapers, turn off cell phones, and refrain from using laptops or other electronic devices except for note-taking purposes or class related computations.

Any student with a disability requiring accommodation in this course is encouraged to contact the Disability Resource Center during the first week of class.