Matrix Computations – COMP6839
Preliminary Syllabus - Spring 10 (Graduate Course)

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- **Course Description and Objective:**
  Research into the areas of applied mathematics and scientific computing often encounters matrix computation problems. In this course you will learn advanced techniques for solving linear equations and computing eigenvalue problems, etc. This course will help you do better research if you involve matrix related computations. **The instructor will provide you the class material.**


- **Credit Number:** 3

- **Prerequisites:** Calculus, Linear Algebra

- **Expected Work:** Homework (= 1/3); One midterm exam and Final project(= 2/3).

- **The Covering Topics:**

  1. *Basic Concepts:* Matrix norms, Vector norms, Orthogonality and the SVD. The sensitivity of square least systems, etc.
  6. *Lanczos Method, Iteration Methods, Functions of Matrices etc*

- **References:**