$$\mathrm{A} = \begin{pmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \cdots & a_{mn} \end{pmatrix}$$

Welcome to the course *Matrix Algebra for Engineers*. This course is similar to a *Linear Algebra* course, but here we place more emphasis on matrices. This should be sufficient for most engineering students. Engineering students usually take a course on matrix algebra in their second year of study, after a full year of calculus. But students don't actually need calculus to study matrix algebra, that is, students don't need the techniques of differentiation and integration that they typically learn in a Calculus course. What students might need is a certain level of mathematical maturity that a calculus course provides. In principle, students can learn this course if they remember their pre-Calculus mathematics.

If you haven't already, watch the Introduction video to see if this course interests you. If it does, and you are not sure about your pre-Calculus math skills, then try the diagnostic quiz. If you can pass this quiz, then you should be able to handle this course.

Course Materials

This course is divided into four weeks, each week focused on a specific topic. The first week is about matrices, the second week is about systems of linear equations, the third week is about vector spaces, and the fourth week is about determinants and the eigenvalue problem. After each video, I post some suggested math problems. Within each week, the videos and problems are divided into sections, and at the end of each section is an ungraded practice quiz. At the end of each week, there is a graded quiz.

Textbook

My lecture notes for this course can be downloaded from

http://www.math.ust.hk/~machas/matrix-algebra-for-engineers.pdf

My book is divided into lectures corresponding to the Coursera videos. At the end of