# Math 3A, Fall 2016

**Instructor:** *Umut Isik*          **TA***: Jennifer Nguyen*
**Text:** *Linear Algebra and Its Applications*, David Lay

| Lecture | Book Section | Topic |
|---|---|---|
| 1 | 1.1 | Systems of Linear Equations |
| 2 | 1.2 | Row Reduction and Echelon Forms |
| 3 | 1.3 | Vector Equations |
| 4 | 1.4 | The Matrix Equation Ax=b |
| 5 | 1.5 | Solution Sets of Linear Systems |
| 6 | 1.6 | Applications of Linear Systems |
| 7 | 1.7 | Linear Independence |
| 8 | 1.8 | Introduction to Linear Transformations |
| 9 | 1.9 | The Matrix of a Linear Transformation |
| 10 | | Review |
| 11 | | **Midterm #1 (17 October)** |
| 12 | 2.1 | Matrix Operations |
| 13 | 2.2 | The Inverse of a Matrix |
| 14 | 2.3 | Characterizations of Invertible Matrices |
| 15 | 2.8 | Subspaces of $R^n$ |
| 16 | 2.8, 2.9 | Cont. |
| 17 | 2.9 | Dimension and Rank |
| 18 | 3.1 | Introduction to Determinants |
| 19 | 3.2 | Properties of Determinants |
| 20 | | Review |
| 21 | | **Midterm #2 (9 November)** |
| 22 | 3.3 | Cont. |
| 23 | 5.1 | Eigenvectors and Eigenvalues |
| 24 | 5.2 | The Characteristic Equation |
| 25 | 5.2, 5.3 | Cont. |
| 26 | 5.3 | Diagonalization |
| 27 | 5.4 | Eigenvectors and Linear Transformations |
| 28 | 6.1 | Inner Product, Length, and Orthogonality |
| 29 | 6.2 | Orthogonal Sets (up to page 343) |

**Final exam:** Wednesday, December 7. Please check the time and place of the final exam for your section.