

EE 203000 Linear Algebra 線性代數

1. 上課教室(classroom)：台達館 216 (Delta 216)
2. 上課時間(class hours)：星期三 (Wed) 10:10 ~ 12:00, 星期五 (Fri) 10:10 ~ 12:00 PM
3. 任課老師(Lecture)：馮開明 (Kai-Ming Feng) 辦公室(Office)：台達館 921 室 (Delta 921)
4. Office Hours: To be determined
5. 助教(TA)：To be determined (辦公室(TA Office)：資電館 604 室, EECS building R604)
6. 教科書(Textbook)：S. H. Friedberg, A. J. Insel, and L. E. Spence, "Linear Algebra," 4th Ed, Prentice Hall, 2014
7. 課程內容(Course contents)：

Chap. 1 Vector Spaces: (9/4 ~ 9/20)

Vector Spaces, Subspaces, Linear Combinations, Linear Equation systems, Linear Dependence and Independence, Basis and Dimension

Chap. 2 Linear Transformations and Matrices (9/20 ~ 10/11)

Linear Transformation, Null Spaces, Range, Matrix Representation of Linear Transformation, Composition of Linear Transformations and Matrix Multiplication, Invertibility and Isomorphisms, Change of Coordinate Matrix

1st Midterm 10/16 10 AM (30%)

Chap. 3 Elementary Matrix Operations and Systems of Linear Equations (10/18 ~ 10/25)

Elementary Matrix Operations and Elementary Matrices, The Rank of a Matrix and Matrix Inverses, Systems of Linear Equations

Chap. 4 Determinants (10/25 ~ 11/1)

Determinants of order 2 and n, Properties of Determinants

2nd Midterm 11/6 10 AM (25%)

Chap. 5 Diagonalization (11/8 ~ 11/27)

Eigenvalues and Eigenvectors, Diagonalizability, Invariant Subspaces and the Cayley-Hamilton Theorem

Chap. 6 Inner Product Spaces (11/29 ~ 12/18)

Inner Products and Norms, The Gram-Schmidt Orthogonalization Process, The Adjoint of a Linear Operator, Normal and Self-Adjoint Operators, Unitary and Orthogonal Operators, Orthogonal Projections and the Spectral Theorem, SVD and Pseudoinverse.

Final 12/20 10:10 AM (35%)

8. 成績考核 (Final Grade Evaluation)：

Examination: (Participation and Quiz: 10%, Midterm 1: 30%, Midterm 2: 25%, Final: 35 %)

There will still be some homework assignments after each chapter for your own study, but with no credit.

9. 講義位址 (Course Material Download Website): eeClass (<https://eeclass.nthu.edu.tw>)

10. 加簽順序：(加簽至教室最大容量)

1. 電機系、電資院學士班二年級同學
 2. 電機系、電資院學士班高年級學生(含雙主修、但不包含輔系、第二專長)
 3. 電機系、電資院學士班一年級學生
 4. 其他學院以電機系為輔系之同學
 5. 其他學院以電機系為第二專長之同學
 6. 其他學院學生(依年級高低排序)
- PS. 雙主修、輔系、第二專長之認定以校務資訊系統之登載為基準

Extra Selection Precedence:

1. Sophomore students of EE or Interdisciplinary Program of EECS
 2. Junior or Senior students of EE or Interdisciplinary Program of EECS, including double major in EECS college
 3. Freshman students of EE or Interdisciplinary Program of EECS
 4. Students from other colleges who are pursuing minor degree in EE
 5. Students from other colleges who enroll their 2nd professional specialty in EE
 6. Other students in descending grade order
- PS. Double major, Minor degree and the 2nd professional specialty are recognized according to the official registration records in the Academic Information Systems