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THE CHINESE UNIVERSITY OF HONG KONG
Print Course Catalog Details

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Academic Org: Fac Office of Engineering – Subject: Courses offered by Fac of Erg

Course: ENGG1120 **Course ID:** 013412 **Eff Date:** 2022-07-01 **Crse Status: Active** **Apprv. Status:** Approved 【Course Rev】

Linear Algebra for Engineers 線性代數及其工程應用

This course aims at introducing students to the fundamental concepts and methods in linear algebra, which are key to many fields of engineering. Topics include systems of linear equations, Gauss elimination, matrix factorization, matrices and their operations, determinants, eigenvalues and eigenvectors, diagonalization, vector space, the Gram-Schmidt process, and linear transformation.

本科教授線性代數的基本概念與方法，以及其在工程上的應用。內容包括：線性方程組、高斯消去法、矩陣分解、矩陣及其運算、行列式、特徵值及特徵向量、對角化、向量空間、格拉姆－施密特正交化和線性變換。

Grade Descriptor:

A

EXCELLENT – exceptionally good performance and far exceeding expectation in all or most of the course learning outcomes; demonstration of superior understanding of the subject matter, the ability to analyze problems and apply extensive knowledge, and skillful use of concepts and materials to derive proper solutions.

有關等級說明的資料，請參閱英文版本。

B

GOOD – good performance in all course learning outcomes and exceeding expectation in some of them; demonstration of good understanding of the subject matter and the ability to use proper concepts and materials to solve most of the problems encountered.

有關等級說明的資料，請參閱英文版本。

C

FAIR – adequate performance and meeting expectation in all course learning outcomes; demonstration of adequate understanding of the subject matter and the ability to solve simple problems.

有關等級說明的資料，請參閱英文版本。

D

MARGINAL – performance barely meets the expectation in the essential course learning outcomes; demonstration of partial understanding of the subject matter and

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the ability to solve simple problems.

有關等級說明的資料，請參閱英文版本。

F

FAILURE – performance does not meet the expectation in the essential course learning outcomes; demonstration of serious deficiencies and the need to retake the course.

有關等級說明的資料，請參閱英文版本。

Equivalent Offering:
Units: 3 (Min) / 3 (Max) / 3 (Acad Progress)
Grading Basis: Graded
Repeat for Credit: N
Multiple Enroll: N
Course Attributes: Faculty Package Course: Engineering

Topics:

COURSE OUTCOMES

Learning Outcomes:

At the conclusion of the course, students should be able to
1. demonstrate knowledge and understanding of the basic elements of linear algebra
2. apply results and techniques from linear algebra to solve simple engineering problems

Course Syllabus:

Provided by the course teacher(s) in the respective teaching term.

Assessment Type:

Essay test or exam	：	65%
Homework or assignment	：	25%
Others	：	10%

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Feedback for Evaluation:

Students may provide their feedback through office hours and course evaluation.

Required Readings:

Provided by the course teacher(s) in the respective teaching term.

Recommended Readings:

1. Erwin Kreyszig, Advanced Engineering Mathematics, Wiley, 10th Edition, 2011.
2. Bernard Kolman, David R.Hill, Introductory Linear Algebra, an Applied First Course, Pearson/Prentice Hall, 8th Edition, 2005.
3. Steven J. Leon, Linear Algebra with Applications, Pearson/Prentice Hall, 7th Edition, 2006.

OFFERINGS

1. ENGG1120   Acad Organization=ENO; Acad Career=UG

COMPONENTS

LEC : Size=80; Final Exam=Y; Contact=3
TUT : Size=80; Final Exam=N; Contact=1

ENROLMENT REQUIREMENTS

1. ENGG1120   **Enrollment Requirement Group:**
Not for students who have taken ENGG1410 or ESTR1004 or ESTR1005 or MATH1030 or MATH1038.

CAF

eLearning hrs for blended cls   0
No. of micro-modules   0
Research components (UG)   0%

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