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THE CHINESE UNIVERSITY OF HONG KONG
Print Course Catalog Details

May 10, 2023
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 Academic Org: Fac Office of Engineering – Subject: Courses offered by Fac of Erg

Course: ENGG1130   **Course ID:** 013413   **Eff Date:** 2022-07-01   **Crse Status: Active**   **Apprv. Status:** Approved   【Course Rev】

Multivariable Calculus for Engineers 多元微積分及其工程應用

This course aims at introducing students to fundamental concepts and methods in multivariable calculus, which provide tools for solving engineering problems. Topics include functions of several variables, curves and surfaces, partial derivatives, Taylor's formula, method of Lagrange multipliers, multiple integrals, line and surface integrals, Green's theorem, Stokes' theorem and divergence theorem

本科教授多元微積分的基本概念與方法，以及其在工程上的應用。內容包括：多元函數、曲線與曲面、偏導數、泰勒公式、拉格朗日乘子法、多重積分、曲線與曲面積分、格林定理、斯托克定理和散度定理。

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。

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MARGINAL – performance barely meets the expectation in the essential course learning outcomes; demonstration of partial 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。

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 multivariable calculus
2. apply results and techniques from multivariable calculus 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. Maurice D. Weir and Joel Hass, Thomas' Calculus, Pearson, 12th Edition, 2010.
3. James Stewart, Calculus - Multivariable Calculus, CENGAGE Learning, 8th Edition, 2016.

OFFERINGS

1. ENGG1130   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. ENGG1130   **Enrollment Requirement Group:**
Pre-requisite: MATH1510
Not for students who have taken ENGG1410 or ESTR1004 or 1006 or MATH2010 or 2018 or 2020 or 2028.

CAF

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

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