

COURSE DETAIL

MULTIVARIABLE CALCULUS

Country

Singapore

Host Institution

National University of Singapore

Program(s)

National University of Singapore

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Mathematics

UCEAP Course Number

104

UCEAP Course Suffix**UCEAP Official Title**

MULTIVARIABLE CALCULUS

UCEAP Transcript Title

MULTIVARIABLE CALC

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This is a course on the calculus of functions of several real variables, applications of which abound in mathematics, the physical sciences, and engineering. The aim is to provide computational skills, ability for 2- and 3-D visualization, and to understand conceptually fundamental results such as Green's Theorem, Stokes' Theorem and the Divergence Theorem. Major topics: Euclidean distance and elementary topological concepts in \mathbb{R}^n , limit and continuity, implicit functions. Partial differentiation, differentiable functions, differentials, chain rules, directional derivatives, gradients, mean value theorem, Taylor's formula, extreme value theorem, Lagrange multipliers. Multiple integrals and iterated integrals, change of order of integration, applications, Jacobian matrix, change of variables in multiple integrals. Line integrals and Green's theorem. Surface integrals, Stokes' Theorem, Divergence Theorem.

Language(s) of Instruction

English

Host Institution Course Number

MA2104

Host Institution Course Title

MULTIVARIABLE CALCULUS

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Mathematics

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