104學年**暑修微積分（二）** 上課日期:105/7/4至105/9/2

**教師資訊**

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**課程資訊**

時間 : 週二 8:10~10:00(第一、二節), 週三及週五 13:10~16:00 (第五~七節)

地點 : 測量系經緯廳

課程網站 :

<http://www.math.ncku.edu.tw/~tnhch/2016summer/calculus.html>

沒有一定要有教科書, 任何教科書均可

**預計上課內容**

(實際狀況按 網頁暑修微積分進度及作業(近期公告)的訊息)

CH.1 Parametric Equations and Polar Coordinates

Sec.1.1 Curves Defined by Parametric Equations

Sec.1.2 Calculus with Parametric Curves

Sec.1.3 Polar Coordinates

Sec.1.4 Areas and Lengths in Polar Coordinates

Sec.1.5 Conic Sections

CH.2 Vectors and the Geometry of Space

Sec.2.1 Three-Dimensional Coordinate Systems

Sec.2.2 Vectors

Sec.2.3 The Dot Product

Sec.2.4 The Cross Product

Sec.2.5 Equations of Lines and Planes

Sec.2.6 Cylinders and Quadric Surfaces

CH.3 Vector Functions

Sec.3.1. Vector Functions and Space Curves

Sec.3.2 Derivatives and Integrals of Vector Functions

Sec.3.3 Arc Length and Curvature

Sec.3.4 Motion in Space: Velocity and Acceleration

CH.4 Partial Derivatives

Sec.4.1 Functions of Several Variables

Sec.4.2 Limits and Continuity

Sec.4.3 Partial Derivatives

Sec.4.4 Tangent Planes and Linear Approximations

Sec.4.5 The Chain Rule

Sec.4.6 Directional Derivatives and the Gradient Vector

Sec.4.7 Maximum and Minimum Values

Sec.4.8 Lagrange Multipliers

CH.5 Multiple Integrals

Sec.5.1 Double Integrals over Rectangles

Sec.5.2 Iterated Integrals

Sec.5.3 Double Integrals over General Regions

Sec.5.4 Double Integrals in Polar Coordinates

Sec.5.5 Applications of Double Integrals

Sec.5.6 Surface Area

Sec.5.7 Triple Integrals

Sec.5.8 Triple Integrals in Cylindrical Coordinates

Sec.5.9 Triple Integrals in Spherical Coordinates

Sec.5.10 Change of Variables in Multiple Integrals

CH.6 Vector Calculus

Sec.6.1 Vector Fields

Sec.6.2 Line Integrals

Sec.6.3 The Fundamental Theorem for Line Integrals

Sec.6.4 Green’s Theorem

Sec.6.5 Curl and Divergence

Sec.6.6 Parametric Surfaces and Their Areas

Sec.6.7 Surface Integrals

Sec.6.8 Stokes’ Theorem

**成績計算** : 20% 平時成績 + 期中期末各 40%

上台寫作業及點名, 無法上課(要有正當理由)請mail 給我, 我才不會點到你.

作業及參考資料會上完課當天網頁公告

期中日期8/3 13:10~15:10 , 期末日期8/31 13:10~15:10

地點會安排在數學館1F3間教室, 前一周會再公告. (要遵守考場規定)

當天無法考試(要有正當理由)請儘早通知, 我好安排時間