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