

一、課程說明(Course Description)

This will be a basic introduction to 2-dimensional differential geometry. The material that will be covered in the course includes the following:

Surfaces, differential functions on surfaces

First fundamental form ; Second fundamental form

Gauss map ; Gauss Theorem

Parallel transport; geodesics

Gauss-Bonnet Theorem

However, the exact material may be changed according to the situation.

二、指定用書(Text Books)

Differential geometry of curves and surfaces, by Manfredo P. Do Carmo.

三、參考書籍(References)

V. Guillemin and A. Pollack, Differential Topology, 1974

B. O'Neill, Elementary Differential Geometry, 1997

M. Spivak, Calculus on Manifolds, 1965

四、教學方式(Teaching Method)

Traditional. (習題課時間 Monday 6-8pm) 教室 (綜三館 203)

五、教學進度(Syllabus)

In the Fall, the course will start from Chapter 2.

Homework:

2.2 1,4,5,10,16

2.3 1,2,6,7,8

2.4 8,12,15,17,21

2.5 1,3,5,6,15

3.2 2,5,6,9,14,15,16,17,18

- 3.3 14,16,20,21
- 3.5 11,12,13,14
- 4.2 3,4,8,9,11,18 (check 7,13)
- 4.3 1,2,3,4,9
- 4.4 1,4,6,8,9,10,15

六、成績考核(Evaluation)

Two midterms (10/26, 12/7) 30% each, one final (1/11) 40%.

七、可連結之網頁位址

<http://www.math.nthu.edu.tw>