

微分方程

DIFFERENTIAL EQUATIONS

NTHU | MATH 3010 | 2023 Fall

課程安排 Arrangements

教師：陳國璋 Kuo-Chang Chen

時間：M12R12

教室：綜三201

助教：劉振宏、黃筱涵、萬育瑄

聯繫方式 Contact Info.

教師辦公室：綜三609

分機：33067

辦公室時間：T78

email: kchen@math.nthu.edu.tw

助教將建立Line群組以便聯繫，
加入方式於課堂宣布

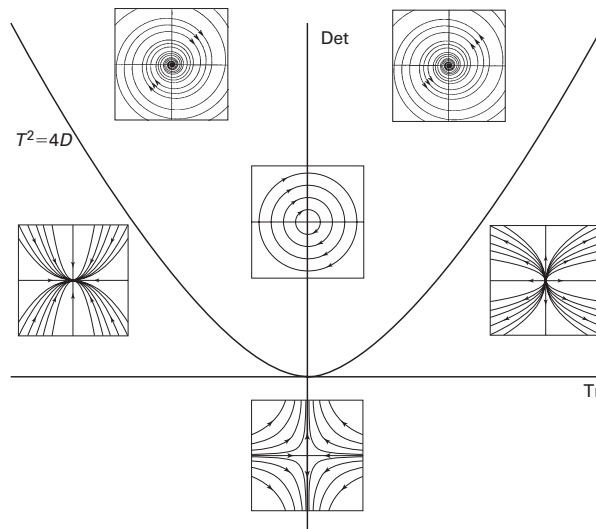
教科書 Textbook

W. Boyce, R. DiPrima, D. Meade:
*Elementary Differential Equations and
Boundary Value Problems*, 12th
edition, John Wiley & Sons, 2022.

參考書 References

M. Hirsch, S. Smale, R. Devaney:
*Differential Equations, Dynamical
Systems, and an Introduction to Chaos*,
Elsevier Academic Press, 2004.

S.B. Hsu, K.C. Chen: *Ordinary
Differential Equations With
Applications*, 3rd edition, World
Scientific, 2022.



課程簡介 Course Description

This course is an introduction to the theory of differential equations intended for second or third year undergraduate students majoring in mathematics. Our aim is to introduce basic concepts, techniques, and applications of first and second order linear equations. Some methods for nonlinear equations and higher order systems will be briefly outlined.

Topics to be covered include:

1. First order differential equations
2. Second order linear differential equations
3. Higher order linear differential equations
4. Series solutions
5. Laplace transforms
6. Nonlinear equations and stability
7. Boundary value problems



評分方式 Grading

小考 Quizzes

Taken place during recitations.

Based on homework

assignments.

期中考 Midterms

2023/10/30 Chapters 1,2,,3

2023/11/30 Chapters 4,5,6

期末考 Final Exam 25%

2024/01/08 Chapters 7,9,11

計分方法一：

小考、期中考1、期中考2、期末考各佔1/4

計分方法二：

期中考1、期中考2、期末考各佔1/3

出席與缺席 Attendance

Students are expected to attend every scheduled class. It is the student's responsibility to keep informed of any announcements, syllabus adjustments or policy changes made during scheduled classes.

You should miss an exam only for the most compelling reasons and you should obtain permission in advance, except in some extraordinary circumstances. If you miss an exam for legitimate reasons, then it will be weighted to other exams. There will be no make-up exam.

課程大綱 Syllabus

There will be a total of 22 lectures, 7 recitation classes, each of them will be 2 hours long. They are scheduled as follows.

週次	週一	進度	週四	進度
1	9/11	Chapter 1	9/14	Chapter 2
2	9/18	Chapter 2	9/21	演習課
3	9/25	Chapter 2	9/28	教師節放假
4	10/2	Chapter 2	10/5	Chapter 3
5	10/9	彈性放假	10/12	演習課
6	10/16	Chapter 3	10/19	Chapter 3
7	10/23	Chapter 5	10/26	演習課
8	10/30	期中考	11/2	Chapter 5
9	11/6	Chapter 5	11/9	Chapter 4
10	11/13	演習課	11/16	Chapter 4
11	11/20	Chapter 6	11/23	Chapter 6
12	11/27	演習課	11/30	期中考
13	12/4	Chapter 7	12/7	Chapter 7
14	12/11	Chapter 9	12/14	演習課
15	12/18	Chapter 9	12/21	Chapter 11
16	12/25	Chapter 11	12/28	Chapter 11
17	1/1	元旦放假	1/4	演習課
18	1/8	期末考		

