

古典力學 – 11210PHYS520000

Classical Mechanics

Lecturer: Kuo-An Wu (吳國安教授) Email: kuoan.wu@gmail.com

Couse description (課程大綱):

This course is a one-semester graduate course on the subject of classical mechanics. Clearly, it is a challenging task to tell you a thorough story about it from scratch in one semester (not to mention that the semester is shortened to 16 weeks). Nevertheless, we plan to cover the framework of analytical mechanics which includes Lagrangian and Hamiltonian mechanics, interesting consequences about symmetry of physical systems and conservation laws, and apply these concepts to understand common classical phenomena such as oscillation (parametric resonance), central force problem (scattering), etc. In addition, we will discuss connections between analytical mechanics and quantum/statistical mechanics (in week 17 and 18), so we have a broad view of physics.

Class time (上課時間): F5F6F7 、**Classroom (教室):** 620, Physics Building (物理館 620)

Class materials(課程用書): Lecture notes (筆記為主)

References (參考書目):

1. “Classical Mechanics” by *H. Goldstein, C. Poole, and J. Safko.*
2. “Analytical Mechanics” by *L. N. Hand and J. D. Finch.*
3. “Mechanics” by *L. D. Landau and M. Lifshitz.*

Office Hour: 10:30AM – noon every Wednesday in my office (R610, Physics Building).

Grading Policy (評分方式):

The course grade will be composed of

- Homework Sets (20%). Collaboration on homework set is encouraged, however each student must write up his or her own reasoning independently.
- Exams: A midterm (40%) and a final (40%).

TAs: TBD