

Below are the chapters that we have covered this semester. Different levels of understanding are required for different materials as follows:

- (♣) You should understand the definitions of the concepts introduced, the statements of the main theorems, and the motivations behind (why we care).
- (♠) In addition to (♣), you should be able to recite and apply the main theorems that we have talked about in classroom, to solve problems.
- (♡) In addition to (♠), you should be able to reproduce the proofs of the theorems that have been shown in classroom.

- Chapter 1, Measure Theory:

- (♣) Chapters 1.1 – 1.4.

- (♠) Chapters 1.5 – 1.7.

- Chapter 2, Laws of Large Numbers:

- (♣) Chapters 2.1.1, 2.1.4.

- (♠) Chapters 2.1, 2.1.2, 2.1.3.

- (♡) Chapters 2.2, 2.3, 2.4, 2.5 (before 2.5.1),

- Chapter 3, Central Limit Theorems:

- (♠) Chapters 3.2, 3.3 (before 3.3.3), 3.4 (before 3.4.3).

The final exam will have 5 problems, including

- 2 from HW, quiz and midterm problems at the level (♠), (♡),
- 1 on the proof of a theorem from the list below:  
Theorems 2.2.6, 2.2.7, 2.3.5, 2.4.1, 2.5.3, 2.5.4.
- 2 other problems at the level (♠), (♡).

The prelim exam will have 4 problems, including

- 1 on the proof of a theorem from the lists above.
- 3 other problems at the level (♠), (♡).