

Class notes

1. Midterm will be held in class 1400-1600, 020425. You can bring along a calculator and a cheatsheet of size A4 with you. I will explain this part in class. **Be Prepared!**
2. Material covered (refer to **Content** of the Text, sections with * are skipped unless specified otherwise): Ch 1 (except 1.6), Ch 2, Ch 3, 4 (regarding the distributions, pay your major focus on bernoulli, binomial and normal distribution), 5.2, Ch 6 (except 6.6. Regarding the functions of random variables, focus on the linear functions of a random variable and iid random variables), 6.7, 6.8.
3. Topics you should know for this Midterm.

Basic numerical summaries, graphical displays. For example, 5-point summary, box-plot. Something similar to our quiz.

Definitions of pdf, pmf, and verification of them

Calculation of expectation, variance, moment generating function, moments of random variable

Definition of independence, uncorrelatedness (definition of covariance, correlation). Contrast of independence and uncorrelatedness.

Properties of sample mean from iid distribution, their mean, variance, moment generating function.

Property of a linear transformation of a random variable: its distribution, its mean, variance, moment generating function.

Properties of linear combination of iid random variables: their mean, variance, moment generating function.

What are LLN (pay attention to weak version, WLLN), Central Limit Theorem? (In the case when X_1, \dots, X_n iid with $EX_1, Var(X_1)$ are both finite.)

Chebyshev's inequality

Limiting of moments (Proof of CLT on page 327{329, justification in each steps)

Calculating normal probability from the standard normal table .

Calculating binomial probability from binomial table (Table II on P 647{651) and their normal approximation when

blems in homework and quiz.

before the midterm. Possibly, some of them will be in the exam.) 6.2-

6.3-2, 3, 14 6.4-2, 5, 6,