



MATEMATISK INSTITUTT
UNIVERSITETET I BERGEN

PRELIMINARY CURRICULUM

STAT210 - STATISTICAL INFERENCE - SPRING 2019

Textbook: Casella & Berger: Statistical inference , 2nd edition

CHAPTER 1: PROBABILITY THEORY

Section 1.1 – 2.6 1 - 37

CHAPTER 2: TRANSFORMATION AND EXPECTATIONS

Section 2.1 – 2.3 47 - 68 except for Th.2.1.8 [p 53], Ex. 2.3.10 [p 64]

CHAPTER 3: COMMON FAMILIES OF DISTRIBUTIONS

Section 3.1 – 3.4 85 - 116 except hypergeometric, [pp 86-88]
Section 3.6.1 122 - 122 only Th.3.6.1 with proof [wp].

CHAPTER 4: MULTIPLE RANDOM VARIABLES

Section 4.1 – 4.2 139 - 156
Section 4.3 – 4.4 156 - 168
Section 4.5 169 - 186
Section 4.6 180 - 186

CHAPTER 5: PROPERTIES OF A RANDOM SAMPLE

Section 5.1 207- 208 to Ex.5.1.2
Section 5.2 only D.5.2.1 [p 211], Th.5.2.9 wp.[p 215],
Th.5.2.11 [p 217]
Section 5.3.1 218 - 218 Student Fisher Th. without proof [wop]
Section 5.3.2 222 - 225
Section 5.4 226 - 230
Section 5.5.1 232 - 233 wop
Section 5.5.3 235 - 237 to the proof of the CLT
 239 - 239 only Th.5.5.17 and Ex.5.5.18
Section 5.5.4 240 - 243 including Ex.5.5.25
 245 - 245 Th.5.5.28
Section 5.5.6 245 - 250 to Ex.5.6.6

CHAPTER 6: PRINCIPLES OF DATA REDUCTION

Section 6.2.1 272 - 279
Section 6.2.4 285 - 287 from D.6.2.21 to "We now use ... "
Section 6.2.4 288 - 288 from Th.6.2.25 to Ex.6.2.26

CHAPTER 7: POINT ESTIMATION

Section 7.1	311 - 312	
Section 7.2.1	312 - 314	to Ex.7.2.3
Section 7.2.2	315 - 323	except for Ex.7.2.8 -7.2.9, [pp 318 - 319] and except for Ex.7.2.13 [pp 323]
Section 7.3.1	330 - 332	to Ex.7.3.5
Section 7.3.2	334 - 342	
Section 7.3.3	342 - 343	to Ex.7.3.18
	347 - 348	Th.7.3.23 and Ex.7.3.24

CHAPTER 8: HYPOTHESIS TESTING

Section 8.1	373 - 374
Section 8.2.1	374 - 379
Section 8.3.1 – 8.3.2	382 - 394

CHAPTER 10: ASYMPTOTIC EVALUATIONS

Section 10.1.1 – 10.1.3	467 - 476	except for the <i>proof</i> of Th.10.1.12 [p 472]
Section 10.3.1	488 - 492	

In addition:

- Homework and compulsory problems and some handouts covered by the lectures are part of the curriculum.
- The matrix treatment in the lectures and the compulsories is important. That is, the treatment of the multinormal distribution and the *Student-Fisher Theorem*, in Lectures 7-10 as well as in Problem 3 compulsory 1 and Problem 1 in compulsory 2.
- Some of the stuff in the lectures and home-work concern “general ability” to calculate. It is often not the examples as such that are important.

The above was the curriculum for Spring 2018. There may come some changes in second half of the course

06 December, 2018

Trygve S. Nilsen
