

STAT 380 Lecture 1
Spring 2019
4 Jan 2019

- I reviewed the course structure.
- You should read the slides ‘Overview’.
- I covered the first 6 slides of ‘Review’.
- The focus is on notation and modelling assumptions.
- I did the 3 cards, 2 colours problem. From this problem you are supposed to recall
 - The *sample* or *probability space*, Ω .
 - *Elementary outcomes*: the elements ω of Ω .
 - *Events*: subsets of Ω .
 - Set notation: union (“or”) and intersection (“and”).
 - Events are sometimes expressed mathematically and sometimes as English phrases like “the second card drawn is a spade” or “at least one the first two cards drawn is a spade”.
 - Students sometimes use things like “ $A = \text{spade}$ ” which is not a clearly defined event – it needs a verb.
 - I touched on *pairwise disjoint* or *mutually exclusive* events. A sequence A_1, A_2, \dots is pairwise disjoint if $i \neq j$ implies $A_i \cap A_j = \emptyset$, the empty set.
 - I noted two axioms of probability:

$$P(\Omega) = 1$$

and: if the sequence A_1, A_2, \dots is pairwise disjoint then

$$P\left(\bigcup_{i=1}^{\infty} A_i\right) = \sum_{i=1}^{\infty} P(A_i).$$

This last property is called *countable additivity*.

- You should be reading the first 3 chapters of Ross. It is ok to read those chapters in an older edition. I won’t be following the book too closely.
- The first assignment is due next Friday afternoon, Jan 11, at noon; there will be a drop box for STAT 380 outside the STAT lab.
- The assignment has a final question which requires you to do some computing and submit the answer to me by email, not in the drop box or on paper.

- Tutorials start next week.
- Our class was moved for one time only to a wierd room without notice so there are no hand-written slides for today.