

STAT 550 Course Calendar

Homework assignments, project instructions, lecture notes and handouts will be posted in Canvas. Readings will be denoted by “550” for the *Course Notes: Statistics 550 Advanced Mathematical Statistics* and by “505” for *A Pair of Primers: Primer on Matrix Analysis and Primer on Linear Statistical Models*. Topics on calendar are subject to change.

Week 1: Jan 13, 15

Reading:

- Course syllabus and Canvas exploration
- 505: Chapters 2 and 7, Sections 8.1-8.4 and 8.11
- 550: Chapter 2

Tuesday

- Introductions to the course and to each other
- Spot the math errors
- Deep dive into matrix algebra

Thursday

- Kronecker products and the vec operator
-

Week 2: Jan 20, 22

Reading:

- 505: Chapters 9 and 12
- 550: Chapter 3

Tuesday

- Kronecker products and the vec operator (cont)
- Matrix differentiation

Thursday

- Matrix differentiation (cont)
 - Eigenvalue/eigenvector review
 - **Homework 1 Due in class**
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Week 3: Jan 27, 29

Reading:

- 505: Chapters 9 and 12
- 550: Chapter 3
- Sections 5.5.1-5.5.3 in Casella and Berger

Tuesday

- Eigenvalue/eigenvector (cont)
- Order of magnitude

Thursday

- Types of convergence in probability
 - Order of magnitude in probability
-

Week 4: Feb 3, 5

Tuesday

- Multivariate Taylor series expansions
- Newton-Raphson and Fisher Scoring algorithms

Thursday

- Newton-Raphson and Fisher Scoring algorithms for logistic regression
-

Week 5: Jan 10, 12

Tuesday

- Missing data and the EM algorithm

Thursday

- Missing data and the EM algorithm
-

Week 6: Feb 17, 19

Tuesday

- TBD

Thursday

- TBD
-

Week 7: Feb 24, 26

Tuesday

- TBD

Thursday

- TBD
-

Week 8: Mar 3, 5

Tuesday

- TBD

Thursday

- TBD
-

Week 9: Mar 10, 12

Tuesday

- TBD

Thursday

- TBD
-

Spring break: Mar 16-20

Week 10: Mar 24, 26

Tuesday

- TBD

Thursday

- TBD
-

Week 11: Mar 31, Apr 2

Tuesday

- TBD

Thursday

- TBD
-

Week 12: Apr 7, 9

Tuesday

- TBD
-

Thursday

- TBD
-

Week 13: Apr 14, 16

Tuesday

- TBD
-

Thursday

- TBD
-

Week 14: Apr 21, 23

Tuesday

- TBD
-

Thursday

- TBD
-

Week 15: Apr 28, 30

Tuesday

- Project presentations
-

Thursday

- Project presentations
-

Finals week

- Final exam in Wilson Hall 1-128 on **Tuesday, May 5, 8:00am-9:50am**