M/STAT 501 Fall 2025 Course Calendar

Back to M/STAT 501 syllabus... STAT 501 aims to cover Chapters 1–4 in Casella and Berger, continuing with Chapters 5–10 in STAT 502 next semester.

Week 1: Aug 20–22

Wednesday

- Introductions to the course and each other
- Sections 1.1–1.2.1: Set theory, sigma algebra, basics of probability theory

Friday

- Section 1.2.2: Calculus of probabilities

Week 2: Aug 25–29

Monday

- Section 1.2.2: Calculus of probabilities (cont)

Wednesday

- Section 1.2.3–1.2.4: Combinatorics in probability
- **Homework 1 due** (Sections 1.1–1.2.2) in Gradescope by 5:00pm

Friday

- Section 1.2.3–1.2.4: Combinatorics in probability (cont)

Week 3: Sep 1–5

Monday

- *No classes: Labor Day*

Wednesday

- Section 1.3: Conditional probability and independence
- ***QUIZ 1***: Section 1.1–1.2.2

Friday

- Section 1.3: Conditional probability and independence (cont)

Week 4: Sep 8–12

Monday

- Section 1.3: Conditional probability and independence (cont)

Wednesday

- Section 1.4: Random variables
- Section 1.5: Distribution functions
- **Homework 2 due** (Sections 1.2.3–1.3) in Gradescope by 5:00pm

Friday

- Section 1.5: Distribution functions (cont)

Week 5: Sep 15–19

Monday

- Section 1.6: Density and mass functions

Wednesday

- Section 1.6: Density and mass functions (cont)
- ***QUIZ 2***: Sections 1.2.3–1.3

Friday

- Section 2.1: Distributions of functions of a random variable

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Week 6: Sep 22–26

Monday

- Section 2.1: Distributions of functions of a random variable (cont)

Wednesday

- Section 2.2: Expected values
- **Homework 3 due** (Sections 1.4–1.6) in Gradescope by 5:00pm

Friday

- Section 2.2: Expected values (cont)

Week 7: Sep 29–Oct 3

Monday

- Section 2.3: Moments and moment generating functions

Wednesday

- Section 2.3: Moments and moment generating functions (cont)
- Section 2.6: Cumulant generating functions and characteristic functions
- (Skip Section 2.4)
- ***QUIZ 3***: Sections 1.4–1.6

Friday

- Sections 3.1 and 3.2: Discrete families of distributions

Week 8: Oct 6–10

Monday

- Sections 3.1 and 3.2: Discrete families of distributions (cont)
- Section 3.3: Continuous families of distributions

Wednesday

- Section 3.3: Continuous families of distributions (cont)
- **Homework 4 due** (Sections 2.1–2.3) in Gradescope by 5:00pm

Friday

- Section 3.4: Exponential families
- Section 3.5: Location and scale families
- Section 3.6: Inequalities and Identities

Week 9: Oct 13–17

Monday

- Sections 3.4–3.6 (cont)

Wednesday

- ***QUIZ 4***: Sections 2.1–2.3

Friday

- Section 4.1: Joint and marginal distributions

Week 10: Oct 20–24

Monday

- Section 4.1 (cont): Joint and marginal distributions

Wednesday

- Section 4.2: Conditional distributions and independence
- **Homework 5 due** (Sections 3.1–3.6) in Gradescope by 5:00pm

Friday

- TBD

Week 11: Oct 27–31

Monday

- Section 4.4: Hierarchical models and mixture distributions

Wednesday

- Section 4.4: Hierarchical models and mixture distributions (cont)
- ***QUIZ 5***: Sections 3.1–3.6

Friday

- Section 4.5: Covariance and correlation (bivariate)

Week 12: Nov 3–7

Monday

- Section 4.5: Covariance and correlation (cont)

Wednesday

- Section 4.3: Bivariate transformations
- **Homework 6 due** in Gradescope by 5:00pm

Friday

- TBD

Week 13: Nov 10–14

Monday

- Section 4.3: Bivariate transformations (cont)

Wednesday

- Section 4.6: Multivariate distributions
- ***QUIZ 6***: Sections 4.1–4.2, 4.4–4.5

Friday

- Section 4.6: Multivariate distributions (cont)

Week 14: Nov 17–21

Monday

- Section 4.7: Cauchy-Schwarz and Jensen's inequalities
- Covariance and correlation for random vectors (not in textbook)

Wednesday

- More on random vectors
- **Homework 7 due** in Gradescope by 5:00pm

Friday

- Special topics / preview of STAT 502

Nov 24–28: Fall break

Week 15: Dec 1–5

Monday

- Special topics / preview of STAT 502

Wednesday

- **Homework 8 due** (Sections 4.3, 4.6–4.7) in Gradescope by 5:00pm

Friday

- Final exam review

Finals week

- Final exam in Wilson Hall 1-124 on Monday, December 8, 10:00am-11:50am