

Math 331 Grading and Schedule

Grading

Your grade in this class will be based on 7 components: class participation, course binder, homework assignments, article reflections, course projects, one midterm exam, and one final exam.

- Class participation == 50 points. Class participation will include attendance as a small part (20 points, 1 point per day attended up to 20), and also includes participation in in-class activities such as presenting work and participating in discussions.
- Course binder == 25 points each X 2 checks == 50 points. Each student is expected to maintain a course binder organizing their course work. The instructor will check the binder twice in class for organization and neatness.
- Homework assignments == 40 points each X 5 assignments == 200 points. Students will practice techniques in problem solving, data cleaning, the application of mathematical and statistical ideas to data analysis, and the production of graphics.
- Article reflections == 40 points each X 5 assignments == 200 points. Students will read short articles in the natural and social sciences involving data analysis and reflect on the methods and effectiveness of data analysis in them.
- Course projects == 150 points each X 2 assignments == 300 points. In small groups of 3 to 4, students will analyze data sets and present the results in a professional written form.
- Midterm exam == 100 points. Students will demonstrate their knowledge of the course content near midterm on a written exam.
- Final exam == 100 points. Students will demonstrate their knowledge of the course content on a written final exam.

There are 1000 points available in the course. Extra credit may be available at instructor discretion. Your letter grade will be assigned by computing the total number of points you earn, looking that total up in the following table, and selecting the letter grade vertically aligned with that total in the table.

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
921-1000	891-920	861-890	821-860	791-820	761-790	721-760	691-720	661-690	621-660	591-620	below 590

Course Schedule

Week	Course Topics and Readings	Course Assessments
1	Unit 1: Introduction to R Installing R and RStudio Introduction to R	Homework 1 assigned
2	Data cleaning and tidying	
3	Unit 2: Descriptive Statistics Creating and interpreting statistical summaries of data	Homework 1 due Homework 2 assigned
4	Creating and interpreting statistical graphics	Article reflection 1 assigned
5	Graphics (continued)	Homework 2 due Homework 3 assigned
6	Unit 3: Models and Inference Probability basics Bayes' Rule	Article reflection 1 due Article reflection 2 assigned
7	Random variables and probability distributions Simulations to produce distributions	Homework 3 due Homework 4 assigned
8	Hypothesis testing Confidence intervals	Article reflection 2 due Article reflection 3 assigned Midterm exam
9	Unit 4: Regression Linear regression	Homework 4 due Homework 5 assigned
10	Linear regression (multivariable) Logistic regression	Article reflection 3 due Article reflection 4 assigned
11	Logistic regression (continued)	Homework 5 due Course project 1 assigned
12	Unit 5: Classification and Learning Classification problems Supervised versus unsupervised learning Supervised learning: Logistic regression for classification	Article reflection 4 due Article reflection 5 assigned
13	Other classifiers: trees Testing the performance of classifiers: the train/test set framework	Course project 1 due Course project 2 assigned
14	Unsupervised learning: Cluster analysis	Article reflection 5 due
15	Cluster analysis (continued) Semester summary	
Finals	Final exam	Course project 2 due

Math 331 Data Analysis Grading and Schedule