

## 1 Basic Information

**Instructor** Dave Kaplan, kaplandm@missouri.edu (email any questions or to set up meeting)

**Textbook** *Distributional and Nonparametric Econometrics*, available on [my website](#). You can use the digital version to start, and I plan to provide you with a nicely printed version from Mizzou Publishing within a couple weeks (so don't print it yourself).

**Course Prerequisite(s)** ECONOM 9473 or instructor's consent (per [Course Catalog](#))

**Class Meetings** 9:30–10:45am Tuesdays and Thursdays, 107 [Geological Sciences Building](#)

**Office Hours** Every Tuesday 2–3pm, or else email me for another time

**Course Website** The course site is on [Canvas](#). I will post any files and announcements there, and you will submit your assignments there. Make sure your settings are such that you get emailed when a new announcement (etc.) is posted. If you cannot access the Canvas site, please let me know ASAP.

## 2 Classes

Generally, each class follows the same structure.

1. First, you may ask any questions about the textbook material (including, “Could you please explain the part about \_\_\_?”).
2. Second, most of the time will be spent on Discussion Questions (DQs) from the textbook. You first discuss the DQ with somebody sitting near you. Then you share your (or your partner's) ideas with the full class.
3. Third, there is usually time to ask additional questions at the end.

Before each class, I expect you to look through the corresponding material in the textbook. I don't expect you to master the material simply by reading. I do expect you to read carefully enough to participate in class. This includes asking questions about material you found confusing as well as participating in class discussions.

Table 1 shows the schedule of class topics.

## 3 Assignments and Grading

Your overall grade consists of five equal parts (20% each): class participation, and four assignments to be submitted through Canvas.

Table 1: Schedule of class topics.

Class #	Date	Topic	Textbook Section(s)	DQs
1	1/18	Writing	1.2	1.1–1.6
2	1/20	L <sup>A</sup> T <sub>E</sub> X (bring laptop if possible)	1.1	n/a
3	1/25	R (bring laptop if possible)	2	2.1–2.2
4	1/27	Quantiles	4.1–4.3	4.1–4.3
5	2/1	Quantiles	4.4–4.5	4.4–4.7
6	2/3	Quantile Regression	5.1–5.2	5.1–5.3
7	2/8	QR (causal)	6.1–6.3	6.1–6.3
8	2/10	QR (causal)	6.4–6.5	6.4–6.8
9	2/15	QR with Endogeneity	7.1–7.3	7.1–7.3
10	2/17	Distributional Inference	8.1–8.5	8.1–8.4
11	2/22	Distributional Inference	9.1–9.2	9.1–9.2
12	2/24	Stochastic Dominance	10.1–10.3	10.1–10.4
13	3/1	Multiple Testing	11.1	11.1–11.3
14	3/3	Multiple Testing	11.2–11.3	11.4–11.6
15	3/8	Bootstrap	12.1–12.3	12.1–12.3
16	3/10	Bootstrap	12.4	12.4–12.5
17	3/15	Bayesian Basics	14.1–14.3	14.1–14.4
18	3/17	Bayesian Bootstrap	14.4–14.7	14.5–14.9
19	3/22	Nonparametric Regression	15.1–15.3	15.1–15.5
20	3/24	Local Regression	16.1–16.3	16. {1,2,5}
<i>Mizzou Spring Break Week</i>				
21	4/5	Local Regression	16.4–16.5	16. {8,9,11}
22	4/6	Local Regression	16.5	16.13–16.16
23	4/12	Linear Smoothers	16.6, 16.8.1–16.8.3, 16.9	16.17–16.19
24	4/14	Sieve/Series	17.1–17.7	17.1–17.2
25	4/19	Model Selection	18.1–18.3	18.1–18.2
26	4/21	Cross-Validation	18.5	18.3–18.5
27	4/26	Multiple Regressors	19.1–19.5	19.1–19.4
28	4/28	Missing Data	21.1–21.3	21.1–21.5
29	5/3	Missing Data	21.3–21.4	21.6–21.10
30	5/5	Ordinal Data	23.1–23.2	23.1–23.4

### 3.1 Participation

Participation is graded by effort. Whether you say something “right” or “smart” is irrelevant. In fact, this is a good opportunity to get comfortable with being wrong and feeling dumb, which will aid your transition from classwork to research. (I do expect that in 3 years you’ll be an expert on your dissertation research topic, but I have no such expectations now.) If you make a “good faith” (sincere) effort to participate in every class, then you’ll get 100% for this component of your grade. This includes both asking questions at the beginning of class and participating in the Discussion Questions.

## 3.2 Assignments 1–3: Exercises

For each of the first three assignments, you will submit one end-of-chapter exercise from the textbook. At most one (of the three) can be from Chapters 1–2, but otherwise you may pick whichever you like. For example, you could submit Exercise E1.2 for Assignment 1, E7.1 for Assignment 2, and E11.1 for Assignment 3.

These are also primarily (but not exclusively) graded on effort, so I suggest picking whichever most interest you. However, this does not mean you can just write down some nonsense and get full credit, because seeing a bunch of nonsense signals to me that you did not make much effort. If even after talking with your classmates and/or me and/or the internet you are still not sure you're doing something right, try to explain your doubts (and your efforts) in your submission. It is good to be aware of your shortcomings rather than demonstrate the Dunning–Kruger effect.

You may work with other students, but you must each submit your own assignment (and cite each other appropriately).

If you have any questions, just ask me. As always, it's best to start early to allow time for confusion, debugging, dreaming of solutions, etc.

## 3.3 Assignment 4: Research

The fourth assignment is related to whatever research you have started working on, in particular the econometric aspects of it (whether empirical or methodological) since that's what I can best give you helpful feedback on. (If you're doing purely theoretical macro or something, we can discuss other options; please let me know ASAP.) You will submit a short (or long if you want) write-up and do a 15-minute presentation during our final exam time. (You will also listen attentively and ask questions of your classmates.)

This fourth assignment should provide you 1) motivation to start/continue your research, 2) feedback on the econometric aspects of your research, 3) practice writing and presenting, and 4) practice thinking critically about your peers' research and discussing research with them. Irrespective of your progress or the "quality" of your research so far, if you take the project seriously, then I will take seriously my role in providing you feedback and guidance.

**Presentation Details** You may use slides, or not. It's not a lot of time, so focus on helping the audience understand enough to ask helpful questions or provide helpful comments. This is an opportunity for you to get input from your classmates and me. It will be a lost opportunity if you just try to make yourself sound smart by using lots of undefined jargon and complicated equations that nobody can understand. (It also won't make you sound smart, but that's secondary.)

**Written Submission Details** It is pretty open-ended since you are all at different stages of research, which is fine. Do your best to summarize wherever you currently are, and what you think the critical next steps (econometrically) will be. For example, if it's empirical, discuss your economic research/policy question, your statistical object(s) of interest, your identification strategy (if applicable), your data issues (missing data, sample selection, etc.), your possible estimators, etc. If

it's methodological, explain the research question, any relevant existing method, the desired results, your conjectures, etc.

If you'd appreciate more specific guidelines, just ask me (well ahead of time) after providing some basic description of your current research (or lack thereof).

## 4 Academic Integrity

As will be the case after you graduate, in this class, collaboration with other students as well as use of whatever resources you can find (books, papers, tutorials, etc.) is permitted and encouraged. The only "exception" is that you must each submit your own ES, i.e., you can't just put multiple names on the same exact write-up.

As will also be the case after you graduate, even with so many resources allowed, academic integrity is taken very seriously. If you use something, then cite it, whether a paper, book, person, or URL. If you collaborate with other students, cite them (note their names on your submission). If you're not sure whether to cite something, err on the side of including too many citations. I won't fail you for forgetting, but it's a good opportunity to practice taking it seriously because in academia, even unintentional plagiarism may be punished harshly (whether formally or informally, e.g., by lowering a referee's esteem of your submitted paper).

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<https://kaplandm.github.io>