

## 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 will provide you with a nicely printed version from Mizzou Publishing very soon (so don't print it yourself; I already placed the order). Besides the material itself, it has all the learning objectives, exercises, and discussion questions.

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

**Class Meetings** 10:30–11:45am Mondays and Wednesdays, LSB E204A. If there is snow/ice/other campus closure, or if I get COVID, etc., then we will meet on Zoom at this link: <https://umsystem.zoom.us/j/95408258910?pwd=bys0WwdqYTha0G9UU1paY1pDQ0VSdz09>. (I'll try to remember to send a reminder, but if you ever show up and see nobody in E204A, please check Zoom.)

**Office Hours** Every Monday after class (11:45am–1:00pm), or email me

**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

Most of our class 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. You are also encouraged to ask questions at any time, about anything related to the course content.

Before each class, I expect you to look through the corresponding material in the textbook (see [Table 1](#)). 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, the last of which includes a short presentation.

[Table 1](#) shows the due dates, which are also in Canvas, though you are encouraged to submit earlier if possible.

Table 1: Schedule for the semester.

Date	Topic	Textbook Section(s)	DQs
1/22	Quantiles	4.1–4.3	4.1–4.3
1/27	L <sup>A</sup> T <sub>E</sub> X (bring laptop if possible)	1.1	n/a
1/29	R (bring laptop if possible)	2	2.1–2.2
2/3	Quantiles	4.4–4.5	4.4–4.7
2/5	Quantile Regression	5.1–5.2	5.1–5.3
2/10	QR (causal)	6.1–6.3	6.1–6.3
2/12	QR (causal)	6.4–6.5	6.4–6.8
2/17	QR with Endogeneity	7.1–7.3	7.1–7.3
2/19	Distributional Inference	8.1–8.5	8.1–8.4
2/24	Distributional Inference	9.1–9.2	9.1–9.2
2/26	Stochastic Dominance	10.1–10.3	10.1–10.4
3/3	Multiple Testing	11.1	11.1–11.3
3/3	1st assignment due		
3/5	Multiple Testing	11.2–11.3	11.4–11.6
3/10	Bootstrap	12.1–12.3	12.1–12.3
3/12	Bootstrap	12.4	12.4–12.5
3/17	Bayesian Basics	14.1–14.3	14.1–14.4
3/19	Bayesian Bootstrap	14.4–14.7	14.5–14.9
<i>Mizzou Spring Break Week</i>			
3/31	Writing	1.2	1.1–1.6
3/31	2nd assignment due		
4/2	Missing Data	21.1–21.3	21.1–21.4
4/7	Missing Data	21.3–21.4	21.5–21.8
4/9	Ordinal Data	23.1–23.2	23.1–23.4
4/14	Nonparametric Regression	15.1–15.3	15.1–15.5
4/16	Local Regression	16.1–16.3	16.{1,2,5}
4/21	Local Regression	16.4–16.5	16.{8,9,11}
4/21	3rd assignment due		
4/23	Local Regression	16.5	16.13–16.16
4/28	Linear Smoothers	16.6, 16.8.1–16.8.3, 16.9	16.17–16.19
4/30	Sieve/Series	17.1–17.7	17.1–17.2
5/5	Model Selection	18.1–18.3	18.1–18.2
5/7	Cross-Validation	18.5	18.3–18.5
5/12	4th assignment due		
5/14	Student presentations (final exams week), usual room (E204A) and time (10:30–11:45am)		

### **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, or are planning to work on over the summer (for your 2nd-year paper), specifically the econometric aspects of it (whether empirical or methodological), because 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 when we meet during final exams week (day/time TBD). 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). If you really don't have any research started, then I can help you figure out an alternative that would essentially consist of learning about the econometric models used in 1 or 2 published papers related to your current research interests, and presenting/writing about those.

## 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).

**Artificial intelligence** (AI) may be used on any assignment, following certain conditions below. This policy matches that of most journals. For example, here's a link to the major publisher [Elsevier's AI policies](#).

1. The most important condition is that you (the human author) are ultimately responsible for the content you submit. As you probably know, AI output usually sounds very authoritative but can be very wrong ("hallucinations"), so it is very important to carefully review any AI output. This is especially true at the PhD level. Personally, I don't use AI for research, but if you can find a way for AI to be helpful, please let me know so I can try it out for myself.
2. You are also required to describe why you used AI. Following Elsevier's policy: please place a statement at the end of your assignment (or immediately before any References), with the heading "Declaration of Generative AI and AI-assisted technologies," with this format: "During the preparation of this work, I used [NAME TOOL / SERVICE] in order to [REASON]. After

using this tool/service, I reviewed and edited the content as needed and take full responsibility for the final content.”

Last updated: January 7, 2025  
<https://kaplandm.github.io/>