

## INFORMATION ABOUT THE ECON 121 FINAL EXAM - FALL 2024

The final exam will be on Saturday 7 December from 11:30 AM to 2:30 PM San Diego time. It will mimic a problem set, providing you with a dataset and asking questions about it. It will be open book, but you may not communicate with anyone while taking it. Regina will grade the exam. If you think you lost points in error, discuss the issue with Regina for clarification. If you are not satisfied, you may challenge the grade, but Prof. Vogl will regrade the whole test, including questions you did not challenge. You may lose points.

You will analyze two datasets, one from the US and one from Israel, to estimate the effect of class size on student achievement in elementary schools.

The dataset [https://github.com/tomvogl/econ121/raw/main/data/project\\_star.rds](https://github.com/tomvogl/econ121/raw/main/data/project_star.rds) contains data on kindergarten students in a sample of schools in Tennessee. An experiment called Project STAR randomly assigned students within each school to one of three types of classes: small class (13-17 students per teacher), regular class (22-25 students per teacher), or regular-with-aide class (22-25 students with a teacher's aide). Teachers were also randomly assigned to classes. Each observation is a student. Variables are:

<b>schoolid</b>	Unique school identifier
<b>srural</b>	= 1 if school is in rural area, 0 otherwise
<b>classid</b>	Unique class identifier
<b>cltype</b>	Class type (1 = small, 2 = regular, 3 = regular + aide)
<b>csize</b>	Number of students in class
<b>tmasters</b>	= 1 if teacher has a master's degree, 0 otherwise
<b>teexp</b>	Teacher's years of experience
<b>twhite</b>	= 1 if teacher is white, 0 otherwise
<b>smale</b>	= 1 if student is male, 0 otherwise
<b>swhite</b>	= 1 if student is white, 0 otherwise
<b>sfree</b>	= 1 if student is eligible for free lunch (a proxy for being from a poor family), 0 otherwise
<b>stest</b>	Score on reading portion of the Stanford Achievement Test

The dataset <https://github.com/tomvogl/econ121/raw/main/data/maimonides.rds> contains data on 4<sup>th</sup> grade classes in Israel. Each observation is a class, with potentially many classes per school. Variables are:

<b>school_id</b>	Unique school identifier
<b>grade_size</b>	Number of 4 <sup>th</sup> -grade students in the school
<b>class_size</b>	Number of students in the class
<b>disadv</b>	Share of students in the class from disadvantaged families
<b>avg_verb</b>	Average verbal exam score in the class

You may refer to books, internet resources (including AI), notes, and code from problem sets, solutions, and classroom examples. You may **not** communicate with any person but Prof. Vogl or Regina during the exam; evidence of such communication will result in failure. If you are taking the exam remotely, record yourself with Zoom and submit the recording by email; if you have questions during the exam, you may e-mail your question to Prof. Vogl. Write code and answers in the R Markdown template. When you finish, knit to PDF (or knit to HTML and then print to PDF in a web browser), and submit the PDF on Gradescope.

**Zoom Recording** If you choose to take the exam remotely, you must create a Zoom recording that shows you and all windows on your screen. Zoom will email you a link to the cloud recording, which you should forward to us. **Make sure you practice before the start of the exam.** You have 24 hours to submit the link on Canvas (until Sunday 8 December at 2:30 PM San Diego time).

1. Open Zoom
2. Start a new meeting
3. Select Share → Entire screen → Share
4. Select More → Record → Record to cloud
5. Make sure (a) video is on, (b) sound is on, (c) you and all the windows on your screen are visible
6. Begin the exam (11:30 AM)
7. Finish the exam (2:30 PM)
8. End the Zoom meeting
9. When you receive an email from Zoom containing a link to the cloud recording, forward the email to tvogl@ucsd.edu and rcallesmartnez@ucsd.edu with the subject “ECON 121 exam - Firstname Lastname”

**PDF** The R Markdown template will produce a PDF containing the output alongside your code and comments. **Make sure you practice before the start of the exam.** Only the PDF needs to be submitted. When the exam is over, you have 5 minutes to upload to Gradescope.

1. Begin the exam (11:30 AM)
2. Answer exam questions by either:
  - (a) writing code and comments
  - (b) writing prose
3. Finish the exam (before 2:30 PM)
4. Click “knit” in RStudio
5. Upload the PDF to Gradescope (before 2:35 PM)