This is your final study guide. All key terms and questions on the exam will come from this study guide.

The final exam will include several key terms, for which you will be asked to define the term, state its significance, and give an example. The terms on the exam will be drawn from this study guide. Terms not on this list will not be on the exam.

**Definition:** 1 sentence. Self-explanatory. Make sure this is sufficiently detailed to distinguish the term from other similar terms on the list.

**Significance:** How does this term relate to the core material we are covering? i.e. how does trade create wealth, how are the gains from trade distributed, who wins and who loses from trade openness, etc. It is also correct to relate this term to similar terms, or opposite terms covered in the course.

**Example:** Give me an example of the term. This does not need to come from lecture or the book, but those are the easiest place to look for examples. There is no specific example we are looking for – any appropriate example will be considered correct.

Sample correct exam answer:

**Term:** Nominal Measure

**Definition:** A type of measure with multiple categories, where the categories are unordered.

**Significance:** Nominal measures are difficult to use in quantitative analysis.

**Example:** Religion is often measured ordinal (e.g. Christian, Jewish, Muslim, Hindu)

There will also be 1-2 mini-essay questions requiring answers of 3-6 sentences and 2-3 short answer questions that require 1-word or 1-sentence answers. As with the key terms, I will only ask questions that come directly off of the study guide.

**Note:** On exam day, bring your bluebook, several pens/pencils, and not much else. Everything except writing instruments and bluebooks will need to be placed down at the front of the class. This includes bags, books, etc. and especially PHONES. No phones at your seat, so if you have a fancy smartphone, you might want to leave it at home, along with your laptop and other valuables.

No trick questions. No surprises. The final is on Monday, Dec 14. Good Luck!
**Key Terms:**

Replication
Cumulative research
Inductive Theory Building
Deductive Theory Testing

Correlation
Causation

Theoretical construct
Independent variable
Dependent variable

Omitted variable
Intervening variable

Measurement Validity
Content validity
Inter-rater (inter-observer) reliability

External Validity (i.e. generalizability)
Internal Validity (i.e. causal validity)

Nominal measure
Ordinal measure
Interval measure
Ratio measure
Dummy variable (AKA dichotomous, binary)

True experiment (your definition should list the 3 core requirements)
Random assignment
Natural Experiment
Null hypothesis

Pretest
Posttest

Differential attrition (mortality)
Contamination
Treatment misidentification
History Effects

Institutional Review Board

Mean
Median
Mode
Histogram (draw one for your example)
Linear regression

Short Answer Questions

1. Take a look at the following histograms.

   ![Histogram A](image1)
   ![Histogram B](image2)

   a. For histogram A, which value is higher, the median or the mean?
   b. For histogram B, which value is higher, the median or the mean?
   c. Which histogram has higher variance?
   d. Does either of this histograms depict a normal distribution?

   Note: The histograms used on the final will differ from these.

2. We will provide you with a few different variables or measures (eg. religion, income, education level), and for each one, we will ask you the following two questions:
   a. What is the most appropriate measure of central tendency? Why?
3. Look at this histogram for income.

![Histogram of Income Values](image)

<table>
<thead>
<tr>
<th>Density</th>
<th>0.08</th>
<th>0.07</th>
<th>0.06</th>
<th>0.05</th>
<th>0.04</th>
<th>0.03</th>
<th>0.02</th>
<th>0.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Income ($1,000s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>50</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>350</td>
<td></td>
</tr>
</tbody>
</table>

a. Is this data censored at any point?

b. Is the mean or the median higher? How do you know?

4. Answer each short-answer question based on the following research design (I will give a different design on the exam, but will ask the same questions about it).

I have a hypothesis that says that immigration from Haiti to the United States improves income and health outcomes for migrants. I want to know if this is true, and I want to estimate the size of these effects. To conduct this study, I compare Haitians who entered a green card lottery and won (i.e. received a green card) to those who entered a green card lottery and lost.

1. Is this design a true experiment, natural experiment, quasi-experiment, or non-experimental design?
2. Name one of the dependent variables in this study (there are two)
3. What is the independent variable of interest (i.e. the treatment)?
4. What is the unit of analysis in this study?
5. What is the population about which I can make a strong inference in this study?
6. What is the treatment group in this study?
7. What is the control group in this study?
8. Do I have random assignment? Explain in one sentence.

5. If I employ random sampling, what is true about my sample relative to the population? If I employ random assignment, what is true about my treatment group in comparison to my control group?

6. Randomized controlled trials are becoming more common in international aid organizations. How is this good for aid organizations? How is this risky for them? (1 sentence each)

Mini-Essay Questions

1. Look at this abstract:

“Development Aid to Agriculture and Economic Growth”
by Kaya, Ozgur; Kaya, Ilker; Gunter, Lewell

The link between foreign aid and economic growth has been a controversial issue with no strong consensus so far. This paper argues that a possible reason why some studies may conclude that aid is ineffective in promoting economic growth might be that not all aid is given for development purposes (i.e. aid given for strategic considerations, humanitarian reasons or emergency relief). This study classifies foreign aid into four subcategories: agricultural aid, social infrastructure aid, investment aid, and non-investment aid. Using the generalized method of moments (GMM) estimation technique on a Barro type growth regression with panel data from the aid recipient economies, this paper finds that when aid is directed to the agricultural sector of the developing countries, it is positively and significantly related to growth and can affect economic growth in the short run.

Answer the following questions about the abstract above:
   a. What is the dependent variable?
   b. What is the independent variable?
   c. What is one potential omitted variable that may be causally related to both the independent and dependent variable?

Note: The abstract used on the final will be different.

2. Is causal inference necessary for prediction? Is it necessary for identifying useful policy interventions? In each case, why or why not?

3. Randomized controlled trials are becoming more common in international aid organizations. How is this good for aid organizations? How is this risky for them? What are the ethical concerns with random assignment? What is
one approach aid organizations can use to (partially) address this? (1 sentence each)

4. Compare and contrast these two country-year measures of "economic development."

   Measure 1: GDP per capita
   Measure 2: An index that includes the literacy rate, life expectancy, infant mortality, and level of democracy

   a. Assess each of these measures in terms of their content validity.
   b. Which of these measures will have better inter-rater (inter-coder) reliability?
   c. Would you expect these two measures to be positively or negatively correlated with one another?