

**Senior Seminar
Environmental Studies 198**

Assignment 3: Methods- Study Design, Data Collection and Analysis (5% of grade)

By next week, please revise your assignment for this week by adding a new section describing the methods you propose to use to address your objectives. The methods *may change* in reality when you have the data in hand, but make your best guess as to what you plan to do with the data you expect to collect. Please divide this section into three components:

1) The **Study Design** (aka “Experimental Design” or “Research Design”) component of your methods section is where you present the blueprint for your research methods. This section need not be excessively lengthy in text, but diagrams are worth 1000 words.

- Clearly and simply diagram the broad approach you will take in your study.
- **Do** cite the works of other authors who have used similar designs. Using a tried and true approach is a strength to the design of a study.
- If you can, draw a picture of the layout of your sample units over the area of the actual map of the study site.
- If your study is experimental, give a table showing number of replications for each treatment.
- If it is correlational or descriptive, show the layout of the samples (either in space or across other aspects of your study system—income, gender, ethnicity, profession, etc...).
- Be sure to specify the total number of samples you will take.
- You may also want to list the variables you are measuring, but do not get into the details of how you are measuring those variables in this section... that information will be covered in the Data Collection component of your Methods Section (coming next)

2) The **Data Collection** section is where you explain systematically the steps you will take to obtain your data in the field.

- This is where you put all the details of *how* you are measuring your variables.
 - **Who** will do it (do you have assistants?)
 - **How** will you do it, specifically?
 - **What instruments or materials** will you use?
 - Append or attach a draft of the actual survey you will administer, or data collection sheet you will use in the field!
- Again, cite other authors who have used the methods you describe, but be sure to describe your data collection methods adequately in the paper as well.
- Even if you are still unsure, write out and hand in a hypothetical scenario (remember, we want you to write a viable proposal, we are not going to commit you to doing everything you propose).

3) The **Data Analysis** section is the last part of your research methods. Here you specifically explain what analytic techniques you will apply to help make sense of the data you collect.

- These techniques may be **quantitative** and **qualitative**, but they must clearly analyze and assess the importance of the data you have collected
- Please plan to use at least some simple quantitative statistics,

**Senior Seminar
Environmental Studies 198**

- state the name of the test(s) you will use for each question, hypothesis or group of hypotheses (T-Test? ANOVA?)
- specify the independent variables and the dependent variables you will include in each statistical test
- Indicate software you intend to use (Excel? SYSTAT 13™? SPSS™? ArcGIS? other?)
- If you are using qualitative methods,
 - state the name of the analytic approach you will use for each question (Coding? Memoing? Integrative diagrams? Etc.)
 - You may find it useful to visit these sites for some general principles as well:
<http://www.socialresearchmethods.net/kb/qual.php> and
<http://www.socialresearchmethods.net/kb/qualapp.php>
 - Indicate any software you intend to use (Nudist™, Atlas/ITI™, NVivo™, Transcription software? Coding software? Be sure to specify the versions)
- It is best to cite other authors who have used the specific analytic approaches you are proposing