

Student Research Project Proposal for Intro to GIS Lab:

The idea of submitting the research proposal before you start working on your GIS project is to help you organize your thoughts. The proposal doesn't have to be too long, but it has to be a well thought out document outlining all steps involved in successful completion of your project. You will be allowed to make a few changes in your project after you submit the proposal pending my approval. Let me know as your ideas evolve, or if you encounter any problem with your original proposal. Remember, the proposal is worth 10% of your grade in the Applications class (either GEOG 201 or GEOS 201).

Your project can be one of the following types:

(A). Your project can be designed to build up a useful database (for example, you can show the location of all academic building on LHU campus as point theme, create an attribute table listing various facts about each building, take digital pictures of each building and link them to their locations by hotlinks or on views);

(B). You could do an investigative study (for example, you could find out if there is any relationship between reported number of certain disease or complains and landuse/certain facilities, such as location of nuclear power plants or chemical plants, or landfill, etc.).

(C). You can also formulate a hypothesis to answer an observed phenomenon and design an analysis or experiment and collect some data, and report your results. At this point you will either accept or reject your hypothesis and formulate a new hypothesis. In other words, this is how most of scientific research or investigations are done.

No matter which of the above three approaches (A, B, or C above) you decide to follow, you will need to answer all or most of the following questions in your proposal:

What do I want to know (question like I wonder if there is any relationship between such and such, or why does something happen where it does)?

Why do I want know this (is it important, or will it make a difference if I discover a relationship between things)?

How can I get an insight about this (what data do I need to have a better understanding)?

Where will I get data from (will get a few relevant themes on the Internet or will I have to prepare a few themes, table, pictures, etc. to go along with what is available on the Internet)?

What will be the best way to portray what I have learned through my analysis (should I create multiple views or should I use one view with some pictures, tables, graphs, etc. to illustrate what I found out)?

In other words, the following is a list of questions (topic) that you need to elaborate on your proposal.

- (1). **Title of the proposal:** the title has to portray a concise summary of your project.

- (2). **Purpose and scope of the selected topic:** In this section you introduce the topic that you are interested in and explain why you think this is a worthwhile topic to study. You briefly discuss what is already known and what you want to know. You formulate a research question.

- (3). **Hypothesis:** you formulate one or multiple working hypothesis to answer your question.

- (4). **Approach to test the hypothesis:** You discuss what data or experiment you will use in your research to test your hypothesis. What are sources of your data (Internet, original data created by you, combination of these, etc.)

- (5). **Presentation:** briefly discuss how you will present your results (e.g. several views, graphs, photograph along with views, tables, statistics, etc).

Hope this helps to understand a bit more about my expectation of the proposal and the student research project. If you are still confused or have a specific question don't hesitate to ask me.