There are several steps which can greatly increase the likelihood:
(a) that a piece of research will yield substantial results,
(b) that it will be possible to carry out the research with a minimum of unnecessary effort, and
(c) that it will afterwards attract the attention of readers.

This memorandum describes some steps that can be taken for these purposes.

I. Planning the Research

Choice of a topic can be the most difficult part of the process and can constitute the difference between success and failure. Unfortunately, there are no mechanical rules that can yield a promising topic.

Some suggestions:

1. Pick some general area that interests you.

2. Allow yourself a severely limited period of time to read both about the pertinent facts and some of the previous analytic writings on the subject.

3. Keep your eyes open for what seem to you to be some interesting and unsettled questions and issues in the area you have selected. For example:
• attend departmental seminars;

• visit websites of leading researchers in your department and other departments whose ideas and interests may overlap with yours;

• visit websites of major funding bodies (e.g., ESRC, Leverhulme, Nuffield, Joseph Rowntree, NFS, NIH)

4. Think of your supervisor early on. Look at the research interests of the people in the department and see how close they are to yours.

Such issues will form the basis of your hypotheses, which in turn are the key to a successful project.

5. By the beginning of next term, try to have a topic and a supervisor.

6. By the end of next term, try to pile up a survey (literature review) and zoom down the data you may need (if your research implies an empirical work).

7. Be aware of plagiarism issues

• The department has means to cross-reference texts and check for pattern similarities of sentences and structures (e.g., JISC Plagiarism Detection Service).

• You are likely to be caught. If so, the consequences will be pretty unpleasant (for you).
II. The Hypotheses

It is crucial to prepare a list of the basic hypotheses which the research will test or evaluate.

A hypothesis is a guess or a conjecture about some economic relationship.

It may be a theorem which you hope you will be able to derive mathematically from a formal model, or an empirical relationship which you hope to be able to confirm econometrically or by survey research techniques or by some other means.

An example of a theoretical hypothesis is the following statement: "A subsidy payment to polluting firms proportionate to any decrease in emissions will always lead to a decrease in industry emissions in a perfectly competitive industry." (The hypothesis happens to be false.)

An example of an empirical hypothesis is the statement: "A reduction in the level of the minimum wage will lead to a decrease in teenage unemployment." (Note: "the minimum wage is harmful to teenagers" is not a usable hypothesis because it is too vague and therefore not testable.)

Formulation of a set of such hypotheses helps in the work of thesis writing in several ways:

1. it helps you decide what sorts of books and articles you will need to read and which you need not bother with;

2. it helps you decide which data you will need and which you will not;

3. it helps you to organize the writing of the thesis.
However, not just any conjecture will serve as a satisfactory hypothesis. In order for it to be acceptable it must pass several tests:

1. You must not know in advance whether the hypothesis is true or false. In fact neither of these possibilities must be implausible. Otherwise, why study the hypothesis?

2. Write out the possible conclusions. In general, it is best if the set of possible answers is small and if one can state what they are in advance. (For example, if the hypothesis is that a reduction in the minimum wage will reduce teenage unemployment, possible conclusions are: a) it will reduce unemployment a great deal; b) it will reduce it very little; c) it will have virtually no effect; d) it will increase unemployment.)

3. Write out a detailed description of the research methods, data, etc., that will be sufficient to test each of the hypotheses. Indicate specifically how these methods will enable you to determine whether or not the hypothesis is correct.

4. Make sure that the methods you have just described are not too difficult for you to carry out in a reasonable period of time. On the other hand, the task must not be so easy that it cannot give scope for you to use your knowledge of economics and its analytic techniques.

5. The final test is that the implications of the hypotheses must be sufficiently interesting and important to constitute a fruitful piece of research. Write out some possible implications in advance.
It may take a fair amount of time to find such hypotheses and check that they satisfy the preceding criteria.

However, in retrospect you will find that the hypotheses and the outline of tests to be followed in evaluating them constitute a fairly detailed road map for the remainder of the research, which can now be carried out with a minimum of floundering and unnecessary effort.
III. A Comment on Data Gathering

The collection of data is beset by two perils:

- that one will end up missing some crucial information and,
- that one will waste effort, scarce time and budget in collecting redundant information, which can even impede your analysis.

To some degree these problems are unavoidable, but they can be kept to a minimum by comparing projected data requirements with the hypotheses and the methods planned to test them.

If it is possible to formulate the equations, tables, etc. that will be used to test the hypotheses and to do so in advance and in detail, these will indicate just what data will be needed and what data are irrelevant.
IV. Writing about Your Results

Proper writing is not to be regarded as mere decoration.

If it is done well it actually helps the analyst to clarify the ideas in his or her mind.

Moreover, if done badly there is no surer way to guarantee that the piece will go unread, particularly by the busy people who are likely to be its prime target.

The following principles are designed to help here.

A. Indispensable Steps

The first six of the following precepts should never be violated:

1. In the first or second paragraph of any paper insert a sentence beginning something like "in this paper it will be shown that..." followed by a detailed summary of your results. (And not "it will be shown that the economic program under study was a failure" but "...that as a result of the program the stock of housing may actually have been reduced by as much as 40 percent below what it might otherwise have been, that it increased market rents by something between 10 and 30 percent and nearly doubled abandonment of buildings", etc.).

   • Such a summary of results (sometimes described by the phrase "executive summary") helps the reader to follow the remainder of the paper.

   • It also enables the reader to decide whether it is worth taking the time needed to read the paper.
• Finally, it helps the writer to organize it.

• Shorter summaries should also appear at the beginning of each section of the paper and of each relatively difficult part, such as a mathematical proof.

2. Go through the paper and eliminate all redundant material. The reader is a busy person.

3. Make certain that your paper is organized in logical steps describing just how your hypotheses have been evaluated (tested) and describing the rigorous conclusions yielded by your tests.

4. Leave impressionistic conclusions and subjective opinions to separate portions of the paper so that you never undercut the reader's trust in the more objective parts of your analysis.

5. Provide a systematic and easily found glossary of all symbols, variables and abbreviations. Remember how much, when you are the reader, you detest papers that fail to do this.

6. If you use graphs or tables, label them with care (with sources where appropriate). In the text provide a detailed description of how they are derived, how they work, and what conclusions they yield (showing exactly how they produce those conclusions). Never refer to a graph by simply saying without explanation "these conclusions are confirmed by the graph." Again, think of yourself as the reader.
B. Supplementary Suggestions

1. It is useful to pick some article in a professional journal as a model.
   - Pick one at the level of difficulty at which you are aiming and whose exposition appeals to you.
   - Follow its guidance in detail, even in terms of its bibliographical and footnoting forms and its numbering of sections, graphs and tables. That will save you difficulties in dealing with editors in the future.

2. Watch your grammar and use of words. Inattention to these suggests to the reader that you are ignorant.

Some illustrative points:

- Do not use verbs as nouns or vice versa. Example: A critique is a noun. "To criticize" is a verb. "To critique" is an obscenity. The person who criticizes is a critic not "a critiquer." An impact is a noun. "To impact the steel industry" is to perform an unspeakable act. What you mean, of course, is to affect the steel industry.

- Avoid split infinitives. Do not say, "to furiously argue" but "to argue furiously."

- Do not switch tenses in midstream: "In this paper it will be shown that...It also reports that..."

- Make sure singulars and plurals are consistent: "The number of farmers are declining" (it is their number that is declining -- the farmers are not becoming midgets).

- Remember: "phenomena" and "criteria" are plural. "A phenomenon" or "a criterion" is the singular form. Similarly,
"data" is plural and "datum" is singular (but many consider this hopelessly old fashioned).

- Watch out for words that sound like others. Example: In a recent student paper "the consequential result" was used when "the consequent result" was meant. (A consequent result is one that follows from the preceding materials; a consequential result is one that is significant.)
Avoiding Barbaric Misuse of Language:  
A Few Suggestions

The following list describes a few common grammatical errors and some bits of wording that offend the aesthetic sense. Try to avoid them.

1. **Criteria** and **phenomena** are **plurals**. They should never be used to refer to a single item. "The main criteria in a hypothesis test is .." is not acceptable English.

2. **Impact** and **critique** are **nouns**, **not verbs**. When I write a critique of an article, I may criticize it, but I do not (and cannot) "critique it" because no such act exists.

3. "To heavily impact" is even worse. First, the appropriate word here is "affect" not "impact." Second, it is used here as a verb (dentists do legitimately use it as an adjective -"an impacted tooth" -but we are not dentists). Third, the phrase here includes a split infinitive.

4. **Split infinitives** are sometimes defended and are sometimes even appropriate. But, more often, they simply show that the writer has no sense of language. When one places a modifier between the “to” and the verb (in the infinitive form of the verb, as in “to run” or “to understand”) one is said to have “split the infinitive”. Thus, “to swiftly run” and “to completely understand” should be avoided, saying instead “to run swiftly” and “to understand completely”.

5. **Avoid singular-plural inconsistency**. For example, do not write “The set of British entrepreneurs is large and they are growing". There is only one set that is being discussed, so one should say “... it is growing”. The problem is often encountered in a legitimate effort to avoid sexism, as in “The typical entrepreneur works hard and they put in long hours”. The
problem is that the sentence is discussing only one entrepreneur.

6. **Avoid time inconsistency.** “This article used standard econometric methods and will employ the Chow test frequently”. Obviously, the author cannot make up his mind about the timing of the work.

7. "**That**" and "**which**" do not mean the same thing. "That" refers to an attribute of an item that tells us which one of a set of items is being discussed. "Which" pertains to an incidental attribute of an item. It is something nice to know about the item, but does not identify the item. For example, “The clock *that* is tall is the broken one”; but “The clock, *which* is tall, has been broken for a long time”.

8. **“Could”** and **“would”** are, generally, conditionals. That is, they should normally be used when the situation depends on the truth of something else. Example: "He would vote for Mr. X if he were old enough to vote." An example of incorrect use is "Inflation could be the explanation of the rise in the price of bread." The correct statement is "Inflation may be ..."