So you have to write a senior thesis...
Perhaps you are feeling uneasy about the amount of work required to produce a senior thesis, and you are not quite sure where to begin. You may begrudge those physics professors who at one fateful faculty meeting a few years ago instituted the senior thesis as a requirement. It may seem like they are just making life difficult for students.

Conspiracy
You should know that those professors who made the senior thesis a requirement also added a significant burden to themselves by agreeing to mentor and edit your thesis project. They know that writing is an essential part of communication, and good writing comes only with practice. No matter how well you understand physics and no matter how imaginative your research, if you cannot communicate your ideas clearly, they benefit no one.

Deadwood
Everyone in physics at one time or another has experienced the frustration of being on the receiving end of a poor presentation, the natural result of insufficient attention paid to clear thought. The effort you put into your senior thesis can dramatically improve your ability to communicate. This effort may even be viewed as necessary to justify your many years of study. To this stage in your life you have mainly received from others --- parents, teachers, and those who paid for your education. You have spent countless hours developing the light of knowledge within you; it will take as much effort to remove the bushel that covers it. It is time to begin to let your light shine as you make the transition towards a career.

What is real?
The work on your senior thesis is perhaps the closest thing to a "real-world" experience that you will have in college. Nobody solves textbook problems or takes exams for a living. Soon, others will judge you primarily by your research initiative and on your ability to communicate; your college grades will be superfluous. For the first time (and far from the last) you will be expected to craft and define a problem which inevitably will be murky in the beginning. You will have to find and explain the context for that problem, including a clear summary of the related works of others. You must justify your choice of problem. The research for a senior thesis will require initiative and imagination. You will have the opportunity to develop a clear description of your work and a coherent and concise argument for its conclusions.

Sooner the Better
The senior thesis requirement is designed to challenge you, but the benefit to you will depend on the effort you put into it. The skills that the project will engender are among the most important that you will take with you after graduation. It is far less work to develop them now than to delay the inevitable. In almost any career path you follow, good writing skills will be crucial. If you do not acquire them during college, you will have to develop them later (motivated by survival instinct), most likely in an ad hoc fashion under embarrassing and unpleasant circumstances.

Thoughtfulness
Good writing is foremost an exercise in clarity of thought. The need to communicate with others will therefore guide your work and in the long run make you much more productive. Good writing is not an afterthought, but it plays a central role in physics. The following outline will help you with your thesis project. It is more than a description of required thesis format; it contains important information that is relevant from the earliest stages of thesis research.