All technical writing should use the same general outline. This includes theses, dissertations, publications, and technical reports. There are 4 sections: introduction, methods, results and conclusion. The following demonstrates the outline by example.

The questions written in italics are what should be answered; they would not actually be written into the document. A good trick to overcome writer's block is to literally write such questions, and then answer them. In this example, very brief answers are given; in practice your writing should be much more extensive.

Title: A Trackable Laser Tag System

Introduction

What is the problem?
In this paper we describe a set of equipment that can be used to track weapon orientation, head orientation, and firing and hits, for purposes of training evaluation.

Why is it a problem?
The U.S. Military increasingly finds itself fighting in cities. As this transition from open warfare to urban warfare occurs, the military is searching for new methods to train troops.

How have other people tried to solve this problem?
Miles gear – outdoor – doesn't track orientation – doesn't wirelessly report data to control station; in contrast we require indoor (building) – wireless reporting – exercises are quick (10 min)

Off the shelf stuff – no orientation – difficult to hook into their core processor/RF scheme.

How is our proposed solution different?
We use 802.11 to wirelessly connect to a central station.
We have integrated orientation tracking.
Fully wireless
Indoor (range of 30 m)
Expected battery life of 2 hours

Methods

What are the details of your proposed solution?

The overall design is diagrammed in Figure 1…

[Figure 1: block diagram of overall system – helmet, rifle, control station]

The following sections describe the design of each piece in detail.

[In general, follow a top-down approach to describing the design, details, and decisions made. Start with a high-level overview, then zoom into each piece of the problem.]

[Data collection and the data itself can be described in a separate subsection here.]

Results

What experiment(s) did you perform to test your methods?
We've constructed 8 prototypes of each device…

We have evaluated the performance relative to our desired specifications (battery life, field-of-view, range of laser, wireless connectivity…).

[In general, describe the experiments, and show the results. This includes graphs of any data, tables, or figures. Draw attention to any important results or findings.]

Conclusion

Did the experiments validate your approach?

How? How not? (What worked, what didn't work)

What lessons did you learn? What future efforts do you plan?

[In general, summarize the results, and evaluate the methods against previous work based upon the results. Suggest additional work for the future.]