

WRITING THE TERM PAPER

ABSTRACT. This document contains advices for writing a term paper.

- Plan a bullet point outline of the paper before you start writing anything.
- Plan and write from the theorems out. This means write down the theorems you plan to prove, then list what supporting lemmas you will need to make the proof easier, then list what definitions you need.
- Add examples or illustrations whenever you can. A paper littered with examples is often easier to read. Make sure the examples illustrate as many of the subtleties of the definition or theorem as possible. Non-examples are sometimes just as useful (e.g. a planar graph K_4 and the non-planar graph K_5).
- The introduction should be the last thing that you write. It should not contain much notation or terminology. It should read like a high level overview of the topic, explaining why it is interesting and/or important. The end of the introduction may contain an outline of the rest of the paper: “In section 2 we give basic definitions... The main theorem is presented in Section 3... We conclude in Section 4 with an application...”
- Be precise. Statements of definitions, propositions, lemmas and theorems should all be clear and correct. You may use looser language when motivating a definition or result, but statements and proofs must be mathematically precise.
- Have a classmate or someone else read over your draft, checking for grammatical errors, convoluted sentences, confusing explanations, etc. Ask them to point out the parts they like as well so that those don't get lost in subsequent drafts.
- The best way to learn to write a good paper is to read lots of other papers. In our case, read at least one (the paper you will/did present in class). As you read it, make notes about what works well and what doesn't work so well. Try to implement the former and avoid the latter.
- Use a spell checker before you print. Watch out for homonyms (e.g. to, too, two). Avoid split infinitives (e.g. to go boldly, not to boldly go). Figure out the difference between less and fewer and use them correctly (hint: it comes down to continuous versus discrete quantities).