MSc in Mathematical Modelling and Scientific Computing Special Topic Tips

Michaelmas Term 2025

- Make sure the mathematics described in the project is correct.

- Make sure the report is well presented, both in terms of the layout and the clarity of the mathematical expression. In particular, check for typos and errors both in the English and the mathematics. Avoid using non-standard notation, having the same notation for different things and different notation for the same thing.

- Reference carefully. The report should demonstrate that a range of sources has been consulted — references do not form part of the page count so you can list as many as you use. Everything listed in the references should be cited from the text.

- Use more than one source. While the special topic should include material beyond what is covered in lectures, it should not just follow one research paper or one book chapter closely. Considering (and possibly comparing) a range of sources is important.

- Additional details should be provided over and above what is given in the source materials. For example, extra steps in the calculations could be given, alternative methods could be used, there could be an alternative derivation of a model along with a critical discussion of the modelling ideas or there could be an implementation of a numerical method. Be sure to demonstrate a good understanding of the source materials.

- If you investigate a numerical method, consider accuracy and the effects of any input parameters. Also be sure to list details of all parameters used so that your work is reproducible.

- Explain what you are doing clearly and be sure to motivate what you do, i.e. describe why you take the approach you do.

- When implementing an algorithm, give some justification as to why you believe your results are correct (e.g. do an implementation for a problem with a known solution as a first example).

- Use a formal style of writing, so avoid abbreviations (use "it is" rather than "it's" etc). However, it is standard practice to write in the first person plural, i.e. use "we". For example you can say "Next we go on to discuss blah blah". (Think of it as a shared experience between you, as the author, and the reader.)

- Consider revisiting the "Badly written document" from Week 3 to see lots of pitfalls to avoid in your writing.