

Scientific Computing

Correction Rubric Assignments

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The assignments comprise three sets of questions that need to be answered in a report. The report is graded on the correctness of the answers to the questions in the assignment set and on the quality of the report writing itself (outline). The grading scheme that is used to do this is given in figure 1.

Outline

	Weight	Aspects
Structure	5%	Does the report include introduction, method and/or theory, results and discussion sections?
Textual	5%	Are sentences correct? Are there no spelling or grammatical mistakes? Is overall language usage scientific?
Methods	5%	Is your approach (i.e. algorithms) well-explained? Is there discussion of theory where necessary?
Tables and figures	5%	Are all tables and figures readable? Is there a description that can be understood independently from the text? Is there a legend where necessary and are labels correct ?

Content

	Weight	Aspects
Answers	80%	Are all answers to the exercises correct?

Bonus

Bonus points are added to the number of points obtained for the exercises. Example: if you had 12.5/13 points for your answers and a full bonus point, then the mark for the content is 13.5/13. This will count towards 80% of your assignment grade. The final mark can never be greater than 10 and bonus points are not passed on to the next assignment.

Figure 1: Grading scheme for each report.

Outline

More specifically, the points that are checked for each part in the outline at least include but are not limited to the following breakdown.

Structure

- The report has a logical structure: introduction, theory, methods, results, discussion, and conclusion.
- The introduction contains a description of the problems that are discussed, their relevance in science (where do we find them, why are they useful?), and an outline of the report.
- Subsections and separate paragraphs are used when necessary.
- The report does not exceed the maximum length (8 pages).

Methods

- All equations are correct.
- All variables are introduced correctly and when relevant their physical interpretation is given.
- In particular, discretization is explained correctly.
- Important steps in derivations are given.
- Experiments and simulations that are performed are explained in detail.
- Relevant parameter settings for simulations are given.

Textual

- Text is written in the present tense, possibly with the exclusion of the methods section.
- No use of “we”, “you”, “I”, etc.
- Variables and such are *italicized* in the text.
- Matrix and vector notation is in **bold**.
- Spelling and grammar is correct.

Tables & Figures

- Figures and tables include a caption that should be able to explain what is in the figure/table without having to read the text.
- Graphs contain axis titles with appropriate units.
- Axis labels (the numbers on the axes) are readable.
- The significance of the colours used in the graph are explained.
- Figures are large enough; they can be easily read when printed on A4 paper.
- Limit the number of lines shown in your graph to approximately 5 (if you need more, there is likely a better way to show it)
- Tables, figures, and pseudocode should always be referenced in the text.

Content – General

In general, the results and answers to the questions in the assignment should be accompanied with interpretation and discussion where appropriate. When a specific plot is asked, it is not sufficient to merely show the plot. Interpretation and discussion of the plot is required to get full points for the question.

This can consist of three steps:

1. **Observe** Make an observation about the results. For example: the concentration of nutrients is lowest near the diffusion-limited aggregation structure.
2. **Interpret** Interpret the result. The structure absorbs the nutrients, hence the nutrient concentration decreases in its vicinity.
3. **Discuss** Relate the results back to theory when possible. Are the results to be expected? If not, what is different?