Writing Scientific Reports: Guidelines

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Form

Form I

- Word processor:
  - LaTeX
  - Word
  - Anything similarly applicable is Ok, of course
- Simple, clear layout
  - The content is important
  - Layout should support understanding it
- Clear structure
  - Use sections, subsections, and so on

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Form II

- Consistent layout of text elements
  - For example, same style for definitions throughout
  - No unmotivated switching of style or fonts
- Support understandability
  - Keep sentences short (this is not a writing contest in general)
  - Be clear, avoid ambiguous or vague descriptions
  - Avoid unstructured, long paragraphs
  - Do not make too many words if other means are available
  - Use examples
  - Use figures (likely re-used from presentation)
  - Avoid typos

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Structure

Structure I

- *Title page*
  - Title
  - Name of the author
  - Name of seminar
  - Appropriate date and time
- *Introduction*
  - Motivate the contents (“Why”)
  - Outline related work that matters: the scientific foundation of the “Why”
  - Tell what will be discussed in the following (“What”)
  - Brief description of sections in the following (optional)

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Structure II

- *Problem definition*
  - Provide a clear, formal description of the problem you address in the following
  - The formal summary of the “What”
- *Methods*
  - Provide all theory in sufficient formal detail
  - Provide all algorithms in sufficient formal detail
  - Mention anything else methodical that matters in practice
  - Reproducibility is key

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Structure III

- *Evaluation*
  - Describe the data
  - Describe the (likely computational) experiments that were run
  - Refer back to Methods wherever needed
  - Again, reproducibility is important
- *Discussion / Summary / Outlook*
  - Discuss the results achieved in a larger context
  - Summarize achievements
  - Mention open problems that remain
  - Outline possible future research that may help to overcome remaining issues
- *Literature*
  - Cite everything from which you draw in the text
  - List all cited work at the end of the report

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Content

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- Logical coherence
  - Content provided optimally builds on contents previously provided (but not on contents to be provided later)
  - Mention things that matter as closely as possible to where they are needed
  - Again: Introduction, Contents, Summary
- Work out and stress a main message
  - Provide main message in the Introduction
  - Keep particular focus on it in all that follows
- Keep things consistent and as simple as possible
  - Write only what you understand
  - "Lying" or "hiding" no longer allowed though; all necessary details to be provided

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