Title:

Informative, specific, concise, encouraging, covers content, 7-10 words (consider using the research question and/or its answer).

Authors

Names and affiliations
All authors should have made a meaningful contribution to the contents of the paper (i.e., you should be answer the question "who did what in this paper?").

Abstract

Problem, action, result.
Readable by itself, without reading the paper.
Brief motivation
State objective
Results
Conclusions
Implications
Present tense. No literature references, no abbreviations.

Introduction

Introduce context of the topic, select level that is appropriate for the intended audience, use present tense.
Further zoom in and outline gap in knowledge, present tense.
Give overview of previous relevant work on this (and closely related) knowledge gap, past tense.
Explicit statement of research question.
Briefly describe your approach to answering this question (e.g., modeling, data collection), present tense.

Method

Data collection or modeling method with enough detail, supporting material and references to make it possible for other researchers in the field to reproduce the work.
Present tense.
Motivate all choices and be as specific as possible.
For forward modeling papers; make sure to address and motivate 1) model domain choice, 2) equations, 3) boundary conditions and 4) material properties.

Results

What you found.
Present tense.
Show/illustrate results as much a possible in figures.
Figures: no unnecessary details, well readable.
Describe in text what you see in the results/figures.
Only results, no interpretation!
Only describe your own results, no comparison with literature.
Before writing prepare all tables and figures.
Select only most important figures, but include sufficient data to allow reader to interpret results.
Aim is to be as specific (quantitative) and informative as possible.

Analysis[1)]

Your interpretation/explanation of your results.
Present tense.
Be clear, concise and logical.
For long paper; remind objectives.

For each objective describe how the results contribute to meeting that objective, cite evidence from literature that supports or contradicts your results and explain this. These are your conclusions.

Discussion

Present tense.
Repeat research question.
For long papers: briefly summarize main results.
Indicate implications of your conclusions of previous section.
Describe limitations of research method for answering the research question.
Projections/implications follow logically from your work.
Ask yourself whether you have really found proof or have you found support for your preferred interpretation?

Conclusions

Your most important (maximum 4) conclusions from the analysis section.
Avoid abbreviations, citations.
No new results, projections/interpretations and references to literature.

Acknowledgements

Who contributed to the work and how.

References

Complete (every reference in here and vice versa) and exactly correct (triple check!).

[1)] Separating Results and Analysis may not always work well in a paper. For instance, when analysis of a first round of results motivates subsequent work. This often case occurs in modeling papers.

Scientific referencing

A scientific paper consists of a series of statements,

1. some of which are common knowledge,
2. other statements have been proven to be true, but this knowledge is not generally known,
3. yet other statements reflect an opinion, hypothesis or non-conclusive observation,
4. then there is the part of the paper which represents your (new) contribution.

References link the paper with published work. References are required for each statement of type 2 and type 3. Whether to include references for statement type 1 is the most difficult part of writing a paper. Before you start writing a paper, you need to think about your audience, because that defines what you may expect to be common knowledge. As a rule of thumb it is good to add a bit more background than you consider critical/minimal.

When you add a reference to your paper, it should be for one or several of the following reasons;

- The referenced manuscript provides important additional information for the context of your paper.
- The referenced manuscript presents for the first time a concept or observation which is relevant for your paper.

In addition, you should keep the following hierarchy in mind when selecting references;

- Preferably, the referenced manuscript is published in a peer-reviewed journal, book or Internet site.
- You can reference manuscripts that are in press in peer-reviewed media.
- If really necessary, you may reference a published book that is generally available and in English.

- If really really necessary you could reference an oral communication with an internationally acclaimed scientist.
- Do not reference anything else.

Common errors are;
- That authors do not cite the first paper that presents a concept or observation, but reference a paper which itself cites earlier work –often this is recognizable by the abbreviation for "for example" (e.g.) at the beginning of the reference, which thus is highly suspect! [2)]
- On a related issue; the oldest reference commonly is defined by the date when a journal became available in electronic form.
- That authors cite papers which are irrelevant in the context of their paper.
- That authors misquote a manuscript as having concluded something, which turns out to be incorrect when you go to that manuscript and carefully read it.
- Typos.

[2)] When is using "e.g." correct? As the abbreviation means "for example" this is what is can be used for, for instance to quote a recent example of a type of study. Note however that giving an example conveys the sense that such a quote is optional and could be left out.