



[Template]

Master's Thesis

**[or, e.g. Project Report, Internship Report,
Bachelor's Thesis]**

Title of Thesis

Submitted by:	Gyro GEARLOOSE
Registration Number:	LAV_xy_uv_ab
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Academic Assessor:	John Doe [your assessor at the University of Applied Sciences]
Date of Submission:	DD Month YYYY [date of submission of the final version, which must be identical with the electronic version]

[Only for Bachelor's and Master's Theses:] Declaration of Academic Honesty

I hereby affirm in lieu of an oath that the present master's thesis entitled

"Conceptual Design and Construction of a High-Altitude Research Aircraft with a Seating Capacity of 800 in Consideration of Modern Composite Materials" [exactly the same title as on the title page]

has been written by myself without the use of any other resources than those indicated, quoted and referenced.

Graz, [date of submission:] DD Month YYYY

NAME, SIGNATURE

[Note: The omission of this section in other written papers and reports does not absolve you from the obligation to indicate, quote and reference all resources used with the same academic rigour.]

Preface

The Preface precedes the Table of Contents. In the Preface, the author usually comments on marginal conditions affecting the thesis, for example its origin, special circumstances under which it was written or realities worth mentioning beyond the level of content.

In the Preface (and only in the Preface) the author can incorporate personal remarks into the text. These could be acknowledgements and words of gratitude to his or her family, friends, the University of Applied Sciences, a company or supervisor(s)/assessor(s). Only in this section of their theses can authors use personal pronouns, such as *I*, *me*, *you* and the like.

Table of Contents

Abstract.....	iv
Kurzfassung	v
List of Figures.....	vi
List of Symbols	vii
1. Introduction	1
2. Methods	9
2.1. Mathematical Foundations	9
2.1.1. Basic Arithmetical Operations	9
2.1.2. Finite-Element Methods (FEM)	10
2.1.3. Methods – 2nd Subheading (Structural Level).....	10
2.2. Technological Resources	10
2.2.1. Hardware	10
2.2.2. Software	10
2.3. Design Process	10
2.3.1. Conceptual Design	10
2.3.2. Final Design.....	10
2.3.3. FEM-Computation	10
3. Results	11
3.1. Results – 1st Subheading (Structural Level).....	11
3.1.1. Results – 2nd Subheading (Structural Level)	11
3.1.2. Results – 2nd Subheading (Structural Level)	11
3.2. Results – 1st Subheading (Structural Level).....	11
4. Discussion	12
4.1. Discussion of Methods	12
4.2. Discussion of Results	12
5. Conclusions	13
References	14
Appendix A: Source Code or Similar Appendices	16
Appendix B: Style Sheet for Creating the References List	17

Abstract

The Abstract is an important section for readers who want to gain a quick overview of the background and results of the current thesis. It should, therefore, contain a concise depiction of the research problem, the methods applied, the results obtained and the conclusions drawn from the investigations. Last but not least, it also serves the purpose of intriguing readers and arousing their interest in the succeeding chapters.

The Abstract follows the structure and organisation of the main part (Introduction – Methods – Results – Discussion) and presents the major findings of the author on a maximum of one page. All structural parts of an abstract are of equal length. In contrast, the Summary at the end of the thesis lays greater emphasis on the results and their discussion (evaluation of results). The Abstract, written in English and in German (see next page), contains no formulae, figures, abbreviations, quotations or headings. The text in this section is divided into four paragraphs corresponding to the structure mentioned above. The most natural tense for an abstract is the present tense.

Please note that the institute will publish the title and abstract of any thesis even if it has been classified for restricted use by a company. Therefore, do not exceed the maximum length of one page for the Abstract.

Kurzfassung

Die deutsche Kurzfassung der Arbeit folgt der Gliederung in Einleitung – Methoden – Ergebnisse – Diskussion. Die wichtigsten Aussagen der Arbeit werden auf einer halben bis maximal einer Seite zusammengefasst. Die Regeln für die Verfassung des englischen Abstracts gelten auch für die Erstellung der deutschen Kurzfassung (siehe vorhergehende Seite). Die deutsche Kurzfassung muss denselben Inhalt aufweisen als der englische Abstract.

List of Figures

Insert the List of Figures HERE, using the following format:

Figure 1: Caption (description) (with corresponding reference if necessary, e.g. (Thomson, 1999, p.8) or [6, p.8])	2
Figure 2: Caption (description) (with corresponding reference if necessary, e.g. (Thomson, 1999, p.8) or [6, p.8])	7
Figure 3: Caption (description) (with corresponding reference if necessary, e.g. (Thomson, 1999, p.8) or [6, p.8])	9
Figure 4: Caption (description) (with corresponding reference if necessary, e.g. (Thomson, 1999, p.8) or [6, p.8])	10

List of Symbols

If necessary, insert a List of Symbols or further lists (for example, List of Tables, List of Abbreviations) HERE.

1. Introduction

The curricula leading to the academic degrees of Bachelor of Science in Engineering and Master of Science in Engineering at the Institute of Luftfahrt/Aviation require students to carry out research and project tasks which have to be documented according to scientific and technical criteria. The present guidelines are applicable to all project reports, bachelors' theses, masters' theses and comparable text types written in English and submitted to the Institute of Luftfahrt/Aviation. In certain cases, exceptions to this template can be made by academic assessors or negotiated on the suggestion of students. Exceptions may be granted if a thesis develops from the cooperation with a company which insists on its own corporate design for written texts, as long as such a proposition does not undermine academic standards. Students need to negotiate any changes to the regular procedure with their academic assessors before they start working on their thesis. Any such changes are only valid if the academic assessor in question has given his or her written consent. In any case and particularly if changes have been granted, students need to pay special attention to the consistency of the form in their thesis.

This template should ensure a consistent and uniform documentation of project work and research carried out at the Institute of Luftfahrt/Aviation as well as strengthen the institute's corporate identity. The template is not a limitation of creative scope because students can make use of their creative power when they fill the formal framework with content. Formal aspects of scientific writing not regulated in this document have to be implemented in agreement with common international publication practices.

The following paragraphs discuss the basics of scientific writing and stylistic matters. Principles of academic writing are published in a multitude of style guides, some of which are included in the References section without any rating at the end of this template (Kirkman, 2005; McMillan and Weyers, 2010; Van Aken and Hosford, 2008) or [3, 4, 7]. (Instead of the author-date system, students can also use the number system for in-text references. If a reference relates to a complete work, no page numbers are necessary, but if the reference relates to an indirect or a direct quotation from the work in question, then page numbers have to be added in both referencing systems.) Academic texts follow the principle of moving from general facts to the specific formulation of problems at all levels (in the entire thesis, all

chapters and subchapters, single paragraphs). Furthermore, any scientific thesis reports results, and that is why the treatment of the subject should be results-oriented. This principle will be explained in more detail later on.

The first sentences in a written report or thesis are often the most difficult ones. A technique for clearing this hurdle is the top-down principle for planning scientific texts. As a first step, the author defines the first structural level of the text. In accordance with this template, the first structural level is already given in the form of Introduction – Methods – Results – Discussion. As a second step, the author divides each chapter into subchapters (see the Methods section below for an example). If required, the subdivision is continued at the third structural level. Any further subdivisions should be avoided for reasons of clarity. However, all subchapters are ordered logically by assigning a heading to each paragraph as a reminder of the content to be covered in the respective paragraph. In this way, the author generates a list of key words in the organisational format of the final version. As a final step of the top-down approach, each paragraph heading is replaced by full-text wording.

One paragraph should comprise between 10 and 15 lines in order to increase the readability of the entire report or thesis. The transition from one paragraph to another is formally marked by a blank line or larger line spacing and the indentation of the first line of the new paragraph. (Leave the space of one standard tab stop free from the left margin at the beginning of paragraphs.) However, do not indent the first line of the first paragraph in a chapter or subchapter (see the layout of the paragraphs in this template). As in the area of stylistic features, great importance has to be attached to structural consistency and uniformity throughout the entire report or thesis. Authors have the freedom to decide whether they want to format their text by means of left-aligned or block justification (as shown in this paragraph). While block justification often tends to be visually more appealing, left-aligned justification is appropriate for small columns or lists because the large spacing between words resulting from block justification would be disturbing. Further exceptions are figure captions and table headings, which are also always left-aligned (see below). There are two options for the font type of the running text, and these are serif (“Times New Roman”) or sanserif (“Arial”) fonts. However, different font types should not be mixed within the same document. This template shows “Arial” for headings and “Times New Roman” for text in order to illustrate two widespread types, but authors should choose only one of them for both,

headings and text. English texts do not use automated hyphenation (syllabification); therefore, this function has to be deactivated in the word processing program employed.

Within paragraphs, long and short sentences should alternate to make the text dynamic and intriguing. Long and complicated multi-clause sentences should be avoided because they decrease readability and clarity. Use active voice wherever possible, since active constructions express initiative and are easier to understand than passive constructions. (Passive voice *is characterized* by a form of the auxiliary verb *be* and the past participle, as demonstrated in this sentence.) Sentences with excessive nominalisation appear stiff; hence authors should apply verbs, adjectives and adverbs in their original forms and not as nouns.

In contrast to German, which tends to be more direct in scientific writing, English-speaking authors often rely on the technique of “hedging” or reducing the certainty of their statements by words such as *could*, *may*, *seem*, *tend*, etc. to avoid presenting their own findings as the only ones valid. In this way, they do not appear pompous and acknowledge that their efforts are merely a small contribution to the global endeavour of scientific research. However, facts, numbers, measurement results or formulae are rather unambiguous elements of scientific writing which should also be presented as such. In practical terms, the technique of “hedging” may be appropriate in sections where authors interpret their results, whereas in other sections more directness is required, so that “hedging” never interferes with the essential principle of clarity in writing. Whenever there is the danger of ambiguity or vagueness in a statement, the principle of scientific precision overrules the technique of “hedging”. In addition, the degree of “hedging” is also discipline-specific, which is why authors should consult their academic assessors on this issue.

Limit the features of the layout on each page to a minimum, for instance the placement of page numbers (pagination) and the use of running chapter headings. Page numbers are often centred at the bottom of the page. Running headers are usually left-aligned and refer to the current chapter heading of the first structural level. The pagination in the main part starts with the number *I* on the first page of the Introduction section. Each chapter of the first structural level starts on a new page after a page break. This principle enables the unambiguous connection between chapters and running chapter headings. Marginalia (comments in the margin of the running text) are not used in scientific and technical writing. The pages preceding the Introduction are numbered by Roman numerals (e.g. *i*, *ii*, *iii*, ... or *I*,

II, III, ...) to distinguish them from the main part. Footnotes¹ disrupt the text flow² and are difficult to set, even with modern word processing programs such as Microsoft® Word®.³ Therefore, do not use footnotes at all or reduce their number in a text to a minimum. In some cases, however, for example in legal texts, footnotes are indispensable, but even then each page should not contain more than three footnotes.

The principle of avoiding personal pronouns varies from discipline to discipline, and English-speaking authors tend to use more pronouns than German-speaking ones. Contrary to frequent recommendations and according to the institute's policy, authors should neither address the reader personally nor make themselves visible through phrases such as "I have ..." or "We discovered ...". Exceptions to this rule may be discussed with the responsible academic assessor. At all events, scientific style is objective, unemotional and free from value judgements (e.g. "very much", "fascinating"). Questions and fillers need to be avoided. Authors should explain all technical terms that the reader will probably not know when they first occur in a text. The same holds true for abbreviations, which are written out in full in brackets when they first occur in a text. Numbers are often written in figures ("340 seconds"), but using corresponding words is also possible ("three hundred and forty seconds"). It is important to apply one or the other form consistently throughout a text.

In technical and scientific writing, formulae and equations occur frequently and pose problems in terms of type setting and layout. In order to increase readability, formulae are not part of the running text but are treated like a separate paragraph. The author has to incorporate any formula into the text by referring to it in the paragraph immediately preceding the formula as Equation (1) (marked by a colon at the end of the sentence):

$$E = mc^2 \tag{1}$$

If formulae and equations are quoted from a source, the corresponding in-text reference has to be added. This is an example with Equation (1) (Thomson, 1999, p.8) or [6, p.8]. Variables (x , y), physical and geometrical quantities as well as terms of functions (e.g. $f(x)$) are set in

¹ This is the text of the footnote.

² They divert the eye to the bottom of the page.

³ Or other tools like OpenOffice.

italics, whereas numbers, constants (e.g. π , e), units, indices, functions (e.g. \sin , Σ) or chemical symbols are set in vertical style. An example is given in Equation (2):

$$f(x, y) = e^x + \sin(2\pi y) \quad (2)$$

Formulae are consecutively numbered, and the number is included in brackets on the right-hand side. The sources of formulae need to be quoted in the text and listed in the References section. The formula itself can be left-aligned or centred. Again, it is important that the chosen format is applied consistently throughout the entire text. Experience has shown that tables with invisible margins provide a suitable frame for inserting objects such as formulae into a text. With tables, the chosen layout remains intact even after changes have been made to the text (e.g. page breaks).

If variables form part of the text, their meaning has to be explained at their first occurrence. An example follows: “Electrical current I increases with growing voltage U .” Variables are never placed at the beginning of a sentence, as the following negative example shows. “ f decreases with growing wave length.” Better: “The frequency f decreases with growing wave length.” In mathematical formulae, the multiplication sign is usually left out. It is only included if the operation should be especially emphasised or if the sign increases the readability of the formula.

Figures are incorporated into the text in a similar way as formulae. They are placed close to the paragraph which refers to them, preferably either at the top of a page or at the end of the corresponding paragraph (Figure 1). The figure caption has to be used consistently throughout the document (e.g. “Figure”, “Fig.”). Similar to formulae, the combination of the figure and its caption facilitates the final formatting of the text. The font size of captions should be one point smaller than that chosen for the running text (e.g. 11 pt instead of 12 pt). Also figures are treated like a separate paragraph and not incorporated into the text. They should be left-aligned or centred on the page.



Figure 1: Caption. The caption in combination with the figure has to be self-explanatory without relying on further explanations in the text. However, each figure has to be referred to in the preceding or succeeding paragraph. (with corresponding reference if necessary, e.g. (Thomson, 1999, p.8) or [6, p.8])

Tables are used for the systematic and compact depiction of data. Like figures, tables should also be placed immediately before or after the paragraph which refers to them. Tables are left-aligned on the page (Table 1), since this supports a calm typeface and layout. In contrast to figures, tables use headings, again in consistent style throughout the document (e.g. “Table”, “Tab.”).

Table 1: Heading. The heading in combination with the table has to be self-explanatory without relying on further explanations in the text. However, each table has to be referred to in the preceding or succeeding paragraph. (with corresponding reference if necessary, e.g. (Thomson, 1999, p.8) or [6, p.8])

All figures and tables have to be mentioned in the running text. If words, figures or tables are taken from books, journals, web sites or similar sources, these sources have to be professionally referenced. (Not referencing material produced by others equals theft of intellectual property.)

The exact and detailed bibliographical information on each source is included in the References section at the end of the report or thesis. This section does not contain any literature for further reading. Sources are indicated and referenced in the running text, in figure captions and table headings but never in chapter headings. All references have to include the corresponding page number(s) from the original sources quoted. References in the text can follow one of three styles: (a) numbers in square brackets related to the alphabetically ordered References section (e.g. [2, p.56] or [5, p.44] or [6, p.8]); (b) references numbered

continuously according to their occurrence in the text; or (c) the combination of the last name(s) of the author(s), the year of publication and the page number(s). If a publication has more than two authors, the reference provides the name of the first author with the addition of “et al.” (e.g. (Flühr, 2010, p.56) or (Sporer-Fellner et al., 2009, p.44) or (Thomson, 1999, p.8). Corresponding to the three cases for in-text referencing, the References section itself can be arranged in three different ways: (a) alphabetically and by serial numbers, starting with “[1]” for the first entry; (b) by serial numbers starting with “[1]” in accordance with the occurrence of the quotations in the text; (c) just alphabetically by the authors’ last names without numbers. However, alphabetically arranged references sections are preferable to those that only use numbers. Even if an author is mentioned together with the title of his or her work in the running text, the complete and detailed bibliographical information has to be listed in the References section at the end of the report or thesis. Every single phrase and sentence taken from a source needs to be unmistakably referenced at the exact location where it is used in the text. Global quotations of complete paragraphs, subchapters and chapters are not permissible.

Depending on academic disciplines and publishers’ policies, the formatting of entries in lists of references varies considerably, and up to this date no international standards exist for regulating this area. The References section in this template has been adopted from a renowned international aeronautical organisation, the American Institute of Aeronautics and Astronautics (AIAA) [1]. Reports and theses submitted to the Institute of Luftfahrt/Aviation have to follow AIAA style. Exceptions to this rule can be granted in written form by the academic assessor if certain disciplines or research topics require it, but such changes have to be communicated before students start writing their reports or theses.

Further lists not discussed here (e.g. an Index of key words) can be added in the Appendix. For the final formatting of the report or thesis, it is advisable to activate the spellchecker and grammar checker provided by the word processing software used. When working on a text for a long time, authors tend to overlook grammatical and syntactical errors, and they cannot identify spelling and punctuation mistakes anymore. (The brain reads what it wants to read.) Before submitting a report or thesis, it makes sense to ask friends or colleagues to proofread it. Together with the final version of the document, a printer-independent version needs to be generated (e.g. in Adobe® pdf-format, PostScript) because varying printer settings can massively change the layout of a text.

The Introduction discusses the background of the research problem as well as the structure and specifics of the report or thesis. This section introduces the reader to the subject matter of the investigation. It has to include a literature review of works published in the subject area of the present research problem, and the author needs to derive his or her motivation for the thesis from this overview of current research. The most natural tense for the Introduction is the present tense, which can be complemented by the present perfect if appropriate.

The Introduction in this template is longer than the other main sections, as it includes guidelines for writing scientific reports, papers and theses. In a scientific report, paper or thesis, however, all main parts (Introduction – Methods – Results – Discussion) should be of similar length. It is not advisable to give a preview of the subsequent chapter in the text. (~~The next chapter describes the methods used.~~) Furthermore, expressions such as *this chapter covers* should be avoided. Such formulations are only used in this template to explain the purpose of each chapter to students.

2. Methods

The second chapter describes the methods used for solving the current research problem and for producing the results to be discussed later. Again, as a rule, the logical structure of this section moves from general to specific information. This means that the author first discusses general principles (e.g. mathematical, technical or economic) relevant to his or her thesis. Nevertheless, the author should avoid reproducing general knowledge and merely cover subject areas with which experts in the corresponding field are probably not familiar. For example, it can be assumed that every expert knows the basic theorems of differential and integral calculus, but special techniques for solving a certain integral need to be explained. From a results-oriented point of view, the chapter Methods merely describes the way to the results presented in a separate section. The chosen depiction has to enable other working groups to comprehend the methods applied. Abortive attempts and wrong paths towards a solution are not part of this section (even if it hurts).

The remainder of this section illustrates the structural levels of the chapter Methods in technical reports and theses. It is necessary to include at least one introductory paragraph between two structural levels to guide the reader through a thesis. For this section, the most common and natural tense is the past tense.

2.1. *Mathematical Foundations*

For solving the xyz-problem during the computation and design of the aircraft system to be developed, the research team employed the finite-element method. ...

The following sections demonstrate the above-mentioned top-down approach to scientific writing, using the example of basic arithmetical operations. For this purpose, the paragraph headings are set in *italics*.

2.1.1. Basic Arithmetical Operations

Addition (Heading/Key word of the first paragraph in Chapter 2.1.1. discussing basic arithmetical operations). If required, this key word can be further subdivided logically in another step or replaced by running text.

Subtraction (Heading/Key word of the first paragraph in Chapter 2.1.1. discussing basic arithmetical operations).

Multiplication.

Division.

2.1.2. Finite-Element Methods (FEM)

Text

2.1.3. Methods – 2nd Subheading (Structural Level)

Text

2.2. *Technological Resources*

Introductory paragraph

2.2.1. Hardware

Text

2.2.2. Software

Text

2.3. *Design Process*

Introductory paragraph

2.3.1. Conceptual Design

Text

2.3.2. Final Design

Text

2.3.3. FEM-Computation

Text

3. Results

This section presents the results obtained. Since results are universally valid, the most natural tense for this part is the present simple. The depiction of results relies on the complete range of forms common in engineering disciplines: tables, graphs, diagrams and the like. It should be mentioned that in this chapter the results are presented without evaluating or interpreting them. A critical analysis and an interpretation of the results as well as the implications they have on the whole scientific field are reserved for the chapter Discussion.

3.1. *Results – 1st Subheading (Structural Level)*

Introductory paragraph

3.1.1. Results – 2nd Subheading (Structural Level)

Text

3.1.2. Results – 2nd Subheading (Structural Level)

Text

3.2. *Results – 1st Subheading (Structural Level)*

Text

4. Discussion

Introductory paragraph

4.1. *Discussion of Methods*

In this section, the applied methods are critically examined if this seems appropriate. Comparisons with other working groups and researchers (quotations and references) should help the author to evaluate his or her own thesis. This section may also suggest possible improvements in the course of further studies.

4.2. *Discussion of Results*

This part critically examines and interprets the results obtained. It further analyses and evaluates their significance in connection with the overall aims of the thesis and in the context of the respective scientific and technological fields. It also compares the current results with those presented in other scientific publications (quotations and references). The author should draw conclusions from the results about their plausibility, meaningfulness and universal validity. The most natural tense for the discussion of methods and results is the present tense.

5. Conclusions

The Conclusions section follows the organisation of the main part (Introduction – Methods – Results – Discussion) and repeats the most important findings and their implications in new words. Special emphasis lies on the results obtained and the conclusions drawn from the discussion (evaluation of results). The most common tense for the Conclusions section is the present tense, followed by the past tense.

An outlook for future research is part of the Conclusions section and completes the current thesis, for example by suggesting ways to improve the weak points identified in the Discussion section or by giving the prospects for further theses founded on the results presented. For the outlook, authors should choose the most natural tenses as required (future forms).

References

Students need to choose either the alphabetical author-date format or the numbered format below and align it with their in-text references. This list needs to include the full bibliographical information on all sources used, also those quoted in the Appendices.

[References list for literature quoted in this template in the author-date system]

American Institute of Aeronautics and Astronautics (AIAA), “Author Kit and Meeting Papers Templates” [web site], URL: http://www.aiaa.org/documents/home/Papers_Template_0907r.dot [cited 21 January 2010].

Flühr, H., *Avionik und Flugsicherungstechnik*, 1st ed., Springer-Verlag, Heidelberg, Germany, 2010.

Kirkman, J., *Good Style: Writing for Science and Technology*, 2nd ed., Routledge, Taylor and Francis, Abingdon, UK, 2005.

McMillan, K., and Weyers, J., *How to Write Dissertations and Project Reports*, new ed., Smarter Student Series, Prentice Hall, Pearson, Harlow, UK, 2010.

Sporer-Fellner, S., Flühr, H., Haider, M., Kappertz, P., and Hering, H., “Evaluation of a Mobile Horizontal Radar Display Filter for Air Traffic Controllers,” *International Journal of Applied Aviation Studies*, Vol. 9, No. 1, 2009, pp. 43–55.

Thomson, S., “A Fantastic Paper on Everything,” *International Expert Studies*, Vol. 24, No. 3, 1999, pp. 7–21.

Van Aken, D. C., and Hosford, W. F., *Reporting Results: A Practical Guide for Engineers and Scientists*, Cambridge UP, Cambridge, England, UK, 2008.

[References list for literature quoted in this template in the number system]

[1] American Institute of Aeronautics and Astronautics (AIAA), “Author Kit and Meeting Papers Templates” [web site], URL: http://www.aiaa.org/documents/home/Papers_Template_0907r.dot [cited 21 January 2010].

[2] Flühr, H., *Avionik und Flugsicherungstechnik*, 1st ed., Springer-Verlag, Heidelberg, Germany, 2010.

[3] Kirkman, J., *Good Style: Writing for Science and Technology*, 2nd ed., Routledge, Taylor and Francis, Abingdon, UK, 2005.

- [4] McMillan, K., and Weyers, J., *How to Write Dissertations and Project Reports*, new ed., Smarter Student Series, Prentice Hall, Pearson, Harlow, UK, 2010.
- [5] Sporer-Fellner, S., Flühr, H., Haider, M., Kappertz, P., and Hering, H., “Evaluation of a Mobile Horizontal Radar Display Filter for Air Traffic Controllers,” *International Journal of Applied Aviation Studies*, Vol. 9, No. 1, 2009, pp. 43–55.
- [6] Thomson, S., “A Fantastic Paper on Everything,” *International Expert Studies*, Vol. 24, No. 3, 1999, pp. 7–21.
- [7] Van Aken, D. C., and Hosford, W. F., *Reporting Results: A Practical Guide for Engineers and Scientists*, Cambridge UP, Cambridge, England, UK, 2008.

Appendix A: Source Code or Similar Appendices

Appendices could include source code generated during work on the thesis or accompanying documents, such as legal texts.

Appendix B: Style Sheet for Creating the References List

Depending on academic disciplines and publishers' policies, the formatting of entries in References sections varies considerably, and up to this date no international standards exist for regulating this area. The Institute of Luftfahrt/Aviation has adopted and slightly adapted the style sheet from a renowned international aeronautical organisation, the American Institute of Aeronautics and Astronautics (AIAA) [1]. Reports and theses submitted to the Institute of Luftfahrt/Aviation have to follow AIAA style. Exceptions to this rule can be granted in written form by the academic assessor if certain disciplines or research topics require it, but such changes have to be communicated to students before they start writing their reports or theses. Reports, theses and papers have no style sheet in the Appendix.

Books, Contributions to Books

Main rule:

Author(s), *Title: Subtitle*, edition number {if given}, Series Name {if given: series number}, Publisher, Place, State/Country, date of publication {if required: chapter(s), pages}.

Explanation:

Publisher, place, and date of publication are required for all books. No state or country is required for major cities: New York, London, Moscow, etc. A differentiation must always be made between Cambridge, MA, and Cambridge, England, UK. Contributions to books require page numbers indicating the length of the contribution. If given, editors must be included. If a book has an editor or editors and no author(s) on the title page and if the reference is to the whole book and not to a specific contribution, the entry is listed under the editor's name. An abbreviation is added to the name(s): "(ed.)" for a single editor, "(eds.)" for multiple editors.

Examples:

Burghardt, M., *Einführung in Projektmanagement*, Publicis-MCD-Verlag, Erlangen, Germany, 1995.

Flühr, H., *Avionik und Flugsicherungstechnik*, 1st ed., Springer-Verlag, Heidelberg, Germany, 2010.

Oates, G. C., (ed.), *Aerothermodynamics of Gas Turbine and Rocket Propulsion*, AIAA Education Series, AIAA, New York, 1984.

Peyret, R., and Taylor, T. D., *Computational Methods in Fluid Flow*, 2nd ed., Springer-Verlag, New York, 1983, Chaps. 7, 14.

Tatzl, D., “English for Aviation and the ICAO Language Proficiency Requirements,” *Contexts of English in Use: Past and Present: A Festschrift for Peter Bierbaumer on the Occasion of the 40th Anniversary of His Career at the University of Graz*, edited by M. Reitbauer, N. Campbell, S. Mercer and R. Vaupetitsch, Braumüller, Wien, 2007, pp. 77–88.

Periodicals

Main rule:

Author(s), “Title,” *Periodical Name*, Vol. {volume}, No. {number}, date of publication, pp. {pages}.

Explanation:

All of the preceding information is required. The journal issue number (“No. 11”) is preferred, but the month (Nov.) can be substituted if the issue number is not available. Use the complete date for daily and weekly publications. Transactions follow the same style as other journals; if punctuation is necessary, use a colon to separate the transactions title from the journal title. Page numbers indicate the length of an article. Pages quoted can be added, but since they are included in the text reference, this is not necessary. Articles completely interrupted by intervening sections list all the pages that contain passages of that article.

Examples:

Dornheim, M. A., “Planetary Flight Surge Faces Budget Realities,” *Aviation Week and Space Technology*, Vol. 145, No. 24, 9 Dec. 1996, pp. 44–46.

Sporer-Fellner, S., Flühr, H., Haider, M., Kappertz, P., and Hering, H., “Evaluation of a Mobile Horizontal Radar Display Filter for Air Traffic Controllers,” *International Journal of Applied Aviation Studies*, Vol. 9, No. 1, 2009, pp. 43–55.

Terster, W., “NASA Considers Switch to Delta 2,” *Space News*, Vol. 8, No. 2, 13–19 Jan. 1997, pp. 1, 18.

Vatistas, G. H., Lin, S., and Kwok, C. K., “Reverse Flow Radius in Vortex Chambers,” *AIAA Journal*, Vol. 24, No. 11, 1986, pp. 1871–1877, here pp. 1872, 1873.

Proceedings

Main rule:

Author(s), "Title," *Proceedings/Conference Name*, edited by {Name}, Vol. {volume}, Publisher, Place, State/Country, date of publication, pp. {pages}.

Explanation:

At a minimum, proceedings must have the same information as other book references: paper (chapter) and volume title, editor (if applicable), name and location of publisher, and page numbers. Do not include paper numbers in proceedings references, and delete the conference location so that it is not confused with the publisher's location (which is mandatory, except for government agencies). Frequently, CP or SP numbers (Conference Proceedings or Symposium Proceedings numbers) are also given. These elements are not necessary, but when provided, their places should be as shown in the examples below.

Examples:

Chi, Y., (ed.), *Fluid Mechanics Proceedings*, SP-255, NASA, 1993.

Morris, J. D., "Convective Heat Transfer in Radially Rotating Ducts," *Proceedings of the Annual Heat Transfer Conference*, edited by B. Corbell, Vol. 1, Inst. of Mechanical Engineering, New York, 1992, pp. 227–234.

Thompson, C. M., "Spacecraft Thermal Control, Design, and Operation," *AIAA Guidance, Navigation, and Control Conference*, CP849, Vol. 1, AIAA, Washington, DC, 1989, pp. 103–115.

Reports, Theses and Individual Papers

Main rule:

Author(s), "Title," report number/reference {if required: type of source such as Master's Thesis}, Place, State/Country, date of publication/submission {if required: chapter(s), pages}.

Explanation:

Government agency reports do not require locations. For reports such as NASA TM-85940, neither insert nor delete dashes; leave them as provided by the author. Place of publication should be given, although it is not mandatory, for military and company reports. Always include a city and state for universities. Papers need only the name of the sponsor; neither the

sponsor's location nor the conference name and location are required. Do not confuse proceedings references with conference papers.

Examples:

Chapman, G. T., and Tobak, M., "Nonlinear Problems in Flight Dynamics," NASA TM-85940, 1984.

Steger, J. L., Jr., Nietubicz, C. J., and Heavey, J. E., "A General Curvilinear Grid Generation Program for Projectile Configurations," U.S. Army Ballistic Research Lab., Rept. ARBRL-MR03142, Aberdeen Proving Ground, MD, Oct. 1981.

Tseng, K., "Nonlinear Green's Function Method for Transonic Potential Flow," Ph.D. Dissertation, Aeronautics and Astronautics Dept., Boston Univ., Cambridge, MA, 1983.

Electronic Publications

Main rule:

Electronic journals:

Author(s), "Title," *Periodical/Proceedings/Conference Name* [type of source], Vol. {volume}, No. {number}, Publisher {if required}, Place {if required}, State/Country {if required}, date of publication, pp. {if given: pages}, URL: <http://www.xxx.yyy> [cited dd month yyyy].

Web sites:

Web site owner, "(Sub)Title," [web site], URL: <http://www.xxx.yyy> [cited dd month yyyy].

Explanation:

CD-ROM publications and regularly issued, dated electronic journals are permitted as references. Archived data sets also may be referenced as long as the material is openly accessible and the repository is committed to archiving the data indefinitely. References to electronic data available only from personal web sites or commercial, academic, or government ones where there is no commitment to archiving the data are not permitted (see Private Communications and Web Sites). Always include the citation date using [cited dd month yyyy] for online references. Break web site addresses after punctuation, and do not hyphenate at line breaks. CD-ROMs require the publisher, place of publication, and state/country of publication.

Examples:

Atkins, C. P., and Scantelbury, J. D., “The Activity Coefficient of Sodium Chloride in a Simulated Pore Solution Environment,” *Journal of Corrosion Science and Engineering* [online journal], Vol. 1, No. 1, 1997, Paper 2, URL: <http://www.cp.umist.ac.uk/JCSE/vol1/vol1.html> [cited 13 April 1998].

Richard, J. C., and Fralick, G. C., “Use of Drag Probe in Supersonic Flow,” *AIAA Meeting Papers on Disc* [CD-ROM], Vol. 1, No. 2, AIAA, Reston, VA, 1996.

Vickers, A., “10-110 mm/hr Hypodermic Gravity Design A,” *Rainfall Simulation Database* [online database], URL: <http://www.geog.le.ac.uk/bgrg/lab.htm> [cited 15 March 1998].

Electronic books are permitted as references only if they were originally published as electronic books. In such a case, the same rules apply as for printed books (see “Books, Contributions to Books”). In addition, identify the type of source after the title (“[e-book]”) and include the network address and citation date at the end of the entry.

Computer Software

Explanation:

Include a version number and the company name and location of software packages.

Examples:

TAPP, Thermochemical and Physical Properties, Software Package, Ver. 1.0, E. S. Microware, Hamilton, OH, 1992.

Patents

Explanation:

Patents appear infrequently. Be sure to include the patent number and date.

Examples:

Scherrer, R., Overholster, D., and Watson, K., Lockheed Corp., Burbank, CA, U.S. Patent Application for a “Vehicle,” Docket No. P-01-1532, filed 11 Feb. 1979.

Unpublished Papers and Books

Explanation:

Unpublished works can be used as references as long as they are being considered for publication or can be located by the reader (such as papers that are part of an archival collection). If a journal paper or a book is being considered for publication, choose the format that reflects the status of the work (depending upon whether it has been accepted for publication). Unpublished works in an archive must include the name of the archive and the name and location of the university or other organisation where the archive is held. Also include any cataloguing information that may be provided. Always query for an update if a work is about to be published.

Examples:

Doe, J., “Title of Paper,” *Name of Journal* (to be published).

Doe, J., “Title of Chapter,” *Name of Book*, edited by..., Publisher, Place, State/Country (to be published).

Doe, J., “Title of Work,” Name of Archive, Univ. (or Organisation) Name, Place, State/Country, Year (unpublished).

Private Communications and Web Sites

References to private communications and personal web site addresses are generally not permitted. Private communications can be defined as privately held unpublished letters or notes or conversations between an author and one or more individuals. They may be cited as references in some case studies, but only with permission of the academic assessor. Depending on the circumstances, private communications and web site addresses may be incorporated into the main text of a manuscript or may appear in footnotes.

The AIAA entries in the References section may be listed alphabetically with or without numbers (as explained in this template). In agreement with academic assessors, entries may also be ordered serially, according to the quotations’ occurrence in the text. A subdivision of the References section into “Books”, “Periodicals”, “Internet” and the like is not permitted because all these single categories are of equal value. The subdivisions in this style sheet merely serve instructional purposes.