'edengths.cls': The Latex Class File for Formatting a Phd Thesis About Clever Stuff at The University of Edinburgh

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THE UNIVERSITY OF EDINBURGH

2017

To my loving cat,

Roxy

Abstract

Blah blah, blah blah.

Lay Summary

See the web page "How to Write a Lay Summary" for a guide.

Acknowledgements

I'd like to thank Danger Mouse, for being so awesome.

Declaration

I declare that this thesis was composed by myself, that the work contained herein is my own except where explicitly stated otherwise in the text, and that this work has not been submitted for any other degree or professional qualification except as specified.

Robert Bobertson

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Figures

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Nomenclature

σ	The total mass of angels per unit area
A	The area of the needle point
a	The number of angels per unit area
m	The mass of one angel
N	The number of angels per needle point

Chapter 1

Some Simple Text

1.1 Using some 'natbib' Citations

The following paragraph demonstrates some simple text with some citations. The command

`\citep[see][]{bibtex:key}`

puts a citation in parathesis with the word 'see' before the reference itself. The second optional '[ ]' puts something after the reference, such as 'chapter 3' as seen in the second citation in the paragraph. Also the command

`\citet[]{bibtex:key}`

will produce an inline citation, i.e., not in parenthesis. Note that a blank line must be places between paragraphs in the raw latex, e.g.

`Some text in first paragraph.`

`Some text in second paragraph.`

At the beginning of this, I'd like to add a reference by Afjeh and Keith (1986) as it has a junior in it and it's good to see how that formats. Pellentesque id mi sit amet mauris elementum sagittis eget at neque. Quisque id sapien magna, et pharetra enim. Aenean congue turpis et libero faucibus vitae vulputate erat facilisis. Pellentesque iaculis orci a nisl scelerisque quis accumsan sem viverra. In nec risus dolor, vitae adipiscing erat (see Solomon *et al.*, 2007) pellentesque id mi sit amet mauris elementum sagittis eget at neque. Proin tincidunt sollicitudin sagittis. Pellentesque id mi sit amet mauris elementum sagittis eget at neque. Quisque id sapien magna, et pharetra enim. Aenean congue turpis et libero faucibus vitae vulputate erat facilisis. Pellentesque iaculis orci a nisl scelerisque quis accumsan sem viverra. In nec risus dolor, vitae adipiscing erat (see Jaccard, 2005) pellentesque iaculis orci a nisl scelerisque quis accumsan sem viverra. In nec risus dolor, vitae adipiscing erat.

1.2   Entering and Referencing a Figure

The next paragraph demostrates a reference to a figure and then a the figure itself. Note the standard layout for a figure is

```
\begin{figure}[htb] % htb is positional preference (here, top, bottom)
  \centering
  \includegraphics[width=some width]{filename without extension}
  \caption{Caption Title}
  \label{fig:label}
\end{figure}.
```

The reference to the figure is then provided by something like

```
figure~\ref{fig:label}.
```

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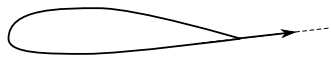

Figure 1.1: Alternative orientations of the wake vortex sheet as it separates from the trailing edge of the aerofoil.

1.3   Quoting Something

The final paragraph in this chapter illustrates a quote. To do a quote simply use the enviroment

```
\begin{quote}
 The quote text.
\end{quote}.
```

Note that the edengths class forces quotes to single spacing as the thesis regulations demand this. Also, there is an inline citation in the next paragraph.

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Another Chapter

2.1 The first section

Note that all section and chapter titles should use lower case except for the first character of the first word. Here is a reference to a paper Smith (1998). Figure 2.1 is a weird picture.
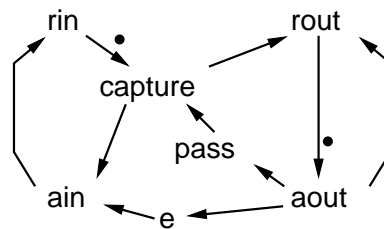

Figure 2.1: This is an example of pdf with a very long caption and *some italics* to see what happens and it should see what happens over two lines.

2.1.1 A subsection

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A subsubsection

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2.1.2 Another subsection

Table 2.1 is an example of a [1] simple table.

1.0	2.0	3.0
4.0	5.0	6.0

Table 2.1: A table

2.2 Another section

This is a long and boring paragraph for the purpose of testing the spacing between paragraphs and the use or otherwise of indentation. I think a space between paragraphs and without the first line indented is somewhat easier to read than no space between paragraphs and with the first line indented.

Another equally exciting paragraph, one two three four five six seven eight nine ten eleven twelve thirteen fourteen fifteen sixteen seventeen eighteen nineteen twenty and so on.

$$z(k,l) = \frac{2}{N}\alpha(k)\alpha(l)\sum_{m=0}^{N-1}\sum_{n=0}^{N-1}x(m,n)\cos\frac{(2m+1)\pi k}{2N}\cos\frac{(2n+1)\pi l}{2N} \tag{2.1}$$

$$x(m,n) = \frac{2}{N}\sum_{k=0}^{N-1}\sum_{l=0}^{N-1}\alpha(k)\alpha(l)z(k,l) \tag{2.2}$$

> This is a quotation, another equally exciting paragraph, one two three four five six seven eight nine ten eleven twelve thirteen fourteen fifteen sixteen seventeen eighteen nineteen twenty and so on. Just checking it is single spaced.

---

1. this is a footnote

Chapter 3

Nomenclature Example

Main equations

$$a = \frac{N}{A} \tag{3.1}$$

The equation $\sigma = ma$ follows easily.

Collocation Method at the Wake Edges

A collocation based gradient method is formulated in Gray *et al.* (2004, sec. 5). In that paper it is proved that the method, although applicable to a general Laplace problem, is not applicable to the crack problem. The difficulty arises from an additional constant in the shape functions for the most singular point. However, the zero value of

The development of the collocation method is very similar to that of the edge adjacent integral, expect that only one polar transformation is available. To begid effect of differ

Bibliography

Afjeh, A. A. and Keith, T. G., Jr. A simplified free wake method for horizontal-axis wind turbine performance prediction. *Journal of Fluids Engineering*, 108:400–406, 1986.

CCC. *Building a low-carbon economy - the UK's contribution to tackling climate change.* Committee on Climate Change, December 2008. URL `http://www.theccc.org.uk/reports/`.

Gray, L. J., Phan, A.-V., and Kaplan, T. Boundary integral evaluation of surface derivatives. *SIAM Journal on Scientific Computing*, 26(1):294–312, 2004.

Jaccard, M. *Sustainable Fossil Fuels.* Cambridge University Press, 2005.

Smith, J. Another of my publications. In *Journal of papers*, volume 1, pages 1–3, July 1998.

Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K. B., Tignor, M., and Miller, H. L., editors. *Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.* Cambridge University Press, 2007.