Ohio State College of Engineering MS/PhD/Candidacy Dissertation Template

Dissertation

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Firstname Midname Lastname, B.S., M.S.

Graduate Program in Nuclear Engineering

The Ohio State University

2019

Dissertation Committee:

Richard Vasques, Advisor

Someone 1, Co-Advisor

Someone 2

Maybe Someone 3

Abstract

This is your abstract. Fill it accordingly.

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Dedicated to the Avengers for killing Thanos.

Acknowledgments

I thank my friends and family, without whom this work would have been completed two years earlier.

In reality, this is the only page of the dissertation of which the author has full control. You can write anything you want here, and no one can tell you it is wrong (except if the margins don't line up!!!!).

Vita

August 2016	B.S. in something, The Ohio State University
Some date	Some degree, Some place
September 2016 to present	Graduate Research Associate, The Ohio State University

Publications

Research Publications

F.M. Lastname, J. Doe, and R. Vasques, “Some Cool Title for a Paper," Journal Name, vol. 99, pp. 11-22, 2018.

Fields of Study

Major Field: Nuclear Engineering

Table of Contents

List of Tables

Table **Page**

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Figure **Page**

List of Symbols

ψ . . . . . Angular Flux

ϕ . . . . . Scalar Flux

Chapter 1: Introduction

This is your introduction chapter. You are allowed to make sections and subsections.

1.1 Something Basic

This is a section.

1.1.1 Something even more basic

This is a subsection.

1.2 Another Section

This is another section.

Chapter 2: This is Another Chapter

You can use any equation environment. I suggest the “align" environment. Like this:

$$1+1=2\,. \tag{2.1}$$

This is because this environment allows you to break your equations easily. If an equation is broken, always number its first line only:

$$\begin{aligned}(x+y+z+a+b+c+d+e+f+g+h)+(w+r+t+y+u)=\\ (x+y+z+a+b+c+d+e+f+g+h+w+r+t+y+u)\end{aligned} \tag{2.2}$$

You can also also use the “subequations" environment. Identify a list of subequations by [pluraleq], like this:

$$1+2=3\,, \tag{2.3a}$$

$$2+3+5=10\,, \tag{2.3b}$$

$$1+2+2+3+5=3+10\,. \tag{2.3c}$$

You can even add text between the list of equations.

$$13=13\,. \tag{2.3d}$$

Now you can use the “cleverref" package to refer to equations, tables, chapters, sections, figures, etc. Just enter Eq. (2.1) or Equation (2.1) if you do not want abbreviations. Also,

the list of equations is done automatically: Eqs. (2.3). Or you can do Eqs. (2.1) and (2.3b) to (2.3d).

The same package will refer to figures and tables, and these will be entered automatically in your index.

2.1 Figures and Tables

This is an example of a basic table:

Table 2.1: Example of a table

Set	ℓ_1	ℓ_2	Σ_{t1}	q_1	**Set**	ℓ_1	ℓ_2	Σ_{t1}	q_1
A_1	0.5	1.0	1.0	1.0	B_1	20/3	40/3	1.5	1.5
A_2	1.0	1.0	1.0	1.0	B_2	10	10	1.0	1.0
A_3	1.0	0.5	1.0	1.0	B_3	40/3	20/3	0.75	0.75

This is an example of a basic figure: As you can see, “cleverref" allows you to refer to

Figure 2.1: Example of a figure

more than just equations: you can refer to Chapter 2, or Section 2.1, or Table 2.1, or Fig. 2.1. Tables and figures are indexed automatically (see index).

Chapter 3: Conclusions

This is your final chapter. It does not have to be titled “Conclusions"; it could be “Discussion", or whatever else you prefer.

I am going to use this chapter to talk about references. All your references should be in the references.bib file, in the same folder as this source file. Only entries that are actually referenced in the text will show up, so you do not have to delete entries from the references.bib file. References will appear in the order they are cited in the text. You can look at the references.bib file to see how to enter each of the references in the following examples.

For papers in proceedings you need: authors’ names, title of paper, title of proceedings, location [city, state (if in the US), or city, country (if abroad)], dates (month, days, year). See examples in [1–3].

For papers in journals you need: authors’ names, title of paper, full name of journal, volume, number (if exists), pages, year. See examples in [4–6].

For book chapters or papers in books you need: authors’ names, title of chapter or paper, title of book, name of editors, name of publisher, pages, year. See examples in [7–9].

For books you need: authors’ names, title of book, name of publisher, year. See examples in [10–12].

Appendix A: This is an Appendix

You can have as many appendices as needed.

Bibliography

[1] John Doe, Jane Smith, Who Knows, and Someone Else. “This is the title of the paper”. In: *Proceedings of Some Conference*. Nowhere, Neverland, Jan. 1-5, 2010.

[2] Edward W. Larsen. “A Generalized Boltzmann Equation for Non-Classical Particle Transport”. In: *Proceedings of the International Conference on Mathematics and Computation and Supercomputing in Nuclear Applications - M&C + SNA 2007*. Monterey, CA, Apr. 15-19, 2007.

[3] Richard Vasques and Edward W. Larsen. “Anisotropic diffusion in model 2-D pebble-bed reactor cores”. In: *Proceedings of the International Conference on Advances in Mathematics, Computational Methods, and Reactor Physics*. Saratoga Springs, NY, May 3-7, 2009.

[4] Tony Stark, Black Widow, and Scarlet Witch. “Something Nerdy asthe Title”. In: *Journal of Make Belief* 42.3 (2010), pp. 10–20.

[5] Anthony B. Davis and Alexander Marshak. “Solar radiation transport in the cloudy atmosphere: A 3D Perspective on observations and climate impacts”. In: *Reports on Progress in Physics* 73.2 (2010), p. 026801.

[6] Edward W. Larsen and Richard Vasques. “A generalized linear Boltzmann equation for non-classical particle transport”. In: *Journal of Quantitative Spectroscopy and Radiative Transfer* 112 (2011), pp. 619 –631.

[7] Some Author. “Title of Paper or Chapter”. In: *Title of Book*. Ed. by Name of Editor. Publishing House, 2015, pp. 11–22.

[8] François Golse. “Recent results on the periodic Lorentz gas”. In: *Nonlinear Partial Differential Equations*. Ed. by X. Cabré and J. Soler. Springer Basel, 2012, pp. 39 –99.

[9] Urs W. Hochstrasser. “Orthogonal Polynomials”. In: *Handbook of Mathematical Functions with Formulas, Graphs, and Mathematical Tables*. Ed. by Milton Abramowitz and Irene A. Stegun. Dover Publications, 2012, pp. 771 –802.

[10] Harry Potter and Hermione Granger. *Title of Book*. Publisher, 1990.

[11] E.E. Lewis and W.F. Miller. *Computational methods of neutron transport*. American Nuclear Society, 1993.

[12] R.L. Burden and J.D. Faires. *Numerical analysis*. Dover, 1993.