

## Manuscript Thesis Option

PhD students in ALDS may, in collaboration with their supervisor and advisory committee, choose to produce a manuscript thesis rather than a more traditional monograph thesis.

A manuscript thesis will be based on at least three papers which together present a unified research project. The following conditions must be met for a manuscript thesis to be accepted for defence:

- The papers must be authored by the student, or, if co-authored, have the student as lead author.
- All three papers must be published or accepted for publication in a peer reviewed venue at the time of the defence of the thesis. Examples include peer reviewed journal articles, papers in peer reviewed conference proceedings, or book chapters in edited collections in which chapters or the collection are peer reviewed.

The manuscript thesis must comply with regulation 12.4 in the university's Graduate Calendar (copied below).

### **12.4 Integrated Thesis Policy**

Many disciplines, especially in engineering and the sciences, accept a thesis consisting of student work based on published papers, conference proceedings, or papers awaiting publication. Known as the 'integrated article,' 'manuscript,' 'sandwich,' or 'chapter' thesis, this type of thesis contrasts with the monograph thesis traditionally offered for examination. However, the same quality and ethical standards apply to each thesis type and the authority of the Thesis Examination Committee remains the same for both. Each individual academic unit decides the thesis format(s) suitable for its discipline.

#### **A. Criteria for Integrated Article Thesis**

The integrated article thesis is acceptable under the following conditions:

- The integrated thesis must consist of a coherent account of a unified research project. It is not a collection of loosely connected papers. The student will provide a document that locates a body of work within the context of existing theoretical and methodological debates in the literature, identifies the contributions of the thesis research to that literature and indicates potential directions for further research based upon knowledge gained through the thesis research.
- The thesis must be original and present the student's own work completed during the program of study for which the thesis is being submitted. The student should be the sole author or principal author of any included materials. The student must have played a major or sole role in setting up and conducting the research, obtaining data and analyzing results, as well as preparing and writing the

documents submitted for examination. In the case where co-authored articles are included, the rules and procedures itemized in "Section D" below must be adhered to.

- The thesis must contain a statement from the thesis supervisor verifying the student's contribution to the originality of the material presented in the thesis and clarifying in what way the included materials became part of the thesis.

## **B. Integrated Article Thesis Format**

Published articles which do not follow the traditional thesis formatting rules may be included as thesis chapters.

The body of an integrated article thesis should contain the following chapters:

- **Abstract**  
The abstract includes a brief description of the subject matter and summarizes the main themes presented in the thesis.
- **Preface**  
The preface must provide full bibliographical details for each article included in the thesis, as well as whether the article is reproduced in whole or in part. In the case of a partially reproduced article, the preface must include a description of the changes that have been made to the published version. Use of copyrighted material must be acknowledged in the preface and tables and figures must have "Reprinted with permission of..." in their captions. See below "Section C" on copyrighted material. Students must also indicate how others are to cite material from this thesis. In the case where the thesis includes co-authored material, see rules and procedures for co-authored material in "Section D", below.
- **Introductory Chapter /Literature Review**  
The introductory chapter provides a comprehensive review of the literature that establishes the student's familiarity with relevant work in the field; sets out the objectives of the thesis; places the research into the larger context of the candidate's discipline; and provides an overall thematic cohesiveness of the chapters (research papers) to the reader.
- **Methods Chapter**  
The methods chapter should include an overview of the methodological approach used in the thesis and the common methodological assumptions or techniques that link the data chapters into a cohesive entity. A crucial feature of the scientific method is repeatability. The thesis must thus contain detailed descriptions of the experimental procedures followed to obtain results, so as to ensure that readers may be able to test the validity of research outcomes. In cases where such detailed descriptions do not appear in the integrated chapters, they must be included in the Methods Chapter. It is also acceptable to include this information in an Appendix, if the explanation is so protracted and tedious that it detracts from the readability of the main body of the text.
- **Data (Research Paper) Chapters**  
Normally, 3 or 4 articles form the body of the thesis and are divided into separate chapters. This work must be smoothly integrated into the flow of the thesis to produce a unified and appropriately sequenced argument. To do so may require some additions, deletions or re- writing of the original material. In cases where a published article is directly reproduced as a chapter without reformatting, additional pages at the beginning

and the end of the chapter should be added to ensure logical and coherent transition between chapters.

- **Conclusion**

The conclusion chapter summarizes and critiques the research topic as a whole, offers an analysis of the limitations existing in the study and suggests potential areas of future research based on the thesis findings.

- **Bibliography and References and Citations**

Bibliographic format should be appropriate to the discipline. Methods of handling and listing references in the text vary. Because the body of the thesis contains chapters representing a separate piece of published work, each chapter may contain its own bibliography. Depending upon the situation, the literature review and/or summary chapter may also contain bibliographies to reflect individual citations made in those sections. Tables and figures should be included in appropriate chapters and numbered consecutively using the chapter number e.g. Chapter 2 would be numbered Table 2-1, 2-2 and so on. This practice avoids the table number repetition that may occur if separate published article material is used.

- **Appendices**

Appendices are optional. Normally, appendices are included to provide information that detracts from the readability of the main body of the text or to present data or information used in the thesis but not directly obtained by the thesis author. For example, lengthy tables, detailed explanation of laboratory procedures, and computer programs may be included in the appendices.

### **Texts from Prior Theses**

A prior graduate thesis or sections of a prior graduate thesis cannot be included as an article in the Ph.D. thesis. The goal is to present a coherent body of research rather than a collation of every piece of work that the student has produced. In the case where doctoral research is closely related to work already completed at the master's level, students will be requested to include a statement attesting to the fact that no text in the thesis has appeared in another thesis.

### **C. Copyrighted Materials and Permissions**

Use of copyrighted material must be acknowledged in the Preface and tables and figures must have "reprinted with permission of..." in their captions.

If the student wishes the work to include text that has already been published as a journal article or book chapter, the student must obtain permission from the publisher and include it along with the thesis as a separate document. Note that Library and Archives Canada request that permissions be submitted separately with the thesis.

In a case where a thesis includes papers co-authored by the student and others, the thesis must state explicitly who contributed to such work and the nature and extent of that contribution. The candidate must obtain permission from the co-authors to use this work and provide a statement of permission along with the thesis as a separate document. Each co-author

must include in the statement of permission the extent of her/his contribution to the article(s) included in the thesis. See Section D below.

#### **D. Rules and Procedures for Integrated Theses which Include Co-Authored Material**

Co-authored publications are a common practice in many disciplines. The thesis, however, must represent the work of the student submitting it for credit. It is thus imperative that rules and procedures be followed to ensure that a student submitting an integrated thesis which includes co-authored article(s) be examined and evaluated on their own contribution to the collective publication(s).

##### **Preface and additional documents**

The preface must include a statement from the supervisor and the student indicating that the student was fully involved in setting up and conducting the research, obtaining data and analyzing results, as well as preparing and writing the material presented in the co-authored article(s) integrated in the thesis. There must also be a statement that clearly distinguishes the specific contributions of the student from those of all other collaborators or co-authors. The supervisor must include a statement which confirms the information provided by the student in the preface. Additionally, each co-author must confirm in a signed statement the extent of her/his contribution to the co-authored article(s) included in the thesis. These statements must be provided along with the thesis as separate documents. The objective of this requirement is to assure examiners that there has been full disclosure of collaborative activity. In providing these statements, all parties involved must take into consideration the rules and regulations of Carleton University's Academic Integrity policy.

##### **Multiple use of the same co-authored article(s)**

As a general rule, the same text from a co-authored published article should not be used in more than one thesis. In the case of students who have worked collaboratively on projects leading to a published article which comprises different sections of text with different single-author attribution, the relevant section(s) of the article may be included in different theses. In the case of a wholly collaborative article where individual contributions cannot be determined, the same article may be used in more than one thesis, but to a maximum of three theses. In cases where the same article appears in more than one thesis, each thesis must include a statement from all students and all supervisors involved confirming that all students collaborated equally in the production of the article(s). These statements must be provided along with the thesis as separate documents.

Issues of copyright must be addressed by the student as outlined in the copyright section above. The candidate must obtain permission from the co-authors to use this work and include a statement of permission along with the thesis as a separate document. Each co-author must include in the statement of permission the extent of her/his contribution to the article(s) included in the thesis.

#### **E. Integrated Article Thesis Examinations**

Article publication or acceptance of publication does not supercede the authority or responsibility of the Thesis Examination Committee to evaluate the thesis during the examination process and to recommend or require changes.

Thesis examination rules/policies and procedures are not changed to accommodate the integrated article thesis.

The oral examination concentrates on testing the candidate's knowledge as much as on questioning the written document.