Guidelines on Manuscript-Style Thesis

Consistent with CGSR Policies and Procedures (section 5.3.4), all theses must be written in good scholarly style and conform to the requirements approved by the academic unit. The following are intended to act as guidelines for minimum requirements in the creation of a manuscript-style thesis. Academic units may choose to provide additional discipline-specific instructions.

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Introduction - Principles of a Thesis:

The thesis is an essential element of a research-based graduate degree. The thesis serves as evidence that a student is able to describe, explain and defend the research work that he/ she has undertaken, and how it contributes to and furthers the knowledge within the discipline. The thesis describes why the research work was undertaken, justifies the methods used, and provides an interpretation and analysis of the results. If a student is successfully able to defend the thesis, it prepares him/ her to undertake further research in the field of study, and to make significant contributions to the field of knowledge. With these principles in mind, a thesis should be presented as a single, cohesive, consistently formatted and unified document, which clearly articulates the progression of a student’s chosen field of research. A thesis presents a student’s research work as a whole, rather than discrete pieces, and the student should be able to justify and defend each part of it, from the introduction through to the conclusion.

Manuscript-Style Thesis:

With the permission of his/ her research Advisory Committee, a student may submit a manuscript-style thesis in a style approved by the academic unit. A manuscript-style thesis is a document that includes one or more scholarly manuscripts, written in a manner suitable for publication in appropriate venues. A manuscript-style thesis allows a student to prepare and present their graduate research work in a format that facilitates publication.

A manuscript-style thesis is not, however, merely a collection of published or publishable papers, and it must meet the principles and objectives required of a thesis (see CGSR Policies and Procedures section 5.3.4).
Format:

Consistency of format and style is essential in a manuscript-style thesis to produce a coherent and defendable document which will satisfy the principles of a thesis. Consistent formatting will help maintain the integrity of the document as a cohesive whole and sustain the clarity required to facilitate the review of the thesis by the Advisory Committee and Examining Committee. A consistent style and format must therefore be maintained throughout the thesis.

- The format and style of a thesis may differ from department to department, and from discipline to discipline. The student’s academic unit will identify an acceptable format for the thesis and communicate it to the student, and the style selected must be maintained throughout the thesis.

- Accepted rules of grammar must be followed, and forms of spelling and punctuation must be used with consistency.

- Even if a manuscript was published in a particular format, when included as a chapter in a thesis, it will match the formatting standard of the thesis. For example, it is expected that the numbering of tables and figures within chapters (see details below) should be done for the thesis as a whole, which means that there should not be two tables or two figures in the thesis with the same number.

- Previously published manuscripts should not simply be inserted into the thesis as copies of journal pages. To ensure consistency and clarity in presentation, previously published materials should be assigned page numbers that are sequential within the thesis, and page numbers as they may have been assigned within the publication must be removed. The page numbers assigned within the publication will be included in the citation.

- Guidelines on more general aspects related to formatting and style, including suggested arrangement of preliminary content, referencing, layout of figures and chapters, etc. are available on the Electronic Theses and Dissertations page of the CGSR website.

Content:

The thesis is a single cohesive document that presents and describes the entirety of the research work that was conducted as part of the graduate degree. Individual manuscripts in a manuscript-style thesis should fit together into a single body of work to achieve the goals of the thesis.

- The manuscript-style thesis, as with any thesis, will develop a general theme that presents the candidate’s research work; it must include an introduction that outlines the
theme and objectives of the research, and a conclusion that draws out its overall implications.

- The different chapters or sections will contribute to the general theme, but the substance of each chapter should focus on a different aspect of the research.

- As the thesis needs to be a single body of work, there needs to be some content of the thesis that deals with the thesis as a whole and unifies it into a single document. How this content is arranged may vary from discipline to discipline, and from thesis to thesis (see details below).

Chapters of the thesis need to be numbered sequentially. Subsections, tables, figures and equations within each chapter will be assigned a unique number, (for example use the chapter number followed by a sequentially increasing number, separated by a period, i.e. 1.1, 1.2, 1.3...), with no two elements of the same type having the same number. This will help ensure the clarity of the document and ease of navigation for the Examining Committee.

References for the thesis can either be listed chapter-by-chapter, or be presented in a single list at the end of the thesis. If the chapter-by-chapter approach is adopted, each chapter, including chapters that are not manuscripts (such as the introduction and concluding chapters), requires a list of references. If a single list appears at the end of the thesis, all references cited in the component manuscripts must be included in the list of references at the end of the thesis.

A particular manuscript can only be included in a student’s thesis if that student’s Advisory Committee agrees that it is appropriate to be included in the thesis.

- Co-authored manuscripts can be included in the thesis, if acceptable to the student’s Advisory Committee and if approved by the academic unit:
  - The Advisory Committee will confirm that the student has made a substantial contribution to each of the manuscripts, and determine that the paper merits inclusion in the thesis. There is no limit to the number of co-authors.
  - To assist the Examining Committee in assessing work involving multiple authors, the student should include an explicit statement in the thesis describing his/her original contributions to the paper in detail, and justifying the inclusion of the paper in the thesis. Individual disciplines and academic units may require further acknowledgment of contributions.
  - There may be cases when the student, supervisor(s) and other research collaborators are co-owners of the intellectual property presented within the thesis, and they may also be co-authors of the manuscript(s). Prior to preparing the thesis, all associated individuals should understand their respective obligations related to data confidentiality (if applicable), copyright, and
authorship (see regulations below). The nature of these obligations will vary with discipline and with the specific policies of the academic unit.

- With the approval of the academic unit, the same manuscript may appear in more than one thesis if multiple students are co-authors on the manuscript, and each made a significant contribution to the research and preparation of the manuscript. Where there may be two students who will include the same manuscript in two separate theses, each student should acknowledge the existence of the other thesis, and the fact that the manuscript appears in both theses.

- In a manuscript-style thesis, it is expected that the author of the thesis will be the lead author on at least one manuscript included in the thesis.

- The manuscript-style thesis may include both published and unpublished manuscripts. However, the publication status of each manuscript should be clearly indicated:
  - For each published article, a complete citation, including first and last page numbers and recognition of the copyright holder, should be printed at the beginning of the manuscript.
  - For a paper that has been submitted but not yet published, a statement concerning the status of any dealing or contemplated dealing with the copyright or the auspices under which the work was prepared should be printed at the beginning of the manuscript.

- If the included manuscript differs in content from a published version of the manuscript, this difference should be briefly described in an addendum. If no content has changed from the published version, there should still be a statement that indicates that the document has been reformatted from the original version for inclusion in the thesis.

- There can be alternate ways in which to revise a manuscript that is presented as a chapter within a thesis. The manuscript itself may be revised, or an addendum explaining the modifications may be inserted within the thesis.

Thesis content falls into the following categories:

1. Introduction and Literature Review - The purpose of the introduction and review of literature is to establish the student’s familiarity with relevant work in the field; establish the purpose and objectives of the research; place the research within the larger context of the discipline; and provide overall context for the research manuscript(s). The introduction should establish the central aim and themes of the research and explain how these are addressed in the various manuscripts making up the thesis. In some disciplines, a separate literature review (possibly as a distinct manuscript) will be a stand-alone chapter, rather than be included in the Introduction; while in other disciplines, the literature review may be incorporated as part of the manuscripts.
2. **Methods (optional)** – If appropriate to the discipline, a discussion of methodology, either as its own chapter, a section in the Introduction or, depending on the context, a section in each individual manuscript can be a necessary part of the thesis.

3. **Transition** - The manuscripts should fit together in the thesis much as chapters would normally fit together in any thesis. Specifically, it needs to be clear to the reader how each manuscript included in the thesis contributes to the overall objectives of the thesis outlined in the abstract and introduction, and should tie each manuscript to the overall aims of the research project. There needs to be a clear and logical progression from one chapter to the next, so that the thesis functions as a complete and unified whole with a clear singular research project as its focus. How the author of the thesis accomplishes this task is at the discretion of the author, the Advisory Committee and, if available, the policies of the academic unit. It may be useful to have short transition sections appended either to the beginning or end of appropriate manuscripts that explain the progression from one manuscript to the next; however, this transition may also be accomplished in the introductory and concluding chapters.

4. **Manuscript(s)** - Each manuscript should have its own chapter. While the manuscript may be a published document, the format of the document in its role as a component of the thesis must be consistent with the thesis as a whole, regardless of the format in which the document was published (see comments on formatting above). The manuscript content may also differ from the published version, and may include additional tables, figures or text, as required to ensure clarity. The format of the manuscript would normally include a brief introduction and statement of the research problem; synthesis of the literature; description of research methods and study area (if applicable); analysis, and presentation and discussion of results. Manuscript length may vary and is at the discretion of the Advisory Committee, although the intent is to emulate the norms of publication or presentation in the discipline.

5. **Discussion and Conclusions** - The final chapter revisits the main contributions or findings of the research manuscript(s) within the broader context of the literature and discipline, linking the findings of each manuscript back to the literature identified in the introduction. Directions for future research are normally identified in this section, as well as any limitations to the research overall. Each thesis is required to contain a concluding section that relates the individual manuscripts, and the conclusions drawn in those manuscripts, to the overarching goal of the thesis.

6. **Appendices and Supporting Documentation** - Material that is not part of the research manuscript(s) but deemed necessary by the student’s Advisory Committee as supporting documentation (e.g. research instruments; raw data summaries; copyright permissions, additional site descriptions, etc.) should be included in Appendices. If there are changes suggested to published manuscripts (i.e., chapters of the thesis) through the defence process, these changes may be addressed and included in a separate
appendix at the end of the thesis, if copyright issues are a concern, or if it disrupts the flow of a published manuscript to make the changes within the published chapter itself. This consideration is for published manuscripts only.

Although the Advisory Committee will discuss and approve the number and focus of manuscripts at the proposal stage, this may be modified by agreement of the committee as the research progresses. Such revisions must be approved by the supervisor and Advisory Committee.

**Review of the Thesis**

- The merits of the manuscript-style thesis will be judged on the criteria outlined at the beginning of this document and by the defence processes outlined for all theses. The judgement of the thesis rests with the Examining Committee (Advisory Committee plus the external examiner) and is independent of and separate from any judgement (favourable or unfavourable) related to the acceptance of individual papers for publication or presentation within the relevant discipline.

- Similar to all other theses, everything in the thesis is subject to review, criticism and possible revision, following the oral defence. Notwithstanding the status of a manuscript considered for publication by other means, the form and content of the thesis must be deemed acceptable by the external examiner and a majority of the Examining Committee in order for the student to complete the degree requirements.

**Copyright**

It is the responsibility of the student and any co-authors of material included in the thesis to obtain from all copyright holders written permission to include copyrighted material in the thesis. Written permission must be obtained from any co-author who retains copyright or from the person to whom the co-author has assigned copyright. Any payment which might be required by the rights holder(s) is the responsibility of the student. The thesis should indicate that copyrighted and/or co-authored material have been printed either “with permission” or “under license” (either by a statement in the preface or on the first page of each article). Copies of the letters of permission or licenses must be available upon request and may be included within the thesis as appendices. Given this, it would be good practice for students to inform the journals to which they submit manuscripts that these manuscripts may eventually be included in a manuscript-style thesis.