

**Toronto Metropolitan University
Yeates School of Graduate and Postdoctoral Studies
Programs in Environmental Applied Science and Management**

Guidelines for Manuscript-based Dissertations/Theses

The EnSciMan program strongly encourages publication of the results of students' research work. There can be substantial advantages for students who publish the results of their research work during the course of their degree studies. For those seeking an academic career, publications are a key metric in decisions for postdoctoral fellowships or in competitions for academic positions. More generally, the rigorous process of preparing a manuscript for publication can be a valuable learning experience. As well, early publication facilitates a timely and wider dissemination and potentially more influential impact of the results of the research.

Toronto Metropolitan University allows the presentation of both Masters theses and Ph.D. dissertations in either traditional or manuscript-based format. The choice is a matter for students and supervisors to discuss early in the process of developing the research agenda.

The manuscript-based format incorporates, as part of the dissertation, the text of one or more manuscripts of which the student is an author or co-author. This text is from published papers, or of manuscripts which have been submitted, or are to be submitted, for publication.

Manuscripts

No specific number of manuscripts is required as a basis for a manuscript-based Ph.D. dissertation. Generally, a minimum of three publishable manuscripts are to be included (i.e., published in, in press with, or under review by peer-reviewed journals at the time of the dissertation examination). At least manuscript one should be published, in press, or accepted for publication. A second manuscript should be at least in the review process. Manuscripts which generally may be incorporated into a dissertation include research reports, literature reviews, discussions of theory or method, or descriptions of empirical findings. Each manuscript will typically address a unique research objective outlined in the dissertation proposal.

The manuscripts must result directly from the dissertation research.

Organization of a Manuscript-based Dissertation

The dissertation is to be more than a collection of manuscripts. It must be prepared specifically to meet the dissertation requirements. All components must be integrated into a logical progression from chapter to chapter forming a unified and consistent report of the research undertaking. The manuscripts must be smoothly integrated into the dissertation. The manuscripts may be incorporated as the foundation of separate chapters or, where appropriate, may form sections within specific chapters. In order to

ensure that the dissertation has continuity, additional text that provides the logical framework for the dissertation is required. In addition, alterations to and re-writing of the text of the manuscripts may be required. Formatting must be consistent throughout the dissertation.

In the case where manuscripts have been published, the dissertation is to contain the text, not the reprints, of the papers. Reprints of published papers may be included as Appendices of the dissertation.

Dissertation Format

The entire dissertation must conform to YSGPS guidelines with respect to organization, content, and style.

As manuscripts prepared for publication are frequently abbreviated documents, where, in the interests of brevity, particular aspects of the research are not fully developed, additional material must be provided (e.g., in appendices, as bridging text, or as separate chapters and/or sections of the dissertation) where necessary. Overall, there must be sufficient detail in the dissertation to allow a clear and precise judgment to be made of the relevant literature, the objectives of the research project, methods, importance and originality of the research reported.

Specific issues related to formatting particular to manuscript-based dissertations which generally need to be considered include:

- The Introduction should provide the conceptual framework for the research and include a clear case demonstrating that the manuscripts form a coherent body of research within that framework.
- The Introduction must incorporate the full citation(s) to the manuscripts incorporated in the dissertation including the detailing of where the manuscript has been published or has been sent for review/publication.
- The Introduction also must include a separate section entitled "Contributions of Authors" detailing the extent of the contribution the candidate played in the work presented in each manuscript, and the role and contribution of any other authors.
- Should the manuscripts, in sum, not provide a comprehensive review of the relevant literature, a separate literature review should be provided.
- Since it is common for published manuscripts only to include an abridgment of methods, it may be necessary to include a Methodology chapter detailing all methods used in conducting the dissertation research.
- A concluding chapter should reflect the entire scope of the dissertation research. A summation of conclusions, recommendations and the original contribution of the dissertation to the advancement of knowledge in the research area should also appear here.
- Although the lists of references may have been formatted in a different way for each manuscript, in the dissertation references are to be presented as a single, comprehensive, alphabetically-ordered References list. In addition, in-text referencing is to be in a consistent style throughout the dissertation.

Authorship

Since a dissertation provides an account of the candidate's research, when co-authored manuscripts are incorporated in a dissertation, the candidate must be the primary author (i.e. the author who has made the most substantial contribution to the work presented in the manuscript) of each. An explicit statement must be included in the dissertation about the responsibilities for and the extent of the contribution the candidate made in the work presented in each manuscript, and the role and contribution of each of the other authors. Particularly, the contribution of each to the following should be addressed: the design and identification of the research undertaking, responsibility for the research, data and other analyses, and the preparation of the manuscript. This statement should appear in a separate section entitled "Contributions of Authors" in the Introduction to the dissertation. The Supervisor(s) must confirm the accuracy of this statement at the Ph.D. oral defence.

Except for the supervisor(s), co-authors of manuscripts cannot be part of the dissertation examining committee. This exclusion includes serving as either Internal or External Examiner for the dissertation.

Copyrighted Materials

Wherever previously published copyright material is incorporated in a dissertation, the candidate must obtain, whenever necessary, signed waivers from the publisher(s). The student must also submit a signed waiver from any co-authors of unpublished manuscripts, except for the supervisor(s). These are to be submitted to the Program Office no later than with the official submission of the dissertation—they are not included in the dissertation. The incorporation of copyrighted material must be explicitly acknowledged in the dissertation; and tables and figures must have "Reprinted with permission of..." in their captions.

Consultation

The decision to opt for a manuscript-based dissertation is a major decision which needs to be explored between supervisor and candidate at an early stage in the candidate's research. Questions related to manuscript topics, timelines, authorship and potential journals to target for submission need be discussed, with clear communication and written records. Consideration needs be given to the design of the research project to allow for the identification of discrete publishable components which still can be integrated into a coherent dissertation. Timelines may be crucial, especially when considering the journal review process. Consideration must be taken of the fact that the preparation of manuscripts should not greatly impede progress on the research and ultimate preparation of the dissertation, which must remain the priority of both candidate and supervisor.

These issues should also be introduced for formal discussion by the dissertation supervisory committee at an early stage. The choice to present research in a manuscript-based dissertation should be noted in the Research Proposal and may form part of the discussion at the Oral Candidacy Examination.

As circumstances may change over time, it is important periodically to review and confirm the issues involved with the supervisor and the dissertation supervisory committee. Continuing consultation is important since, should the dissertation examination committee feel that the dissertation has major omissions with regard to the above guidelines; the candidate may be required to resubmit an amended version.

Master's Theses

The general guidelines pertaining to manuscript-based Ph.D. dissertations may be used as guidance for the preparation of Master's theses. Generally, one or two manuscripts may form the basis of a thesis. At least one manuscript must be in the publication process (i.e. published, in press, accepted for publication, or in review) at the time of the thesis defence.