Master’s Thesis Manuscripts

Traditional and Publication Formats

PURPOSE AND CONTENT

A thesis is an essential part of the master's program and must demonstrate a high level of ability to think logically, write clearly, and, if possible, include the development of new concepts. It must involve skills and knowledge gained during the degree program. It must not necessarily be part of an on-going research project in the department. The following categories describe general types of thesis research and may help you determine a topic, but it is possible that your thesis will not fit into any of the categories.

Resource mapping: Resource mapping involves the systematic description of some aspect of a water resource in a given area or region. The emphasis will be on physical aspects (hydrologic, geologic, chemical) or economic, legal, and institutional aspects of water resources. A portion of the data base must be original to the thesis and obtained by the student. Within reasonable limits of available time and resources, the data should be critically analyzed and evaluated as to its significance and usefulness.

Problem analysis: Problem analysis involves the development of a functional relationship among two or more variables of importance in hydrology and water resources. The problem should be one that can be posed in the form of a question or questions for which there is an expectation of obtaining an answer within reasonable limits of available time and resources.

Measurement: The solution to many problems in hydrology and water resources depends on the availability of techniques to quantitatively measure pertinent variables. The development of a new technique, the improvement of an existing technique, or the demonstration that an existing technique is flawed can provide the substance for a thesis. However, it must be more than the invention of a gadget and must be based on knowledge and skills in hydrology and water resources.

Decision analysis: Decision analysis involves structuring a problem so the factors affecting the decisions to be made, or which have been made, may be identified and the resultant decision critically analyzed. Such studies might (a) consider the effectiveness of present and proposed legislation and regulations, (b) determine if changing conditions require changes in procedures that are presently standardized, (c) design water resource projects (structural and nonstructural) and operating rules for such projects.

Legal or economic case analysis: The study and analysis of the legal and economic aspects of water problems are increasingly relevant to society at the local, regional, national, and international levels. Hydrologists and water resources scientists are finding that their knowledge is becoming more appreciated when public policies or judicial decisions are made. Studies in this realm might (a) assess the consequences of hydrologic information upon legislation, regulations, or policy; (b) determine the economic or environmental cost of a project or proposal; or (c) study the institutional arrangements needed to effectively and equitably allocate water resources among competing users.

Two Thesis formats are described below with references to the Graduate College’s formatting guidelines for each.

TRADITIONAL THESIS FORMAT

A student may submit their thesis in a traditional format following the guidelines established by the Graduate College. All Thesis manuscripts are submitted to ProQuest, a global information technology company which collects university Thesis and Dissertation manuscripts for dissemination to the public.

Refer to the Graduate College document, **Thesis Formatting Guide**, at the following link for instructions: <https://grad.arizona.edu/gsas/dissertations-theses/dissertation-and-thesis-formatting-guides>

At a minimum, the traditional format includes a Table of Contents, Lists of Figures/Illustrations and Tables, Chapters, Appendices, and References/Bibliography. Additional content may be required (refer to the formatting guidelines).

PUBLICATION THESIS FORMAT

A student may submit their thesis in a publication format following the guidelines established by the Graduate College. All Thesis manuscripts are submitted to ProQuest, a global information technology company which collects university Thesis and Dissertation manuscripts for dissemination to the public.

Refer to the Graduate College document, **Thesis Formatting Guide**, at the following link for instructions: <https://grad.arizona.edu/gsas/dissertations-theses/dissertation-and-thesis-formatting-guides>

At a minimum, the publication format generally includes a Table of Contents and Chapters that present a summary of the research, an explanation of the student's contribution if it was not individual research, and an explanation of how this research contributes to the student’s field. Copies of the Published/Publishable papers should be included as individual Appendices. If references are cited, they should be included in a Reference section following the Chapters but preceding the Appendices. Additional content may be required (refer to the formatting guidelines).

**HAS Department Publication Requirements**: Manuscripts may have been prepared for a referred journal or other outlets (e.g., professional report, books, etc.). The committee will assess the acceptability of the research based on the scientific content and the student’s contributions to the work.

The student must be a coauthor on at least one paper or more papers; primary authorship is not required. At least one publication is required. In the summary of the work, the student's contribution should be clearly explained. Coauthors may comprise a majority of the M.S. examining committee.