

Master’s Practicum Handbook

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Introduction to the Master's Opus

As part of their degree requirements, all SEAS master's students must complete a project, thesis or practicum. All master's students are admitted as a project student. The project option gives students a team experience that approximates future work environment. Students can petition for the thesis option when they plan to conduct original research and produce a scholarly work. Although students are not admitted under the practicum option, a student may petition into this option under circumstances described below.

Projects, theses, and practica share common academic expectations and provide different educational experiences. Regardless of the opus type, all include the following academic expectations:

- the mastery of an appropriate set of academic material;
- an understanding of the major steps of the scientific approach (research design) or decision analysis (evaluation of management alternatives) and the successful application of these steps to an environmental problem;
- the ability to demonstrate critical thinking about an environmental problem and the application of appropriate analytical techniques in solving that problem;
- experience in both writing a scientific paper or technical report and giving an oral seminar to peers on the process and results of the study; and
- faculty evaluation of the final product.

Occasionally, students wish to substitute another opus option for the one they were admitted to complete. SEAS's policy is that changes in the form of the opus must be supported by a faculty advisor and approved by the Associate Dean. Students should submit a written statement that explains why this change is needed. Project students who wish to substitute a thesis must show that they have had or will acquire the integrative team problem-solving experience missed by not participating in a project. Likewise, thesis students who wish to substitute a project must show how they have had or will acquire the training in research methodology. In addition, a student may petition the Associate Dean to undertake a practicum as his/her opus work. The practicum is an individual experience, often developed around an internship experience or the design of a project (see the Practicum Handbook.)

To request a substitution, use the "Petition to Change Master's Opus" form. SEAS established these substitution requirements to protect the focus and intention of the different Masters options. Petitions will be evaluated on the basis of the rationale for substitution and the availability of faculty resources to support the proposed opus. Such changes must be approved by the Associate Dean. All petitions must be accompanied by an advisor approved Development and Mentoring Plan for Master's Students form.

Master's students who wish to change their opus option should do so by the drop/add deadline of their second semester (fourth semester for three-year or dual degree programs.) Students who are enrolled in NRE 701.888 (the Master's Project Planning Course) and wish to change their opus option need to make their decision in advance of the drop/add date or expect to continue with the course and project team through completion.

The Practicum

What is a Master's Practicum?

A practicum is a supervised practical application of a previously developed or studied theory. In a practicum, theory is used to solve an applied problem. For SEAS students, a practicum is the application of natural resource problem-solving (analytical) techniques. This includes the principles of decision analysis and design formulation or evaluation of alternatives for management, planning, or development. Often, a practicum will be developed around an internship experience or the design of a project, and is an individual opus. The practicum must include all the scholarly elements of an opus, include a theoretical framework, literature review, and general implications of the particular topic. It is expected that a practicum opus will be planned under the direction of an advisor to include these scholarly elements; a prior work experience cannot serve as a practicum.

The written report of a practicum experience normally includes (a) an introductory chapter explaining the context of the practicum experience, including a theoretical framework and review of literature, a definition of the problem, a statement of objectives, and an explanation of methods, (b) one or more chapters that describe results of the experience, including an explanation of how theory and skills were applied to help a decision-maker who might use the student's works, and (c) a concluding chapter that analyzes alternatives or proposes one or more solutions and summarizes the report. Included also is a summary that recapitulates the problem, objectives, methods, results, and conclusions. An abstract (on a separate page following the title page) is also required. The practicum is reviewed by the student's practicum committee, and it must meet that committee's standards of quality and quantity.

Permission to do a practicum will not be granted on the basis of a student's past experience; a practicum must be based on future work that involves a work plan formulated before the experience.

Objectives of a Practicum

The major objectives of a practicum are to give students the opportunity to develop their creative abilities in one or more of the following activities:

- give students opportunities to develop, integrate, and reinforce competence through performance in work situations that involve citizens, citizen groups, and professionals
- permit students to acquire and test skills relevant to real-world conditions of natural resource and environmental design
- provide students with opportunities to formulate and weigh questions that arise in the course of practice (e.g., ethical issues, policy guidelines, conflicts)
- apply theory and knowledge to develop effective project designs, development and management plans, and policies for solving critical resource problems
- prepare a development and/or management plan for the owner of a particular property
- compare different methods for solving a specific problem and develop a decision model or process for selecting the best method(s)
- help faculty and students be aware of state-of-the-art practice in the field

Who May Write a Practicum?

Students may not substitute a practicum (NRE 700) for a project or thesis without permission from the Associate Dean.

Grounds for petitioning. Students who desire to substitute a practicum for a master's project or thesis must petition the Associate Dean. The Associate Dean will consider petitions only from those students who fit one of three categories:

1. International students who plan to return to their home countries and wish to apply their SEAS training there.

An international student who petitions to substitute an off-campus practicum for a master's project is responsible for making financial arrangements for international travel, if necessary, to gather critical data for the practicum. In her/his petition the student should be clear why the practicum carried out abroad will be of more value to the student in the home country than participating in a group project on campus.

2. Students who are hired (or accepted as a volunteer) to work under supervised conditions.

Students who work with various categories of organizations (as paid employees, volunteers, interns, etc.) may want to use that experience to write a practicum. The practicum experience must involve the student's supervisor (employer) and faculty advisor.

3. Students who wish to apply theory and knowledge to develop skills in landscape design, resource management, policy analysis, conflict resolution, and decision analysis in a real-world setting.

Master's Practicum Structure and Planning

Student Responsibilities

The student is responsible for knowing and meeting deadlines, submitting forms, establishing a thesis committee, and making sure that the thesis is prepared in an acceptable way. The student's thesis committee and SEAS's Office of Academic Programs will provide assistance, but the student ultimately is responsible for timely completion of the practicum.

General Structure

Students whose practicum is generated through the Master's Project Planning session will elect one credit of EAS 701.888 and up to 5 additional credits of EAS 700. Single student Practicums can elect up to 6 credits total of EAS 700.

Practicum Advisor

Your practicum advisor should be an SEAS faculty member serving as either a sole advisor or co-advisor. SEAS adjuncts, as well as research scientist-track appointees, may also serve as co-advisor. When an advisor who does not hold an appointment in SEAS guides a student's practicum experience, that person is listed as co-advisor, with an SEAS faculty member serving as the other co-advisor of the committee. The committee is expected to help the student focus on a topic that meets the student's academic goals and is practicable in the "real world". It is important that the student and practicum advisor clearly understand their mutual expectations with respect to the amount of work to be done, especially work being done in the field (e.g., how many summers of field work will be required?).

Funding for Practica

The Master's Practica Funding is intended to defray costs of conducting clearly defined group research activities including:

- Research related expenses (e.g. paying subject fees, accessing specialized data sets, purchasing archival materials, purchasing images, hiring field assistants)
- Research-based travel not associated with a course (e.g. off-campus data collection, access to libraries, archives or historical sites)
- Purchasing laboratory equipment, field work equipment, or computer software
- Off-campus study of foreign languages needed for research. Proposals will be considered only if the instruction is not available on the UM-Ann Arbor campus. The relevance of the language studied to the student's research must be explained in the proposal.
- Off-campus study of specialized methodologies or techniques needed for research. Proposals will be considered only if instruction in the methodologies and/or techniques is not available on the UM-Ann Arbor campus. The relevance of the methodologies and/or techniques to the student's research must be explained in the proposal.

A funding proposal describing the research project/practicum (maximum of 1,500 words) is due for all students in a Master's Project or Practicum. Each project/practicum group will submit one overall funding proposal. The requirements are described in the [Master's Project and Practicum Funding Guidelines](#).

Your master's practicum advisor should give you guidance on creating a budget. The project budget guidelines and template can be found online. Before submitting any budget requests to OAP, your faculty project advisor needs to approve your budget.

If your academic travel (conference, research, internship, project/thesis work) takes you out of the U.S., you are required to register via the [U-M Travel Registry](#) and purchase the [U-M Travel Abroad Health Insurance](#). The health insurance is required even if you currently have insurance which provides for international travel. OAP verifies your registration and purchase the health insurance, and then will distribute the funds to your student account.

It also may be appropriate to solicit funding from outside the School: the Horace H. Rackham Graduate School awards (limited) Travel and [Graduate Student Research Grant funding](#) the International Center awards (limited) funding for work overseas.

All of these opportunities require that a student submit a completed application form and proposal (including a budget) and receive approval before incurring expenses. Contact the appropriate office for additional information.

Format

Margins

The gutter margin must be a 1.25-1.5 inches wide to allow for binding. All other margins must be a least one inch wide. Typing should be started one inch from the top of the page and end at least one inch from the bottom. (This does not include headers or footers.)

Spacing

Spacing should be used uniformly throughout the document. Single, one and one-half, and double spacing are all acceptable.

Pagination

A number should appear on every page except the title page and the blank page following it.

The preliminary pages receive small Roman numerals (i, ii, iii, etc.) that are placed in the center of the typing page, one-half inch above the bottom of the page. The numbering should begin with "ii." The blank page following the title page is neither counted nor numbered. This page should be the only blank page. The blank page and the title page are the only two pages that do not receive numbers.

The page numbers in the body of the text are placed in the center of the typing space, one-half inch below the top of the page. An exception in the placing of the page number should be made for pages carrying a major heading (e.g., the first page of a chapter, bibliography, or appendix). On all such pages, the number should be placed at the bottom, in the center of the typing space. If the description of a figure is too long to be placed on the same page as the figure, it may be placed on the left side facing the figure. The figure number must appear on both the figure and the page carrying the description of the figure. This page must carry the number that would normally precede the page number of the figure itself (letter suffixes such as 10a, 10b, etc. should not be used).

Typing should appear on both sides of the paper (i.e., double sided). Each page of the text should be filled unless it is a preliminary page or the last page of a chapter. Chapters are the only sub-division in the text that require new pages. When the text is not divided into chapters, each major division should be treated as a chapter and begin a new page.

Table of Contents

There should be a table of contents; the captions should be clear and informative and agree with captions in the text.

Abstract

The abstract is a summary of the main objectives, methods, results, and conclusions or recommendations, concisely and precisely written, and limited to 25 typed lines. Since most readers will read the abstract to determine the value of examining the entire document, give critical information such as "The three criteria used in the study were" and "results showed that 29% of 358 respondents favored" as opposed to "criteria will be discussed" or "some respondents felt", respectively. The abstract will be reprinted with an index of all master's projects, and may eliminate the need for a longer executive summary. Good examples of abstracts are seen preceding articles in refereed research journals and in Dissertation Abstracts.

Footnotes

These are explanatory notes not properly a part of the text. They should be placed at the bottom of the page to which the note applies.

References

Bibliographical material may be indicated by footnotes, but it is usually better practice to give all references used or consulted in a single "Literature Cited" or "Bibliography" section at the end of the text (but ahead of appendices). In this case, references should be: 1) identified by name and date in the text (e.g., Dana 1948) and listed alphabetically in the bibliography, or 2) indicated in the text by numbers cumulative throughout the paper (e.g., 12) and listed by numbers at the end.

Literature Cited or Bibliography

There are several accepted styles. Clarity should not be sacrificed for brevity. The important thing is to be accurate, complete, and consistent. Students should consult their major professor, style manuals, published books, or bulletins for the style used in their field. Students often use a style similar to that used by the journal to which they plan to submit a manuscript.

Layout Order

- a. Title page (use [sample title page](#) provided)
- b. Abstract (2-3 paragraphs)
- c. Acknowledgements (optional)
- d. Table of Contents
- e. Text
- f. Appendices (optional)
- g. Bibliography

Practicum Completion Requirements

The student must have enrolled in at most 6 credit hours of NRE 700. Each thesis must culminate in a written document.

Written Document

The final report should be uploaded directly to MBox. Jennifer Taylor, the School Registrar, will provide you access to MBox to upload your final document(s). You will also need to submit, in hard copy, the signed Opus Verification Form and Deep Blue License Agreement. The finished copy of the final report required by the School must be uploaded by 5:00 p.m. on the last day of scheduled classes for the term in which the degree is expected. Failure to submit this copy will delay your graduation.

The copy of record for all SEAS opus documents is stored in "DeepBlue". DeepBlue is the University of Michigan's permanent, safe, and accessible service for representing our rich intellectual environment online. The electronic copy will be stored in DeepBlue maintained by the Shapiro Science Library.

Presentation

The School requires a presentation of the practicum product, open to the SEAS community. SEAS hosts a Capstone Conference at the end of each Winter term where all students can present their opus work. Please note, that failure to present at your given time during the Capstone Conference, could delay your graduation. Students who miss their presentation will need to work out an alternative presentation time

with the Associate Dean for Academic Programs. Notification of the new event needs to be sent to the SEAS community. An oral presentation and defense is mandatory, although, with approval of the practicum advisor, students may substitute presentation at a professional meeting or to other groups and organizations (e.g. the sponsoring organization or community groups) for a public defense at SEAS.

The finished copy of the final practicum must be submitted to OAP by 5:00 p.m. on the last day of scheduled classes for the term in which the degree is expected. Failure to submit this copy will delay your graduation.