

M.S. DEGREE PROGRAMS IN ENVIRONMENTAL SCIENCE POLICY AND PROCEDURES MANUAL

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I. BACKGROUND

The RIT Environmental Science (ES) Program is composed of three tracks: BS, BS/MS, and MS. One of the key principles emphasized in all three tracks is the interdisciplinary nature of environmental science. Environmental Science draws on many scientific disciplines, mathematics, and a wide range of nonscientific disciplines. In order to solve significant environmental problems, an environmental scientist must simultaneously utilize elements from many disciplines. This interdisciplinary nature of Environmental Science is reflected in the graduate curricula and in the policy and procedures described herein.

This policy and procedure manual applies to the graduate portions (BS/MS track and MS Track) of the ES Program. BS/MS track students are students currently enrolled in the ES undergraduate BS program. Students enrolled in the BS/MS track will fulfill all requirements for both the BS Environmental Science degree and for the MS Environmental Science degree. The MS degree track is for students already holding a BS degree in environmental science, biological sciences, or a related field of study. While the general degree requirements for the two programs are the same, in some instances these two categories of students will be handled separately in what follows below.

II. ADMITTANCE

A. BS/MS TRACK

1. ADMISSION REQUIREMENTS – BS/MS TRACK

- a. RIT BS Environmental Science Students seeking admission to the BS/MS Program will ordinarily apply for admission in the spring semester of their third year. Thus, students must have completed or be enrolled in all required courses found in the first two years of the BS curriculum or an alternative sequence of approved courses.
- b. External transfer students to the BS program must meet the above requirements, and must have completed at least two semesters at RIT, before applying.
- c. The academic standards for a Master's degree are higher than those for the BS programs and condensing the schedule of courses makes the BS/MS program more rigorous than either program individually. **Students applying to the BS/MS program must have a minimum 3.0 Overall GPA, PFOS GPA, and GPA in Environmental Science coursework. Note: a 3.0 does not guarantee admission into the program.**

2. PROCEDURES FOR ADMISSION – BS/MS

- a. The applicant must complete an application packet and submit it to the Environmental Science Graduate Admissions Committee (Forms 1 and 2). Application materials will be sent to eligible students during the Winter of their third year and must be returned to the ES Program Office by February 15.

- b. **At the time of application, students are encouraged to contact potential research mentors regarding potential research projects.**
- c. Applicants will be notified by mail regarding acceptance into the BS/MS Program by the Chair of the Environmental Science Graduate Admissions Committee during spring semester.
- d. In some cases, a student may be admitted on probationary status. In this event, the student will have twelve months to remediate the deficiency or deficiencies identified by the admissions committee.
- e. Accepted students will meet with their advisor to prepare a tentative semester-by-semester schedule of courses.
- f. Students admitted to the BS/MS Program also need to submit a **Change of Program form for the academic semester following completion of 124-Semester credit hours at RIT.**

B. MS TRACK

1. PROCEDURES FOR ADMISSION – MS TRACK

- a. Application for graduate study must be made online by February 15 through the RIT Office of Graduate Enrollment Services
http://www.rit.edu/emcs/ptgrad/grad_admission.html.
- b. Applicants must have a minimum 3.0 GPA.
- c. **At the time of application, students are encouraged to contact potential research mentors regarding potential research projects.**
- d. The Graduate Record Examination (GRE) is recommended, but not required, for domestic applicants. International students are required to submit GRE scores.
- e. International students are required to submit Test of English as a Foreign Language scores (TOEFL) scores. In general, a TOEFL score of greater than 550 (paper-based) or 213 (computer-based) is required for admission to the ES Program. Students who do not speak English as their primary language are also required to take the Michigan Test of English Language Proficiency, given by the RIT English Language Center (ELC). If a student's score is below standard, he or she must follow the recommendations of the ELC for additional English language coursework. Successful completion of this course work is an ES Program requirement for the Master of Science degree in Environmental Science. Foreign students who have completed their undergraduate degree at a U.S. institution do not need to submit TOEFL scores.
- f. When the application materials are complete, the applicant's folder is forwarded to the ES Program Office for review by the ES Graduate Admissions Committee.
- g. Once a decision has been made on an application, materials will be forwarded back to the Office of Graduate Enrollment Services for official notification to the applicant. **The Office of Graduate Enrollment Services is the only office authorized to advise students applying to the MS ES Program of the action taken.** Any offer of scholarship or assistantship made by the ES Program is made contingent on acceptance by the Office of Graduate Enrollment Services.

- h. In some cases, a student may be admitted on probationary status. In this event, the student will have twelve months to remediate the deficiency or deficiencies identified by the committee.
- i. Applicants may also be waitlisted, pending advisor availability.

III. SCHEDULING, REGISTRATION, AND CERTIFICATION

- A. Scheduling materials, course announcements, and registration materials will be placed in the mail folders or e-mailed to the students enrolled in the MS ES Program.
- B. For new students not yet on campus, the materials will be mailed and e-mailed prior to the upcoming semester. If you do not receive these materials, contact the ES Program Office.
- C. Non-matriculated students should contact the ES Program Office for course announcements and the dates and times of open registration.
- D. The Office of the Dean of the College of Science will be responsible for maintaining each student's academic record. The Environmental Science Program keeps a duplicate record.
- E. The student will receive information of their progress in the graduate program, on a periodic basis, from the ES Program Office.
- F. When all degree requirements have been completed, as described in more detail below, the Head of the Thomas H. Gosnell School of Life Sciences will certify completion of the degree program.

IV. ADVISING

- A. All students will have two advisors: a Faculty Advisor and an Academic Advisor. The Academic Advisor is located in the Program Office and serves as the day-to-day liaison for questions related to registration, course enrollment and degree certification. The Faculty Advisor is the faculty member with whom the student is doing their graduate research.
- B. New students must complete Form 3, the student information form and turn it in to the Academic Advisor in the Program Office at the start of their first academic year.
- C. If a research project has not been identified, the instructor of the Environmental Science Graduate Studies (ENVS-601) or the Program Director will act as a temporary advisor and will assist the student in identifying a suitable research project and advisor. Adjunct faculty and environmental professionals from the community may also serve as research advisors.
- D. The Faculty Advisor, Academic Advisor and the student will prepare the entire program of study that will be pursued by the student, including any remedial course work prior to the start of the first semester in the program. Form 4 (optional) can be used for this purpose.

- E. The advisor and student will assemble a Graduate Review Committee consisting of at least three members. The members of this committee will be chosen for their ability to contribute to the student's research effort. At least half of the members of the graduate review committee must be RIT faculty members.
- F. Form 5, which indicates the research advisor, members of the Graduate Review Committee members and the outline of the research project must be prepared by the student and advisor and approved by the Graduate Program Director by the end of the second semester of enrollment in the program.
- G. Some part-time students may conduct environmental science research at their place of employment. Credit may be granted for such research, if the work-related research is current and the work supervisor and the student's Graduate Review Committee formally coordinate the planning, execution, and reporting of the research in compliance with all requirements herein described. A formal proposal and final report are required, as described in detail below.

V. COURSEWORK

- A. Students should make an appointment to review prerequisites and determine the courses to be taken in the first semester of program, as soon as possible following admission.
- B. Each student's record will be tracked using Form 6, which will be maintained in the Program Office.
- C. If a student wishes to petition for transfer credit, the student must submit a Transfer Evaluation Form, available in the Dean's Office. These courses must also be approved on Form 7. Transfer credit will appear on a student's transcript as credit for an equivalent RIT course, or as a Graduate Transfer Elective, for courses that have no RIT equivalent.
- D. Courses offered by other RIT colleges, which are not required in the MS Environmental Science curriculum, are accepted in the program only when approved by the student's advisor and the Graduate Program Director **prior to enrollment in the course using Form 7**. Such courses will be reviewed, in consultation with the head of the School as necessary, to determine if they are appropriate to the student's program.
- E. Occasionally, a student may elect to use an independent study course as a graduate elective. These courses are accepted in the program only when approved by the student's advisor and the Graduate Program Director **prior to enrollment in the course using Form 7**. Such courses will be reviewed, in consultation with the Head of the School as necessary, to determine if they are appropriate to the student's program. The College Independent Study approval form must also be filled out for approval and attached to Form 7.
- F. All courses must be taken at the graduate level (600 and above). Undergraduate courses do not count towards the degree requirement.
- G. Required undergraduate prerequisites cannot be counted towards the overall GPA or towards the number of semester credit hours required for graduation. For example,

General Ecology is a prerequisite for Advanced Conservation Biology; students required to take this course prior to enrollment in Advanced Conservation Biology may not count this course towards their overall GPA or total number of semester credit hours required for graduation.

- H. Students enrolled in the BSMS degree program may count a maximum of 9 semester credit hours towards both degrees. All double counted courses must be taken at the graduate level.
- I. A minimum of 3 and a maximum of 6 credit hours of thesis research (ENVS-790 or ENVS-780) may be counted towards completion of the MS degree.
- J. A minimum GPA of 3.0 is required to remain in good academic standing. See section XII below for a discussion of suspension and probation resulting from a GPA below 3.0.
- K. If a student has completed all required coursework for graduation, the student must remain continuously enrolled in Continuation of Thesis (see section XIII below).

VI. NON-MATRICULATED STUDENTS

- A. Non-matriculated individuals may take courses that are required for the MS ES degree program prior to seeking admission. If the student later applies for admission to the MS ES Program, the required courses taken prior to matriculation will contribute to the GPA calculation and to the fulfillment of the required hours for this degree.
- B. Courses taken prior to matriculation may not exceed the seven-year limit for graduate studies (i.e., the time from which the first course is taken as a non-matriculated student until the completion of the MS ES Program may not exceed seven years.
- C. Courses taken prior to formal admission to the program may not count toward the completion of the MS degree if the credits accumulate beyond 16 semester credit hours before an application is filed with the Admission's Office.

VII. RESEARCH PROPOSAL

All students must prepare and publicly defend a research proposal. In some instances, a non-thesis research project (ENVS-790) may be developed under the direction of the student's research advisor, but the student will still present and defend the proposal and the final project. The research proposed above may be from any aspect of ES and it may include science, social science, other disciplines, and the integration of disciplines. Research, which integrates several disciplines, is especially encouraged. The purpose of the submission of the Research Proposal is to allow the committee to evaluate and advise the student on matters pertaining to ES research and academic development. As a part of this evaluation the committee will consider the ability of the student to complete the project in a reasonable length of time and will include a detailed review of the student's overall performance.

- A. **Along with consistent** consultation with the student's research advisor, the Environmental Science Graduate Studies course (ENVS-601) is designed to result in the student preparing and defending his/her research proposal.
- B. The proposal should have the following sections:
1. **Introduction** – This section should delineate, in detail, the background (science, social science, engineering, etc) for the proposed project and should reflect a thorough review of the literature. Computer assisted literature searches are available through the RIT library website. This section must conclude with a succinct statement of the problem to be addressed by the proposed project and the objectives of the proposed research.
 2. **Materials and Methods** – This section should give sufficient detail, such that another individual with similar education and training in Environmental Science could reasonably be expected to duplicate the experiments proposed. This may include, but is not limited to, a description of reagents used (this may include catalog number), a description of equipment used (this may also include catalog numbers or model numbers), details of survey instruments used, RIT Institutional Review Board Approval, experimental protocols, analytical methods, the number of subjects and/or samples used, controls, statistical analyses to be used, and a timeline for completion of the project. An estimate of the cost of materials should also be included.
 3. **Broader Impacts (optional)** – This optional section may explain the broader implications of the proposed project and should help to put the research project into a larger context. For a list of possible broader impacts, see the definitions used by the National Science Foundation (<http://www.nsf.gov/pubs/2007/nsf07046/nsf07046.jsp>).
 4. **Bibliography** – This section should include references for all sources cited within the body of the text. In all matters of style and format, the student should meet the requirements for publication of the journal in which the research mentor believes the research may be published. If these requirements are not available, the student is referred to the Chicago Manual of Style.
- C. The student will present the proposal orally to her/his Graduate Review Committee. The presentation is open to the public and must be advertised within the School of Life Sciences and/or the College of Science at least one week prior to the time of the defense. A written copy of the proposal must be distributed to the committee members at least one week prior to the scheduled time of the oral presentation. It is important to note that the oral presentation is also an oral examination.
- D. Committee members may decide to issue a pass, a failure, or a conditional pass with specific conditions. The research proposal cannot be passed with more than one dissenting vote. All results from the evaluation should be made known to the student immediately and recorded on Form 8. A copy of this form should be given to the student as written notification of the results of the presentation.
- E. In the event of an unfavorable evaluation, the committee should immediately decide on the action(s) to be taken. One or more of the following recommendations could be made:

- a. Revision of the proposal
- b. Special seminar or other presentation
- c. Special written assignments
- d. Specific coursework to be taken
- e. Dismissal from the program

VIII. FINAL WRITTEN REPORT AND FINAL ORAL EXAMINATION/DEFENSE

All students must prepare a final, written report of their thesis or project and formally present their work in a public seminar and defense. The Graduate Review Committee will evaluate both the oral presentation and the research project.

- A. A final written report of the research project will be submitted to the Graduate Review Committee. The final report will contain all sections described above for the Research Proposal, and in addition will include Results and Discussion section(s) that present the results of the research and contain a thorough scholarly review of the environmental implications of the research conducted. See below for the suggested format.
- B. The final report will also be presented orally to the student's Graduate Review Committee at a mutually agreeable time. This constitutes a second oral examination. The final oral examination/defense will be a public seminar that will be followed by private questioning by the Committee.
- C. The Committee must receive a copy of the "final draft" of the written report **at least one week prior** to the time of the oral presentation.
- D. The student is responsible for posting public announcements of the seminar at least one week in advance to the School of Life Sciences and/or the College of Science.
- E. The oral presentation should include the same sections as are found in the written report (i.e., Introduction, Materials and Methods, Results, Discussion). Students are strongly urged to use visual aids to enhance their presentation.
- F. The Committee, based on the final examination and the final written report, will take final action. The Committee will record their actions on Form 9. The final approval cannot be given with more than one dissenting vote.
- G. The comments, requirements, corrections etc. from the Committee should be promptly incorporated into the Final Written Report or Thesis, at which time the Committee will sign the thesis cover page. Note that the cover page and one copy of the entire thesis (library copy) must be printed on high quality, acid free bond paper (see below) and after binding will be retained by Wallace Library in the Archives. Three additional copies must be prepared for the Program, the Research Advisor, and the student and submitted for binding. These additional copies may be photocopies of the original. It is recommended that the student make additional copies to distribute to committee members.
- H. The student must pay the nominal bindery fee to the cashier at Student Financial Services before the library will accept the thesis. The library must acknowledge receipt and acceptance of the thesis before the student will be certified for graduation. A paper

receipt is provided by the library as acknowledgement and must be submitted to the ES Program Office for degree certification.

- I. Students also are required to submit an electronic copy of the thesis or dissertation to ProQuest Dissertations and Theses Global for publication (see <http://infoguides.rit.edu/thesis-services> for details). **Note that the cover page of this file should NOT contain the approval signatures, for security reasons.**
- J. Acceptance of a thesis constitutes a publication.

IX. FORMAT OF REPORT OR THESIS

- A. Previous reports and thesis may be examined in the Program Office or from the RIT Scholar Works digital library (<http://scholarworks.rit.edu>).
- B. Instructions for preparing a thesis are available at <http://infoguides.rit.edu/thesis-services>
- C. Brevity is the key to good environmental science writing. However, sufficient detail must be provided to permit independent repetition of the study, given the references cited and the report or thesis.
- D. The following formatting must be used:
 - 1. Document specifications for copy submitted to Wallace Library
 - a. High quality, acid free bond paper (8.5" x 11") should be used for the original library copy. Clean photocopies can be used for all additional copies.
 - b. A margin of 1 inch (minimum) on all sides of the pages is required in order to accommodate the binding process for theses.
 - c. The thesis/dissertation text is to be 1.5 or double-spaced. Footnotes and long quotations are to be single-spaced. Such spacing is a standard requirement in academic publishing.
 - d. The font style must be a serif style—serif fonts have additional structural details that enhance the readability of printed text. One popular serif font is Times New Roman.
 - e. The font size must be within 10 point – 12 point, for optimum readability of the text.
 - f. All preliminary pages should be numbered with Roman numerals.
 - g. Pages containing the main text, illustrations, appendices, and bibliography should be numbered with Arabic numerals.
 - h. Single sided pages are required for the library copy. All other copies may be double sided.
 - i. For additional details on document preparation see <http://infoguides.rit.edu/thesis-services>
 - 2. References
 - a. Reference citations are indicated in the text by the first author's last name and year of publication in parentheses. The corresponding citation will appear in the Bibliography of the report or thesis.

- b. The citations will adhere to the format of the journal in which publication of the research is most likely to appear.
 - c. If no such format is available to the student, the student is referred to the Chicago Manual of Style.
- 3. Figures and Tables
 - a. Charts, graphs, drawings, and tables are inserted following the page in which reference is made to them. Charts, graphs, and drawings are referred to as figures.
 - b. Legends generally provide experimental detail sufficient for interpretation without reference to the text.
 - (a) Legends appear on the same page as data tables, positioned above the table.
 - (b) Legends for figures appear below the figure on the same page or on a separate page.
 - c. The axes of graphs must be clearly labeled with units. The axes should have graduation marks.
 - d. Every figure must be boldly and consecutively numbered.
 - e. If you utilize a figure or table that has previously been published, this must be referenced. If the material is copyrighted, permission to use the figure or table must be obtained and noted.
 - f. Footnotes to tables should appear on the same page as the table.
- 4. Headings should appear in bold. The following headings may be used:
 - a. **TITLE PAGE** (See Form 10 for the proper format)
 - b. **PERMISSION FOR REPRODUCTION**
 - c. **TABLE OF CONTENTS**
 - d. **TABLE OF FIGURES**
 - e. **TABLE OF TABLES**
 - f. **ACKNOWLEDGEMENTS**
 - g. **ABSTRACT**
 - h. **INTRODUCTION**
 - i. **MATERIALS AND METHODS**
 - j. **RESULTS AND DISCUSSION**
 - k. **SUMMARY**
 - l. **BIBLIOGRAPHY**
 - m. **APPENDIX** (optional)

X. GRADUATION

- A. All requirements as described in the RIT Graduate Bulletin must be fulfilled.
- B. All coursework, as listed on the Degree Audit (Form 6) and described above must be successfully completed.
- C. An overall GPA of 3.0 or higher is required for graduation.
- D. A student must successfully complete either a project or thesis. For the thesis, the final document must be submitted to the library and written documentation provided to the ES Graduate Program Office. See <http://infoguides.rit.edu/thesis-services> for the bindery specifications and drop off schedule.
- E. When final approval has been received from the Committee and all other requirements have been met, the Head of the School of Life Sciences will certify the student for graduation.
- F. A student enrolled in the BS/MS track may participate in the spring graduation ceremony at the end of their fourth year, provided that they have completed the degree requirements for the BS degree at the time of the ceremony. At this time the student will be recognized only for the BS degree. A BS/MS student may also wait until completion of the MS degree to participate in the graduation ceremonies, in which case the student will receive recognition for both degrees at the same time. BS/MS students will not receive recognition for the BS degree in more than one ceremony.
- G. In order to participate in the spring graduation ceremony and receive recognition for completion of the MS degree, a student must have completed all of the degree requirements above. In rare instances, a student who intends to finish the degree during the summer semester may participate in the spring ceremony provided that the student: (1) has completed collection of all data for the thesis or project, (2) has a defense date scheduled during the summer semester, and (3) has received approval from their advisor and the Graduate Program Director.

XI. TIME LIMITATION

- A. All program requirements must be completed within seven (7) years after matriculation.
- B. Only the RIT Graduate Council can grant an extension of this limit. The student must petition the Graduate Council for an extension. The petition must include a description of the circumstances, which have led to an unusual period of time being required for completion of the degree.

XII. PROBATION AND SUSPENSION

- A. Any matriculated student whose cumulative program GPA drops below 3.0, after completion of 8 semester credit hours or more, will be placed on probation.

- B. If a student has completed 8 hours or more of coursework towards the MS ES degree and his/her GPA drops below 2.75, dismissal from the program may result.
- C. Students on probation must meet with their advisor to discuss the advisability of their continuation in the program.
- D. Students placed on probation must raise their GPA above 3.0 in 8 semester credit hours or less or they will be suspended from the program.
- E. A suspended student wishing to return to the program may apply for readmission after a period of one academic year.
- F. A student suspended from the program may not enroll in courses for one year from the date of the suspension, unless special permission is obtained from the Dean of the College of Science.
- G. Dismissal from the program is generally an irreversible decision of the Environmental Science Graduate Committee.

XIII. CONTINUATION OF THESIS

- A. If a student has completed all requirements for graduation except the preparation and presentation of her/his report/thesis, the student should register for Continuation of Thesis.
- B. Continuation of Thesis costs the equivalent of one credit hour, although no credit is earned.
- C. The student must register for Continuation of Thesis each semester (including summer semester) until the report or thesis is completed.
- D. **Students are expected to pursue their degree without a substantial break.** Failure to enroll (register) for three successive academic terms, including summer but excluding Intersession, can result in the loss of active student status.
- E. **For each semester that a student is registered for Continuation of Thesis, the student must submit to the Program Director a brief document at the start of the semester indicating the goals to be accomplished during the semester. At the end of each semester, the student must submit a brief progress report of the actual progress made.**
- F. The seven-year limit for completion of all work related to the MS ES degree continues in force.
- G. If a student must temporarily discontinue study for one or more semesters, a Leave of Absence Form should be completed. This form is available in the ES Program office.
- H. A leave of absence will not exceed one year. An extension may be granted in exceptional circumstances.
- I. If a student leaves the program permanently, a Withdrawal Form should be completed. This form is also available in the ES Program office.
- J. For additional details, see the current RIT Graduate Bulletin.