

State University of New York
College of Environmental Science and Forestry

GRADUATE PROGRAM
IN
ENVIRONMENTAL SCIENCE

Master of Science
(M.S.)
Degree

HANDBOOK

2008 - 2009

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I. INTRODUCTION

Welcome to the Graduate Program in Environmental Science (GPES). We are delighted that you have joined a unique set of graduate students, faculty, and researchers who share a deep concern for the development and application of multidisciplinary approaches to the stewardship of our natural and built environments. This Handbook is intended as our primary guide to GPES for both students and faculty.

The operation of GPES is moderately complex. This is a result of the diversity of student backgrounds, the participation of faculty from across the College and Syracuse University, and the curricula design which balances a Core, with Area-of- Study depth, and individualized synthesis.

Hierarchically, the State Education Department and S.U.N.Y. establish basic policy for all graduate programs. Within E.S.F, a comprehensive set of Graduate Policies have been adopted by the College Faculty. These are published in the College Catalog. The policies and the procedures which implement College policy can be found at <http://www.esf.edu/graduate/policies.htm> . These are available for review with your major professor. Internally GPES has evolved a number of specific policies, procedures, and guidelines for the effective delivery of the program.

GPES' primary vehicle for engaging multidisciplinary subjects is the **Area of Study**. These represent the loci of faculty research and scholarship interests which have been formally approved by the Faculty. Minimum thresholds include three active faculty including a coordinator, and five graduate E.S.F. courses. Areas of Study are periodically revised to reflect evolving interests and resources. Areas of Study are structured as standing subcommittees, with a coordinator, and participating Major Professors. Subcommittees may have student members.

All students in GPES are admitted directly into an Area of Study. Students are strongly encouraged to network with their peers and to actively participate in their Area of Study.

The GPES web page provides a link to the areas of study and their participating faculty at <http://www.esf.edu/environmentalscience/graduate/> .

II. REQUIREMENTS FOR THE M.S. DEGREE

The Catalog description provides the basic framework of graduation requirements. The College's process for managing a masters degree is depicted in the schematic which follows. To facilitate detailed program planning and graduation documentation GPES uses a Plan Sheet. Each Major Professor is to keep an updated version in their advising file, and each student is encouraged to keep an updated personal copy. A completed Plan Sheet must be attached to the College's Form 3B when submitted for approval by the Chair. Plan sheets are available in the Graduate Program in Environmental Science office. A copy of the Plan Sheet follows this description.

1. Prerequisites.

Deficiencies in undergraduate level Micro or Environmental Economics, Ecology, or Statistics are identified in the letter of admission. If not completed prior to matriculation these **must** be taken as co-requisites during the first two semesters of residence. Undergraduate or graduate courses may be taken to satisfy deficiencies. Undergraduate courses are not included in Grade Point Averages, and do not count toward satisfying the minimum number of required graduate credit hours. Graduate courses will be included in Grade Point Averages. Graduate level deficiency courses may not be used in a Plan Sheet for Core, or Area of Study requirements.

2. Advanced Standing.

A maximum of six graduate credit hours with a grade of B or above that have not been applied to another degree may be transferred via Petition. The Petition must include an attached syllabus, and a justification of how the courses are to be included on the student's Plan Sheet.

Petitions regarding Core requirements may be submitted following matriculation. Petitions regarding Area of Study requirements are to be submitted following the formalization of the student's steering committee.

3. Program Requirements.

The Master's Degree is designed as a two-year experience. The minimum total credits for the degree is 36.

- a. Core: A total of nine (9) hours in applied social sciences is required. In addition, a total of six (6) hours is required in research methods. Course options which satisfy these requirements are designated by the area of study faculty.
- b. Area of Study: A minimum of fifteen (15) credit hours (excluding 898 and 899 courses) in the area of study, as determined by the major professor and area of study faculty. Area of Study faculty maintain advising lists of courses preapproved to satisfy the fifteen credit hour Area of Study requirements. The student's Major Professor or Steering Committee may designate additional courses. These lists are reproduced in Appendix A.
- c. Thesis: A minimum of six (6) credit hours of research resulting in a document that clearly demonstrates graduate level accomplishments of the student, followed by a defense examination. Students must have an approved Thesis Proposal. A form for approval is contained in Appendix B. A diagram showing program requirements and progress toward the degree follows. See also attached program Plan Sheet.

4. Concurrent Degree.

Concurrent degree students may "double-count" 8 cr. hrs. toward their M.S. degree.

NOTES

1. The Steering Committee "is composed of the major professor and at least two faculty members or other qualified persons." See the College Catalog 2008-2009.

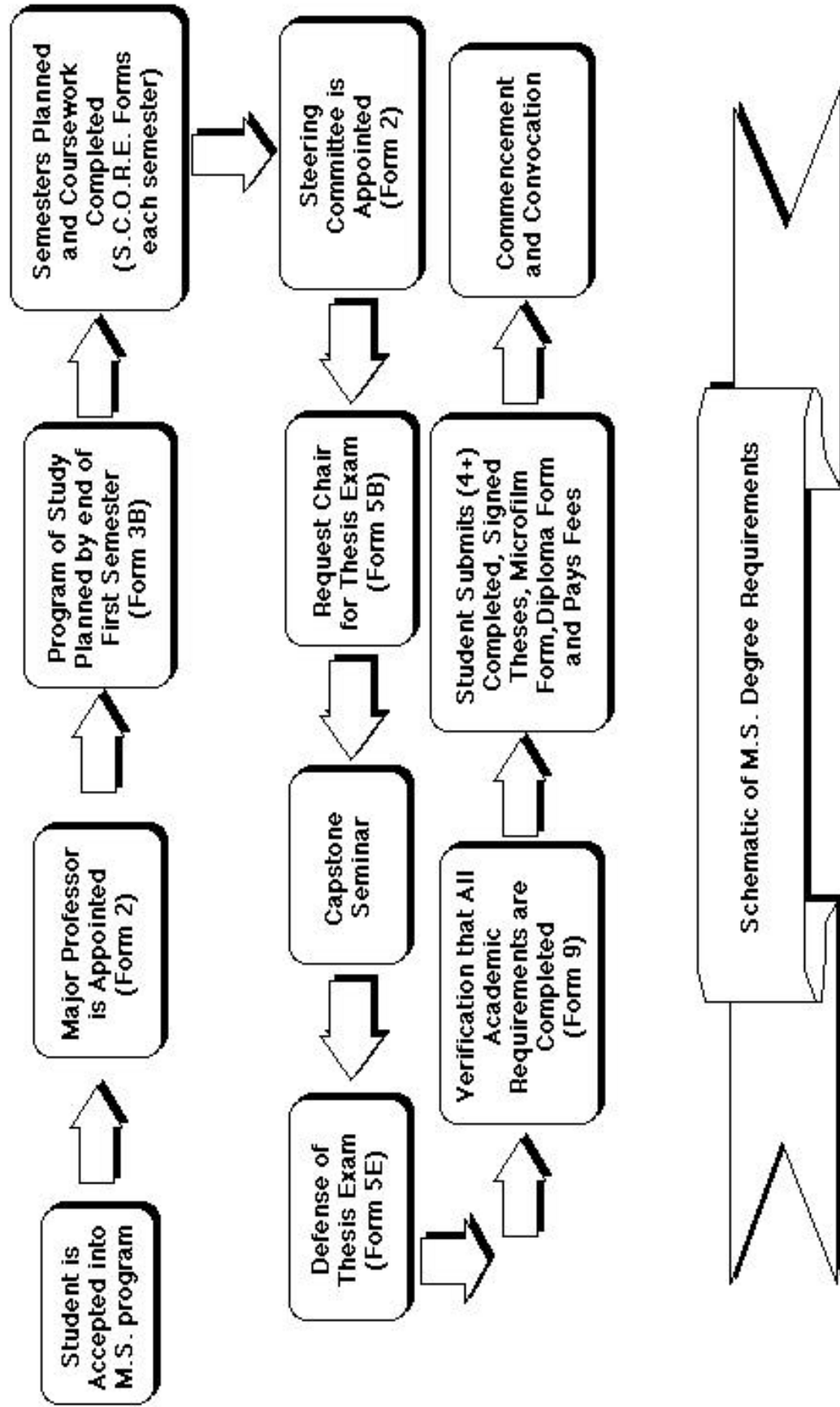
2. The Steering Committee "should be appointed within the first semester". The Steering Committee" must be established and must have met by the end of the third semester of graduate study.

3. The Defense Committee "consists of members of the steering committee, and at least one additional faculty member" as Examiner. The Dean of Instruction and Graduate Studies appoints a committee Chair who is not from the student's degree program. See the College Catalog 2008-2009.

4. "Form 5B should be submitted to the Dean's office, according to academic year deadlines.

5. The student "must inform the Dean's office of the agreed upon date, time, and location for the defense at least two weeks in advance of the defense date." Form 5A.

6. One final copy must be delivered to each member of the Defense Committee, including the Chair, at least seven (7) days prior to the scheduled defense date Form 5A. The student should be aware that Syracuse University faculty serving on the committee may require the delivery of their copies at least fourteen (14) days prior to the defense.



MS PLAN SHEET

Student: _____ **Semester Entered:** _____
Phone: _____ **Email:** _____ **Area:** _____

Semester:

Course	Cr. Hrs.	Grade GPA	Seminars (2)	Pre-Req.	App. Soc. Sci.	Research Methods	Study Area	Thesis
Totals:								
Unmet Requirements:	/39	/3.0min	/2	/0-9	/9	/6	/12	/6

Semester:

Course	Cr. Hrs.	Grade GPA	Seminars (2)	Pre-Req.	App. Soc. Sci.	Research Methods	Study Area	Thesis
Totals:								
Unmet Requirements:	/39	/3.0min	/2	/0-9	/9	/6	/12	/6

Semester:

Course	Cr. Hrs.	Grade GPA	Seminars (2)	Pre-Req.	App. Soc. Sci.	Research Methods	Study Area	Thesis
Totals:								
Unmet Requirements:	/39	/3.0min	/2	/0-9	/9	/6	/12	/6

Semester:

Course	Cr. Hrs.	Grade GPA	Seminars (2)	Pre-Req.	App. Soc. Sci.	Research Methods	Study Area	Thesis
Totals:								
Unmet Req.:	/39	/3.0min	/2	/0-9	/9	/6	/12	/6

PROGRAM ADMINISTRATION

Student: _____ **Semester Entered:** _____

Degree: Ph.D. M.S. M.P.S. Area of Study: _____

Address: _____

Phone: _____ **Email:** _____

Deficiencies: _____ **Semester Remedied:** _____

Administrative Requirements Completed:

3B Form Yes Date: _____

Thesis/Internship Proposal: Yes Date: _____

Title: _____

Steering Committee:

1) _____ Phone _____
2) _____ Phone _____
3) _____ Phone _____
4) _____ Phone _____

Examiners (M.S., Ph.D. only):

1) _____ Phone _____
2) _____ Phone _____
3) _____ Phone _____
4) _____ Phone _____

Defense/Exam Chair (M.S., Ph.D. only):

_____ Phone _____

Capstone Seminar: Yes Date: _____ Time and Location: _____

TA/RAs Held:

Semester	_____	Course/Project	_____	Supervisor	_____
Semester	_____	Course/Project	_____	Supervisor	_____
Semester	_____	Course/Project	_____	Supervisor	_____
Semester	_____	Course/Project	_____	Supervisor	_____
Semester	_____	Course/Project	_____	Supervisor	_____
Semester	_____	Course/Project	_____	Supervisor	_____

III. RESOURCES

The Graduate Program in Environmental Science has limited staff, facility, and financial resources. Over the past few years we have developed management approaches for their effective and equitable utilization.

A. Graduate Program in Environmental Science (GPES) Office is 107 Marshall Hall

The office has two primary segments: Production Staff, Records and Communications. The Office maintains files (unofficial) of student records, folders of job and research announcements, course syllabi, and internship requests. It maintains a collection of GPES Thesis, Dissertations, Research Proposals, and Internship Reports which are available for reference.

Most students at some time during their studies encounter problems of a personal or academic nature for which they require assistance. An early full discussion of the situation and options is often the key to their resolution. Major Professors and the GPES Director are all available to facilitate this process. Office staff can assist in making appointments as necessary.

B. Conference Room 105 Marshall Hall

The Conference Room is the setting for Faculty Meetings and GPES seminars, including graduate students' capstone seminars. The room may be scheduled for student meetings. During unscheduled periods it is available for informal graduate student discussions and study. Stored in the conference room are the Faculty's Slide Projector, VCR, TV, Laptop Computer, and LCD Projectors which may be borrowed by graduate students for class presentations.

GPES Mailboxes - Outside 105 Marshall Hall

These are the primary mechanism for internal College and Faculty communications. Students should make it a practice to visit their box at least once a week. The mailboxes should not be used to receive U.S. Mail, and the GPES Office Staff cannot receive personal phone messages for students.

C. Office Space

It has been the general practice of the College that graduate students are provided with a desk space on an as-need basis. Because of limited facilities and the flux of students in residence, the assignment of such space usually takes a few weeks each fall. Students should first ask for space available from their major professor. GPES has some space for available in B5 Marshall Hall, B7 Marshall Hall and 406B Bray Hall. The Office Staff maintains a list of requests and vacancies. Periodically, GPES arranges with other Faculties to use surplus space on a semester by semester basis.

D. Assistantships

There are two basic forms of assistantships, Graduate (GA), and Research (RA). GA's are awarded by the College each year based on Faculty recommendations. They are primarily used for Teaching Assistantships in undergraduate and graduate courses. In 2008-2009 GPES

had 12 semester positions for its approximately 75 graduate students. Each spring students who will be returning in the Fall are notified by the GPES Director of the projected GA allocation and requested to formally apply. Incoming admitted students are also included in the selection process. A faculty committee prioritizes the applications for administrative action.

As a graduate-research College ESF is involved in numerous externally funded projects most of which involve RA's. Each project is managed by a Principal Investigator who has the responsibility of selecting staff. GPES has no direct involvement in this process. Students interested in RA's should discuss opportunities with their Major Professor. Throughout the year the Graduate Office and Research Office circulate research, fellowship, and internship announcements. Students should periodically check their mailboxes, the appropriate ES folders, and the ES bulletin board.

The Edna Bailey Sussman Fund provides stipends to support graduate student summer internship experiences. The Fund has supported approximately 20 ESF students per year, about one-quarter of whom have been GPES students. Sussman supports a broad range of interest areas, from environmental policy, regulation and communication to various environmental sciences. Sussman applications are treated competitively; awards are usually in the range of \$4,800 for full-time internship employment. Applications must be filed by the annual application deadline, usually in early March. Awards are announced in early May. Proposal guidelines are available in February from the Office of Instruction and Graduate Studies located in 227 Bray.

APPENDIX A.1
MASTER of SCIENCE (M.S.) DEGREE

ENVIRONMENTAL COMMUNICATION AND PARTICIPATORY PROCESSES
STUDY AREA

Advising Guide

General Requirements. The minimum credit hours required for the MS degree are:

	Credit Hours
2 Environmental Science Seminars	0
Applied Social Science	9
Methods	6
Area of Study	15
Thesis Research	6
Total	36

Environmental Science Seminar. All students are required to take two (2) semesters of ENS 797 Environmental Science Seminar or, with Major Professor permission, appropriate seminars in other Faculties at the College or Syracuse University (the latter for credit only). ENS 797 is normally offered only as an Audit, but at times is offered for credit. If so, the student may take it for credit or Audit. ENS 797 taken for credit may be applied against the Applied Social Science requirement.

Applied Social Science. 9 credit hours should be selected from the following course list. In some cases, other appropriate courses may fulfill this requirement in the larger context of your program. These substitutions require approval by your Major Professor.

ANT 683 Social Movement Theory
FOR 665 Natural Resources and Environmental Policy
FOR 753 Advanced Natural Resource and Environmental Policy
GEO 558 Sustainable Development
IST 552 Information Systems Analysis Concepts and Practices
IST 607 Government and Information
IST 642 Electronic Commerce
IST 643 U. S. Federal Information Policy
LAW 716 Environmental Law
PPA 709 Public Organizations and Management
PPA 730 Problems in Public Administration
PPA 753 Executive Leadership and Policy
PSC 705 Science and Public Policy
SPC 514 Language and Meaning
SPC 535 Communication and Community
SPC 546 Seminar Legal Communication

Research Methods. 6 credits hours, usually selected from the following courses. Consider your thesis research needs in consultation with your Major Professor when choosing these or other appropriate method courses:

PPA 722 Quantitative Analysis
SOC 614 Introduction to Qualitative Research

Area of Study. 15 credit hours. Area of Study course work is chosen in consultation with your Major Professor and Steering Committee. At least 6 credit hours of EST coursework must be completed from the list of courses provided below, excluding any independent studies courses (ENS 798). The other six credits may be selected from the courses listed below or from other appropriate courses that become available.

EST 608 Environmental Advocacy Campaigns and Conflict Resolution
EST 612 Environmental Policy and Governance
EST 626 Concepts and Principles of Sustainable Development
EST 635 Public Participation and Decision Making
EST 650 Environmental Perception and Human Behavior
FOR 690 Seminar and Workshop on Natural Resources Policy & Management
EFB 617 Perspectives on Interpretive Design
MIS 545 Decision Support Systems
MIS 745 Decision Support Systems
MAR 741 Marketing Community and Public Service Agencies
SHR 703 Interpersonal and Group Skills for Managers
ANT/LIN/SOC 571 Topics in Sociolinguistics
ANT 652 Anthropology
ANT 674 Culture and Folklore
ANT 675 Culture and Disputing
SOS 620 Interpersonal Conflict Resolution Skills
SOS 621 Mediation: Theory and Practice
SOS 622 Negotiation: Theory and Practice
SOS 623 Leadership: Theory and Practice
SOS 624 Conflict Resolution in Groups

Thesis. 6 credits, completed as ENS 899 Thesis Research. These credits reflect progress made in thesis research. They can be used to support the development of your thesis proposal (e.g., literature review, directed readings) as well as the actual research and writing of the thesis. These credits are awarded in consultation with your Major Professor.

Other Requirements. In addition to course and credit hour requirements, students are required to:

1. Form a Steering Committee of the Major Professor and two additional faculty members by the end of the second semester of full-time study. Form 2A is available in Marshall 107.
2. File a Form 3B (Academic Plan), attaching a program Plan Sheet, with the Office of Instruction and Graduate Studies (227 Bray) by the end of the second semester of full-time study. Form 3B is available in Marshall 107.
3. Offer a Capstone Seminar, reporting either on planned or completed Thesis activity.
4. Successfully complete written comprehensive exam.
5. Successfully complete Thesis defense.

APPENDIX A.2
MASTER OF SCIENCE (M.S.) DEGREE

ENVIRONMENTAL POLICY AND DEMOCRATIC PROCESSES
STUDY AREA

Advising Guide

General Requirements. The minimum credit hours required for the degree are:

	Credit Hours
Environmental Science Seminar	0
Applied Social Science	9
Research Methods	6
Area of Study	15
Thesis Research	6
Total	36

Environmental Science Seminar. All students are required to take two (2) semesters of ENS 797 Environmental Science Seminar or, with Major Professor permission, appropriate seminars in other Faculties at the College or Syracuse University (the latter for credit only). ENS 797 is normally completed as an Audit, but at times may be taken for credit if offered. Credit hours when awarded may be applied against the Applied Social Science requirement.

Applied Social Science. 9 credit hours, selected from the following course list:

EST 608 Environmental Advocacy Campaigns and Conflict Resolution
EST 612 Environmental Policy and Governance
EST 626 Concepts and Principles of Sustainable Development
EST 635 Public Participation and Decision Making
EST 650 Environmental Perception and Human Behavior

Research Methods. 6 credits hours, usually selected from the following:

APM 635 Multivariate Statistical Methods
APM 625 Intro to Sampling Techniques
PPA 722 Quantitative Analysis
SOC 614 Introduction to Qualitative Research

Area of Study. 15 credit hours. Area of Study course work beyond the Core and Research Methods requirements is chosen in consultation with the Major Professor and Steering Committee. Generally, this coursework is seen as an extension of coursework begun in the Core, and will be taken from the list of courses below, although other courses at times may be selected. At least 6 credit hours of ENS coursework must be completed from the list of courses provided below, excluding any independent studies courses (ENS 798).

EST 550 Environmental Impact Analysis
EST 608 Environmental Advocacy Campaigns and Conflict Resolution
EST 612 Environmental Policy and Governance

EST 626 Concepts and Principles of Sustainable Development
EST 635 Public Participation and Decision Making
EST 650 Environmental Perception and Human Behavior
ESC 622 Energy Markets and Regulation
FOR 665 Natural Resources and Environmental Policy
GEO 558 Sustainable Development
GEO 720 Seminar on Latin America
IST 552 Information Systems Analysis Concepts and Practices
IST 607 Government and Information
IST 642 Electronic Commerce
IST 643 U. S. Federal Information Policy
LAW 716 Environmental Law
PPA 709 Organizational Theory
PPA 730 Public Organization and Management
PSC 602 Public Policy Analysis Theory and Practice
PSC 705 Science and Public Policy

Thesis. 6 credits, completed as ENS 899 Thesis Research. A thesis proposal is required, and the thesis or project in final form must conform with College and faculty requirements; see program Handbook.

Other Requirements. In addition to course and credit hour requirements, students are required to:

1. Form a Steering Committee of the Major Professor and two additional faculty members by the end of the second semester of full-time study.
2. File a Form 3B (Academic Plan), attaching a program Plan Sheet, with the Office of Instruction and Graduate Studies (227 Bray) by the end of the second semester of full-time study.
3. Complete two semesters of ENS 797 Environmental Policy Seminar, either as an Audit or, at the student's option, for academic credit.
4. Offer a Capstone Seminar on the thesis or project, reporting either on planned or completed activity.
5. Successfully complete a Thesis Defense Examination.

APPENDIX A.3
MASTER OF SCIENCE (M.S.) DEGREE

ENVIRONMENTAL AND COMMUNITY LAND PLANNING
STUDY AREA

Advising Guide

General Requirements. The minimum credit hours required for the degree are:

	Credit Hours
Environmental Science Seminar	0
Applied Social Science	9
Research Methods	6
Area of Study	15
Thesis Research	6
Total	36

Environmental Science Seminar. All students are required to take two (2) semesters of ENS 797 Environmental Science Seminar or, with Major Professor permission, appropriate seminars in other Faculties at the College or Syracuse University (the latter for credit only). ENS 797 is normally completed as an Audit, but at times may be taken for credit if offered. Credit hours when awarded may be applied against the Applied Social Science requirement.

Applied Social Science. 9 credit hours including at least 6 in ENS course work, selected from the following list:

- EST 608 Environmental Advocacy Campaigns and Conflict Resolution
- EST 612 Environmental Policy and Governance
- EST 626 Concepts and Principles of Sustainable Development
- EST 635 Public Participation and Decision Making
- EST 650 Environmental Perception and Human Behavior
- LSA 651 Comprehensive Land Planning
- LSA 652 Community Development and Planning Processes

Research Methods. 6 credits hours, usually selected from the following:

- LSA 640 Research Methodology
- APM 635 Multivariate Statistical Methods
- PPA 722 Quantitative Aids for Policy Analysis
- PSC 602 Public Policy Analysis

Study Area Coursework. 15 credit hours. Area of Study course work beyond the Core and Research Methods requirements is chosen in consultation with the Major Professor and Steering Committee. Generally, this course work is seen as an extension of course work begun in the Core, and will be taken from the list of courses below (or from those listed above that are not used to satisfy requirements), although other courses at times may be selected. At least 6 credit hours of EST/LSA course work beyond that taken in the Core must be completed from the list of courses provided below, excluding any independent studies courses (EST/LSA 798).

LSA 611 Natural Factors Analysis
LSA 650 Behavioral Factors of Community Design
LSA 651 Comprehensive Land Planning
LSA 681 Cultural Landscape Preservation
LSA 696 Community Planning Workshop
EFB 519 Geographic Modeling
ESC 525 Energy Systems
ESC 535 Renewable Energy Systems
ESC 622 Energy Markets and Regulation
EST 550 Environmental Impact Analysis
EST 626 Concepts and Principles of Sustainable Development
FOR 540 Watershed Hydrology
FOR 642 Watershed Ecology and Management
FOR 557 Practical Vector GIS
FOR 558 Advanced Vector GIS
FOR 665 Natural Resources and Environmental Policy
FOR 676 Tourism Planning
FOR 678 Wilderness/River Recreation Management
FOR 680 Urban Forestry
FOR 796 Special Topics: Park Planning
GEO 558 Sustainable Development
GEO 605 Theories of Development
GEO 781 Seminar, Cartography, Environmental Risk
CIE 541 Transportation Engineering
IST 552 Information Systems Analysis Concepts and Practices

Thesis. 6 credits, completed as ENS 899 Thesis Research. A thesis proposal is required, and the thesis or project in final form must conform with College and Faculty requirements; see program Handbook.

Other Requirements. In addition to course and credit hour requirements, students are required to:

1. Form a Steering Committee of the Major Professor and two additional faculty members by the end of the second semester of full-time study. Students initiate this action in consultation with the Major Professor who files a request to form the committee.
2. File a Form 3B (Academic Plan), attaching a program Plan Sheet, with the Office of Instruction and Graduate Studies (227 Bray) by the end of the second semester of full-time study.
3. Offer a Capstone Seminar on the thesis or project, reporting either on planned or completed activity.
4. Successfully complete a Thesis Defense Examination.

APPENDIX A.4
MASTER OF SCIENCE (M.S.) DEGREE

ENVIRONMENTAL SYSTEMS AND RISK MANAGEMENT
STUDY AREA

Advising Guide

General Requirements. The minimum credit hours required for the degree are:

	Credit Hours
Environmental Science Seminar	0
Applied Social Science	9
Research Methods	6
Area of Study	15
Thesis Research	6
Total	36

Environmental Science Seminar. All students are required to take two (2) semesters of ENS 797 Environmental Science Seminar or, with Major Professor permission, appropriate seminars in other Faculties at the College or Syracuse University (the latter for credit only). ENS 797 is normally completed as an Audit, but at times may be taken for credit if offered. Credit hours when awarded may be applied against the Applied Social Science requirement.

Applied Social Science. 9 credit hours, selected from the following course list:

EST 608 Environmental Advocacy Campaigns and Conflict Resolution
EST 612 Environmental Policy and Governance
EST 626 Concepts and Principles of Sustainable Development
EST 635 Public Participation and Decision Making
EST 650 Environmental Perception and Human Behavior

Research Methods. 6 credits hours, usually selected from the following:

APM 620 Analysis of Variance
APM 625 Introduction to Sampling
APM 635 Multivariate Statistical Methods
GEO 686 Adv Quantitative Geo Analysis

Area of Study. 15 credit hours. Study Area coursework beyond the Core and Research Methods requirements is identified by Study Area faculty and chosen in consultation with the Major Professor and Steering Committee. Frequently recommended courses are:

CEN 573 Principles and Design in Air Pollution Control
CIE 529 Risk Analysis in Civil Engineering
CIE 554 Principles of Environmental Toxicology
CIE 653 Applied Aquatic Chemistry
CIE 671 Environmental Chemistry and Analysis
EFB 518 Systems Ecology
EFB 600 Toxic Health Hazards
EFB 610 Ecological Biogeochemistry

EFB 611 Topics in Environmental Toxicology
ERE 643 Water Pollution Engineering
ESC 525 Energy Systems
ESC 535 Renewable Energy Systems
ESC 622 Energy Markets and Regulation
FCH 510 Environmental Chemistry I
FCH 511 Environmental Chemistry II
FCH 515 Methods of Environmental Chemistry Analysis
FOR 557 Practical Vector GIS
FOR 556 Spatial Modeling
FOR 642 Watershed Ecology and Management
FOR 796 Special Topics: Forest Resource Management

Thesis. 6 credits, completed as ENS 899 Thesis Research. A thesis proposal is required, and the thesis or project in final form must conform with College and Faculty requirements; see program Handbook.

Other Requirements. In addition to course and credit hour requirements, students are required to:

1. Form a Steering Committee of the Major Professor and two additional faculty members by the end of the second semester of full-time study. Students initiate this action in consultation with the Major Professor who files a request to form the committee.
2. File a Form 3B (Academic Plan), attaching a program Plan Sheet, with the Office of Instruction and Graduate Studies (227 Bray) by the end of the second semester of full-time study.
3. Offer a Capstone Seminar on the thesis or project, reporting either on planned or completed activity.
4. Successfully complete a Thesis Defense Examination.

APPENDIX A.5
MASTER OF SCIENCE (M.S.) DEGREE

WATER AND WETLAND RESOURCES STUDIES
STUDY AREA

Advising Guide

General Requirements. The minimum credit hours required for the degree are:

	Credit Hours
Environmental Science Seminar	0
Applied Social Science	9
Research Methods	6
Area of Study	15
Thesis Research	6
Total	36*

* A minimum of 6 credits in ENS course work is required.

Special Note on Academic Background. Students must have appropriate background in chemistry, biology, physics, earth science and computer programming and application. All students should have at least one course in physical water science (e.g., hydrology, hydrogeology, geology, aquatic chemistry, aquatic biology) as well as demonstrated competence in at least one of these aquatic science areas (experience, undergraduate and/or graduate course work). Recommended courses include: (i) Physical Water Science: CIE453, FOR540, FEG340, FOR641, GOL544, and GOL542; (ii) Aquatic Chemistry and Toxicology: CIE551, FCH515, FCH496, GOL652, FCH510, and EFB560; (iii) Aquatic Biology: EFB524 and EFB525; and (iv) Wetlands Science: EFB518, EFB542, EFB691, and ENS625.

Environmental Science Seminar. All students are required to take two (2) semesters of ENS 797 Environmental Science Seminar or, with Major Professor permission, appropriate seminars in other Faculties at the College or Syracuse University (the latter for credit only). ENS 797 is normally completed as an Audit, but at times may be taken for credit if offered. Credit hours when awarded may be applied against the Applied Social Science requirement.

Applied Social Science. 9 credit hours. Study Area faculty may indicate which if any courses listed below are particularly recommended, and courses not listed here may be substituted with agreement of Study Area faculty.

ENS 601 • Water Resources Management
EST 550 Environmental Impact Analysis
EST 608 Environmental Advocacy Campaigns and Conflict Resolution
EST 612 Environmental Policy and Governance
EST 626 Concepts and Principles of Sustainable Development
EST 635 Public Participation and Environmental Decision Making
EST 650 Environmental Perception and Human Behavior
FOR 687 Environmental Law and Policy
FOR 665 Natural Resources and Environmental Policy
LAW 716 Environmental Law
PPA 709 Public Organizations and Management
PPA 730 Problems in Public Administration
PSC 705 Science and Public Policy
IST 552 Information Systems Analysis

IST 607 Government and Information
IST 642 Electronic Commerce
IST 643 U.S. Federal Information Policy

* Indicates water resources policy courses.

Research Methods. 6 credits hours, usually selected from the following:

APM 510 Statistical Analysis
APM 620 Analysis of Variance
APM 625 Introduction to Sampling Techniques
APM 635 Multivariate Statistical Methods
GEO 583 Environmental GIS
GEO 686 Adv Quantitative Geo Analysis
LSA 640 Research Methodology
PPA 722 Quantitative Analysis
PSC 602 Public Policy Analysis Theory and Practices
SOC 614 Introduction to Quantitative Research

Area of Study. 15 credit hours. Study Area coursework beyond the Core and Research Methods requirements is identified by Study Area faculty and chosen in consultation with the Major Professor and Steering Committee. Frequently recommended courses are:

CIE 570 Water and Wastewater Treatment Design
CIE 652 Biological Waste Treatment
CIE 653 Applied Aquatic Chemistry
CIE 659 Advanced Hydrogeology
CIE 671 Environmental Chemistry and Analysis
EFB 516 Ecosystems
EFB 518 Systems Ecology
EFB 522 Ecology, Resources, and Development
EFB 524 Limnology
EFB 525 Limnology Lab
ENS 607 Wetland Practicum
EST 626 Concepts and Principles of Sustainable Development
EST 696 Special Topics: Great Lakes Policy
ERE 643 Water Pollution Control Engineering
FEG 340 Engineering Hydrology and Hydraulics
FCH 515 Methods of Environmental Chemistry Analysis
FCH 496 Special Problems: (In) Chemistry
FOR 540 Watershed Hydrology
FOR 557 Practical Vector GIS
FOR 558 Advanced Vector GIS
FOR 642 Watershed Ecology and Management
FOR 643 Forest Hydrology
GOL 541 Hydrogeology

Thesis or Project. 6 credits, completed as ENS 899 Thesis Research. A thesis proposal is required, and the thesis in final form must conform with College and Faculty requirements; see program Handbook.

Other Requirements. In addition to course and credit hour requirements, students are required to:

1. Form a Steering Committee of the Major Professor and two additional faculty members by the end of the second semester of full-time study.
2. File a Form 3B (Academic Plan), attaching a program Plan Sheet, with the Office of Instruction and Graduate Studies (227 Bray) by the end of the second semester of full-time study. Students initiate this action in consultation with the Major Professor who files a request to form the committee.
3. Offer a Capstone Seminar on the thesis or project, reporting either on planned or completed activity.
4. Successfully complete a Thesis Defense Examination.

APPENDIX B.1
MS THESIS PROPOSAL APPROVAL FORM

Approval of Proposals

Students are required to prepare a Thesis Proposal. This proposal must be formally approved by the student's Major Professor and Steering Committee using this form (below) for signatures with a copy of the proposal attached.

Although progress in developing a proposal may vary from student to student, students are normally required to produce an approved proposal before registering for more than 3 credits of ENS 899 Thesis Research.

Content of Proposals

Proposals will vary in content according to the nature of the planned research. In general, these should be succinct statements of research plans, normally about 10 pages in length, describing the planned work as follows:

1. Tentative title.
2. Research objective or hypothesis.
3. Background. A brief statement summarizing pertinent literature.
4. Key data or information sources.
5. Method of analysis.
6. Expected results.
7. Timetable for research, writing, and defense examination.
8. Brief bibliography.

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PROPOSAL APPROVAL

Student Name: _____

Thesis Title: _____

Approved:

Major Professor	_____	Date	_____
Committee Member	_____	Date	_____
Committee Member	_____	Date	_____

A copy of the approved proposal should be affixed to this form, and copies of this document with attached proposal should be provided to each of the above signers, and to the Graduate Program in Environmental Science (GPES) Office, 107 Marshall Hall.

APPENDIX B.2.

INSTRUCTIONS FOR THE PREPARATION OF THESES

The following guidelines are provided for Master's students preparing a thesis:

1. The general style manual for the College is **A Manual of Style for Authors, Editors and Copywriters** commonly referred to as the "Chicago manual of style". A Faculty may opt to use a style manual which is more discipline oriented, and in doing so, accepts the responsibility of communicating this preference along with other special requirements to the graduate students concerned. Likewise, it is the student's responsibility to be aware of the style manual and any special requirements of his/her faculty. In any case, the manual to be used should be indicated as part of the proposal, i.e., the student in consultation with the Faculty and/or major professor should identify in the proposal which style manual will be followed in preparation of the thesis.

2. The College shall participate in the Dissertation Information Service (DIS) provided by University Microfilms International, Ann Arbor, Michigan. All Master's theses and all doctoral theses will be submitted for inclusion in this database. This database is a computerized index containing bibliographic citations to nearly one million doctoral and Master's theses dating back to 1861. This is a very valuable resource because it makes available through a variety of products the results of a student's work. The cost of this service is paid for by each student.

More detailed information on DIS is available in the Office of the Dean on Instruction and Graduate Studies.

3. To ensure the uniform physical quality of theses, all will conform to the guidance provided in **Preparation of Archival Copies of Theses and Dissertations**, American Library Association, copies of which are available for review in Moon Library and the Office of the Dean of Instruction and Graduate Studies.

4. Abstracts are required for all Doctoral and Masters theses and will contain key words which will be listed at the end of the abstract. The abstracts will be bound with the thesis, or project and will not exceed 150 words for a Master's thesis or 350 words for a doctoral thesis.

5. Generally, theses should adhere to the following organization:

Thesis Format:

Title Page
Acknowledgments
Table of Contents
List of Tables
List of Figures
Abstract with Key Words
Introduction
Literature Review
Methods and Materials
Results
Discussion
Conclusions
Appendices
Vita

Alternatives to this organization may be authorized by the Steering Committee within any guidelines which may be developed by the individual Faculty.

6. Manuscript theses will be acceptable as determined by individual Faculties. The student's selection of this format must be in keep with guidelines established by participating Faculty and have the prior approval of the student's major professor and steering committee.

The student is considered the senior author of any manuscript theses and as such only his/her name shall appear on the title page. Other authors shall be cited under the Acknowledgment section, but not on each manuscript. The abstract should be inclusive of all manuscripts included in the document. Likewise, the Conclusions section should be a synthesis of all inclusive manuscripts.

7. The Library will receive the original signed thesis. The original will be the archival copy and will not circulate. The copy will be available for circulation.

References

University of Chicago. (1969). **A Manual of Style for Authors, Editors and Copywriters.** (12th ed., rev.). Chicago: University of Chicago Press. Ref. Z253 C53 1969.

University Microfilms, Inc. **Publishing Your Dissertation: How to Prepare Your Manuscript for Publication.** n.d.

Boyd, Jane & Etherington, Don. (1986). **Preparation of Archival Copies of Theses and Dissertations.** Chicago: American Library Association. Z701 B79 1986.

FORMAT FOR VITA

NAME:

DATE AND PLACE OF BIRTH:

EDUCATION:

	<u>NAME AND LOCATION</u>	<u>DATES</u>	<u>DEGREE</u>
HIGH SCHOOL:			

COLLEGE:

EMPLOYMENT:

	<u>EMPLOYER</u>	<u>DATES</u>	<u>POSITION</u>
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APPENDIX C

GRADUATE PROGRAM IN ENVIRONMENTAL SCIENCE STAFF AND PARTICIPATING FACULTY

107 Marshall Hall
315-470-6528

Staff:

PATRICIA A. GIBEAULT (Patti)
107 Marshall Hall, 470-6528
Secretary for Graduate Program/Receptionist

DAVID L. JOHNSON (Director of GPES)
419 Jahn Lab, 470-6829
(Environmental Chemistry)

Abbreviation Definitions:

ECLP-Environmental & Community Land Planning
ECPP-Environmental Communication & Participatory Processes
EPDP-Environmental Policy & Democratic Processes
ESRM-Environmental Systems & Risk Management
WWRS-Water & Wetland Resources Studies

ESF and other adjunct, faculty, who participate in GPES change from time to time. Please check the GPES home page for the most current list at <http://www.esf.edu/environmental/science/graduate>.

Participating ESF Faculty:

COLIN M. BEIER – ESRM
Adirondack Ecological Center, 518-582-4551
(Forest Ecology)

GREGORY L. BOYER – WWRS
320 Jahn Lab, 470-6825
(Algal Toxins, Algal CO₂ Sequestration)

MARGARET M. BRYANT – ECLP
333 Marshall Hall, 470-4929
(Land Planning)

EMANUEL J. CARTER – Environmental and Community Land Planning
312 Marshall Hall, 470-6665
(City Planning, Urban Design, Rural Development, Design History and Theory)

CHERYL S. DOBLE – ECLP
322 Marshall, 470-6553
(Community Design and Planning; Public Participation in Decision Making Process; Rural Planning and Land Use Management)

THEODORE A. ENDRENY – WWRS
423 Baker Lab, 470-6565
(Watershed Modeling)

CHARLES A. HALL – ESRM
354 Illick Hall, 470-6870
(Systems Ecology)

MYRNA H. HALL - ESRM, ECLP
112 Marshall Hall, 470-4741
(Spatial Analysis and Modeling, Land Change Science, Urban Ecology)

JAMES M. HASSETT – WWRS
404 Baker Lab, 470-6633
(Watershed Modeling)

RICHARD S. HAWKS – ECLP
331 Marshall Hall, 470-6544
(Community Design and Planning; Natural Resource Information in the Land Use Design Process)

CHARLES N. KROLL – ESRM, WWRS
424 Baker Lab, 470-6699
(Decision Analysis)

DIANE M. KUEHN – ECPP
310A Bray Hall, 470-6561
(Recreation Management and Research)

PATRICK J. LAWLER - ECPP
105 Moon Library, 470-6914
(Environmental Communication)

KARIN E. LIMBURG – WWR, ESRM
249 Illick Hall, 470-6741
(Aquatic Ecology & Fisheries, Watershed Ecology, Man/Nature Interactions)

VALERIE A. LUZADIS – ESRM, EPDP
307 Bray Hall, 470-6693
(Natural Resource Economics)

JACK P. MANNO - WWRS
211A Marshall Hall, 470-6816
(Sustainable Development, Ecological Economics, Great Lakes Policy)

MARK S. MEISNER – ECPP, EPDP
108A Marshall Hall, 470-6908
(Environmental Discourse and Communication)

MYRON J. MITCHELL – ESRM
210 Illick Hall, 470-6765
(Biogeochemistry of Forest and Aquatic Ecosystems; Decomposition Processes;
Stable Isotopes)

SHARON D. MORAN - ECPP, ECLP, EPDP, ESRM, WWRS
113 Marshall Hall, 470-6990
(Environmental Policy, Government and Water Resources)

GEORGIOS E. MOUNTRAKIS – ECLP
419 Baker Lab, 470-4824
(Geographic Information Modeling, Spatial Analysis, Remote Sensing)

TSUTOMU NAKATSUGAWA – ESRM
110 Illick Hall, 470-6767
(Toxicology, Toxic Health Hazards)

BRENDA J. NORDENSTAM - ESRM
108A Marshall Hall, 470-6573
(Risk Perception and Analysis)

RUDOLPH M. SCHUSTER – ECLP
310B Bray Hall, 470-4863
(Ecological and Recreational Planning)

SUSAN L. SENECAH – ECPP, EPDP
109 Marshall Hall, 470-6570
(Environmental Communication and Policy)

S. SCOTT SHANNON – ECLP
313 Marshall Hall, 470-6537
(Community Design and Planning; Rural, Traditional, and Neo-Traditional
Community Form; Historic Landscape Preservation; Computer Applications and Design
Simulation)

RICHARD C. SMARDON – WWRS, EPDP
211B Marshall Hall, 470-6576
(Wetland Assessment, Public Participation, Decision Making)

DAVID A. SONNENFELD – EPDP
106 Marshall Hall, 470-4931
(Environmental Sociology, Sustainable Development, East/Southeast Asia)

JOHN C. STELLA – WWRS
334 Illick/207 Marshall Hall, 470-4902
(Watershed Ecology and Management, Stream and Riparian Ecology)

MARK A. TEECE – ESRM
415 Jahn Lab, 470-4736
(Coral Reefs, Stable Isotope Biogeochemistry)

TIMOTHY A. VOLK – ESRM
346 Illick Hall, 470-6774
(Renewable Energy)

BENETTE A. WHITMORE – ECPP
105 Moon Library, 470-6722
(Environmental Communication)