

SUNY-ESF
320 Bray Hall
One Forestry Drive
Syracuse NY 13210
(315) 470-6566

Student Handbook

for

Undergraduate Studies in

**The Department of Forest and
Natural Resources Management**

August 2009

Table of Contents

Preface.....	1
Undergraduate Programs in Resources Management.....	2
Mission and Vision	2
Educational Objectives	3
Forest Resources Management Educational Objectives.....	3
Natural Resources Management Educational Objectives.....	4
Forest Ecosystem Science Educational Objectives.....	5
Forest Resources Management	7
Program Requirements.....	7
Avenues for Completion.....	8
Summary of General Education and Professional Education Core Requirements.....	8
Undergraduate Program Requirements.....	10
Freshman and Sophomore Courses.....	10
Junior and Senior Courses	11
Technical Electives	14
Natural Resources Management	15
Program Requirements.....	15
Avenues for Completion.....	16
Summary of General Education and Professional Education Core Requirements.....	17
Undergraduate Program Requirements.....	18
Freshman and Sophomore Courses.....	18
Junior and Senior Courses	20
Program Requirements.....	22
Program Admission	23
Summary of General Education and Professional Education Core Requirements.....	23
Freshman and Sophomore Courses.....	24
Junior and Senior Courses	26
Directed Elective Courses.....	28
Undergraduate Minors	30
Syracuse University and SUNY-ESF Minors.....	30
Recreation Resource and Protected Area Management Minor.....	30
Forestry Minor	31
Water Resources Minor	31
Combining Forest Technology or Land Surveying Technology and an FNRM B.S. Degree	33
Forest Technology A.A.S. to Forest Resources Management B.S.	33
Forest Technology A.A.S. to Forest Ecosystem Science B.S.....	33
Forest Technology A.A.S. to Natural Resources Management B.S.	34
Land Surveying Technology A.A.S. to Forest Resources Management B.S.	34
Land Surveying Technology A.A.S. to Forest Ecosystem Science B.S.	34
Land Surveying Technology A.A.S. to Natural Resources Management B.S.	35
Appendices.....	37
Appendix A: Miscellany.....	38
Petitions.....	38
More on Transferring Courses.....	39
Late Adds, Late Drops	39

Incompletes	40
Taking a Course at another College after Matriculation at ESF	40
Taking Graduate Courses.....	41
Credit-Hour Loads	41
Academic Probation, Suspension and Dismissal	41
Privacy Issues.....	42
Independent Study and Internships.....	42
Changes between FRM and NRM, FRM and FES, or NRM and FES	42
Appendix B: Internships	43
Internship Guidelines for Students.....	43
FNRM Internship Agreement	45
Internship Evaluation	47
Appendix C: Faculty Directory.....	48
Appendix D: Who to Call	50

Preface

Welcome to the 2009-10 Academic Year! This is the current version of the *Student Handbook*. Please retain this handbook, as it will be your guide throughout your degree program at ESF. If you read this handbook, your adviser has the tools to work with you on developing the best possible program of study for you.

Please read the first six pages of this handbook and then the pages appropriate to your degree program:

Forest Resources Management	pages 7-14
Natural Resources Management	pages 15-21
Forest Ecosystem Science	pages 22-29

We always are looking for ways to improve this handbook and our advising services. Please let us know what we can do to make your undergraduate program more effective for you.

David Newman, Chair, Department of Forest and Natural Resources Management
Christopher Nowak, Chair, FNRM Undergraduate Studies Committee, and Curriculum
Coordinator

August 25, 2009

Undergraduate Programs in Resources Management

Mission and Vision

ESF's Forest and Natural Resources Management (FNRM) programs are science-based and values-driven. The integration of values and scientific facts characterize professions that are successful in democracies. ESF-trained foresters are able to integrate these two threads in America's complex society.

The FNRM mission statement is:

The mission of the ESF Forest and Natural Resources Management programs is to produce and to transmit knowledge about the function and dynamics of forests and related renewable resources to all of our customers; to encourage continual learning about forest and related renewable resources and their role in making people's lives better; and to develop leaders who will manage renewable resources for people on a sustainable basis.

Our vision of professional resource managers is that they are problem solvers. They have mastered integration of disciplinary knowledge and have the necessary skills to protect and manage forest and natural resources. ESF-educated resource managers are leaders who help people solve the complex problems of the world's natural resources.

Goals—Our Forest and Natural Resources programs have four broad goals:

- ◆ Understand the function and dynamics of forests and related renewable resources;
- ◆ Attain the skills to manipulate forests and related natural resource systems and to predict the consequences;
- ◆ Monitor citizen and owner values regarding forests and natural resources and respect them; and
- ◆ Integrate values with scientific facts and know the limits of our knowledge.

Professional forestry education began over a century ago in New York. In 2002, a parallel program in Natural Resources Management was added to capture the current breadth of faculty and student interests in renewable resources and their management. Today's resources management programs are based on a clear vision that combines professional competency with a strong foundation in the biophysical sciences, humanities and social sciences.

Students in ESF's Forest and Natural Resources Management programs like forests and the out-of-doors. They want to be in rural settings, they enjoy nature, and they want to master the knowledge and skills needed to conserve and manage forests and the environment. With 25,000 acres of forestlands as teaching laboratories, ESF provides many opportunities to meet student needs. The forest technology and land surveying technology programs at ESF's Wanakena campus prepares young people for careers in fieldwork and is a route to Forest and Natural Resources Management programs that emphasizes experiential learning. Internships with forest-based/natural resource-based organizations in the business, public and nonprofit sectors amplify these hands-on experiences. Experiential learning is combined with learning concepts and skills in the classroom and laboratory on ESF's Syracuse campus. The results are among the best anywhere in North America.

Educational Objectives

ESF's Department of Forest and Natural Resources Management has identified nine outcomes based educational objectives for each of its undergraduate degree programs.

Forest Resources Management Educational Objectives

1. **Understanding Forests** – Know the relationships among flora and fauna including the biological and physical requirements of different plant and animal species within a forested ecosystem.
2. **Measuring Forests** – Identify the major species, both flora and fauna, in a given area correctly. Plan, conduct, and analyze forest inventories including biological, physical, and social. Be able to describe and apply different statistical sampling methods used in measuring forests. Be able to project stand and forest development. Knowledge, and use, of computer growth and yield projection models.
3. **Manipulating Forests** – Describe alternative ways to change or maintain forest structure. Prescribe, justify, and implement treatments in accord with owner objectives.
4. **Managing Forests** – Evaluate tradeoffs among biological sustainability, economic feasibility, and social acceptability with respect to alternative forest management plans. Be able to describe and apply appropriate decision-making tools and techniques (e.g., investment analyses) to evaluate alternative forest management practices. Specify and implement management practices appropriate to ownership objectives.
5. **Policy Making** – Understand policy making processes at national, state, and local levels, for both large and small organizations as these processes affect forest management.
6. **Communicating** – Explain forest development, manipulation, and management to different audiences in both written and oral form. Describe technical forestry terms to many different audiences using consistent and accurate terminology.
7. **Ethics** – Act in an honest and credible manner and take responsibility for the work of your team and your actions. Exhibit tolerance for different viewpoints and opinions of others that may not agree with yours by understanding values and value systems used by people to reach decisions and to take actions.
8. **Problem Solving** – The act of defining a problem; determining the cause of the problem; identifying, prioritizing and selecting alternatives for a solution (e.g., strategic, tactical and operational planning); and implementing a solution. Understand the conceptual framework of each problem solving step and be able to facilitate a team through a systematic process for problem solving.
9. **Leading** – Recognize the union between leading and following. Demonstrate effective teamwork skills.

Natural Resources Management Educational Objectives

1. **Understanding Natural Environments** – Know the relationships among organic and inorganic resources, including the biological and physical requirements of different plant and animal species, within forest and watershed ecosystems, and how humans interact with these resources.
2. **Measuring Natural Resources** – Correctly identify the major species of both flora and fauna in a given area. Assess the extent of human impacts on forests, watersheds, and other natural areas. Plan, conduct, and analyze forest and watershed ecosystem and/or natural area inventories for biological, physical, and social resources. Be able to describe and apply different statistical sampling methods to user groups, forests, watersheds, and/or natural areas.
3. **Manipulating Natural Resources** – Describe alternative ways to manage forest and watershed ecosystems and natural areas for recreation, and/or watershed protection/restoration/enhancement purposes. Prescribe, justify, and implement management strategies for forest and watershed ecosystems and natural areas in accord with owner objectives.
4. **Managing Natural Resources** – Evaluate tradeoffs among biological sustainability, economic feasibility, and social acceptability with respect to alternative natural resource management plans. Be able to describe and apply appropriate decision-making tools and techniques to human and/or natural resource management practices. Specify and implement management practices appropriate to ownership objectives.
5. **Policy Making** – Understand policy-making processes at national, state, and local levels for both large and small organizations as these processes affect the management of stakeholder groups and natural resources.
6. **Communicating** – Explain forest, watershed, recreation, and/or natural area development, manipulation, and management to different audiences in both written and oral form. Describe related technical terms to many different audiences using consistent and accurate terminology.
7. **Ethics** – Act in an honest and credible manner and take responsibility for the work of your team and your actions. Exhibit tolerance for different viewpoints and opinions of others that may not agree with yours by understanding values and value systems used by people to reach decisions and to take actions.
8. **Problem Solving** – Be able to define a problem; determine the cause of the problem; identify, prioritize and select alternatives for a solution (e.g., strategic, tactical and operational planning); and implement a solution. Understand the conceptual framework of each problem solving step and be able to facilitate a team through a systematic process for problem solving.
9. **Leading** – Recognize the union between leading and following. Demonstrate effective teamwork skills.

Forest Ecosystem Science Educational Objectives

1. **Understanding Forests** – Know the relationships among flora and fauna including the biological and physical requirements of different plant and animal species within a forested ecosystem.
2. **Measuring Forests** – Identify the major species, both flora and fauna, in a given area correctly. Plan, conduct, and analyze forest inventories including biological, physical, and social. Be able to describe and apply different statistical sampling methods used in measuring forests. Be able to project stand and forest development. Knowledge, and use, of computer growth and yield projection models.
3. **Manipulating Forests** – Describe alternative ways to change or maintain forest structure. Prescribe, justify, and implement treatments in accord with owner objectives.
4. **Managing Forests** – Evaluate tradeoffs among biological sustainability, economic feasibility, and social acceptability with respect to alternative forest management plans. Be able to describe and apply appropriate decision-making tools and techniques (e.g., investment analyses) to evaluate alternative forest management practices. Specify and implement management practices appropriate to ownership objectives.
5. **Policy Making** – Understand policy making processes at national, state, and local levels, for both large and small organizations as these processes affect forest management.
6. **Communicating** – Explain forest development, manipulation, and management to different audiences in both written and oral form. Describe technical forestry terms to many different audiences using consistent and accurate terminology.
7. **Ethics** – Act in an honest and credible manner and take responsibility for the work of your team and your actions. Exhibit tolerance for different viewpoints and opinions of others that may not agree with yours by understanding values and value systems used by people to reach decisions and to take actions.
8. **Problem Solving** – The act of defining a problem; determining the cause of the problem; identifying, prioritizing and selecting alternatives for a solution (e.g., strategic, tactical and operational planning); and implementing a solution. Understand the conceptual framework of each problem solving step and be able to facilitate a team through a systematic process for problem solving.
9. **Leading** – Recognize the union between leading and following. Demonstrate effective teamwork skills.

The measurement of these outcomes is to be based on Bloom's Cognitive Levels of Knowledge (Table 1.1).

Table 1.1. Bloom's Cognitive Levels of Knowledge¹

Bloom's Cognitive Levels	Activities
Definition	Remembering facts, terms, concepts, definitions, principles
Comprehension	Explain, predict, interpret, infer, summarize, translate, give examples of the meaning of material to an intelligent person with no formal training in forestry
Application	Apply, solve, show make use of, modify, demonstrate, compute problems unlike those described in class
Analysis	Breakdown material into component parts to describe, explain, and interpret interrelationships; compare & contrast
Synthesis	Produce something new or original from component parts, design, construct, develop, formulate
Evaluation	Make a judgment based on a pre-established set of criteria, appraise, evaluate, justify, judge

The Department of Forest and Natural Resources Management has defined the minimum competency level as *Analysis*. This level of knowledge is our target for all nine educational objectives. While not every course deals with each of the nine educational objectives, we have structured the current curriculum to help us meet our goals by graduation.

These traits are best developed by a broad base in writing and public speaking, the natural sciences, mathematics, and the social sciences and humanities. The majority of work scheduled during the first two years (lower division) is in these basics.

¹ Bloom, B.S., ed. 1956. *Taxonomy of Educational Objectives, Vol. 1: Cognitive Domain*. McKay, NY.

Forest Resources Management

Professional forestry education has been featured at ESF since the College's founding in 1911. Today's Forest Resources Management program is based on a clear vision that combines professional competency with a strong foundation in the biophysical sciences, humanities, and social sciences to meet society's needs for forest managers.

Many ESF students enjoy trees and forests and want to work in forested settings. They appreciate nature, and want to master the knowledge and skills needed to conserve and manage forests and the environment. With 25,000 acres of college forestlands as teaching and research laboratories, ESF provides many opportunities to meet student needs for experiential learning. The Forest Technology program at ESF's Wanakena campus prepares students for careers in field forestry and is a route to the Forest Resources Management program that emphasizes field practice. Internships with forest-based organizations in the private, public and nonprofit sectors amplify these hands-on experiences. Practical experience is combined with learning concepts and problem solving and critical thinking skills in the classroom and laboratory on ESF's Syracuse campus. Outcomes are among the best anywhere in North America.

Forest Resources Management is an integration of forest ecology and biology, forest measurements, forest policy and administration, and courses to predict and evaluate the effects of manipulation. Timber, water, recreation, wildlife, and a broad array of environmental values and services, such as biodiversity and healthy forest systems, are important results of effective management. This major prepares students to be well-rounded generalists who can practice forestry and succeed as professionals in a variety of allied natural resources management fields.

Forest resources management offers a wide variety of employment opportunities. Our graduates are working throughout the United States as professional foresters and natural resource managers in private industry, public agencies, and for nonprofit organizations. Their duties can range from timber management to recreation planning to environmental education, to name a few.

The educational program in Forest Resources Management leading to the first professional degree in forestry is accredited by the Society of American Foresters (SAF). SAF is recognized by the Commission on Recognition of Postsecondary Accreditation as the specialized accrediting body for forestry in the United States

Program Requirements

The Summer Program in Forest and Natural Resources Management is required for ALL students in Forest Resources Management (except those who attend the Forest Technology and Land Surveying Technology Program at the Ranger School, Wanakena Campus). The Summer Program is a four-week session that begins at the end of May and lasts through June. It is taught at ESF's Wanakena Campus on Cranberry Lake. The program consists of one course: Adirondack Field Studies (FOR 304). The Summer Program is designed to be completed after the Sophomore year and must be completed before Junior year.

Students have expectations of the Forest Resources Management program and its faculty, and the faculty have expectations of the students as well. Students are expected to enter their junior year with the ability to write and speak clearly. Work should be presented in a professional manner, and criticism should be given and accepted in this same spirit. Students are expected to

understand and use computers, including word processing of manuscripts, spreadsheets with functions, and basic database management. Students should be mature, active learners who want to develop professional judgment for conducting and supervising field and office operations.

Avenues for Completion

Students may follow one of three “paths” to enter and complete the Forest Resources Management program:

1. The “freshman” path is for students who enter ESF as a freshman and complete all degree requirements at ESF with the Summer Program in Forest and Natural Resources after the second year.
2. The “combined A.A.S/B.S.” path is for students who wish to have more field measurement and field problem solving skills and leadership development in context of forestry problems. The first year can be at ESF or another campus and the second year is spent at the Ranger School, Wanakena campus. Students then complete their B.S. degree requirements at ESF. This path can usually be completed in a total of four years.
3. The “transfer” path is for students who complete all or part of their lower division course work at another two or four-year campus, attend the Summer Program the summer before entering ESF, and complete the upper-division requirements at ESF. Students preparing to transfer to ESF with full junior status must have earned at least 60 credits of college course work.

Summary of General Education and Professional Education Core Requirements

The undergraduate curriculum in forest resources management consists of two broad categories of courses. The first category, general education, provides students with knowledge and skills that are useful and important for all educated persons regardless of their profession as well as preparation for advanced courses leading to a specific profession. The second category, professional courses, provides students with direct preparation for a career. The first two years of college usually focuses on general education and the second two on the professional studies.

GENERAL EDUCATION CORE	CREDITS
English (1 course focused on writing) and Public Speaking	6
Biology (w/laboratory)	4
Chemistry (w/laboratory)	4
Physics	4
Precalculus	3
Probability and Statistics	3
Economics	3
Management	3
American History	3
Western Civilization	3
Other World Civilizations	3
Humanities (fulfilled through writing course, CLL290)	3
The Arts	3
Information Literacy	1
Minimum credit hours	46

PROFESSIONAL EDUCATION CORE	CREDITS
Summer Program in FNRM	4
Dendrology	3
Geospatial Information Technologies	3
Silviculture	4
Natural Resources Ecology	3
Forest Ecology	3
Introduction to Soils	3
Forest Mensuration	3
Forest Biometrics	3
Forest Management Decision Making and Planning	3
Managerial Economics	3
Forest Operations	3
Outdoor Recreation	3
Natural Resources Policy	3
Professional Forestry Mentoring Program	1
Wildlife Management	3
Vegetation Management	3
Water Resources	3
Forest Health/Protection	3
Wood Technology/Science	3
Integrated Resources Management	3
FNRM Orientation	1
Minimum core credit hours	64
Free electives	18
Total required for graduation	128

Undergraduate Program Requirements

Freshman and Sophomore Courses

Students may be admitted directly as first-year freshman students at ESF or through a variety of transfer options. Regardless of which way students enter ESF, they must complete both the general and professional education requirements. To meet degree requirements, students must successfully complete all lower- and upper-division courses. The following are lower division requirements presented in sample schedules for first-year students and transfer students at ESF.

First-Year Freshmen at ESF

Below is a sample schedule of courses for students admitted to ESF's Syracuse campus programs as first-year freshmen.

Sample Freshman Year - Fall Semester		
Course	Cr. Hr.	Check Off
FOR132 Orientation Seminar: Forest and Natural Resources Mgt. ¹	1	
FOR207 Introduction to Economics (Gen. Ed. Social Science)	3	
CLL190 Writing and the Environment (Gen. Ed. Communication)	3	
EFB101 General Biology I (Gen. Ed. Natural Sciences)	3	
EFB102 General Biology I Laboratory	1	
FCH150 General Chemistry Lecture I	3	
FCH151 General Chemistry Laboratory I	1	
TOTAL	15	

Sample Freshman Year - Spring Semester		
Course	Cr. Hr.	Check Off
APM 104 College Algebra and Precalculus (Gen. Ed. Math)	3	
CMN220 Public presentation Skills for Env. Professionals	3	
CLL290 Writing, Humanities, and the Environment (Gen. Ed. Humanities)	3	
ESF200 Information Literacy	1	
FOR232 Natural Resources Ecology	3	
Free Elective	3	
TOTAL	16	

Sample Sophomore Year - Fall Semester		
Course	Cr. Hr.	Check Off
EFB336 Dendrology	3	_____
FOR204 American History (Gen. Ed. American History)	3	_____
FOR332 Forest Ecology	3	_____
PHY101 Major Concepts of Physics I	4	_____
Free Elective	3	_____
TOTAL	16	_____

Sample Sophomore Year - Spring Semester		
Course	Cr. Hr.	Check Off
APM391 Introduction to Probability and Statistics	3	_____
FOR203 Western Civilizations (Gen. Ed. Western Civ.)	3	_____
Arts (Gen. Ed. The Arts)	3	_____
Other World Civilizations (Gen. Ed. Other World Civ.)	3	_____
Free Elective	3	_____
TOTAL	15	_____

¹All students (freshmen and transfers) must take FOR 132.

General Education Courses

At least 27 credits in SUNY-mandated general education courses, distributed among nine knowledge and skill areas, must be completed as part of the degree. Seven of these knowledge and skills areas are met through specific required courses. The remaining two knowledge and skills areas must be chosen from a list of acceptable courses listed on the Registrar's web page:

- The Arts
- Other World Civilizations

Although it is usually expected that the SUNY-mandated general education courses will be taken in the freshman or sophomore years, it is possible to take several of these courses in either the junior or senior year. However, be sure to discuss the ramifications of such a delay with your advisor.

Transfer Entry Program

Students preparing to transfer to ESF with full junior status must have earned at least 60 credits of college course work. The sample courses listed above represent the type of course requirements for students admitted to ESF's Syracuse campus programs as transfers.

Junior and Senior Courses

Coursework taken in the Junior and Senior years is usually a combination of courses from the professional education core and technical electives. Technical electives may be chosen to allow

the student to either broaden their education in forest management or to concentrate in a particular component of forest resources management. The following sample schedule of courses is appropriate for students that enter the program as either a freshman or as a transfer student.

Sample Sophomore/Junior Year - Summer Semester at Wanakena		
Course	Cr. Hr.	Check Off
FOR304 Adirondack Field Studies	4	_____
TOTAL	<u>4</u>	_____

Sample Junior Year - Fall Semester		
Course	Cr. Hr.	Check Off
FOR322 Forest Mensuration	3	_____
FOR334 Silviculture	4	_____
FOR345 Introduction to Soils	3	_____
FOR360 Principles of Management	3	_____
FOR402 Professional Forestry Mentoring Program	1	_____
Free Elective	3	_____
TOTAL	<u>17</u>	_____

Sample Junior Year - Spring Semester		
Course	Cr. Hr.	Check Off
ESF300 Introduction to Geospatial Information Technologies	3	_____
FOR323 Forest Biometrics	3	_____
FOR333 Natural Resources Managerial Economics	3	_____
FOR370 Forest Management Decision Making and Planning	3	_____
FOR372 Fundamentals of Outdoor Recreation	3	_____
TOTAL	<u>15</u>	_____

Sample Senior Year - Fall Semester		
Course	Cr. Hr.	Check Off
FOR373 Forest Operations	3	_____
FOR465 Natural Resources Policy	3	_____
Free Elective	3	_____
Technical Elective ²	3	_____
Technical Elective ²	3	_____
TOTAL	<u>15</u>	_____

Sample Senior Year - Spring Semester		
Course	Cr. Hr.	Check Off
FOR490 Integrated Resources Management	3	_____
Free Elective	3	_____
Technical Elective ²	3	_____
Technical Elective ²	3	_____
Technical Elective ²	3	_____
TOTAL	<u>15</u>	_____

² Technical electives must include at least one course each in vegetation management, water resources, forest protection/health, wildlife management, and wood technology/science.

Technical Electives

Fifteen (15) technical elective hours are restricted to five resource areas: forest protection or health, vegetation management, water resources, wildlife management, and wood technology/science . Students must choose one course from each of these resource areas to meet graduation requirements. Courses that satisfy this requirement include the following (other courses may be substituted with an approved petition):

Forest Protection/Health		
Course		Credits
EFB340	Forest and Shade Tree Pathology	3
EFB351	Principles of Forest Entomology	3
EFB352	Elements of Entomology	3

Vegetation Management		
Course		Credits
FOR415	Forestry Consulting & Wood Procurement	3
FOR430	Agroforestry	3
FOR433	Silviculture Workshop	3
FOR455	Forest Genetics and Tree Improvement	3
FOR460	Managing Vegetation Using Integrated Pest Management	3
FOR480	Urban Forestry	3

Water Resources		
Course		Credits
FOR340	Watershed Hydrology	3
FOR442	Watershed Ecology and Management	3
EFB542	Freshwater Wetland Ecosystems	3

Wildlife Management		
Course		Credits
EFB390	Wildlife Ecology and Management	4
EFB493	Wildlife Habitats and Populations	4

Wood Technology/Science		
Course		Credits
WPE322	Mechanical Processing	3
WPE387	Wood Structure and Properties	3
WPE400	Introduction to Forest Products	3
WPE444	Materials Marketing	3

Natural Resources Management

The Natural Resources Management program is based on a vision that combines professional competency in management skills with a strong foundation in the social and biophysical sciences. The program was constructed so that students would have the freedom to work in specialty areas associated with a minor from ESF or Syracuse University (see pages 30-32).

Students interested in this program typically are drawn to natural settings and environments, enjoy nature, and want to develop the professional knowledge and skills needed to conserve, steward and manage natural resources and the environment. ESF provides a wide variety of opportunities to meet student needs utilizing 25,000 acres of forestlands as teaching laboratories and college faculty in many natural resource management disciplines. Internships with natural resource-based organizations in the business, public and nonprofit sectors provide additional hands-on experiences. Experiential-field learning is combined with learning concepts and skills in the classroom and laboratory on ESF's Syracuse campus.

The Natural Resources Management program develops professional skills that employers tell us are the most important traits they look for in new employees. These traits are developed through a broad base of classes in the natural sciences, social sciences and humanities, communication, and quantitative and qualitative problem-solving skills. The majority of work scheduled during the first two years (lower division) is in these areas. This major prepares students to be well-rounded natural resources managers.

Natural Resources Management offers a wide variety of employment opportunities. Our graduates are working throughout the United States in public agencies, private industry, and for nonprofit organizations. Their duties range from policy analysts for federal agencies to resource managers for non-profit organizations, from recreation planning for state park agencies to recreation management in federal wilderness areas, and from watershed hydrologists to land managers maintaining surface water quality.

Program Requirements

The Summer Program in Forest and Natural Resources Management is required for ALL students in Natural Resources Management (except those who attend the Forest Technology or Land Surveying Technology Programs at the Ranger School, Wanakena Campus). The Summer Program is a four-week session that begins at the end of May and lasts through June. It is taught at ESF's Wanakena Campus on Cranberry Lake. The program consists of one course: Adirondack Field Studies (FOR 304). The Summer Program is designed to be completed after the Sophomore year and should be completed before Junior year.

Students have expectations of the Natural Resources Management program and its faculty, and the faculty has expectations of the students as well. Students are expected to enter their junior year with the ability to write and speak clearly. Work should be presented in a professional manner, and criticism should be given and accepted in this same spirit. Students are expected to understand and use computers, including word processing of manuscripts, spreadsheets with functions, and basic database management. Students should be active learners who are mature and want to develop professional judgment for conducting and supervising field and office operations.

Avenues for Completion

Students may follow one of three “paths” to enter and complete the natural resources management program:

1. The “freshman” path is for students who enter ESF as a freshman and complete all degree requirements at ESF with the Summer Program in Forest and Natural Resources Management after the second year.
2. The “combined A.A.S/B.S.” path is for students who wish to have more field measurement and field problem solving skills and leadership development in context of forestry problems. The first year can be at ESF or another campus and the second year is spent at the Ranger School, Wanakena campus. Students then complete their B.S. degree requirements at ESF. This path can usually be completed in a total of four and one-half years.
3. The “transfer” path is for students who complete all or part of their lower division course work at another two or four-year campus, attend the Summer Program in Forest and Natural Resources the summer before entering ESF, and complete the upper-division requirements at ESF. Students preparing to transfer to ESF with full junior status must have earned at least 60 credits of college course work.

Summary of General Education and Professional Education Core Requirements

The undergraduate curriculum in Natural Resources Management consists of two broad categories of courses. The first category, general education, provides students with knowledge and skills that are useful and important for all educated persons regardless of their profession as well as preparation for advanced courses leading to a specific profession. The second category, professional courses, provides students with direct preparation for a career.

GENERAL EDUCATION CORE	CREDITS
English (1 course focused on writing) and Public Speaking	6
Biology (w/laboratory)	8
Chemistry or Physics (w/laboratory)	8
General or Field Ecology (w/laboratory)	4
Pre-calculus	3
Statistics and Probability	3
Economics	3
Management	3
Sociology or Psychology	3
American History	3
Western Civilization	3
Other World Civilizations	3
Humanities	3
The Arts	3
Information literacy	1
Minimum credit hours	57
PROFESSIONAL EDUCATION CORE	CREDITS
Summer Program in FNRM	4
Introductory Soils	3
Watershed Hydrology	3
Forest Ecology and Silviculture	3
Accounting or Finance	3
Managerial Economics	3
Geospatial Information Technologies	3
Outdoor Recreation	3
Wildlife or Fisheries	3
Natural Resources Policy	3
Writing for Scientific Professionals	3
Human Dimensions	3
Natural Resources Agencies and Administration	3
Integrated Resources Management	3
Orientation: Forest and Natural Resources Mgt.	1
Minimum core credit hours	44
Free electives	21
Total required for graduation	122

Undergraduate Program Requirements

Freshman and Sophomore Courses

Students may be admitted directly as first-year freshman students at ESF, or through a variety of transfer options. Regardless of which way students enter ESF, they must complete both the general and professional education requirements.

At least 27 credits in SUNY-mandated general education courses, distributed among nine knowledge and skill areas, must be completed as part of the degree. To meet degree requirements, students must successfully complete all lower- and upper-division courses. The following are lower division requirements presented in sample schedules for first-year students and transfer students at ESF.

First-Year Freshmen at ESF

Below is a sample schedule of courses for students admitted to ESF's Syracuse campus programs as first-year freshmen.

Sample Freshman Year - Fall Semester			
Course		Cr. Hr.	Check Off
CLL190	Writing and the Environment	3	_____
EFB101/102	General Biology I and Lab	4	_____
FCH150/157	General Chemistry Lecture I and Lab	4	_____
FOR132	Orientation Seminar: Forest and Natural Resources Mgt. ¹	1	_____
APM104	College Algebra and Pre-calculus	3	_____
	TOTAL	15	_____

Sample Freshman Year - Spring Semester			
Course		Cr. Hr.	Check Off
EFB103/104	General Biology II and Lab	4	_____
	General Chemistry II w/Lab or General Physics w/Lab	4	_____
	GenEd Course ³	3	_____
	GenEd Course ³	3	_____
ESF200	Information Literacy	1	_____
	TOTAL	14	_____

Sample Sophomore Year - Fall Semester		
Course	Cr. Hr.	Check Off
CMN220 Public Presentation Skills for Env. Professionals	3	_____
EFB320 General Ecology	4	_____
FOR207 Introduction to Economics	3	_____
FOR360 Principles of Management	3	_____
GenEd Course ³	3	_____
TOTAL	<u>16</u>	<u>_____</u>

Sample Sophomore Year - Spring Semester		
Course	Cr. Hr.	Check Off
APM391 Introduction to Probability and Statistics	3	_____
Sociology or Psychology ²	3	_____
GenEd Course ³	3	_____
GenEd Course ³	3	_____
TOTAL	<u>13</u>	<u>_____</u>

¹ All students (freshmen and transfers) must take FOR 132: Orientation Seminar in FNRM

² FOR 202: Introduction to Sociology (3) or SOC 101: Introduction to Sociology (3) or PSY 205: Foundations of Human Behavior

³ See “General Education Requirements” section, below.

General Education Requirements

At least 27 credits in SUNY-mandated general education courses, distributed among nine knowledge and skill areas, must be completed as part of the degree. Four of these knowledge and skills areas are met through specific required courses. The remaining five knowledge and skills areas, noted with a ² in the tables above must be chosen from a list of acceptable courses listed on the Registrar's web page:

- American History
- The Arts
- Other World Civilizations
- Western Civilization
- Humanities

While the SUNY General Education requirements allow students to meet the social science requirement by completing the introductory economics course, the NRM degree requires an additional social science course, as noted with a ² in the tables above. To meet this added social science requirement, students should choose a course from one of the following subject areas:

- Sociology
- Psychology
- Government
- Political theory
- Public policy

Although it is usually expected that the SUNY-mandated general education courses will be taken in the freshman or sophomore years, it is possible to take several of these courses in either the junior or senior year. However, be sure to discuss the ramifications of such a delay with your advisor.

Transfer Entry Program

Students preparing to transfer to ESF with full junior status must have earned at least 60 credits of college course work. The sample courses listed above represent the type of course requirements for students admitted to ESF's Syracuse campus programs as transfers.

Junior and Senior Courses

Coursework taken in the Junior and Senior years is usually a combination of courses from the professional education core and free electives. The following sample schedule of courses is appropriate for students that enter the program as either a freshman or as a transfer student.

Sample Sophomore/Junior Year - Summer Semester		
Course	Cr. Hr.	Check Off
FOR301 Adirondack Forest Ecology and Dendrology	1	_____
FOR303 Introduction to Forest Resources Measurements	3	_____
TOTAL	<u>4</u>	=====

Sample Junior Year - Fall Semester		
Course	Cr. Hr.	Check Off
FOR345 Introductory Soils	3	_____
FOR340 Watershed Hydrology	3	_____
FOR321 Forest Ecology and Silviculture	3	_____
Accounting or Finance ¹	3	_____
Free Elective	3	_____
TOTAL	<u>15</u>	=====

Sample Junior Year - Spring Semester		
Course	Cr. Hr.	Check Off
FOR333 Managerial Economics for Env. Professionals	3	_____
ESF300 Natural Resources Information Systems	3	_____
FOR372 Fundamentals of Outdoor Recreation	3	_____
Wildlife or Fisheries Course ²	3	_____
Free Elective	3	_____
TOTAL	<u>15</u>	=====

Sample Senior Year - Fall Semester		
Course	Cr. Hr.	Check Off
FOR465 Natural Resources Policy	3	_____
CLL405 Writing for Scientific Professionals	3	_____
Human Dimensions ³	3	_____
Free Elective	3	_____
Free Elective	3	_____
TOTAL	<u>15</u>	_____

Sample Senior Year - Spring Semester		
Course	Cr. Hr.	Check Off
FOR490 Integrated Resources Management	3	_____
FOR488 Natural Resource Agencies and Administration	3	_____
Free Elective	3	_____
Free Elective	3	_____
Free Elective	3	_____
TOTAL	<u>15</u>	_____

¹ ACC 201: Introduction to Accounting for Non-Management Students (3) or FIN 301: Finance for Non-Management Students

² EFB 390: Wildlife Ecology and Management (4) or EFB 487: Fisheries Science and Management (3) or EFB 493: Wildlife Habitats and Populations (4)

³ EST 390 Social Processes and the Environment (3) FOR 312 Sociology of Natural Resources(3) or FOR 475 Human Behavior and Recreation Visitor Management

Forest Ecosystem Science

The Bachelor of Science degree program in Forest Ecosystem Science (FES) is based on a vision that combines professional competency in forest management skills with an enhanced understanding of ecological sciences. Students interested in this program typically are drawn to natural settings and environments, enjoy nature, and want to understand how forested ecosystems work. ESF provides a wide variety of opportunities to meet student needs utilizing 25,000 acres of forest lands as teaching laboratories. Internships with natural resource-based organizations in the business, public and nonprofit sectors provide additional hands-on experiences. Experiential-field learning is combined with learning concepts and skills in the classroom and laboratory on ESF's Syracuse campus.

The FES program allows students to obtain the professional skills that employers look for in new employees and a deeper understanding of the scientific basis of those skills. These skills are developed through a combination of core courses focusing on biology, ecology, ecosystems, and management. The forest ecosystem science degree offers a wide variety of employment opportunities. Graduates work throughout the United States in public agencies, private industry, and for nonprofit organizations. They also are well prepared to enter graduate programs in management of forest and natural resources, ecological research, or other areas of applied forest biology.

Forest ecosystem science offers a wide variety of employment opportunities. Graduates work throughout the United States in public agencies, private industry, and for nonprofit organizations. They also are well prepared to enter graduate programs in management of natural resources, ecological research, or other areas of applied forest biology.

Program Requirements

The Summer Program in Forest and Natural Resources Management is required for ALL students in Forest Ecosystem Science (except those who attend the Forest Technology or Land Surveying Technology Programs at the Ranger School, Wanakena Campus). The Summer Program is a four-week session that begins at the end of May and lasts through June. It is taught at ESF's Wanakena Campus on Cranberry Lake. The program consists of one course: Adirondack Field Studies (FOR 304). The Summer Program is designed to be completed after the Sophomore year and must be completed before Junior year.

Students have expectations of the Forest Ecosystem Science program and its faculty, and the faculty has expectations of the students as well. Students are expected to enter their junior year with the ability to write and speak clearly. Work should be presented in a professional manner, and criticism should be given and accepted in this same spirit. Students are expected to understand and use computers, including word processing of manuscripts, spreadsheets with functions, and basic database management. Students should be active learners who are mature and want to develop professional judgment for conducting and supervising field and office operations.

Program Admission

Students may follow one of three paths to enter and complete the forest ecosystem science degree program:

1. The freshman path is for students who enter ESF as freshmen and complete all degree requirements at ESF with the Summer Program in Forest and Natural Resources after the first or second year (first year preferred).
2. The combined A.A.S/B.S. path is for students who wish to have more field measurement and field problem solving skills and leadership development in context of forestry problems. The first year can be at ESF or another campus and the second year is spent at the Ranger School on the Wanakena campus. Students then complete their B.S. degree requirements at ESF. This path can usually be completed in a total of four and one-half years.
3. The transfer path is for students who complete all or part of their lower-division coursework at another two- or four-year campus, attend the Summer Program in Forest and Natural Resources the summer before entering ESF, and complete the upper-division requirements at ESF. Students preparing to transfer to ESF with full junior status must have earned at least 60 credits of college coursework.

Summary of General Education and Professional Education Core Requirements

The undergraduate curriculum in Forest Ecosystems Science consists of two broad categories of courses. The first category, general education, provides students with knowledge and skills that are useful and important for all educated persons regardless of their profession as well as preparation for advanced courses leading to a specific profession. The second category, professional courses, provides students with direct preparation for a career. The first two years of college usually focuses on general education and the second two on the professional studies.

GENERAL EDUCATION CORE	Credits
Calculus I	4
Introduction to Probability & Statistics	3
English with a focus on Writing I & II	6
General Biology w/Lab	8
General Chemistry I & II w/Lab	8
Introduction to Economics	3
Principles of Management	3
General Physics w/Lab	4
Information Literacy	1
Basic Biology Electives ¹	6
Western Civilization	3
American History	3
Other World Civilizations	3
The Arts	3
Minimum Credit Hours	58

PROFESSIONAL EDUCATION CORE	Credits
Dendrology	3
Orientation Seminar: Forest and Natural Resources Mgt.	1
Summer Program in Forest and Natural Resources	4
Forest Mensuration	3
Forest Biometrics	3
Geospatial Information Technologies	3
Forest Ecology	3
Silviculture	4
Introductory Soils	3
Natural Resources Policy	3
Integrated Resources Management	3
Advanced Biology Electives	6
Ecosystems/Ecology Electives	9
Management Electives	7
Human Dimensions Elective	3
	58
Minimum Credit Hours	58
Free Electives	12
	128
Total Required for Graduation	128

Freshman and Sophomore Courses

Students may be admitted directly as first-year freshman students at ESF or through a variety of transfer options. Regardless of which way students enter ESF, they must complete both the general and professional education requirements.

At least 27 credits in SUNY-mandated general education courses, distributed among nine knowledge and skill areas, must be completed as part of the degree. To meet degree requirements, students must successfully complete all lower- and upper-division courses. The following are lower division requirements presented in sample schedules for first-year students and transfer students at ESF.

First-Year Freshmen at ESF

Below is a sample schedule of courses for students admitted to ESF's Syracuse campus programs as first-year freshmen.

Sample Freshman Year - Fall Semester			Cr.	Check
Course		Hr.	Off	
APM105	Survey of Calculus I	4	_____	
CLL190	Writing and the Environment	3	_____	
EFB101/102	General Biology I and Lab	4	_____	
FCH150	General Chemistry Lecture I	3	_____	
FCH151	General Chemistry Laboratory I	1	_____	
FOR132	Orientation Seminar: Forest and Natural Resources Mgt.	1	_____	
TOTAL		16	_____	

Sample Freshman Year - Spring Semester			Cr.	Check
Course		Hr.	Off	
EFB103/104	General Biology II and Lab	4	_____	
FCH152	General Chemistry Lecture II	3	_____	
FCH153	General Chemistry Laboratory II	1	_____	
ESF200	Information Literacy	1	_____	
FOR207	Introduction to Economics	3	_____	
	General Education Course ¹	3	_____	
TOTAL		15	_____	

Sample Sophomore Year - Fall Semester			Cr.	Check
Course		Hr.	Off	
FOR332	Forest Ecology	3	_____	
FOR360	Principles of Management	3	_____	
PHY211	General Physics I	3	_____	
PHY221	General Physics I Lab	1	_____	
	Basic Biology Elective ²	3	_____	
	General Education Course ¹	3	_____	
TOTAL		16	_____	

Sample Sophomore Year - Spring Semester			Cr.	Check
Course		Hr.	Off	
APM391	Introduction to Probability and Statistics	3	_____	
CLL290	Writing, Humanities and the Environment	3	_____	
	General Education Course ¹	3	_____	
	General Education Course ¹	3	_____	
	Basic Biology Elective ²	3	_____	
TOTAL		15	_____	

¹ See "General Education Courses" on next page.

² See "Directed Elective Courses" on page 28.

General Education Courses

At least 27 credits in SUNY-mandated general education courses, distributed among nine knowledge and skill areas, must be completed as part of the degree. Five of these knowledge and skills areas are met through specific required courses. The remaining four knowledge and skills areas, noted with a ¹ in the tables above must be chosen from a list of acceptable courses listed on the Registrar's web page:

- American History
- The Arts
- Other World Civilizations
- Western Civilization

Although it is usually expected that the SUNY-mandated general education courses will be taken in the freshman or sophomore years, it is possible to take several of these courses in either the junior or senior year. However, be sure to discuss the ramifications of such a delay with your advisor.

Transfer Entry Program

Students preparing to transfer to ESF with full junior status must have earned at least 60 credits of college course work. The sample courses listed above represent the type of course requirements for students admitted to ESF's Syracuse campus programs as transfers.

Junior and Senior Courses

Coursework taken in the Junior and Senior years is usually a combination of courses from the professional education core and technical electives. Technical electives may be chosen to allow the student to either broaden their education in forest management or to concentrate in a particular component of forest science. The following sample schedule of courses is appropriate for students that enter the program as either a freshman or as a transfer student.

Sample Sophomore Year - Summer Semester			Cr. Hr.	Check Off
Course				
FOR304	Adirondack Field Studies		4	_____
TOTAL			<u>4</u>	<u>_____</u>

Sample Junior Year - Fall Semester			Cr. Hr.	Check Off
Course				
EFB336	Dendrology		3	_____
FOR322	Forest Mensuration		3	_____
FOR334	Silviculture		4	_____
FOR345	Introductory Soils		3	_____
	Advanced Biology Elective ³		3	_____
TOTAL			<u>16</u>	<u>_____</u>

Sample Junior Year - Spring Semester			
Course		Cr. Hr.	Check Off
FOR323	Forest Biometrics	3	_____
ESF300	Geospatial Information Technologies	3	_____
	Advanced Biology Elective ³	3	_____
	Ecosystems/Ecology Elective ⁴	3	_____
	Management Elective ⁵	4	_____
	TOTAL	<u>16</u>	_____

Sample Senior Year - Fall Semester			
Course		Cr. Hr.	Check Off
FOR465	Natural Resources Policy	3	_____
	Ecosystems/Ecology Elective ⁴	3	_____
	Human Dimensions Elective ⁶	3	_____
	Free Elective	3	_____
	Free Elective	3	_____
	TOTAL	<u>15</u>	_____

Sample Senior Year - Spring Semester			
Course		Cr. Hr.	Check Off
FOR490	Integrated Resources Management	3	_____
	Management Elective ³	3	_____
	Ecosystems/Ecology Elective ⁴	3	_____
	Free Elective	3	_____
	Free Elective	3	_____
	TOTAL	<u>15</u>	_____

² See “Basic Biology Electives” on page 28.

³ See “Advanced Biology Electives” on page 28.

⁴ See “Ecosystems/Ecology Electives” on page 28.

⁵ See “Management Electives” on page 29.

⁶ See “Human Dimensions Electives” on page 29.

Directed Elective Courses

Students must choose one course from each of these directed elective areas to meet graduation requirements. Courses that satisfy this requirement include the following (other courses may be substituted with an approved petition):

² Basic Biology Electives (chose at least 6 credits)		
Course		Credits
EFB303	Introduction to Environmental Microbiology	4
EFB307/308	Principles of Genetics with Lab	4
EFB311	Population Ecology and Evolution	3
EFB320	General Ecology	4
FCH210	Elements of Organic Chemistry	4

³ Advanced Biology Electives (chose at least 6 credits)		
Course		Credits
EFB325	Cell physiology	3
EFB340	Forest and Shade Tree Pathology	3
EFB351	Principles of Forest Entomology	3
EFB355	Invertebrate Zoology	3
EFB440	Mycology	3
EFB480	Principles of Animal Behavior	4
EFB483	Mammal Diversity	3
FOR455	Forest Genetics and Tree Improvement	3

⁴ Ecosystems/Ecology Electives (chose at least 9 credits)		
Course		Credits
EFB413	Introduction to Conservation Biology	3
EFB445	Plant Ecology	3
EFB446	Ecology of Mosses	3
EFB518	Ecosystems	3
EFB340	Systems Ecology	3
FOR340	Watershed Hydrology	3
FOR430	Agroforestry	3
FOR443	Forest Hydrology	3
FOR513	Adirondack Forest Ecology & Management	2-3
FOR523	Tropical Ecology	3

⁵ Management Electives (chose at least 7 credits)		
Course		Credits
EFB390	Wildlife Ecology and Management	4
FOR333	Managerial Economics for Env. Professionals	3
FOR370	Timber Management	4
FOR433	Silviculture Workshop	3

⁶ Human Dimensions Electives (chose at least 3 credits)		
Course		Credits
EST366	Attitudes, Values and the Environment	3
EST390	Social Processes and the Environment	3
FOR312	Sociology of Natural Resources	3
FOR372	Fundamentals of Outdoor Recreation	3
FOR475	Human Behavior & Recreation Visitor Mgt.	3

Undergraduate Minors

Syracuse University and SUNY-ESF Minors

There are a growing set of minors available to SUNY-ESF students from both SU and ESF, including the following (see College Catalog for more information): computer and information technology (SU); entrepreneurship, management studies, and marketing (SU)a; and urban environmental science (ESF). The Department of Forest and Natural Resources Management sponsors three minors: recreation resources and protected area management; forestry (not available to forest resources management students) and water resources.

Recreation Resource and Protected Area Management Minor

The Recreation Resource and Protected Area Management minor provides students with the opportunity to combine visitor management with protected area management. Understanding the need to balance the opportunity for visitor experiences with protecting and stewarding protected areas provides professional insight into planning and managing those areas for limited visitor access. Understanding the motivations, preferences, and behavior of recreational users is necessary to integrate the human dimensions into protected area management with consideration of the social and environmental factors related to such management. Protected area managers need to be able to manage both the resource itself as well as a wide variety of users, such as campers, hikers, bird watchers, boaters, nature photographers and others who enjoy nature-based experiences in extensive protected area environments owned by public agencies, private landowners, or NGOs. A student will submit a course selection form and petition for admission to his/her faculty advisor and the undergraduate coordinator of the Department. This signed form and petition will then be sent to the Chair of the Department of Forest and Natural Resources Management. This interdisciplinary minor includes courses taught at ESF in the Departments of Forest and Natural Resources Management and Environmental and Forest Biology. Required courses (15 credit hours): FOR 372 Fundamentals of Outdoor Recreation (3), EFB 416 Introduction to Environmental Interpretation (3), FOR 475 Human Behavior and Recreation Visitor Management (3), FOR 476 Ecotourism and Nature Tourism (3), and FOR 478 Wilderness and Wildlands Management (3). Admission to this minor requires that a student from any ESF program complete a general ecology course (e.g., EFB 320 General Ecology, which is a pre-requisite for EFB 416), has a cumulative grade point average of 2.750 or better after one semester at ESF in his/her major program of study (or as a transfer student with same standing), and has permission of the Forest and Natural Resources Management Chair and Undergraduate Education Coordinator (via petition).

Forestry Minor

The minor in Forestry draws from the biological, physical, social, and managerial sciences. The curriculum aids in understanding the biological complexities of the forest and the interactions between the forest and social and economic demands. The minor is designed to provide students with an appreciation of forest resources management. Course themes include forest measurements, forest ecology, forest management and silviculture, and forest policy and economics. The minor in Forestry includes courses taught at ESF in the Department of Forest and Natural Resources Management (FNRM); required course prerequisites are in both FNRM and Environmental and Forest Biology. It is the responsibility of the student to meet any prerequisites associated with courses in the minor. Required courses (16 credit hours): FOR 322 Forest Mensuration (3); FOR 332 Forest Ecology (3); FOR 334 Silviculture (4); FOR 370 Forest Mgt. Decision Making & Planning (3) or FOR 373 Forest Operations (3); FOR 333 Natural Resource Managerial Economics (3) or FOR 465 Natural Resources Policy (3). Admission to the minor requires students to have a cumulative grade point average of 2.750 or better after one semester at ESF (or as a transfer student with same standing), and permission of the Forest & Natural Resources Management Chair and Undergraduate Education Coordinator (via petition).

Water Resources Minor

Water resources is a multi-disciplinary field that integrates the physical, geochemical and biological processes of the water cycle and their application to management of water resources. Although study in water resources has traditionally been distributed among different disciplines, such as natural resources management, engineering, biology and chemistry, the most compelling issues in water resources lie at the interface between these traditional disciplines. It is critical for students to have a solid foundation of coursework that examines the linkages among hydrology, the physical, geochemical and biological sciences, and water resources management. The interdisciplinary minor in water resources provides an opportunity for students to study and integrate principles of physical hydrology, geochemistry, aquatic and terrestrial ecology, and natural resources management. This interdisciplinary minor includes courses taught at SUNY ESF in the Departments of Forest and Natural Resources Management, Environmental Resources and Forest Engineering, Environmental and Forest Biology, and Chemistry. The minor also includes the option of taking courses at Syracuse University, in relevant departments including Geology, Geography, Civil and Environmental Engineering, and Biology. Required courses (15 credit hours): FOR 340 Watershed Hydrology (3); FOR 442 Watershed Ecology and Management (3); one course in Physical Processes (3); one course in Geochemical Processes (3); and one course in Biological/Ecological Processes (3). Admission to this minor requires that a student from any ESF program has a cumulative grade point average of 2.750 or better after one semester at ESF (or as a transfer student with same standing), has permission of the Forest and Natural Resources Management Chair and Undergraduate Education Coordinator using a standard petition, and lists the specified and thematic courses planned for completion of the minor in said petition. Students are responsible for meeting the prerequisite requirements for individual courses, as applicable. Prerequisites will not count towards the minor, but may be included in the student's major course of study. Approved courses in thematic areas are:

Physical processes (3 credits):

- * FEG 340 Engineering Hydrology and Hydraulics (3)
- * ERE 440 Water Pollution Engineering (3)
- * ERE 445 Hydrologic Modeling (3)

- ERE 496 River Form and Process (3)
- * ERE 548 Open Channel Hydraulics (3)
- * ERE 571 Fluid Mechanics (3)
- GEO 316 River Environments (3, at SU)
- GOL 541 Hydrogeology (3, at SU)

Geochemical processes (3 credits):

- * FCH 510 Environmental Chemistry I (3)
- * FCH 515 Methods in Environmental Chemical Analysis (3)
- * EFB 415 Ecological Biogeochemistry (3)
- * EFB 524 Limnology (3)
- * CIE 471 Environmental Chemistry (3, at SU)
- * GOL 400 Contaminant Hydrogeology (3, at SU)
- * GOL 400 Aqueous Geochemistry (3, at SU)

Biological processes (3 credits):

- EFB 486 Ichthyology (3)
- * EFB 423 Marine Biology (3)
- * EFB 487 Fisheries Science and Management (3)
- * EFB 488 Fisheries Science Practicum (3)
- * EFB 554 Aquatic Entomology (3)
- EFB 496 Watershed Ecology with Focus on the Hudson River (2)
- * EFB 500 The Hudson River Watershed: Source to Sink in Eight Days (1-2)

- * Courses with prerequisites.

Combining Forest Technology or Land Surveying Technology and an FNRM B.S. Degree

Ranger School graduates who go on to pursue a bachelor's degree have a solid field education as well as a professional orientation. Students wishing to transfer from the forest technology or land surveying technology programs to either the FRM, NRM, or FES programs are usually admitted as juniors. They will be given credit for the Summer Program in Forest and Natural Resources, and several other courses depending on the option pursued at the Range School. Each student must complete all physical sciences, social sciences, and humanities requirements while at ESF in Syracuse. The number of courses taken depends on the student's prior preparations. All other requirements in the undergraduate degree programs must be met. The following tables illustrate how the forest technology credits can be brought into the B.S. degree.

Forest Technology A.A.S. to Forest Resources Management B.S.

R.S. Course #	Equivalent BS Course #	Equivalent Course Title	Transfer Credits
FTC200	EFB336	Dendrology	3
FTC202	***	Free Elective	3
FTC204	FOR304	Adirondack Field Studies	3
FTC206	FOR304	Adirondack Field Studies	1
	FOR332	Forest Ecology	3
FTC208	***	Free Elective	5
FTC211	FOR334	Technical elective (Vegetation Mgt.)	3
	***	Free elective	2
FTC215	***	Free Elective	2
FTC217	***	Tech. Elective (Protection)	3
	***	Free elective	2
FTC219	***	Tech. Elective (Wildlife Mgt.)	3
	***	Free elective	1
FTC221	***	Free Elective	3
Total Credits			37

Forest Technology A.A.S. to Forest Ecosystem Science B.S.

R.S. Course #	Equivalent BS Course #	Equivalent Course Title	Transfer Credits
FTC200	EFB336	Dendrology	3
FTC204	FOR304	Adirondack Field Studies	3
FTC206	FOR304	Adirondack Field Studies	1
	FOR332	Forest Ecology	3
FTC211	FOR334	Silviculture	4
Total Credits			14

Forest Technology A.A.S. to Natural Resources Management B.S.

R.S. Course #	Equivalent BS Course #	Equivalent Course Title	Transfer Credits
FTC200	***	Free Elective	3
FTC202	***	Free Elective	3
FTC204	FOR304	Adirondack Field Studies	3
FTC206	EFB320	General Ecology	4
FTC208	***	Free Elective	3
FTC210	***	Free Elective	3
FTC211	FOR304	Adirondack Field Studies	1
	FOR321	Forest Ecology and Silviculture	3
FTC215	***	Free Elective	3
FTC217	***	Free Elective	3
FTC219	***	Wildlife or Fisheries	3
FTC221	***	Free Elective	3
Total Credits			35

Land Surveying Technology A.A.S. to Forest Resources Management B.S.

R.S. Course #	Equivalent BS Course #	Equivalent Course Title	Transfer Credits
FTC200	EFB336	Dendrology	3
FTC202	***	Free Elective	3
FTC204	FOR304	Adirondack Field Studies	3
FTC206	FOR304	Adirondack Field Studies	1
	FOR332	Forest Ecology	3
FTC208	***	Free Elective	3
FTC215	***	Free Elective	3
FTC251	***		3
FTC253	***		3
FTC255	***	Free Elective	3
Total Credits			28

Land Surveying Technology A.A.S. to Forest Ecosystem Science B.S.

R.S. Course #	Equivalent BS Course #	Equivalent Course Title	Transfer Credits
FTC200	EFB336	Dendrology	3
FTC204	FOR304	Adirondack Field Studies	3
FTC206	FOR304	Adirondack Field Studies	1
	FOR332	Forest Ecology	3
Total Credits			10

Land Surveying Technology A.A.S. to Natural Resources Management B.S.

R.S. Course #	Equivalent BS Course #	Equivalent Course Title	Transfer Credits
FTC200	***	Free Elective	3
FTC202	***	Free Elective	3
FTC204	FOR304	Adirondack Field Studies	4
FTC206	EFB320	General Ecology	4
FTC208	***	Free Elective	3
FTC210	***	Free Elective	3
FTC215	***	Free Elective	3
FTC251	***	Free Elective	3
FTC255	***	Free Elective	3
Total Credits			29

For More Information Contact:

Dr. Christopher Nowak
Chair, Undergraduate Education Committee
Undergraduate Studies Coordinator
Department of Forest and Natural Resources Management
State University of New York
College of Environmental Science and Forestry
317 Bray Hall
One Forestry Drive
Syracuse, NY 13210
TEL: (315) 470-6575
Email: canowak@esf.edu

Appendices

Appendix A: Miscellany

Petitions

The petition process exists to provide needed flexibility in the curriculum. Students often encounter situations that require minor adjustments from the academic requirements. As such, petitions at ESF generally handle two basic kinds of actions: (1) variances to degree requirements and (2) transfer of credit from another institution after the admissions process is completed. Petition forms are available from the Registrar's Office. Before completing a petition form, meet with your advisor. Many simple problems can be solved with a memo from the advisor to the Undergraduate Education Committee. Complete the petition forms legibly and clearly explain what you want to have happen. There are four parts of the petition form that must be completed:

Informational heading. Be sure to provide all contact information requested and *sign* at the appropriate place. A petition that is missing this information can not be processed.

Request. This should be clear and concise. What is the variance being requested? What specific course is being transferred? ... from which institution?

- Requests to substitute courses require the consent of the instructors.
- Often, the best way to fill out a petition is to write a simple memorandum and attach it to the petition form.

Justification. This should be clear, logical, and detailed. You want to include a reasoned justification for the request. Explain the rationale for your request. Clarity is important, but more detail is better than less. It is important to remember that those acting on the petition will only see what you have written as a justification for your request. If the request is a variance, what are the circumstances? If a course transfer, what requirement is it meeting (how should it be slotted on the Plan Sheet)? Depending upon what is being petitioned, you will want to include additional information here:

- *Variances.* The student to obtain any additional items that are helpful - letters of support or explanation from relatives, doctors, instructors, etc. - and to attach them to the petition before the advisor signs the petition.
- *Course transfers.* The student must attach a description of the course, obtained from a catalog, or the WWW address. Exceptions include any course for which a transfer agreement has already been established (see below: such a listing should be noted on the petition).

Signatures. Undergraduate petitions must be signed by the advisor, then brought to the Undergraduate Curriculum Coordinator (Dr. Chris Nowak) who signs and forwards it to the Department Chair (Dr. David Newman) and then to the Dean of Instruction and Graduate Study for final approval. The Dean may choose to consult with the Committee on Instruction (Academic Standards Subcommittee) before acting. If approved, the petition is forwarded to the Registrar, who makes the appropriate change in the record.

More on Transferring Courses

- *Transfer Articulation Guidelines (TAG)*. The Admissions Office maintains a listing of courses at articulating institutions that are predetermined to be acceptable substitutes for requirements in the various ESF curricula. The list (TAG-list) is available from the Admissions homepage, under *Cooperative Transfer Colleges*.
- *Grades do not transfer*. Credit can be transferred - if the grade is C or better - but the grade cannot, so it cannot affect the GPA.
- *Making up lower division deficiencies*. These should be satisfied as soon as possible, since they may be prerequisites for upper division classes or conflict with desired electives. Students should try to make up these classes (commonly organic chemistry, physics, and calculus) during the summer, at a local community college, if possible.
- *Petition courses before taking them*. Students should submit petitions *before* taking classes elsewhere. This way they know in advance if the course will transfer and meet the intended purpose.
- *Required upper division subjects* may be satisfied by acceptable lower division courses taken at another institution. Usually the transfer is handled at admission, but sometimes a course is named in a way that obscures its relationship to the FNRM curriculum, and a later petition is needed. Such courses are placed in the upper division of the Plan Sheet, in the appropriate slot.

Late Adds, Late Drops

After the add date, about 10 days into the semester, students must petition to add a class. By that time considerable material usually has been presented, and the instructor has the right to refuse admission; if the instructor approves, the petition is virtually always successful. Common late adds include research projects (FOR 498) or internships (Forestry 499) that are developed later in the semester.

In contrast, no petition is harder to get approved than one to drop a course after the drop deadline. Late drop petitions go automatically to the Academic Standards subcommittee, who look for some significant circumstance that occurred after the drop date (which is a couple months into the semester). Before filing such a petition, be sure you have read about the process on the Registrar's FAQ page (important enough to reproduce below).

Guideline Criteria for Successful Late Drops. A petition must exhibit a clear and significant mitigating or extenuating circumstance outside of "normal" and predictable distractions from college coursework, etc. Examples might include illness, injury, death in the immediate family, financial emergency, and others.

The mitigating or extenuating circumstance must occur after or extend beyond the college designated "drop deadline".

The mitigating or extenuating circumstance must be clearly the result of actions outside the control of the student, i.e. not self-inflicted hardship. Similarly, if the student is innocently a victim of poor advising or administrative mishandling, justifiable grounds for the petition may be found

The clear message contained in these criteria should be "late drops are only justifiable under exceptional conditions." The drop deadline placed by the college (ESF, not SU - it differs in intent and date) is exactly that - normal drops are not accepted after that deadline. You may find it useful to see what is not appropriate as well as knowing what is.

The following are "typical" examples of petition justifications which would **not** be accepted:

- *student missed the "drop deadline" by accident*
- *student coursework load is too heavy*
- *student is failing the course*
- *student has missed too many classes or has fallen too far behind*
- *student has changed major and the course is not required in the new major*
- *student intends to retake the course later or at another college*
- *student gambles unsuccessfully in taking an exam or attempting a project on or after the drop deadline*

Two other points are of noteworthy consideration: first, a late change to "audit" a course is considered equivalent to dropping, and all the above criteria apply; second, a petition to late drop is not approved until final review by the Dean of Instruction and the Subcommittee on Academic Standards. Students petitioning for late drops should continue to attend class until they receive final notification of the subcommittee's action. Even if your advisor and instructor approve the petition, it is not a done deal.

Incompletes

A grade of "I" may be assigned only when the student is passing and has nearly completed the course, if the work is not completed because of circumstances beyond the student's control. The incomplete must be resolved prior to the end of the semester following the one in which the grade was given. It may be extended by one semester by petition with the consent of the instructor. If the incomplete is not resolved by the appropriate deadline it will be changed to a grade of "F".

Taking a Course at another College after Matriculation at ESF

Following matriculation at ESF, students who wish to take courses for credit at other colleges or universities (other than ESF or Syracuse University) must submit a petition prior to taking the course. If the petition is approved, the student must request the registrar at the other college send a transcript directly to the ESF Registrar. To receive credit, a grade of "C" or higher must be earned. Before taking the course the student should:

- Obtain a course description or syllabus and submit it with the petition.
- Have the instructor of the ESF course review the proposed substitution and write a brief memo evaluating its applicability.
- Obtain a signature from the faculty advisor on the petition.

Taking Graduate Courses

ESF courses numbered 500 and above are graduate courses. Undergraduate enrollment in these is governed as follows:

700-900 level classes - undergraduates are *absolutely excluded*

600-level classes - to enroll, undergraduates must have: 1) senior standing; 2) a GPA of 3.0 or better; and 3) an approved petition (at least pending at time of registration) showing instructor consent (this consent also needs to be indicated on the SCORE form).

500-level classes - according to written ESF academic policy, instructor permission is required. This may be ignored by faculty members and the Registrar, but it does provide the instructor with some control over enrollment.

Credit-Hour Loads

For four-year students with no Advanced Standing credit, an average of 15 credit-hours per semester is an appropriate pace. The amount of AS credit awarded to transfer students often affects the loads they attempt to carry; they may have lower division deficiencies but still want to complete a BS degree in four years. A common problem is to over-reach the first semester, under the false assumption that ESF classes are no more difficult than what they have had in the past. Academic difficulties may result.

- Undergraduate students are considered full-time with a load of 12 credit-hours. This status is important for most forms of financial aid.
- 14-16 credit hours are typical semester loads; only exceptional students should take 18 or more.
- Students in academic difficulty, or those enrolled through the Educational Opportunity Program (EOP), should try to minimize their credit-hour loads.

Academic Probation, Suspension and Dismissal

While some subjectivity is involved, the Dean of Instruction and Graduate Studies will usually place a student on academic probation if their cumulative grade point average (GPA) drops below 2.0, which is the minimum required for graduation. If satisfactory progress is not made after one semester on probation, the student is suspended from ESF. Advisors are kept apprised by the Dean by means of copies of communication with probationary students.

- *Satisfactory progress* is determined in comparison with a target GPA, the semester GPA a student would need to maintain to finish with a 2.0 cumulative GPA.
- Students on probation are restricted to a maximum load of 15 credit hours and should minimize extra-curricular activities. *Reminder:* while courses may be taken over the summer and transferred to lighten loads at ESF, the grades do not count in the GPA.
- Students may appeal an academic dismissal, and the advisor may volunteer (or be solicited for) comment on the probability of success, should the appeal be granted. Suspended students may reapply after one semester. A second suspension leads to dismissal, which is permanent.

Privacy Issues

Most information about you is private. Examples of private information include:

- Grades, or other information on plan sheets and transcripts (***private even from parents!***)
- Special enrollment (EOP, for example) or minority standing
- Disabilities
- Probationary standing
- Non-public personal information, including social security numbers.

Independent Study and Internships

An independent study is learning that the student undertakes with a particular faculty member. An internship is a working and learning opportunity sponsored by an employer with oversight from a faculty member. In both independent study and internships, strong emphasis is placed on student initiative. The Forestry Internship Agreement is included as Appendix B in this Handbook.

Changes between FRM and NRM, FRM and FES, or NRM and FES

Undergraduate students in the Department of Forest and Natural Resources Management are admitted to either the Forest Resources Management (FRM) degree program, or the Natural Resources Management (NRM) degree program, or the Forest Ecosystem Science (FES) degree program. Consequently, to change from one to another after admission is considered a change of degree program and you must follow the established College policy. Students considering making this type of change should go to the **Office of Career and Counseling Services** and discuss their request.

Appendix B: Internships

Internship Guidelines for Students

These are general guidelines to be followed by any student undertaking an internship for academic credit. These general guidelines can be supplemented or amended by the particular faculty advisor and student depending on special circumstances.

1. All internships for which academic credit is desired must be set up in advance of beginning the internship. If circumstances preclude this then a meeting or discussion between the student, field supervisor, and faculty advisor must take place at the beginning of the internship period.
2. Students must complete, in consultation with the faculty advisor and field internship supervisor, a FNRM Internship Agreement (page 45 of this handbook).
3. Students will maintain periodic contact with their faculty advisor during the internship. This can either be by phone, email, or regular mail. Contact every two weeks is recommended.
4. Students will keep a journal in which they enter the activities in which they participate, meetings attended, and observations about the company/agency etc. with which they are working.
5. Students will keep a record of any projects for which they have particular responsibility for completion. This record would consist of copies of written reports, display material, data analyses, etc.
6. At the completion of the internship the student will prepare a written report that will address the following:
 - a. How did the internship relate to the course work you have had?
 - b. What different courses might you have taken or might now take after completing this internship?
 - c. What were the particular things you learned on this internship?
 - d. How did the work you were engaged in relate to things such as:

measuring natural resources	managing natural resources
biological and physical factors	policy making
communicating	ethics and leading
problem solving	other items as needed

7. At the completion of the internship here will be a one to two hour debriefing session which shall include the student and faculty advisor, and, if feasible, the field supervisor and another faculty member. During this debriefing the student will be asked questions such as those addressed in the written report.
8. The grade for the internship will be determined by the faculty advisor and field supervisor based on student's performance on the job, depth of thinking, observations contained in journal, final written report, and any written or oral presentations.

FNRM Internship Agreement

Preparation of this agreement is the responsibility of the student. It must be typed and written clearly and concisely. Please refer to the guidelines for the Internship Agreement. It must be on file with all approval signatures prior to registration for credit.

Internship Title:

Approvals:

Student: _____ Date: _____

Faculty sponsor: _____ Date: _____

Field Supervisor: _____ Date: _____

Addresses:

Student:

Phone:

Street:

City, State, Zip:

Field Supervisor:

Alternate Supervisor:

Street:

Street:

City, State, Zip

City, State, Zip

Phone:

Phone:

Internship Objectives:

Scope of Work:

Anticipated Work Schedule:

Commencement: _____

Completion: _____

Credit Hours: _____

Necessary Skills:

Previous Experience:

Support Being Provided:

Evaluation Procedures:

Internship Evaluation

Supervisor: _____

Student: _____

Please rate the student intern on each of the characteristics listed below by circling the appropriate number: (1) Outstanding, (2) Above average, (3) Average, (4) Below Average, (5) Unsatisfactory and (6) Unable to Judge.

- | | | | | | | |
|--------------------------------|---|---|---|---|---|---|
| 1. Ability to learn: | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Interest: | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Preparation of assignments: | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Initiative: | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Quality of Work: | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. Reaction to criticism: | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. Cooperation: | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Dependability: | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. Judgement: | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Communication: | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. Creativity | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. Overall Evaluation: | 1 | 2 | 3 | 4 | 5 | 6 |

Where your expectations of the intern [] met, [] exceeded, or [] not met?

In which ways? On the next sheet, please comment on the student's overall performance, including any strengths or weaknesses you feel are important.

Signature: _____

Date: _____

Appendix C: Faculty Directory

Nasri Abdel-Aziz, Instructor: 205 Marshall Hall, 315-470-6972, e-mail: nabdel@esf.edu.
Calculus.

Lawrence P. Abrahamson, Senior Research Associate: 126 Illick Hall, 315-470-6777, e-mail: labrahamson@esf.edu. Forest Entomology, Forest Pathology, Pesticides, Integrated Pest and Vegetation Management, Woody Biomass for Energy Crops.

Eddie Bevilacqua, Associate Professor: 301 Bray Hall, 315-470-6697, e-mail: ebevilacqua@esf.edu. Forest Measurements and Statistics.

Russell D. Briggs, Professor: 358 Illick Hall, 315-470-6989, e-mail: rdbriggs@esf.edu. Forest Soils and Silviculture.

Karen Conahan, Instructor: 206 Marshall Hall, 315-470-4815, e-mail: kconahan@esf.edu.
Calculus.

Chad P. Dawson, Professor: 308 Bray Hall, 315-470-6567, e-mail: cpdawson@esf.edu.
Wilderness management, Outdoor Recreation Management.

Allan P. Drew, Professor: 311 Bray Hall, 315-470-6578, E-mail: apdrew@syr.edu. Tree Physiology, Physiological Ecology.

René H. Germain, Associate Professor and Graduate Studies Coordinator: 316 Bray Hall, 315-470-6698, e-mail: rhgermai@syr.edu. Sustainable Forestry Systems, Business.

Diane Kuehn, Assistant Professor: 310A Bray Hall, 315-470-6561. e-mail: dmekuehn@esf.edu.
Recreation Resources Management, Tourism Planning, Commercial Recreation

Jacqueline LaVie, Instructor: 204 Marshall Hall, 315-470-4818, e-mail: jelavie@esf.edu.
Calculus.

Valerie A. Luzadis, Associate Professor: 307 Bray Hall, 315-470-6693, e-mail: vluzadis@esf.edu. Forest Policy, Values, and Ecological Economics.

Robert W. Malmshemer, Associate Professor: 305 Bray Hall, 315-470-6909, e-mail: rwmalmsh@esf.edu. Forest and Natural Resource Law and Policy.

Charles A. Maynard, Professor: 216 Marshall Hall, 315-470-6560, e-mail: cmaynard@syr.edu.
Forest Genetics, Tree Improvement, Plant Tissue Culture and Transformation.

Douglas A. Morrison, Research Associate: 306 Bray Hall, 315-470-6740, e-mail: damorris@esf.edu. Sociology, Psychology, Forest Recreation.

David Newman, Department Chair and Professor: 320 Bray Hall, email: dneuman@esf.edu.
Forest Resource Economics, Land Use Change, Taxation, Policy.

Christopher A. Nowak, Professor and Undergraduate Studies Coordinator: 317 Bray Hall, 315-470-6575, e-mail: canowak@esf.edu. Vegetation Management, Silviculture, Forest Ecology, Sustainable Forest Management.

Ralph D. Nyland, Distinguished Service Professor: 312 Bray Hall, 315-470-6574, e-mail: rnyland@syr.edu. Silviculture, Forest Practice.

Stephen V. Stehman, Professor: 322 Bray Hall, 315-470-6692, e-mail: svstehma@syr.edu. Statistics, Sampling.

John Stella, Assistant Professor: 206 Marshall Hall, 315-470-4902, e-mail: stella@esf.edu. Hydrology, Watershed Management.

Timothy A. Volk, Senior Research Associate: 346 Illick Hall, 315-470-6774, e-mail: tavolk@esf.edu. Short Rotation Intensive Culture Forestry, International Forestry.

Sarah L. Vonhof, Instructor: 303A Bray Hall, 315-470-6594, email: slvonhof@esf.edu. Environmental & Natural Resources History, Property Systems.

John E. Wagner, Associate Professor: 304 Bray Hall, 315-470-6971, e-mail: jewagner@esf.edu. Forest Resources Economics.

Ruth Yanai, Professor: 210 Marshall Hall, 315-470-6955, e-mail: rdyanai@syr.edu. Forest Soils.

Lianjun Zhang, Professor: 323 Bray Hall, 315-470-6557, e-mail: lizhang@syr.edu. Forest Biometrics.

Appendix D: Who to Call

Below is a short list of offices/people that help get answers to your questions.

Forest and Natural Resources Management Curriculum Coordinator (Dr. Christopher Nowak, x 6575) for questions about:

- FNRM academic policies (general or specific)
- advisor assignments, temporary substitutions
- advising and registration schedules
- petitions
- complaints and (hopefully) recommendations

Admissions Office (Susan Sanford, Director, x 6600) for questions about:

- explanation and (early) modification of advanced standing credit
- advice on course equivalencies relating to petitions

Registrar's Office (Ray Blaskiewicz, Registrar, x 6654, x 6657) for questions about:

- access to online advising services mentioned above
- clarification of course slotting on Plan Sheet
- implementation of academic policies and procedures

Office of Instruction and Graduate Studies (Scott Shannon, Dean, x 6599) for questions about:

- interpretation of academic policies and procedures
- student probation and dismissal
- applicability of courses to General Education requirements
- special programs (minors, honors, science education)

Office of Financial Aid & EOP (John View, x 6670) for questions about:

- effects of credit load and academic standing on financial aid
- special considerations for students in Educational Opportunity Program

Office of Multicultural Outreach (Dr. Raydora Drummer, x 4815) for questions about:

- special concerns of minorities

Office of Career and Counseling Services (x 6660) for questions about:

- career exploration, testing, and related services
- personal advising/counseling, tutoring, disabilities
- program changes, withdrawal, and readmission