# SUNY ESF Ranger School Forest Technology Accreditation Report

**Presented to the**

# Society of American Foresters

# 2011

# Table of Contents

# Introduction and Format

The purpose of this continuing review process and accreditation by the Society of American Foresters is to maintain the overall quality of the instructional program at the SUNY College of Environmental Science and Forestry, Forest Technology Program located at the Ranger School in Wanakena, New York.

Many positive and innovative changes and improvements have taken place at the Ranger School since the last full review of the Forest Technology Program submitted in January 2005. In the process of addressing the specific standards set by the Society of American Foresters (SAF), this report will highlight these changes and improvements.

The Ranger School's Forest Technology Program was one of the first forest technology institutions to be recognized by the SAF. In 1982 the Forest Technology Program submitted its first self-study report for recognition to the SAF. On March 29-31, 1982 the SAF visitation review panel visited the Ranger School Campus and on May 27, 1982 submitted its report of the visitation to Dr. Edward E. Palmer. the President of the College of Environmental Science and Forestry.

On February 15, 1985, Wesley Suhr, Director of the Ranger School, submitted to the SAF "A Response Report to the SAF Panel Visitation of 1982."

During the academic year 1984-85 the Forest Technology Program was reviewed for the purpose of continuing recognition by the SAF review panel. On November 14, 1985 the SAF Committee on Forest Technology School Recognition recommended that the SAF continue recognition of the SUNY ESF Forest Technology Program through 1995 subject to the submission of a satisfactory interim report in 1990.

In June 1990 an Interim Status Report was submitted to the SAF. This report was rejected on September 28, 1990 by the SAF Committee on Forest Technology School Recognition because the report did not meet SAF format criteria or address specifically the seven standards as requested by SAF. The Committee recommended continued recognition through 1995, of the Forest Technology Program leading to an AAS degree at the SUNY College of Environmental Science and Forestry, contingent upon submission of a report by June 15, 1991.

Prior to June 1991 a revised Interim Status Report was submitted to the SAF Committee on Forest Technology School Recognition. On August 3, 1991 the SAF Committee on Forest Technology Recognition recommended to the SAF Council continued recognition through 1994. It was noted that within the Summary Findings, the only negative comment appeared under Standard VI – "no documentation or narrative was presented regarding the program's operating budget."

In December of 1994, the Ranger School submitted a "Recognition Report of the Forest Technology Program (Ranger School)" to the SAF Committee on Forest Technology School Recognition. This report requested continued recognition of our Forest Technology Program and also requested recognition of our land surveying concentration. On October 27, 1995 the SAF Committee on Forest Technology School Recognition recommended that the SAF continue recognition through 2005 of the Forest Technology Program leading to the Associate in Applied Science Degree as administered by the College of Environmental Science and Forestry contingent upon the submittal of an Interim Status Report in the year 2000. Recognition for the surveying program was denied.

In September 2000, an Interim Status Report was submitted to the SAF. On November 15, 2000 the SAF Committee on Forest Technology School Recognition recommended to the SAF Council continued recognition through 2005. Findings by the SAF Committee on Forest Technology School Recognition were extremely positive.

In January 2005 the Ranger School submitted a "Recognition Report of the Forest Technology Program" to the SAF Committee on Forest Technology School Recognition. This report requested continued recognition of our Forest Technology Program. On October 19, 2005 the SAF Committee on Forest Technology School Recognition recommended that the SAF continue Recognition through 2015 of the Forest Technology Program leading to the Associate in Applied Science Degree as administered by the College of Environmental Science and Forestry. All standards were met and general observations were extremely positive.

Beginning January 1, 2009 the SAF began accrediting programs in Forest Technology. Therefore, no Interim Status Recognition Report was submitted in 2010.

It is our pleasure to provide our first Program Accreditation Review Report as required for initial SAF Accreditation. The narrative is organized standard by standard and all the supporting documentation appears in the Appendix with exhibit numbers relating back to the appropriate narrative.

# STANDARD I
# Program Objectives

**Mission Statements and Program Outcomes**

The mission for the Ranger School, last formalized in 2001, is to "Develop leaders in the application of forest and surveying technology by providing highly respected educational programs and opportunities in a unique environment." Although a third curriculum has recently been added, this statement succinctly states the mission of the School's Forest Technology Program.

In 2010, the faculty developed and formally approved an "Assessment of Learning Outcomes" for the Forest Technology Program. The eight major outcomes, or objectives of the Forest Technology curriculum, were developed from numerous discussions with faculty members and the Forest Technology Advisory Committee members over a number of years. These outcomes reflect the group consensus about which skills a forest technician should possess. The outcomes are:

1. A forest technician is competent in making observations, measurements, and collecting information

2. A forest technician has competent communication skills

3. A forest technician is skilled with a variety of common forestry tools to complete assigned tasks

4. A forest technician understands timber as a renewable resource, and the place of forest management within the economic realms of wood products industries and societal needs

5. A forest technician understands the complexity of the forest ecosystem, and can identify the more common components of forest ecosystems, including trees, other plants, wildlife, fungi and insects

6. A forest technician understands the biological, economical, and cultural importance of other natural forest resources, including wildlife, water, soil, recreation and wilderness

7. A forest technician has a positive work ethic, and is capable of working independently with minimum supervision, as a member of a crew, or as a supervisor of a crew

8. A forest technician is confident working in the forest environment, is aware of the dangers and understands the importance of working safely

The full list of Outcomes, Curriculum Elements, and Assessment Methods is included as Appendix A-1.

The mission and objectives of the Ranger School Forest Technology Program are consistent with the parent institution in that the College of Environmental Science and Forestry's general mission is to "advance knowledge and skills and to promote the leadership necessary for the stewardship of both the natural and designed environments" [1].

**Program Delivery**

The Forest Technology Program, located on the Ranger School campus in Wanakena, NY, is administratively located within the Department of Forest and Natural Resources Management of the State University of New York's College of Environmental Science and Forestry. Students who successfully complete the Forest Technology Program receive an Associate in Applied Science Degree (A.A.S.) in Forest Technology[2].

The Forest Technology Program is the second year of a two-year curriculum. Students take their first year of general education (30 credit hours) at an accredited college either in state or out-of-state. These prerequisite credits include: biology, with lab (4), other science, with lab (4), English (6), trigonometry or pre-calculus (3 or 4), economics (3), and other electives (10). Their second year of specific studies in forestry is completed at the Wanakena Campus.[3]

List 1, which shows many of the colleges attended by our students during their freshman year, also illustrates the geographic range from which our students come: New York state primarily, but also from New England, Pennsylvania, Michigan and other neighboring states.

The following pages within the 2010-2011 SUNY ESF college catalog provide information specific to the Forest Technology Program:

**List 1**
**Freshman year colleges:**

Students from the Class of 2011 completed their first year of general education classes from the following colleges:

Adirondack Community College
Broome County Community College
Cayuga Community College
Clinton Community College
Cobleskill Community College
Erie Community College
Finger Lakes Community College
Hudson Valley Community College
Jamestown Community College
Jefferson County Community College
Mohawk Valley Community College
Naugatuck Valley Community College
Paul Smiths College
Onondaga Community College
Orange county Community College
Schenectady Community College
Southern Maine
Suffolk County Community College
SUNY Alfred
SUNY Canton
SUNY Cortland
SUNY Delhi
SUNY ESF
SUNY Oneonta
SUNY Oswego
SUNY Plattsburgh
Tompkins Cortland Community College
Ulster Community College
University of New England
Westchester Community College
others

[1] http://www.esf.edu/welcome/mission.htm
[2] http://www.esf.edu/rangerschool/programs/ft.htm
[3] Dubuar Forest and grounds are described in detail in Section VII.

- Academic program – page 7
- Forest Technology Admissions – page 33 [4]
- The Campuses – page 53 [5]
- The Ranger School – pages 140-144
- Course Descriptions – pages 208-210

We continue to attract students who have an interest in outdoor careers and the forest environment. Our program provides them the knowledge for working in that environment, including techniques for measuring, evaluating, and reporting to land owners and land managers. Our graduates may find satisfying careers in the fields of forestry, insect and disease management, watershed management, urban forestry, tree care and other environmental technologies.

Graduates of the program are prepared for positions as forest rangers, federal, state and private industry forest technicians and forestry aides; district forest supervisors, timber inventory specialists; timber sales supervisors; forest recreation aides, forest protection technicians, arborists, and engineering aides.

Some of the program's primary constituents who continue to hire the program's graduates include:

Federal Government
- U.S. Forest Service
- Army Corps of Engineers
- National Park Service
- Bureau of Land Management

Industrial
- International Paper
- Finch Forest Management
- Wagner Hardwoods

State Governments
- NYS Department of Environmental Conservation
- NYS Department of Transportation
- NYS Office of Parks, Recreation &Historic Preservation
- Massachusetts Forestry Department
- Maine Forest Service
- Virginia Forest Service
- New Hampshire Cooperative Extension Service

County Governments
- County Soil & Water Districts
- County Parks Departments

[4] www.esf.edu/admissions/rsvisit.asp
[5] www.esf.edu/rangerschool

Private Forest Consultants

- Legacy Forestry
- Future Forests Consulting, Inc.
- Forecon, Inc
- Fountains Forestry. Inc.
- LandVest

Tree Care Industry

- Davey Tree Care Expert Co.
- Swingle Tree Care Co.
- Vegetation Control Service
- Bartlett Tree Experts
- Chippers
- DJ's Tree Service and Logging, Inc.

Other

- Adirondack Mountain Club
- Nature Conservancy

# STANDARD II
# Curriculum

### Overview

The Ranger School's Forest Technology Program was founded in 1912 and is the oldest continuously operating program of its kind in North America. Prior to 1973 it was a one year certificate program. In 1973 a two year A.A.S. program replaced the certificate program. The program's one-plus-one design requires students to complete 30 credit hours of course work in liberal arts at an accredited college during their freshman year before entering the Ranger School at Wanakena for an additional 45 credit hours during their sophomore year.

Until 1994 there had been only one academic program available at Wanakena and all students were required to take the entire program. In 1990 the faculty started plans for offering students a choice: a concentration in Forest Technology or Land Surveying. In August of 1993, with the approval of the Provost, the land surveying concentration was implemented, and in 1993 the first freshman students entered accredited colleges. In August of 1994 this first group of students with an interest in land surveying entered the Ranger School and graduated in May 1995 with an A.A.S. degree in Forest Technology with a concentration in Land Surveying.

The faculty of the Forest Technology Program spent approximately two years (1998-2000) evaluating, modifying and updating the curriculum for the academic year spent at the Ranger School. During this process the faculty critically assessed the curriculum and presented a series of recommendations to the then Faculty of Forest and Natural Resources Management and the ESF Faculty. The revised curriculum package received final approval from the ESF Faculty at their January 27, 2000 meeting, and the approved Forest Technology Curriculum was implemented in the fall of 2000.

During the fall of 2004, the Ranger School formally requested the State University of New York (SUNY) to authorize an A.A.S. degree in Land Surveying Technology. This request was approved by both SUNY and the State Education Department, and the new program was implemented beginning in the fall of 2005. A decision was made to forego SAF recognition of the new degree program and instead seek accreditation from ABET. The Ranger School formally requested ABET accreditation for the Land Surveying Technology program in January 2010 and expects a positive decision by summer 2011.

In the summer of 2009, the Ranger School faculty engaged in yet another critical assessment of the Forest Technology and Land Surveying Technology curriculums. This was part of a larger effort to develop ways to increase enrollment and also expand and enhance educational opportunities for Ranger School students. With the help of the Vice President for Enrollment and Marketing, the Chair of the Department of Forest and Natural Resources Management, and the key personnel from the Admissions Office, a total of nine strategies were outlined and prioritized. During the fall of 2009,

the Ranger School faculty requested and received approval to pursue all nine strategies from the ESF Provost. With the support of the College, the Ranger School faculty immediately began to implement the highest priority strategies. A brief description of the pertinent changes and updates follows.

In December 2009, the Ranger School faculty requested that the ESF Faculty review and approve significant changes and updates to both the Forest Technology and Land Surveying Technology Programs. The following curriculum proposals were made to the ESF Faculty and approved in March 2010:

- Change the first-year science requirements for the Forest Technology Program to 4 credits of General Biology and 4 credits of a science-based course (e.g., biology chemistry, physics)
- Reduce the credit hours offered during the first Ranger School semester from 24 to 21 by reducing Introduction to Surveying by 1 credit, and Geographic Information Technology (formerly Spatial Analysis of Forest Resources) by 2 credits. This results in a reduction in class weeks from 18 to 17 for the fall semester.
- Update and revise course descriptions for all courses. Change the name of several courses to better reflect revised content and objectives.
- Make other specific changes to the Land Surveying program to facilitate ABET accreditation.

The approved changes were implemented beginning with the fall 2010 semester. Currently, students enrolled in the Forest Technology Program take the courses listed in Table 1 during their academic year at the Ranger School. After successful completion of these courses, students receive an A.A.S. degree in Forest Technology from the SUNY College of Environmental Science and Forestry.

In January of 2010, the Ranger School faculty requested that the ESF Faculty review and approve a new (i.e., third) A.A.S. degree program in Environmental and Natural Resources Conservation. The program was approved by the ESF Faculty in March 2010 and by the NY State Education Department in September 2010. The new curriculum, also a one-plus-one program, begins in August 2011. At this time, SAF accreditation of the new Environmental and Natural Resources Conservation Program is not being sought.

**TABLE 1**
**A.A.S. Forest Technology Program**
**Second year at the Ranger School**

**Fall Semester**

| | |
|---|---|
| FTC 200 Dendrology | 3 credit hours |
| FTC 202 Introduction to Surveying | 3 credit hours |
| FTC 204 Introduction to Natural Resources Measurements | 4 credit hours |
| FTC 206 Forest Ecology | 4 credit hours |
| FTC 207 Forest Safety | 1 credit hour |
| FTC 208 Geographic Information Technology | 3 credit hours |
| FTC 210 Leadership and Forest Technology | 3 credit hours |
| | ***21 credit hours*** |

**Spring Semester**

| | |
|---|---|
| FTC 211 Silviculture | 4 credit hours |
| FTC 213 Forest Inventory Practicum | 2 credit hours |
| FTC 215 Timber Harvesting | 2 credit hours |
| FTC 217 Wildland Firefighting and Ecology | 2 credit hours |
| FTC 219 Introduction to Forest Recreation | 1 credit hour |
| FTC 221 Natural Resources Management | 3 credit hours |
| FTC 223 Water Measurements | 1 credit hour |
| FTC 225 Timber Transportation and Utilization | 3 credit hours |
| FTC 234 Wildlife Conservation | 3 credit hours |
| FTC 238 Forest Insects and Disease | 3 credit hours |
| | ***24 credit hours*** |

**A. Contact Hours**

The total number of contact hours of instruction in forestry and related technical development courses, and of hours devoted to laboratory instruction, has dropped slightly since 2005 (Table 2). This is due to the recent changes in curriculum described previously. Most of the change has occurred in the Lab/Field category, especially during the fall semester.

**TABLE 2**
**Contact Hours Per Student**
**Forest Technology Curriculum**

| Semester | 2004-05 Class Contact Hours | | | 2010-11 Class Contact Hours | | |
|---|---|---|---|---|---|---|
| | Lecture | Lab/Field | Total | Lecture | Lab/Field | Total |
| Fall | 284 | 362 | 646 | 274 | 322 | 596 |
| Spring | 247 | 382 | 629 | 256 | 376 | 632 |
| Total | 531 | 744 | 1,275 | 523 | 698 | 1,221 |

**B. Technical Subject Areas – Second Year at Ranger School**

Table 3 relates the technical subject areas that shall be included in Forest Technology instruction as required by SAF and the current Ranger School courses that provide the desired coverage.

**TABLE 3.**
**Subject Area/Course Coverage.**

| Subject Area | Dendrology | Forest Ecology | Silvi-culture | Protection | Measurements | Land Sur-veying | Aerial Photo Interpre-tation | Woods Safety | Harvesting Techniques | Multiple Use of Forest Land | Forest management Practices | Principals of Human Resources |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Forest Technology Courses | | | | | | | | | | | | |
| FTC 200 Dendrology | 👍 | | | 👍 | | | | | | | | |
| FTC 202 Introduction to Surveying | | | | | | 👍 | | | | | | |
| FTC 204 Intro to Natural Resources Measurements | 👍 | | | | 👍 | | | | | | | |
| FTC 206 Forest Ecology | 👍 | 👍 | | | | | 👍 | | | | | |
| FTC 207 Forest Safety | | | | | | | | 👍 | | | | |
| FTC 208 Geographic Information Technology | | | | | 👍 | 👍 | 👍 | | | | | |
| FTC 210 Leadership and Forest Technology | | | | | | | | 👍 | 👍 | | | 👍 |
| FTC 211 Silviculture | | 👍 | 👍 | 👍 | 👍 | | | 👍 | | 👍 | 👍 | |
| FTC 213 Forest Inventory Practicum | 👍 | | | | 👍 | 👍 | 👍 | | | | | |
| FTC 215 Timber Harvesting | | | 👍 | | 👍 | | | 👍 | 👍 | | 👍 | |
| FTC 217 Wild Land Firefighting and Ecology | | 👍 | | 👍 | | | | | | | | |
| FTC 219 Intro to Forest Recreation | | | | | | | | | | 👍 | | |
| FTC 221 Natural Resources Management | | | 👍 | | 👍 | | 👍 | | | 👍 | 👍 | |
| FTC 223 Water Measurements | | | | | | | | | | 👍 | | |
| FTC 225 Timber Transportation and Utilization | 👍 | | | | | 👍 | | | 👍 | | | |
| FTC 234 Wildlife Conservation | | | | | | | | 👍 | | 👍 | | |
| FTC 238 Forest Insects and Disease | | 👍 | | 👍 | | | | | | | | |

The following is a more in-depth discussion of the required subject areas vis-à-vis the Ranger School courses:

a. Dendrology: Dendrology is well covered and students use their field identification skills through the entire year. Some dendrology field labs are conducted in the winter season to improve student skills in identification by bark and twigs. The Wanakena Campus is located on the northern edge of the Northern Hardwood region, resulting in limited species diversity. Field trips throughout the North Country, from the St. Lawrence River Valley to the Lake Champlain Valley, are used to expose students to different forest types and a more diverse selection of species.

b. Forest Ecology: The content areas are well covered. Within the Forest Ecology course, field laboratories have been designed to increase application of ecology concepts and enhance student understanding of forest typing.

c. Silviculture: All of the content areas are fully covered in lecture. Both hardwood and softwood silviculture is covered in the class. Field laboratories are designed in both forest types. A prescribed burn is conducted as part of the Wildland Firefighting course. Field trips enhance understanding of covered topics.

d. Protection: Regional problems and controls of insects, diseases and animal damage are sufficiently presented. At times, due to course scheduling, it is impossible to see the actual problems in the field, so inside laboratory examples must be used. Students are shown how silviculture can be used to protect against damage caused by fires, insects, wind, and disease. Field labs are conducted to see local insect and/or disease incidences and/or impacts.

   Forest fires are not a serious problem in the Adirondacks, and therefore, actual fire suppression experience is limited. Videos and computer models are used to supplement actual fire experience. Students receive S130/190 Wildland Fire Suppression training and red card certification through the New York State Department of Environmental Conservation.

   A "Fire Training Area" has been developed on the Dubuar Forest to provide a field setting for yearly exercises in prescribed fire and fire suppression.

e. Measurements: All the content areas are thoroughly covered in lecture and laboratories, with students getting valuable hands-on practice in all topics except log and tree grading. These topics are covered in lecture and on field trips to managed forests and saw mills, but students do not actually practice log and tree grading. Grading entails many local variations that change depending on supply and demand. The faculty is

aware of the importance of tree and log quality and has sought ways to incorporate more practical field work in this topic.

Computer usage by students is very adequate. Software programs used includes Microsoft Office (Word, Excel, and Power Point), Arc GIS, SILVAH, Carlson, and TwoDog.[6]

f. Land Surveying: All of the content areas are well covered in lecture as well as in laboratory. Students get a chance to work with a range of equipment from the hand compass up to the total station, and they draft maps by hand and by computer using Carlson Survey software and Arc GIS software.

   Students are introduced to the theory and use of global positioning systems (GPS). Both hand-held and survey-grade GPS equipment is covered, with special emphasis on hand-held, or recreational-grade, GPS receivers.

g. Aerial Photo Interpretation: All content areas are well covered. Students are required to purchase a set of photos that cover part of the Dubuar Forest. They also sign out a stereoscope for the entire year and are expected to use the photos and stereoscope for several lab/field exercises. Field labs are designed to reinforce basic concepts in scale interpretation and planning. Digital orthophotos are also available to the students for GIS projects.

h. Woods Safety: All of the topics within this subject area are covered, and instructions are repeated within a course just prior to students working with specific tools. Safety is discussed later in this section of the report.

i. Harvesting Techniques: In the laboratory, students harvest a marked stand, create a logging plan, and conduct a cost analysis. The various harvesting system are presented in lecture and some are observed on field trips. The west coast cable systems receive very little coverage, as they are rarely used in the northeast.

j. Multiple Uses of Forest Lands: The program has several courses that provide excellent coverage of the topics of wildlife, recreation and water. The FTC 221-*Natural Resources Management* course is used to show how these uses are integrated.

   Range management receives very minimal coverage. The management of minerals on forest lands in the Adirondacks is not a major issue, with gravel, sands, etc. being the typical mineral uses of forest lands. In lecture students are made aware of mineral uses, and field trips occasionally

[6] Full list of computer software is in Appendix G-1

exposed the students to oil, gas and strip mining issues.

k. Forest Management Practices: Coverage of the required topics is adequate. The faculties continually discuss what the ideal content and structure of a forest management course for technicians should entail. Currently, field trips and guest speakers supplement and/or reinforce this subject area. Emphasis is placed on developing a management plan given realistic constraints of time, money, existing regulations, societal values, etc.

l. Principles of Human Resource (Personnel) Management: These topics are covered primarily in FTC 210-*Leadership and Forest Technology*. Throughout the year students are required to work in crews in field and laboratory situations, with various students acting as crew leaders. The topics of diversity and ethics are covered, as are resume writing and interviewing.

**C. General Education**

The Forest Technology Program continues as a "one plus one program" providing students with general education courses during the first year of college (Table 4). The first year of the program may be obtained at any accredited college, including ESF in Syracuse, NY. Each year, approximately 10 students attend ESF's Syracuse Campus for their first year of college. Many of those students return to the Syracuse Campus following their sophomore year at the Ranger School.

The general education goals and objectives for the program are to:

1. Satisfy New York State general education requirements for granting A.A.S. degrees. In general the State requires that besides providing the necessary scientific and technical training for a specific profession, a student must also receive courses in English, math and humanities. This objective is satisfied by requiring students to take six credit hours of English, three of math, and ten hours of electives with at least one humanities course.

2. Require students to take general education courses that act as prerequisites for the technical area courses. This objective is satisfied by requiring students to take four credit hours of biology, four credit hours of additional science, three hours each of math and economics, plus recommended/desirable electives.

The quality of education obtained by students during their freshman year is varied and for that reason the college and Ranger School program only accept for transfer, courses with grades of "C" or better. No grades of C- or D are accepted.
The faculty is also very concerned with students' oral and written communication skills. In an attempt to improve on these communication skills, students are required to make oral presentations in several classes during both the fall and spring semesters. In addition, faculty assigns several technical reports and term papers throughout the year, and work closely with students to help them develop high quality products.

**TABLE 4**
**First Year of 1 + 1**
**Forest Technology Curriculum**

| **Freshman Year: All Students (Completed at ESF or a transfer college)** | **Credit Hours** |
|---|---|
| General Biology (One 4-credit course including lab) | 4 |
| Science Course with lab (Biology, Chemistry or Physics) | 4 |
| English with a focus on writing (Two 3-credit Courses) | 6 |
| Trigonometry or pre-calculus (One course) | 3-4 |
| Economics (micro preferred) (One course) | 3 |
| Electives* (three or four courses) | 10 |
| **Total Maximum Transfer Credits** | **30** |

*Suggested electives for a 2-year degree program include psychology, sociology, computers, public speaking, drafting. Suggested electives for students planning on transfer to 4-year degree programs are chemistry, American history, and pre-calculus.

### D. Course Syllabi, Outlines

Within the college and program, faculty members responsible for specific courses are required to review and maintain an official course description that must be approved by the college faculty before actually teaching the course or when the course is significantly altered. Course descriptions are presented in a consistent format approved by the ESF Faculty. A list of all courses showing scheduled lecture and laboratory hours and the name of the faculty member responsible for each course may be found in Appendix B-1.Course descriptions pertinent to the Forest Technology Program may be found in Appendix B-2. Each faculty member also maintains and regularly updates a syllabus for each course taught. Course Syllabi for all courses in the Forest Technology Program may be found in Appendix B-3.

It is the desire of the faculty that all course descriptions be officially reviewed at least once every three years. An official review requires the responsible instructor to present to the program faculty his/her suggested course description revisions, and then through discussion the faculty would arrive at a consensus. Unofficial course reviews occur at weekly and pre- and post-semester faculty meetings and individual faculty continuously revise and update their syllabi.

**E. Instructional Materials and Textbooks**

1. Textbooks and published handbooks are used in the following courses:

FTC 200 Dendrology
Text: Trees of the Northern United States and Canada, Farrar, John Laird, 1995.

FTC 202 Introduction to Surveying
Text: Elementary Surveying: An Introduction to Geomatics, Ghilani, Charles D., and Paul R. Wolf, 2008.

FTC 204 Natural Resources Measurements
Text: Forest Mensuration for the Forest Technician, Savage, J.M., and C.E. Martin, 2005.

FTC 206 Forest Ecology
Text: Forest Stand Dynamics, Oliver, C. D. and B.C. Larson, 1996.
Text: Forest Cover Types of the United States and Canada, Society of American Foresters, 1980.

FTC 207 Forest Safety
No text required

FTC 208 Geographic Information Technology
No text required

FTC 210 Leadership and Forest Technology
Text: Loving Trees is Not Enough: Communication Skills for Natural Resource Professionals, Mendell, Brooks C., 2006.

FTC 211 Silviculture
Text: The Practice of Silviculture: Applied Forest Ecology, (9th ed.)Smith, David M., Bruce Larson, Matthew Kelty, and P. Mark S. Ashton, 1997.

FTC 213 Forest Inventory Practicum
Text: Forest Mensuration for the Forest Technician, Savage, J.M., and C.E. Martin, 2005.

FTC 215 Timber Harvesting
No text required. Supplemental readings assigned.

FTC 217 Wildland Firefighting and Ecology
Text: Forest Health and Protection, Edmonds, R.L., J.K. Agee. and R.I. Gara, 2011.

FTC 219 Introduction to Forest Recreation
No text required. Supplemental readings assigned.

FTC 221 Natural Resources Management

Text: Forest Management and Planning, Bettinger, P., K. Boston, J.P. Siry and D.L. Grebner, 2009.

Text: Good Forestry in the Granite State, UNH Cooperative Extension Service, 2010.

FTC 223 Water Measurements

No text required

FTC 225 Timber Transportation and Utilization

Text: Identifying Wood: Accurate Results with Simple Tools, Hoadley, Bruce R., 1990.

FTC 234 Wildlife Conservation

No text required. Supplemental readings assigned.

FTC 238 Forest Insects and Disease

Text: Forest Health and Protection, Edmonds, R.L., J.K. Agee. and R.I. Gara, 2011.

Text: The Stewardship of Northern Hardwoods: A Forest Owner's Handbook, Adams, K.B., D.C. Allen and others,

Text: Introduction to Forest Entomology, Allen, D.C., 1985.

2. Handbooks, manuals and study guides produced by the college are used in the following courses:

FTC 200 Dendrology

Handbook: Dendrology-Eco Field Manual, A Guide to Plant Identification at the Ranger School. Bridgen, Michael, 2010.

FTC 202 Introduction to Surveying

Manual: Ranger School Basic Surveying Manual, Webb, Michael, 2010.

FTC 204 Natural Resources Measurements

Manual: Technical Report Writing: A Manual of Style, Savage, James, 2010.

Study Guide: Statistics Study Guide, Savage, James, 2010.

FTC 206 Forest Ecology

Handbook: Dendrology-Eco Field Manual, A Guide to Plant Identification at the Ranger School. Bridgen, Michael, 2010.

Handbook: University Readers copyrighted course materials packet for FTC 206 Forest Ecology (ordered online)

FTC 211 Silviculture

Study Guide: Silviculture Study Guide, Bridgen, Michael, 2011.

FTC 213 Forest Inventory Practicum

Manual: The Timber Cruise: Background, Purpose and Procedure. Savage, James, 2011.

Manual: Technical Report Writing: A Manual of Style, Savage, James, 2010.

FTC 217 Wildland Firefighting and Ecology

Manual: S-130 and S-190 Training Materials

FTC 223 Water Measurements

Manual: Lecture outline

FTC 238 Forest Insects and Disease

Manual: Pathology and Entomology at the Ranger School, 2011

All courses use handouts that are revised yearly. The use of computer programs, videos and DVD's is common, while the use of slide programs and films is rare. Appendix B-6 lists the specific texts and instructional materials used in each course.

**F. Safety Instruction:**

The program continues to emphasize throughout its curriculum student and job safety. Within the first two weeks students receive:

1. Ranger School Student Handbook which includes approximately eight pages of safety information (Copy will be made available during the site visit).
2. Two hour lecture on campus and program safety procedures.
3. Swimming test.
4. Canoe safety and use instruction.
5. American Red Cross Multimedia Standard First Aid and Adult CPR courses. This training is given with FTC 210 Leadership and Forest Technology. The Ranger School maintains an AED in the main hallway of the Ranger School for easy access in the event of a cardiac emergency.

Optional certifications in boater safety and ice rescue are sometimes offered.

Students are required to have their own approved:

1. Hard hat
2. Safety eyeglasses
3. Chainsaw safety boots

In all courses where use of hand tools is taught, safe habits, use and maintenance are discussed and demonstrated to the students before and during the exercise. Course training in safe chainsaw use is enforced in FTC 207- *Forest Safety* by providing a special chainsaw safety program by a specialist from the Tilton Equipment Company.

All instructors consider student safety when developing course exercises. Instructors also notify student's prior to and during each exercise of potential safety hazards and proper safety procedures and attire. All Detailed Course Descriptions contain a section "Health and Safety Considerations" that outlines areas that may need special safety awareness (See Appendix B-5).

At a minimum, students are required to wear safety hardhats, long pants, and ankle supported hiking boots on all field exercises and field trips. When using hand tools, students are required to also wear safety boots and eye protection. When using chainsaws, students must also wear chainsaw safety chaps. Chaps are supplied by the program. Safety gloves are also made available to students who wish to use them, and ear protection is required for students using any power equipment.

The school maintains 15 first aid kits for student field exercises, 3 emergency field packs and a trauma first aid kit.

The school maintains a two-way radio system with mobile and portable radios available during student field exercises for emergency use. All faculty carry portable radios during field exercises. Cell phone coverage in the vicinity of the Ranger School is insufficient at this time to serve as a reliable communication device.

In FTC 207- *Forest Safety*, the following topics are presented:

1. Define and identify unsafe acts and unsafe conditions.
2. Conduct a proper safety inspection.
3. Identify and describe means to improve safety procedures and accident control.

**G. Forestry – Related Work Experience**

The Forest Technology Program does not provide or require an off- campus work experience or internship as part of its graduation requirements. However, the program is oriented to the "working world" as the mission statement emphasizes. Students are in class eight hours per day, 40 hours per week.

A number of full and half day projects are conducted each semester to provide realistic, job-like experiences to the students. Table 5 lists the major projects offered in each class. In the enclosed packet of "other descriptive materials" are the directions for the Forest Inventory Practicum (i.e., the timber cruise), an example of a job-like, field-project.

**TABLE 5**
**Ranger School Exercises**
**Providing Job-Like Work Experience**

| Course | Exercises | Time/Student |
|---|---|---|
| FTC 202 | | |
| Introduction to Surveying | Sub-compartment Survey | 2 full days |
| FTC 204 | | |
| Introduction to Natural Resources | Hardwood-forest inventory | 1 half day |
| Measurements | Softwood Plantation Inventory | 2/6-hour days |
| FTC 206 | | |
| Forest Ecology | Forest Type Map | 3 half days |
| | Forest Transect Exercise | 6-hour independent |
| | Herbarium Collection | project |
| | Ecological observation & description | 2 half days |
| FTC 207 | | |
| Forest Safety | Road/trail Maintenance | 2 half days |
| FTC 208 | | |
| Geographic Information Technology | GIS Map Development | 2 full days |
| FTC 210 | | |
| Leadership and Forest Technology | Foot-trail Layout | 2 half days |
| FTC 211 | | |
| Silviculture | Pruning Pine Plantation | 1 half day |
| | Crop-tree release in Hardwoods | 1 half day |
| | Inventory/Stocking Determination | 1 full day |
| | Street-tree Inventory | 1 full day |
| | Marking Softwood Stand for thinning | 1 half day |
| | Uneven-aged Stand Analysis | 1 half day |
| | Advanced Regeneration Inventory | 1 half day |
| | Hand Planting of Conifers | 1 half day |
| | Weed Assessment in Young Stand | 1 half day |
| FTC 213 | | |
| Forest Inventory Practicum | Compartment Timber Cruise (200 ac) | 7 full days + 2 half days |
| FTC 215 | | |
| Timber Harvesting | Chainsaw/Skidder Logging | 3 full days |
| FTC 217 | | |
| Wild Land Firefighting and Ecology | Prescribed Burn/Fire Suppression | 2 half days |
| FTC 219 | | |
| Introduction to Forest Recreation | Trail Construction and Maintenance | 1 full day |
| FTC 221 | | |
| Natural Resources Management | Management Plan Development | 4 half days |
| | Forest Certification | 1 half day |
| | Regeneration Survey | 1 half day |
| FTC 225 | | |
| Timber Transportation and Utilization | Forest Road Design | 3 full days |
| FTC 234 | | |
| Wildlife Conservation | Songbird Inventory | 1 half day |
| | Deer-Pellet Count Survey | 1 half day |
| FTC 238 | | |
| Forest Insects and Disease | Insect collection | Independent,1 half day |
| | Forest Health Survey | 1 half day |

# STANDARD III
# Faculty

The Forest Technology Program is presently served by five faculty members. One of those, Christopher Westbrook, currently serves as the Director of the Ranger School, a position appointed by the college president. The other four faculty members are responsible to the director and together operate the Forest Technology Program. The Director of the program reports to the Chairman of ESF's Department of Forest and Natural Resources Management (Dr. David Newman) who, in turn, reports to the provost (Dr. Bruce Bongarten).

Each faculty member is assigned a specific group of courses depending on his/her expertise and equalization of work load. Faculty members also assist each other, when needed, with lab and field exercises.

As of spring 2011, the Ranger School faculty is comprised of:

1. Christopher Westbrook, tenured Professor (12 months)
2. Dr. Michael Bridgen, tenured Professor (10 months)
3. James Savage, tenured Professor (10 months)
4. Dr. Mariann Garrison-Johnston, Assistant Professor (10 months)
5. Michael Webb, Instructor (10 months)

Other faculty/staff having teaching responsibilities are:

1. Robert Fleming, Instructional Support Assistant (12 months)
2. Greg Vaverchak, Instructional Support Associate (12 months)
3. Mike Rozeski, Visiting Instructor, surveying
4. Stephen Sehnert, Visiting Instructor, surveying

Michael Webb, Licensed Land Surveyor, teaches FTC 202 – *Introduction to Surveying* in the fall semester and several other surveying courses in the Land Surveying program during the spring semester. He is currently being considered for continuing appointment (i.e., tenure).

Dr. Garrison-Johnston is currently being reviewed for a 3- year reappointment as an Assistant Professor.

Mike Rozeski and Stephen Sehnert are licensed land surveyors who teach part-time in the Land Surveying Program, during the spring semester.

Both Robert Fleming and Greg Vaverchak are graduates of the Ranger School. Greg has been a Certified Arborist since 2007.

Specific course assignments for each faculty/staff member involved with the Forest Technology Program may be found in Appendix C-1. Curriculum Vitaes for the faculty and teaching-support staff may be found in Appendix C-2.

## A. Student/Faculty Laboratory Ratios

Many of the Forest Technology Program courses are assigned a backup instructor and when needed the close working relationship of the faculty allows for the addition of one or more backup instructors. In general the laboratory student-faculty ratios during the 2008/2009 and 2009/2010 school years did not exceed the values shown below:

| | |
|---|---|
| 25-1 | Indoor lab – general work<br>Outdoor lab – field trip |
| 15-1 | Indoor lab – difficult concept, skill<br>Example: computer equipment use<br>Outdoor lab – student problem<br>Example – tree measuring, survey traverse |
| 9-1 | Outdoor lab – hazardous or difficult student work<br>Example – chainsaw use training, trail maintenance |
| 6-1 | Outdoor lab – hazardous student work<br>Example – logging job |

Secondary or backup teaching assignments for the purpose of maintaining acceptable student-faculty ratios are made at the start of each semester and scheduled during weekly faculty meetings.

## B. Full Time Equivalent Student-Teacher Ratio

An FTE Documentation spreadsheet has been completed based on the 2010-2011 academic year and can be found in Appendix C-3. The results of that analysis show a FTE student/teacher ratio of 7.5

## C. Faculty Development

State funding for professional development continues to be extremely limited. In most years, the Ranger School Endowment has provided additional/supplemental funding which has allowed the faculty to participate in professional development activities. Given the intensity of the program and teaching responsibilities it is sometimes difficult to schedule time for professional development and involvement with professional organizations. A consistent attempt has been made to encourage and provide support for at least one major professional event and one professional membership per faculty member per year.

The following is a summary of faculty development activities undertaken during the last five years, or since hire.

**Christopher Westbrook, Director, Professor, LLS**

- NYSAPLS 52nd Annual Conference, Verona, NY, January 2011
- NYSAPLS 51st Annual Conference, Verona, NY, January 2010
- CEFTS Annual Meeting, Glenville, WV, August 2009
- NYSAPLS 50th Annual Conference, Albany, NY, January 2009
- CEFTS Annual Meeting, Itasca Community College, MN, August 2008
- NYSAPLS 49th Annual Conference, Niagara Falls, NY, January 2008
- CEFTS Annual Meeting, Fort Kent, Maine, August 2007
- NYSAPLS 48th Annual Conference, Rochester, NY, January 2007
- CEFTS Annual Meeting, Paul Smith's College, NY, August 2006
- NYSAPLS 47th Annual Conference, Verona, NY, January 2006
- NYSAPLS 46th Annual Conference, Saratoga Springs, NY, January 2005

**Michael Bridgen, Professor**

- NYSAF Annual Meeting, Syracuse, NY 2011
- Attended Introduction of ArcGis 9.3, a workshop offered by the University of New Hampshire Cooperative Extension at Laconia, New Hampshire, May 2010
- Attended Symposium on Ash in North America, West Lafayette, IN, March 2010
- Attended North American Forest Ecology Workshop, Logan, Utah , June 2009
- Attended 7th Biennial Conference on University Education in Natural Resources, Corvallis, Oregon, March 2008
- Attended the "Active Learning: Creating Excitement in the Classroom", sponsored by SUNY Training Center, at the University of Buffalo, Buffalo, New York, March 2007
- Attended the "Best Assessment processes VIII, A Working Symposium", sponsored by ABET, Inc. and the Rose-Hulman Institute of Technology, in Terre Haute, Indiana, February 2006
- Attended (and served as an invited speaker) the 24th Annual National Conference of the Native American Fish and Wildlife Society in Bar Harbor, Maine, May 2006

**James Savage, Professor, CF**

- NYSAF Annual Meeting, Syracuse, NY, 2011
- Webinar, "Wild Things in Your Woodlands," 2011
- SAF Silviculture/Utilization Pre-Convention Technical Tour, New Mexico, October 2010
- SAF National Convention, Albuquerque, NM, 2010
- Webinar, "Lyme Disease in Pennsylvania," 2010

- 8th Biennial Conference on University Education in Natural Resources, Blacksburg, VA, 2010
- Webinar, "Deer Habitat Management," 2010 NYSAF Annual Meeting, Syracuse, NY, 2010
- Webinar, "Beginning Maple Syrup Production," 2010
- NY Licensed Outdoor Guide Workshop, including First Aid and CPR, 2009
- Webinar, "Climate Change: Your Woods and Wildlife," 2009
- Online ArcGIS self-training modules, via the ESRI website, January 2009
- NYSAF Annual Meeting, Syracuse, NY, 2009
- SAF HSD Meeting and National Convention Reno, NV, 2008
- NAI *Certified Interpretive Guide* course, Paul Smiths, NY, 2008
- New England SAF Annual Meeting, Fairlee, VT, 2007
- NYSAF Annual Meeting, Syracuse, NY, 2007
- Travelled to Germany to learn about forestry and national park management in Bavaria, 2007
- NYSDEC Marten and Fisher Training Workshop for Volunteers, Newcomb, NY, 2006
- NYSAF Adirondack Chapter Meeting, North Creek, NY, 2006
- SAF National Convention, Pittsburgh, PA, 2006
- NY-SAF Annual Winter Meeting, Liverpool, NY, 2006
- NYSAF Adirondack Chapter meeting and tour of Dillon Park and IP lands, 2006
- SAF National Leadership Academy, Nebraska City, NE, 2005
- SAF National Convention, Fort Worth, Texas, 2005

**Mariann Garrison-Johnston, Assistant Professor, CF**

- Hardy L. Shirley Faculty Mentoring Colloquium: Collaborations in Research, Teaching and Outreach: Opportunities, Challenges and New Paradigms, Syracuse, NY, January 2011
- New York SAF Annual Meeting, Syracuse, NY, January 2011
- Society of American Foresters National Convention, Albuquerque, NM, October 2010
- Hubbard Brook Committee of Scientists Quarterly Meeting, Thornton, NH, July 2010
- Hubbard Brook Ecosystem Study Annual Meeting, Thornton, NH, July 2010
- Women in Scientific and Environmental Professions Series, Dr. Laura Kenefic and Dr. Susan Stout, ESF Moon Library, Syracuse NY, April 2010
- FNRM Speaker Series, Dr. Laura Kenefic, ESF Moon Library, Syracuse, NY, April 2010
- Eighth Biennial Conference on University Education in Natural Resources, Virginia Tech University, Blacksburg, VA, March 2010

- FNRM Speaker Series, Dr. Tim Fahey, ESF Moon Library, Syracuse NY, February 2010
- New York Society of American Foresters Annual Meeting, Syracuse, NY, January 2010
- Hubbard Brook Committee of Scientists Quarterly Meeting, Millbrook, NY, October 2009
- ESF Beech Consortium Organizational Meeting, Newcomb, NY, August 2009
- Hubbard Brook Committee of Scientists Quarterly Meeting, Thornton, NH, July 2009
- Hubbard Brook Ecosystem Study Annual Meeting, Thornton, NH, July 2009
- New York Society of American Foresters Annual Meeting, Syracuse, NY, January 2009
- New England Society of American Foresters Annual Meeting, Fairlee, VT, March 2008
- Cognition, Teaching and Learning (2 credits), University of New Hampshire Graduate School, Durham, NH, May-June 2007
- Teaching With Writing (2 credits), University of New Hampshire Graduate School, Durham, NH, May-June 2007
- National Workshop on Forest Productivity and Technology: Cooperative Research to Support a Sustainable and Competitive Future, Washington, DC, November 2006
- Wetland Classification, University of New Hampshire Professional Development Series, Portsmouth, NH, October 2006
- Army Corps of Engineers Wetland Delineation Methods, University of New Hampshire Professional Development Series, Portsmouth, NH, September- October 2006

**Michael Webb, Instructor, LLS**

- Various workshops @ NYSAPLS 52nd Annual Conference, Verona, NY, January 2011
- Introduction to ArcGIS, University of New Hampshire Cooperative Extension, Laconia, NH, May 2010
- Various workshops @ NYSAPLS 51st Annual Conference, Verona, NY, January 2010
- Various workshops @ NYSAPLS 50th Annual Conference, Albany, NY, January 2009
- Various workshops @ NYSAPLS 49th Annual Conference, Niagara Falls, NY, January 2008
- The Surveyor, FEMA & Elevation Certificates, Rochester, NY, June 2008
- Various workshops @ NYSAPLS 48th Annual Conference, Rochester, NY, January 2007
- Various workshops @ NYSAPLS 47th Annual Conference, Verona, NY, January 2006

- Various workshops @ NYSAPLS 46th Annual Conference, Saratoga Springs, NY, January 2005
- Future Role of the Surveyor in GIS, East Syracuse, NY, August 2005
- Designing and Implementing a GIS, East Syracuse, NY, August 2005

# STANDARD IV
# Students

For the past six years, student enrollment for the Forest Technology Program at the Ranger School has been fairly strong. Enrollment in this program has varied between 30 and 38, with the number graduating with an AAS in Forest Technology ranging from 26 to 33. Many of our students are 19-21 year-old white males but we also have a significant number of older, non-traditional students ages 25 to 40+. Women student population has varied between approximately 10% - 18% of the total student population. Few minorities have participated in the program. Most students are from New York State with approximately 3 - 5 students per year from other states, with the majority of those coming from adjoining states (New Jersey, Pennsylvania, and Vermont).

Employment for AAS graduates within the forestry profession for the past five years has been extremely variable. For the past three years the employment opportunities for our students have been significantly impacted by the global economic situation. Students have been able to obtain seasonal positions but the job search process has been more strenuous and time consuming than other years with students needing to apply for more positions and also be willing to relocate to where the job site is situated.

For our graduates, many entry level positions begin as seasonal opportunities. There seems to be an increase in fire suppression positions with the US Forest Service and forest technician positions with forestry consulting firms. Some seasonal positions with the New York State Department of Environmental Conservation (DEC) are available each year. Job opportunities within the tree care industry and surveying are reasonably strong.

Some of the specific ways we assist in improving the enrollment at the Ranger School and college are done as follows:

1. Advertises in a variety of print sources and on area radio stations when financial support is available.
2. Conducts two Saturday open house events each academic year (one event each semester).
3. Faculty and admissions staff meet regularly with admissions and curriculum representatives from several community colleges to outline and promote our program.
4. Ranger School Faculty holds evening informational meetings with first year students at SUNY Canton and SUNY ESF (Syracuse Campus).
5. Director meets early each fall semester with the ESF Admissions staff to discuss program changes and updates and provide refresher information.

A. Student Recruitment, Admissions, Retention, Graduation Policies:

During the first year of the 1+1 program students will be guided by the policies that govern attendance at their local campus. During the second year of the program students will be guided by the policies of the State University of New York, College of Environmental Science and Forestry and by an additional set of Forest Technology Program "house rules," found within the Ranger School Student Handbook.

1. Recruitment – Recruitment activities are under the direction of the college's admissions office. The Ranger School has a number of recruitment materials that are provided to prospective students.

   The Ranger School conducts two open houses per year for prospective students with an interest in any or all of our program offerings. On average, about 45 interested students and their parents have attended each open house. The faculty believes that these open houses have been very successful as they give the prospective student a firsthand look at the program. Appendix D-1 is a copy of an open house program.

   The Ranger School web page (www.rangerschool.esf.edu) is where prospective students may also find out about the programs offered at the Ranger School. Ranger School faculty and staff also host an active Facebook page highlighting student activities, alumni profiles and upcoming events.

2. Admissions – Admissions activities are under the direction of the college's Admission's Office. The admission requirements for the Forest Technology Program can be found on the Ranger School web site at: http://www.esf.edu/admissions/rangerschool.htm. The admission requirements for the Ranger School can also be found in the 2010-2011 college catalog on page 143. Since 1992 the program only accepts for transfer credit courses with final grades of "C" or better.

3. Ranger School Summer Bridge Program – To be admitted to the Ranger School students must satisfactorily complete 30 credit hours of course work at a college of their choice. Some students have had difficulty completing several required courses including biology and trigonometry. During the summer of 2007 the Ranger School began a Summer Bridge Program which offered a biology and trigonometry course for students deficient in these particular areas of study. Enrollment in has been fairly strong with 8 – 17 students attending the Summer Bridge program each year. To date, all students who enrolled in one or both of the Summer Bridge Program courses have satisfactorily completed the courses and have been able to attend the Ranger School that academic year.

4. Retention:

Freshman Year – Retention of committed freshmen continues to be a problem because students are not on the Wanakena Campus but rather at the college of their choice during their first year. The reasons given for this problem are:

a. Students, for personal reasons, elect to stay at the first year college; they become comfortable.
b. Students find acceptable alternative programs at the first year college.
c. Because of low enrollment throughout the SUNY system, first year colleges try to influence students to stay.
d. Students fail courses during their first year of the program and are offered alternative programs at their first year college. These alternative programs keep the student at the first year college and allow the student to get an A.A.S. degree in 2 ½ years instead of waiting another year to enter the Ranger School.
e. Students are poorly prepared and fail the first year program or drop out.

Second Year – This year is at the Wanakena Campus and under the director control of the Forest Technology Program Faculty.

a. Students may not enter the second year of the program unless they have completed the 30 semester hours of required first year work and have a minimum grade point average (GPA) of 2.00. Most of the uncertain, academically poor, etc. students have, therefore, been eliminated from the program prior to entering the second year of the program at Wanakena.
b. At six weeks and twelve weeks into the program (fall semester only) each student is sent his or her course grades, and those with low marks are asked to meet with their advisor to discuss their status.
c. Student performance is monitored and discussed at weekly faculty meetings, and if warranted students are counseled.
d. At the end of the first semester students who have failed (F) any course or have a cumulative GPA below 1.80 will be recommended for dismissal. Students with a GPA of 1.80 to 1.99 are normally placed on academic probation.

Table 6 below shows actual retention figures for the last six years.

**TABLE 6**
**Retention (2nd Year)**
**Forest Technology Program Students**

| Class of | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|
| Total Enrollment | 38 | 37 | 30 | 30 | 30 | 34 |
| Withdrew | 3 | 4 | 2 | 0 | 2 | 1 |
| Academic dismissal 1st semester | 1 | 0 | 1 | 3 | 0 | 1 |
| Academic Probation | 4 | 0 | 1 | 2 | 0 | 0 |
| Enrolled 2nd semester | 34 | 33 | 27 | 27 | 28 | 32 |
| Forest Technology Graduates | 32 | 33 | 26 | 26 | 27 | 32 |

5. Graduation – To receive an A.A.S. Degree in Forest Technology, students must pass all courses taken at the Wanakena Campus with a "D" or better. They must also have a minimum GPA of 2.00 (average of "C").

Each year the program holds its own graduation exercises. Most students participate in graduation ceremonies, and many years 100% of the student body participates.

Documentation for the official policies governing admissions, probation, dismissal and graduation may be found in the 2010-11 college catalog or on the ESF website http://www.esf.edu. (Please note that since a very limited number of college catalogs are printed, copies of the catalog have not been included with this report. Copies will be available to the visiting team during the site visit. The catalog is also available on the ESF website.)

B. Advising, Counseling, Career Guidance:

The director of the Ranger School is responsible for all activities concerning the advising, counseling and career guidance of students. In carrying out these responsibilities he seeks counsel from such college staff as:

1. Dean of Student Life
2. Director of Student Activities
3. Director of Career Planning
4. Director of Financial Aid
5. Director of Personnel and Affirmative Action
6. Chief of University Police
7. Chair, Department of Forest and Natural Resources Management

To assist in the above stated activities each faculty member, at the beginning of each school year, is assigned eight to ten students for the purpose of being their advisor. During orientation students are introduced to their advisors during several group meetings. Within the first two weeks of the semester each faculty member meets individually with each of his/her student advisees. Other meetings occur on a regular basis at the discretion of the student and the advisor.

Faculty also maintains office hours each weekday morning during class breaks.

For counseling, advising, and class assistance purposes each faculty is required to be on duty in his/her office one assigned evening each week for a three hour time block.

The faculty and professional staff (technical support personnel and Residence Hall Director) hold weekly meetings at which specific student concerns are discussed and solutions suggested. Minutes are taken at these meetings.

The faculty advisors and the Forest Technology Program faculty work to retain all qualified students within the program. The close rapport between faculty and students provides each student the maximum opportunity to achieve his or her career goals.

Student opportunities for remedial assistance are limited at Wanakena because the Forest Technology Program courses are available only at Wanakena. When a student needs remedial help faculty will assist by:

1. Working with individual students on assigned duty nights.
2. Holding special evening review sessions for groups of students needing help.
3. Preparation of additional problem sets.

Student with documented learning disabilities are asked to self-report this to the Director of the Ranger School. The documentation is then examined by the Syracuse Office of Disabilities and an accommodation letter is prepared on the student's behalf. The student then presents the accommodation letter to each faculty member and a plan of action is developed. The accommodations most often include extended time on exams and a quiet place to take exams.

C. Student Assessment of the Program

Faculty members are asked to have the students evaluate one of their courses each semester. In separate questionnaires students are asked to evaluate the course material and instructor's ability to teach (see course and instructor evaluation forms in Appendix D-2.

The purpose of the evaluation process is to assist each faculty member in improving his/her course materials and teaching methods. The sharing of specific information with other faculty members is up to each individual instructor. General questionnaire information is discussed by the faculty and used to improve the program.

Appendix D-3 provides statements from individual student questionnaires indicating their assessment of the program.

D. Leadership and Cultural Awareness Opportunities.

During the freshman year of the program, students are at the college of their choice and, therefore, have access to all the normal college activities involved with leadership and cultural awareness opportunities.

Student activities during the second year of the Forest Technology Program are somewhat limited because of the intensity of the program (8 hours per day, 5 days per week,) and the size and location of the Wanakena Campus.

A part-time Residence Hall Director supervises the residence hall and also works closely with the faculty in providing various programming activities to the Ranger School students.

Students elect their own government which consists of a president, vice president, secretary, treasurer, and section representatives. A faculty member and the Residence Hall Director serve as advisors to the student government. During the school year the student government controls and uses a specific student activity budget funded by student fees and set aside for the purpose of financing social events, transportation, etc.

Most years the Ranger School students, under the direction of their yearbook editor and faculty advisor, produce a 30 to 50 page yearbook which provides an overview of the year spent at the Ranger School.

Since 1996 Ranger School students have participated in an organized ice hockey program under the guidance of a Ranger School faculty member. During the fall semester students travel to Canton, NY once a week and play hockey on a refrigerated rink. During the winter months, students gather twice a week at the local rink in Star Lake. An annual Alumni-Student Hockey game is held in the late winter each year.

An Outing Club was formed during the 2002-03 academic year. This club provides students with the opportunity to further explore the Adirondack Park through day hikes, skiing and snowshoeing trips, and rafting excursions.

The Ranger School sponsors a woodsmen's team each year. The team typically competes in 2-3 meets each semester.

Many years the Ranger School students host the four-year degree students from the Syracuse for a "winter weekend" held in Wanakena. This brings students from the two campuses together for a weekend of social interaction.

On the Wanakena Campus there is an athletic field and equipment available to play football, softball, volleyball, soccer and horseshoes. An outdoor tennis and basketball

court are also available. The campus has a fleet of canoes and two kayaks available for student use on the Oswegatchie River and Cranberry Lake.

Within the main building there are student recreation facilities including a flat screen television (with DirecTV) with VCR/DVD, pool table, ping pong table and foose ball table. There is also fitness room with equipment including free weights, treadmill, stationary bikes, and an elliptical machine. A student kitchen is available and is equipped with refrigerator, microwave, conventional oven, pots and pans, and other kitchen accessories.

On the average, about 90 percent of the student body own vehicles which results in approximately 25-35 percent of the student body leaving the campus each weekend.

# STANDARD V
# Program

## A. Technology Program

The Forest Technology Program is a unit of the Department of Forestry and Natural Resources Management of the College of Environmental Science and Forestry. It is presently under the control of the Chair, Department of Forestry and Natural Resources Management, who, in turn, is responsible to the Provost.

The Forest Technology Program remains a distinct and separate school. The program is on a separate campus in Wanakena, New York, 150 miles from the main campus where the four-year and advanced degree programs in forestry are taught. The faculty at Wanakena has been assigned the responsibility for developing and teaching the Forest Technology curriculum.

The College of Environmental Science and Forestry organizational charts may be seen in Appendix E-1

## B. Advisory Body

Until 1992, the Forestry Advisory Council for the then Faculty of Forestry and Natural Resources Management acted as the advising council for the Forest Technology Program.

In 1993 at the direction of the program's faculty a specific Ranger School Forest Technology Program Advisory Committee was formed. Table 7 indicates its functions, meeting schedule, size and make-up. Appendix E-2 lists the names and addresses of the current members (2010) of the Advisory Committee.

Recent meetings of the Ranger School Forest Technology Advisory Committee were held October 17, 2008, October 23, 2009, and October 8, 2010. Minutes of the most recent meeting are attached as Appendix E-3.

## TABLE 7
## Ranger School Forest Technology Program
## Advisory Committee

The Forest Technology Program Advisory Committee is comprised of volunteer members from representative professional forest resources associations, forestry baccalaureate programs, forest industries, public agencies, consulting foresters and the interested public.

The major functions of the members of the committee are to:

- Review the present program and offer advice based on each member's professional experience and expertise.
- Keep the faculty informed of the present and future trends within the forest resource management profession so that the faculty may make relevant and timely changes in the educational program.
- Discuss admission strategies, equipment needs, changes in technology, etc.

The committee functions under the following guidelines:

- Committee will be composed of from 6 to 10 members plus a representative of the Surveying Friends Committee.
- Members should plan on a five-year commitment but may resign at any time.
- The members will elect a moderator for a two-year term and other officers as they see fit.
- The committee will meet once a year during the fall at the Ranger School.
- The Forest Technology Faculty should plan on attending all official committee meetings.
- The Ranger School Director or designee along with the moderator will be responsible for organizing and planning the meetings. Minutes of all meetings will be kept and distributed to all committee members.
- One member will be appointed by the committee to attend the Surveying Friends Committee meetings.

**C. Cooperative Working Relations**

Cooperative working relations are established and maintained with leaders in the forest industry and related fields. These relations occur via telephone, letter, personal relationships, etc. Regional experts act as guest speakers and field trip leaders. They also provide professional information which is placed in the appropriate courses.

The following is a list of current (2011) working relations maintained by faculty with leaders in related industries, organizations and agencies:

- Adirondack Economic Development Corporation (Westbrook & Savage)
- Adirondack Ecological Center Newcomb, NY (Savage)
- Clifton-Fine Economic Development Corporation (Westbrook)
- NYS Department of Transportation's Adopt-A-Highway Program, Wanakena, NY (Savage and Westbrook)
- NYS, DEC, Brasher Falls State Forest, Brasher, NY (Bridgen)
- NYS DEC Wilmington Wild Forest Wilmington, NY (Savage)
- NYS DEC Glen Meal State Forest, Pierrepont, NY (Bridgen)
- NYS DEC Adirondack Steering Committee (Westbrook)
- Northern Adirondack Chapter of the New York Forest Owners Association, Board Members (Bridgen and Savage)
- New York State Association of Professional Land Surveyors, Members (NYSAPLS) (Webb and Westbrook)
    a. Education Committee Chair (Westbrook)
- St. Lawrence County BOCES Environmental Tech Board, Norfolk, NY, Board Member (Bridgen)
- St. Regis Mohawk Tribe, Environment Division, Hogansburg, NY, Consultant Bridgen)
- Society of American Foresters, Members (Johnston, Savage, and Westbrook)
- Chair-Elect of NYSAF (Johnston)
- Past Chair of NYSAF (Savage)
    a. Faculty Representative for Ranger School Student Chapter SAF (Savage)
- Village of Canton, city tree advisory committee (Bridgen)
- Intermountain Forest Tree Nutrition Cooperative, Univ. of Idaho (Johnston)

These cooperators also have a positive impact on the presentation of the Forest Technology Program. Members of the NYS DEC, for example, participate in presenting the fire protection part of the program. In 2010, due to a change in DEC personnel and subsequent administrative policies, we were encouraged to prepare a formal fire management plan to address contingencies that may arise from our fire suppression field lab. Dr. Mariann Johnston prepared a "Prescribed Burn Plan", attached as Appendix E-4, for approval by the DEC.

**D. Technical, Secretarial and Custodial Support**

Technical –

Room 141 - Mr. Robert Fleming, Instructional Support Assistant, manages the equipment room, and assists faculty members in field labs, especially in the surveying courses.

Room 154 - Mr. Gregory Vaverchak, Instructional Support Associate, was recently hired (January 2, 2011). This new position, approved by SUNY ESF in 2010, allows for an individual to assist faculty members in the Forest Technology Program, especially in field activities.

Room 156 – Mr. Tim O'Mara, Residence Hall Director. The position of residence hall director was initiated in 2004. This individual resides in the dormitory and provides security and oversight of the facilities on weekends and overnight on weekdays.

Secretarial – The Forest Technology Program has the following secretarial services:

Room 134 – SUNY Program Aide (full time), June McWharf

Room 140 – Calculations Clerk II – Julie LaTray

Room 160 - Alumni Secretary (full-time-paid by Alumni) – Gail Simmons. All alumni records are kept on file in the Alumni office and are available to the program faculty.

Each of the full time secretarial staff has in her office a computer to aid in her tasks.

Custodial and Physical Plant Support – The Forest Technology Program is housed in one building which is supported by two custodial staff members, one of whom works ½ time.

The Physical Plant consists of five full-time employees and one part-time employee , who maintain all of the buildings on campus, including the main building, five faculty houses, the water treatment facility, the waste treatment facility, the shop, and other facilities. They also maintain the vehicle fleet, campus roads, and campus landscaping.

# STANDARD VI
# Parent Institution and Supporting Areas

The Forest Technology Program was founded in 1912 as the New York State Ranger School, and its parent institution the SUNY College of Environmental Science and Forestry was founded in 1911 as the New York State College of Forestry at Syracuse University. The College was created to be the State's institution for educational work in forestry and to also conduct special research to help in the solution of forestry problems.

Since its inception, the College has responded to the broad needs of environmental professionalism. In 1972 the College was re-chartered as the SUNY College of Environmental Science and Forestry, to better reflect both its grounding in forestry and the breadth of its programs.

For nearly 100 years the College has focused on the environment in each of its mission areas: instruction, research and public service. The institution grants degrees including Associate in Applied Science (A.A.S.), Bachelor of Science (B.S.), Bachelor of Landscape Architecture (B.L.A.), Master of Science (M.S.), Master of Professional Studies (M.P.S.), Master of Forestry (M.F.), Master of Landscape Architecture (M.L.A.) and doctoral (Ph.D.). The College continues to be devoted to the advancement of environmental science and forestry, with a strong focus on instruction.

The following list of the College's departments and divisions illustrates the breadth of academic programs available:

- Chemistry Department
- Engineering Division
- Environmental and Forest Biology Department
- Environmental Resource Engineering Department
- Environmental Science Division
- Environmental Studies Department
- Forest and Natural Resource Management (FNRM) Department
- Landscape Architecture Department
- Paper and Bioprocess Engineering Department
- Sustainable Construction Management & Engineering Department

The College is accredited by the Middle States Association of Colleges and Secondary Schools. The B.S. and M.F. degree programs in the FNRM Department are accredited by the Society of American Foresters. The A.A.S. degree program in Forest Technology is recognized by the Society of American Foresters, and the A.A.S. degree in Land Surveying Technology is pending accreditation by the Accreditation Board for Engineering and Technology (ABET). The B.L.A. and M.L.A. degree programs are accredited by the American Society of Landscape Architecture, and the B.S. degree program in Environmental Resource Engineering is accredited by ABET.
(Note: All of the preceding is documented in the College catalog.)

## Library Facilities

The Ranger School's library is housed in room 220 in the Administration Building on the Wanakena Campus. It is a branch of the Moon Library (ESF's Syracuse Campus Library) with approximately 1257 volumes, principally text books, monographs and technical reports. It currently receives about 35 periodicals of which about 20 are technical. (Appendix F-1) Several other technical periodicals are accessible only online via Moon Library's website. In the last five years approximately 60 new volumes have been added to the collection (Appendix F-2)

The book stacks are open 24 hours per day, seven days a week. Also available in the library are VHS, CD and DVD media that students may check out and view at their leisure.

Library Administrative Procedure

The Ranger School library is a branch of the College's Moon Library, and therefore, the responsibility of its Director, Mr. Stephen Weiter. Early each fall semester, all Ranger School students attend a two-hour presentation by a Moon Library staff member who introduces the ESF and Syracuse University library systems and the services they offer, as well as procedures on how to access those services and check out materials.

Professor Savage has local responsibility for overseeing the Ranger School library operations and collections. When available, work-study students (availability varies annually depending on student need and available funding) monitor the library and complete such tasks as maintaining the stacks, periodicals and VHS/DVD cabinet.

Annual journal binding and updating of file records are the responsibility of the Moon Library Staff.

Two computers are available in the Ranger School Library providing students with 24-hour access to the online resources of the Moon Library and the Syracuse University Library. Students and faculty also have access to "hard copy" resources from the Syracuse libraries. These materials may be requested via Interlibrary Loan. Procedures for accessing Illiad are described in Appendix F-3.

## Budget

The College financial year is from July 1 to June 30 and the accounts at the Wanakena Campus are subdivided as follows: (copies available at site-visit)

1. Ranger School Instruction

   Personal Service – Regular – salary and benefits for:
   1 –director – 12-month employee

4 – professors – academic year employees [7]
1 – instructor – academic year employee
2 – instructional support specialists – 12-month employees

Personal Service Temporary – salary, wages and benefits for visiting instructors.

Other Than Personal Service (see Appendix F-6)

- Copier and printer supplies and service.
- Academic equipment repair and purchase of small items.
- Academic computer supplies and service.
- Academic office supplies.
- Duplication of handouts, workbooks, etc.
- Faculty seminars – registration, travel per diem. Travel and per diem costs are set by contractual agreements between the faculty union and the State.

Central Duplicating – a recharge for the purpose of purchasing paper from the College's main supply and using the College's central duplicating services.

Automotive Service – a recharge account bases on the mileage use of College vehicles by all Forest Technology Program academic activities.

Within this account the College Provost is responsible for setting the allocations for Personal Service Regular. The Chairman of the FNRM Department sets the allocations for Other Than Personal Service, and the Ranger School Director is then responsible for the expenditures. The Other Than Personal Service category is comprised principally of fixed costs, with limited funds available for faculty travel and professional improvement.

2. Academic Equipment Account

Annually in January the College make major ($500 or more) academic equipment purchases. The Forest Technology Faculty via the Director sends its requests to the FNRM Chair. Purchases are made depending on the need and amount of money available. On average the Forest Technology Program has received approximately $5000 worth of new academic equipment each year.

3. Ranger School Student Fee Account

A $392.00 fee is charged to each student per year for the purpose of improving the social, non-academic environment at Wanakena. In recent years monies in this account have been used for such things as the:

- Purchase and maintenance of a TV satellite system.
- Annual subscription to TV channels.

[7] Due to a faculty retirement, the Ranger School is currently operating with 3 professors. A search for an individual to fill the 4th position is currently underway, and the successful candidate is expected to join the faculty starting in Fall 2011.

- Purchase of exercise equipment for the fitness room.
- Transportation to recreational events such as hockey games and Outing Club trips
- Purchase of TV, DVD and VHS equipment.

This account has been of considerable help in improving the social environment at the Wanakena Campus. The Ranger School Director, with the assistance of the College's Vice President for Academic Affairs is responsible for allocating the use of these monies. The annually-elected Student Government also has some control over a portion of these funds.

4. Ranger School Endowment.

In 1992 with the assistance of the College's Director of Development, the Ranger School started an Endowment Program. The purpose of this Ranger School Endowment is to use the interest from donations by alumni and friends for student scholarships, program and campus improvements. As of December 31, 2010 the Endowment has a principle balance of approximately $ 429,400.00 earning interest. The Director, with faculty advice, is responsible for allocating the use of these monies.

A number of other funds that are earmarked solely for the Ranger School are housed within the ESF College Foundation. These funds and their purpose are specified below:

**Scholarship Funds**

Buholtz Scholarship
George and Mariann Butts Scholarship
Daniel Castagnozzi Memorial Scholarship
Daniel Cooke Full Tuition Scholarship
Kermit Remele Scholarship
Robert Westbrook Memorial Scholarship

**Program Funds**

Ranger School Endowment
Ranger School Expendable Account
Wanakena Institutional Development Account

Although there is no formal annual giving campaign at the Ranger School, formal requests for support of the Ranger School Endowment and other fund raising are conducted approximately every two years.

In 2009-2010 we conducted a capital campaign to fund a number of initiatives and projects. Approximately 200 alumni contributed $40,000.00 towards this appeal.

5. Administrative Professionals

The Wanakena Campus presently has two administrative professionals, a State University Program Aide, and a Calculations Clerk II. The expenditures for these services are under the control of the College's Director of Business Affairs in Syracuse, NY.

6. Residence Hall Director

The Ranger School Residence Hall Director is a half-time position. This person is responsible for the safety and security of the students residing in the residence hall. This person also assists with providing various non-academic programming to the Ranger School students.

7. Bookstore

The Wanakena Campus operates its own bookstore, managed by the Calculations Clerk II. The expenditures for these services are under the control of the College's Director of Business Affairs. The bookstore is open on a regular basis for students to obtain textbooks and required instructional materials, as well as optional instructional materials and a variety of office supply products.

8. Physical Plant including Custodial

The Wanakena Campus physical plant support and custodial staff (six) is directly responsible to the College's Director of Physical Plant. This Director develops the budget and supplies the staff, equipment and materials required to carry out the facility operations and maintenance.

Capital facility construction is a separate budgeting process and is under the direction of the Director of Physical Plant. In the last ten years the most significant project was a $6 million renovation project which included construction of a new wing and the remodeling of the existing building. Appendix G-3 outlines the additions and changes made to the main building.

A new wood chip boiler was added to the Physical Plant main building this past year. This building also received new garage doors, new windows, and new insulation to accommodate the heating system. Construction on the boiler room started in September 2010, and the boiler was official burning on January 11, 2011. The current estimate of fuel need is between 50 and 100 tons of chips or pellets per year.

9. Forest Property

The budgeting for forest property activities is under the control of the College's Director of Forest Properties in Syracuse.

10. Food Service.

The Ranger School Food Service is operated under the supervision of the Ranger School Food Service Director. The staff consists of the Food Service Director, three full-time employees and several part-time employees. The budgeting for the Ranger School Food Service is under the control of the College's Director of the Physical Plant in Syracuse, NY.

**Student Placement**

1. The Forest Technology Program assists in the placement of students in the following ways:

- FTC 210 Leadership and Technology course trains students in résumé preparation and interview preparation.

- Students are instructed in how to apply for federal jobs (U.S. Forest Service, National Park Service, Bureau of Land Management, etc.) using the online www.usajobs.gov website procedures.

- The Program Aide acts as a clearinghouse for upcoming job opportunities. Position announcements from alumni and friends, the New York State DEC, and other organizations are provided to the Program Aide for electronic distribution via an e-mail list-serve to all current students and interested alumni.

- A job board is maintained in the hall outside the student lounge for current job openings in forestry and, surveying, as well as, further education options.

- Employers occasionally visit the campus seeking employees. Employers who have visited the Wanakena Campus in the past include Davey Tree Company, Bartlett Tree Experts, Chippers, and the New York State DEC.

- Students attend the New York Society of American Forester's Annual Meeting, typically held in January of each year. Students are instructed in appropriate dress and behavior, and encouraged to circulate and talk to prospective employers.

- Students and alumni are encouraged to visit GreenLink, ESF's Career Services website for job hunting. Students may create an account and access a variety of relevant job opportunities

- Admissions representatives from ESF's Syracuse Campus visit the Ranger School at least twice per year to discuss B.S. educational programs in forestry and related areas at ESF. Students are briefed on the application process and transfer procedures.

- Significant progress has been made over the last few years by the FNRM Faculty to accept a significant number of credits from the Ranger School towards the various B.S. programs. This has had a positive impact on our students and encouraged many to continue their education at ESF.

- Students may also transfer into other departments at the Syracuse Campus, including Environmental and Forest Biology, Landscape Architecture, Environmental Resources Engineering, and Sustainable Construction Management and Engineering.

- In the fall of each year the office of Career Planning and Development prepare a Placement Report of the May graduates. Placement information for the classes of 2006, 2008 and 2009 can be found in Appendix F-5

Upon graduation, the Ranger School Alumni Association provides a communication link with all alumni. On a yearly basis, the association does the following:

- Sends 2 newsletters to 2400 alumni.

- Sends an Annual Information Sheet to 2400 alumni. This sheet asks such questions as occupation, employers, etc. Approximately 700 alumni returned their information sheets in 2009. Examples of the form can be found in Appendix F-5

- From the returned information sheets, an annual Alumni News is published containing all pertinent individual information about each alumnus. The Alumni News of 2010 contained data on approximately 700 alumni.

Through this information supplied by the Ranger School Alumni Association, the Program is kept well informed of alumni employment records. Alumni may also join the Ranger School Alumni and Friends Facebook group, 'Like' the SUNY-ESF Ranger School Facebook page, and visit the school's website (http://www.esf.edu/rangerschool/) to stay informed regarding Ranger School events and activities.

# STANDARD VII
# Physical Resources and Facilities

## A. Outdoor Laboratory

The James F. Dubuar Memorial Forest is a critically valued resource to this Forest Technology Program. This 2,850-acre property surrounds the Ranger School administrative site, allowing easy access by students and faculty. Students in the Ranger School programs may also utilize adjacent areas of state-owned Adirondack Park land which bound the south, west, and east sides of the Dubuar Forest.

The 2850-acre property is comprised of the following broad types:

1. Natural Softwoods (100 acres)
2. Planted Softwoods (900 acres)
3. Natural Hardwoods (1400 acres)
4. Non-commercial – mostly wetlands (450 acres)

The forest is divided into thirteen compartments, each approximately 200 acres in size. This division provides the basis for management activities and for easier location and tracking of student assignments.

Access is provided by

1. 5 miles State Route 3
2. 3 miles Town of Fine roads
3. 12 miles gravel forest roads
4. 10 miles hiking trails

Some examples of use of the Dubuar Forest include

1. Student outdoor laboratory
2. Research
3. Demonstration
4. Recreation
5. Forest management activities
6. Arboretum

The management of the James F. Dubuar Forest is under the control of SUNY-Environmental Science and Forestry's Forest Properties Manager. In December 2007, a committee comprised of ESF faculty and staff collaborated in the development of an update strategic plan for the Dubuar Forest. This plan lays out a vision, mission, and long-term goals for use of the property. A Management Committee meets annually to assess progress, and to discuss tactical and operational plans aligned with this strategic effort. The next revision of the strategic plan is scheduled for December 2012.

Examples of student usage of the Dubuar Forest by course number are:

1. FTC 200 Dendrology: Many of the two-hour lab sessions are conducted throughout the forest for the purpose of learning to identify the local forest

plants.

2. FTC 202 Introduction to Surveying: Field laboratory activities in pacing and compass, GPS navigation, and surveying tools such as surveyors' ropes and levels are conducted on the forest.

3. FTC 204 Introduction to Natural Resources Measurements: Field labs emphasizing individual tree measurement, log scaling, and forest sampling techniques are conducted on the forest.

4. FTC 206 Forest Ecology: Field laboratory activities including ground vegetation identification and sampling, soil development, hydrology and stream mapping, identification of stand developmental stages, and forest cover typing techniques are conducted throughout the forest.

5. FTC 207 Forest Safety: Introductory chainsaw exercises and the proper use of hand tools are practiced in the ball field area, followed by a thinning exercise in the forest.

6. FTC 208 Geographic Information Technology: Students conduct practical field exercises in GPS navigation, ground-truthing of aerial photos, and aerial photo interpretation in various areas throughout the forest.

7. FTC 211 Silviculture: Field trips on the forest are taken to conduct growth and yield data collection and analysis, observation of stand treatments and practice of various cultural treatments.

8. FTC 213 Forest Inventory Practicum: Students are assigned in pairs to conduct a timber inventory on a 200-acre Compartment of the forest.

9. FTC 215 Timber Harvesting: Students conduct a logging activity somewhere on the on the forest.

10. FTC 217 Wildland Firefighting and Ecology: Students conduct a prescribed burn in a swtichgrass stand established for this purpose on the forest.

11. FTC 219 Introduction to Forest Recreation: Students inventory the recreation resources on a 200-acre compartment, construct and maintain trails, lean-to and kiosks.

12. FTC 221 Natural Resources Management: Students develop a resource stewardship plan based on data gathered during FTC 213. They also conduct regeneration surveys and collect increment core data.

13. FTC 223 Water Measurements: Students conduct stream flow measurement exercises on the forest.

14. FTC 232 Wildlife Conservation: Students conduct bird surveys and estimate deer densities on the forest.

15. FTC 238 Forest Insects & Disease: Students learn to recognize common insect and disease signs and symptoms on the forest, conduct a disease survey, and dissect diseased trees.

"The Ranger School has an Arboretum adjacent to the campus. The arboretum was established in 1940, expanded to about 10 acres in 1995 and now it covers nearly 15 acres. It includes about 60 species common in the northern hardwood and boreal forests of the Northeast, particularly in the Adirondack region. Some non-local species, such as ponderosa pine, pitch pine, and tulip poplar are also present.

The construction of a universal-access trail was started in 2007, using funds donated by the HSBC in the Community (USA) Foundation Inc ($25,000) and volunteer labor. Surveying students laid out the trail using ADA specifications, and Forest Tech students have been constructing the trail, adding more detail each year.

In addition to Ranger School students, the arboretum is used by local school groups and by visitors with an interest in learning about trees and shrubs."

**B. Classrooms, Laboratories, Shops, Equipment**

One of the main objectives of the capital construction project completed in 2003 was to improve our instructional spaces. These spaces include the following:

1. Classrooms and their maximum occupancy
   a. Room 261 – Main Classroom — 92 students
   b. Room 262 – Small Classroom — 45 Students
   c. Room 260 – Conference Room — 15 students

2. Laboratories and their maximum occupancy
   a. Room 233 – Laboratory/Drafting Room — 45 students
   b. Room 221 Computer Room — 30 students

3. Shops
   a. Nursery tool shed — 10 students
   b. Garage (tool/equipment maintenance) — 20 students

4. Equipment Storage Locations
   a. Canoe area – 34 canoes

b. Maintenance Building – 17 chainsaws, 10 brushsaws
c. Nursery tool shed
d. Administration Building
    i. Room 141 – Instrument Room – contains an adequate supply of well-maintained technical instruments and equipment for use in field and lab exercises (Appendix G-2)
    ii. Room 151 – Storage Room – contains a variety of technical instruments. Many are not regularly used, but still have significant value.
    iii. Room 233 – Laboratory/Drafting Room – contains a variety of water measurement, photogrammetry and soil analysis equipment, and microscopes. Two large light tables and several drafting tables are also available for student use.

**C. Dormitory Facilities**

The student dormitory capacity is 78. Currently 20 beds are reserved for women students. A limited number of single rooms are available to both male and female students for an extra charge. All rooms have ports allowing access to the internet, and an internet access via a secure wireless connection is available as well. Phone service is available from the local provider at an additional cost.

**D. Instructional Technology Equipment**

Our two classrooms and the computer lab are equipped with instructional technology equipment as follows:

1. Room 261 – Main Classroom:
    a. 2 LCD Projectors
    b. Projection system for:
        i. 1 Dell computer with internet connection
        ii. optional laptop computer plug-ins
        iii. document camera (overhead)
        iv. DVD and VHS systems
    c. Microphone and sound system with wall-mounted speakers

2. Room 262 – Small Classroom
    a. 1 LCD Projector
    b. Projection system for:
        i. 1 Dell computer with internet connection
        ii. optional laptop computer plug-ins
        iii. document camera (overhead)
        iv. DVD and VHS systems
    c. Microphone and sound system with wall-mounted speakers

3. Room 221 – Computer Lab
    a. 1 LCD Projector

b. 1 Instructor computer (Dell) with internet connection

**E. Computers**

Computer technology is an important component of the Ranger School educational program. Many courses require the use of computers and the application of specific software. A list of the software available for student use can be found in Appendix G-1. The Computer Lab (Room 221) is open for student use 24 hours per day, 7 days per week. The following equipment is available for student use in the Computer lab:

- 24 Dell Optiplex GX620 machines with flat-panel monitors and Ethernet connection for server and internet access
- 1 Microtek ScanMaker 5800 flatbed scanner
- 2 printers
  HP3005 black/white laser jet
  HP2008 color inkjet
- 1 large-format plotter
  HP Designjet 800ps

Two computers (Dell GX620) are also available in the library. All faculty and staff offices are equipped with computers, replaced on approximately a 3-5 year cycle.

**F. Student Transportation**

The following vehicles are assigned to the Wanakena Campus for use by the Forest Technology Program:

- 3 – 15 passenger vans
- 1- 8 passenger van
- 1- station wagon (capacity 5)

These vehicles are under the control of the College's Physical Plant Department. From a safety standpoint the physical and mechanical conditions of these vans is often a concern to the faculty. In early 2010 the Ranger School did obtain a new 15-passenger van. The other vans are all older, high mileage models. On a monthly basis the mileage use records are submitted to the Physical Plant Director, and the Program is charged at a rate of .50 cents per mile. Funds for this expenditure come from a student transportation fee paid by the students ($410.00 per student per year). On occasion, a bus may be chartered to transport students on long-distance trips. The expense for this service is also charged to the student transportation fee account.