

# Associate of Science in Applied Forest Management

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## Vision Statement

The Applied Forest Management Program is conservation-based, promoting the wise and sustainable use of our natural resources through an understanding of science. This theme is emphasized throughout the forestry curriculum.

## Mission Statement

It is the mission of the UMFK Forestry Program to nurture its students to become individuals who are responsible and skilled forestry professionals capable of performing all technical field tasks; who understand the tenets of good forestry and personnel management; who possess good communication and problem solving skills; who are aware of the ethical dimensions of their actions; and who are prepared to further their education at the university or as life-long learners.

## Program Description/Goals

The Applied Forest Management Program leading to an Associate Degree in Science is accredited by the Society of American Foresters (SAF). The program is designed to prepare students for careers in forestry. Students in the program study basic forestry, such as tree identification, tree measurement, forest ecology and silviculture. UMFK faculty members have worked closely with forestry professionals in industry and the Maine Forest Service to develop a curriculum that satisfies the needs of the employer. UMFK graduates provide skills that are the foundation of good forestry and conservation in Maine. Some of these skills include boundary surveying; forest inventory and mapping; and supervision of harvesting, thinning, and planting crews; as well as fire suppression, emergency management and other skills. UMFK's forestry graduates have a broad forestry education and graduate with many marketable skills. Graduates find work as forest technicians, foresters, and forest rangers. Many graduates work in forest operations and several are GIS specialists. Potential employers include consulting foresters; land management companies; forest industry; and the forestry, conservation, and agriculture departments of the state and federal governments. Presently, the job-to-student ratio is very high, and a number of UMFK students have received permanent job offers prior to their graduation. Summer internships also are numerous.

This associate degree also may serve as entry to a baccalaureate education in business management, rural public safety, environmental studies, forestry or other fields. Several programs are available where students can complete the Associate of Science in Applied Forest Management and a baccalaureate degree within four years. For example, local industry encouraged UMFK to develop a forestry concentration under the Business Management major. With proper planning, a student can complete both degrees (Associate of Science and Bachelor of Science) in four years. Refer to the Business Major for more information. The Maine Forest Service worked with UMFK faculty to develop the concentration in Wildland Firefighting. UMFK graduates are fully-qualified to work as rangers for the Maine Forest Service, or for federal agencies such as the Bureau of Land Management or the U.S.D.A. Forest Service. Students interested in pursuing careers in government can further their education with a baccalaureate degree in Rural Public Safety, easily completing both degrees in four years.

## Physical Requirements

Many of UMFK's forestry courses are field-oriented and require the student to possess mobility in a field setting. Reasonable accommodations will be made for students with documented limitations; nevertheless, all students must be able to visit field sites and should realize that employment in forestry often requires a physical fitness exam by the employing agency.

## Student Learning Outcomes

UMFK forestry graduates will be able to:

1. recognize locally-important woody species and understand their ecology, use, and potential markets;
2. measure forest trees and products;
3. extract qualitative and quantitative natural resource data from maps, aerial photographs, and digital data sources;
4. perform boundary surveying, forest inventory, and mapping;
5. recognize and describe the tenets of good forestry, implement timber marking, and assess the outcome of silvicultural practices;

6. recognize and describe the tenets of good personnel management and implement those skills when supervising woods crews or wildland fire crews;
7. recognize and describe the methods of forest regeneration and protection, including the basic principles of wildland fire, wildland firefighting, forest health and the ability to identify major health threats and forest pests
8. recognize and describe the ecology, silviculture, and management of regional forest types;
9. recognize the importance and inter-relatedness of all natural resources;
10. recognize and describe the state laws, regulations, and standards relative to the practice of sound forestry and be capable of assessing compliance with those standards;
11. recognize unsafe conditions in the workplace and know how to correct or to avoid those conditions;
12. apply communication skills in both written and verbal forms;
13. comprehend through listening, reading, and observation;
14. apply mathematics to forestry and related disciplines;
15. apply problem-solving skills;
16. recognize and describe the possible outcomes arising from their decisions, as they relate to forestry or life in general; and
17. be proficient in Geographic Information Systems (GIS) and Global Positioning Systems (GPS) and apply those and other technologies to the protection or management of natural resources.
18. identify local and economically important wood specimens
19. set up management blocks and map and conduct road layouts
20. recognize and describe the basic tenants of forest operations
21. develop a professional forest management plan

## Program Requirements

The Associate of Science in Applied Forest Management degree is awarded upon the completion of a minimum of 71 credit hours of the following prescribed general education, forestry and forestry concentration requirements, with a minimum cumulative grade point average of 2.0. First aid and chainsaw safety testing must be satisfied by a "B" grade or better. The forest measurements course sequence (FOR290 and 332) must be completed with a minimum grade of "C" in each course.

## General Education Requirements for Associate of Science in Applied Forest Management

CRN	Course Name	Credits
<b>I. Intellectual and Practical Skills</b>		
<b>A. Communication (9 credit hours)</b>		
ENG 100	English Composition I (written)	3 credits
ENG 101	English Composition II (written)	3 credits
COM 200	Speech (oral)	3 credits
<b>B. Quantitative Reasoning (3 credit hours)</b>		
MAT XXX		3 credits
<b>C. Information Fluency (3 credit hours)</b>		
GIS 300	GIS Applications	
<i>*4 credits required for a baccalaureate degree.</i>		
<b>II. General Knowledge (3 credits)</b>		

Choose one course from the listed General Education- Associate Degree in Behavioral & Social Sciences (Students pursuing a bachelor's degree in Business Management or Rural Public Safety need ECO 101.)

## Applied Forest Management Required Courses

CRN	Course Name	Credits
FOR 109	Dendrology	4 credits
BUS 211	Principles of Business Management	3 credits
ENV 302	Wildlife Conservation or ENV 354 Wildlife Habitat Interactions <b>OR</b>	
ENV 334	Wildlife Science	3 credits
FOR 100	Introduction to Forestry	4 credits
FOR 131	Spreadsheets for Foresters	1 credit
FOR 132	Forest Protection I (S130/S190, policy)	2 credits
FOR 203	Surveying For Foresters	3 credits
FOR 208	Forest Products, Timber Harvesting, & Transportation	3 credits
FOR 226	Forest Operations	4 credits
FOR 242	Map & LiDAR Interpretation	3 credits
FOR 260	Silvics (Forest Ecology)	3 credits
FOR 290	Forest Mensuration	4 credits
FOR 330	Forest Protection II (entomology/pathology)	3 credits
FOR 332	Forest Inventory & Analysis	3 credits
FOR 350	Forest Management Practicum	3 credits
FOR 360	Silviculture	3 credits
FOR 361	Silvics & Silviculture Laboratory	2 credits
GEO 103	Intro to Global Positioning Systems	1 credit
SSC 327	Interpersonal Skills for Supervisors	1 credit
<b>Minimum</b>		<b>71 credits</b>

## Techniques for Assessment

The Applied Forest Management Program primarily is an experiential learning program with nearly half (43%) of its contact credits occurring in laboratory or field settings. Of the remaining courses, many employ learning and assessment methods for multiple learning styles. While some of the courses are lecture-based, students are assessed using a variety of means including written assignments, group work, small projects, hands-on exercises, as well as, weekly quizzes, exams, field exams, comprehensive final exams in several courses, and semester projects.

Safety is the highest priority in the program. Therefore, all students in Forest Operations must receive a grade of 80 or better on written exams on First Aid/CPR and on timber harvesting competency early in the semester in order to remain in the course. In Forest Mensuration and Forest Inventory & Analysis, students must receive a grade of "C" or higher to graduate.

Semester projects that incorporate a synthesis of topics of applied skills and account for a significant portion of the course grade can be found in Forest Inventory, Forest Protection Laboratory, Silvics/Silviculture Laboratory, and Forest Management. Students have practical exercises and testing in Forest Protection I (S-130/S-190) and Wildland Fire Origin. Practical laboratory exercises and field or practical exams are found in Forest Operations, Harvesting and Transportation, Forest Measurements, and Map and LiDAR Interpretation. During their final year, students must successfully complete a capstone project in FOR 350 Forest Management Practicum.

Graduates also have an opportunity to complete an alumni survey and provide feedback about the quality and effectiveness of the education they have received.

## Suggested Course Sequencing

**Fall Semester First Year**

CRN	Course Name	Credits
ENG 100	English Composition I	3 credits
	MAT 128 or above	3 credits
FOR 100	Introduction to Forestry	4 credits
FOR 131	Spreadsheets for Foresters	1 credits
FOR 109	Dendrology	4 credits
<b>Total</b>		<b>15 credits</b>

**Spring Semester First Year**

CRN	Course Name	Credits
ENG 101	English Composition II	3 credits
FOR 132	Forest Protection I	2 credits
FOR 242	Map & Airphoto Interpretation	3 credits
FOR 208	Forest Products, Harvesting, and Transportation	3 credits
FOR 290	Forest Mensuration	4 credits
GEO 103	Introduction to Global Positioning Systems	1 credit
<b>Total</b>		<b>16 credits</b>

**Fall Semester Second Year**

CRN	Course Name	Credits
	General Education - Behavioral & Social Sciences	3 credits
FOR 203	Surveying for Foresters	3 credits
FOR 226	Forest Operations	4 credits
FOR 332	Forest Inventory and Analysis	3 credits
<b>Total</b>		<b>13 credits</b>

**Spring Semester Second Year**

CRN	Course Name	Credits
BUS 211	Principles of Business	3 credits
	General Education - Oral Communication	3 credits
FOR 260	Silvics (Forest Ecology)	3 credits
FOR 360	Silviculture	3 credits
GIS 300	GIS Applications	3 credits
<b>Total</b>		<b>15 credits</b>

**Fall Semester Third Year**

CRN	Course Name	Credits
ENV 302	Wildlife Conservation <b>OR</b>	
ENV 354	Wildlife Habitat Interaction <b>OR</b>	
ENV 334	Wildlife Science	3 credits
FOR 330	Forest Protection II	3 credits
SSC 327	Interpersonal Skills for Supervisors	1 credit
FOR 350	Forest Management Practicum	3 credits
FOR 361	Silvics/Silviculture Lab	2 credits
<b>Total</b>		<b>12 credits</b>