

OUTCOMES ASSESSMENT MODEL

Department of Forestry Division of Agricultural Sciences & Natural Resources Oklahoma State University

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Mission, Goals and Objectives

The following goals and objectives for the Department of Forestry were revised and submitted to the Society of American Foresters Accreditation Committee in 1996, and were approved:

Department of Forestry Mission Statement

"To enhance the social, ecological and economic value of forest resources for the citizens of Oklahoma and the nation through professional and public education and basic and applied research."

In keeping with the SAF (1998) definition of forestry as "the profession embracing the science, art, and practice of creating, managing, using, and conserving forests and associated resources for human benefit and in a sustainable manner to meet desired goals, needs, and values", we have identified the following goals and objectives to accomplish our undergraduate educational mission:

GOAL 1 TO DEVELOP THE STUDENTS' PROFESSIONAL AND TECHNICAL KNOWLEDGE, SKILLS AND ABILITIES BY PROVIDING FIELD, CLASSROOM AND LABORATORY EXPERIENCE WHICH INTEGRATES THE THEORY AND PRACTICE OF FORESTRY.

- 1.1 Each graduate will acquire the basic scientific knowledge needed to function effectively as a professional.
- 1.2 Each graduate will be competent in the professional skills associated with a chosen area or career interest.
- 1.3 Each graduate will gain an appreciation of the whole of forestry, its scope and interdependence with all other parts of society.
- 1.4 Each graduate will be familiar with the major issues facing forestry professionals.
- 1.5 Provide each graduate courses and curriculum that reflect the current and changing needs of the forestry profession.
- 1.6 Insure a curriculum which also provides a true "General Education".
- 1.7 Provide each graduate a summer camp experience by use of the "roving camp" concept with a course content central to the upper division curriculum.
- 1.8 Recruit and retain highly qualified faculty and support personnel.
- 1.9 Provide high quality facilities, equipment, services and other resources to support the instructional program.
- 1.10 Maintain a curriculum which fulfills SAF accreditation requirements.
- 1.11 Recruit and retain high quality students.

GOAL 2 TO DEVELOP COMMUNICATION AND QUANTIFICATION COMPETENCIES NEEDED FOR PROFESSIONAL PERFORMANCE AND EFFECTIVE CITIZENSHIP.

- 2.1 Each graduate will be able to speak effectively and with confidence.
- 2.2 Each graduate will be able to listen intelligently.

- 2.3 Each graduate will be able to write with clarity.
- 2.4 Each graduate will be able to read with understanding.
- 2.5 Each graduate will be able to use appropriate quantification skills.
- 2.6 Each graduate will be able to use current technology, such as electronic computers, as tools to enhance human capabilities.
- GOAL 3 TO ENCOURAGE THE DEVELOPMENT OF VALUES SUPPORTED BY PERSONAL CONVICTIONS AND PROFESSIONAL ETHICS.
 - 3.1 Opportunities will be provided each graduate to develop personal values which are consistent with the needs of society and the profession of forestry.
 - 3.2 Opportunities will be provided each graduate to learn to make informed moral decisions with discernment in response to professional ethics.
- GOAL 4 TO DEVELOP ANALYTICAL AND PROBLEM-SOLVING ABILITIES.
 - 4.1 Each graduate will be able to identify and define problems that need to be addressed.
 - 4.2 Each graduate will know how to locate and utilize relevant information in the analysis of specific problems.
 - 4.3 Each graduate will be able to formulate procedures required in the solution of problems.
 - 4.4 Each graduate will be able to communicate research findings to relevant publics as potential answers to problems.
- GOAL 5 TO DEVELOP EFFECTIVE INTERPERSONAL SKILLS.
 - 5.1 Each graduate will have been encouraged to develop interpersonal skills needed to be a contributing citizen of the world and a member of the profession of forestry.
 - 5.2 Each graduate will have been encouraged to develop an understanding of their personal background as well as an appreciation for the diversity of cultural backgrounds of other persons.
 - 5.3 Each graduate will have been encouraged to recognize and respect the rights of others.
 - 5.4 Each graduate will be able to organize and lead groups of people.
 - 5.5 Each graduate will be able to participate effectively as a member of a group.
- GOAL 6 TO PROVIDE A BASIS FOR IDENTIFICATION AND DEVELOPMENT OF CAREER GOALS AND LIFELONG LEARNING.
 - 6.1 Each graduate will have evaluated an array of career options and will be able to make a congruent choice.
 - 6.2 Each graduate will recognize the need for continuing education.

The following goal statement was developed for the graduate program in Forestry, and it provides the expected outcome for graduate students pursuing the M.Ag. and M.S. degrees:

With respect to graduate programs, the overall goal of the Department is to provide high quality advanced training and instruction in the application of the scientific method to problems in forestry. This includes problem analysis and identification, research methods, synthesis of results and communication of findings. The Department strives to develop the capability for original and creative work under the guidance of established professionals and scientists.

Outcomes

The outcomes for the undergraduate program are incorporated within the objective statements under the Department goals.

The outcomes for graduates of the M.Ag. and the M.S. degrees are developed from the graduate goal statement and include the following:

1. Understand and apply the scientific method to problems in forest resource sciences.
2. Demonstrate the ability to summarize and report research results orally and in writing.

Assessment Methods - Undergraduates

1. Graduation rates for students who have completed the forestry summer camp program will be maintained. The summer camp is a 8-credit hour academic program required between the sophomore and junior years. Completion of the forestry camp demonstrates the attainment of basic forestry skills and elementary understanding of forest resource management. Record keeping was initiated with the 1991 summer camp students (1993 graduates) and continues.
2. *Capstone course:* All undergraduates are required to take FOR 4333, Forest Resources Management, the approved capstone course for forestry majors. The capstone course proposal is presented in Appendix A. The capstone requirement includes a major senior project, including a written and oral report of problem analysis and solution to an external client on an actual forest resources management problem. The forestry capstone requirement has been in place since 1986.
3. *Exit interview:* All undergraduates will meet with the Department Head or academic advisor immediately prior to graduation. Interviews will include discussion of curriculum, instruction, advising and facilities. Notes on exit interviews are kept on file and summarized in an annual report and reviewed by the faculty.
4. *External program review:* Accreditation of the undergraduate program in forestry by the Society of American Foresters will be maintained. On-site reviews are conducted every 10 years with comprehensive self-review reports due at mid-term. Accreditation reviews assess all aspects of the instructional program and the relation between instruction, research and cooperative extension. An accreditation handbook is provided in appendix B, which details the required elements for accreditation. The last on-site visit was in 1996, and a mid-term report will be submitted in 2001. Accreditation reports and review committee comments and requirements are on file in the Department of Forestry and will be provided for the University outcomes assessment.

The Department of Forestry is reviewed approximately every five years by the Cooperative State Research, Education and Extension Service (USDA-CSREES). This comprehensive review focuses on research, but includes all functions of teaching, research and extension. The review team makes recommendations for program improvements. The last review was conducted in 1997, and the report of the review committee was provided to the Department.

5. *Survey of alumni:* Graduates from the most recent five years will be surveyed at five-year intervals (or more frequently if survey results indicate the need). The survey will include the opportunity to evaluate forestry courses, supporting courses, advisement and professional preparation. Results will be summarized and included in accreditation and program assessment reports. A questionnaire was developed in the spring of 1995, and the first survey was initiated in the summer of 1995. The initial sampling included 100% of graduates for whom current addresses were correct. Results were compiled and included in the Department's 1996 accreditation report. Additionally, a survey of the more recent graduates (1994-98) was developed and initiated in March 1999, and the data compiled.

Assessment Methods - Graduates (M.Ag and M.S.)

1. *Creative component:* All M.Ag. and M.S. students are required to complete a thesis or creative component. The thesis or creative component demonstrates the ability to review and understand the scientific literature, plan project or research study, conduct the study and summarize and report the results. The student's committee reviews progress periodically during the program, and final evaluation is made during a formal final oral examination. Results are contained in student files. Results are summarized for the outcomes assessment report.
2. *Final examination:* All M.Ag. and M.S. students are required to pass a final oral examination covering all coursework and the creative component or thesis (see 1 above).
3. *Seminars:* All M.Ag. and M.S. students are required to take at least 1 seminar course per year during their graduate program. The seminar normally reports the student's research plans, literature review or research results. Grades and peer evaluation are the method of assessment of performance. Students who perform poorly are advised to consider courses or other activities designed to improve. Advisors are responsible to work with graduates.

Obtaining and Analyzing Results

The results of assessments will be collected and analyzed by the Assessment Coordinator and Department advisors. Since comprehensive review of the undergraduate program by the entire faculty is an integral part of the accreditation process, outcomes assessment data and comments will be reviewed as a part of this process.

Interpretation and Feedback

Through the accreditation process, inadequacies in the forestry program must be addressed and progress reports submitted on a mutually acceptable schedule to the Society of American Foresters. The forestry faculty, Department Head and the administration of the College of Agricultural Sciences and Natural Resources are mutually responsible to support changes in the curriculum advisement, equipment, classrooms and laboratories to meet accreditation requirements.

Procedures for utilizing feedback from accreditation and other proposed outcome assessment information include the following:

1. Curriculum matters are referred to the Forestry curriculum committee. The committee makes recommendations for needed changes to the faculty. If approved, proposed changes are submitted to the College and University for review and approval. Minor changes such as coordination of sequential courses is addressed by appropriate faculty groups.
2. Teaching quality and advisement is addressed through annual faculty appraisals with the Department Head. Specific activities such as workshops and seminars which provide formal training may be prescribed. Student evaluations of courses are used as a guide for identifying problems and tracking change.
3. Facilities and equipment needs are met with annual Departmental maintenance accounts or special grants on a priority basis. Major needs such as space, lab equipment or computer labs are met through coordinated efforts with the College of University. Facility and equipment needs are responsive to the needs of students.

Minor adjustments are made annually in each of these areas and major adjustments at key intervals usually associated with the planning for or the feedback from external reviews. We anticipate that outcomes data will be incorporated in these ongoing instructional adjustment processes.

Time Line

1. *Graduation rates:* Data for the class of 1993 was collected following summer semester 1993. Graduation tracking has been continued thereafter for all undergraduates.
2. *Capstone course:* Assessment is in place and ongoing.
3. *Exit interview:* Exit interviews have been conducted, but a formal reporting procedure has not. Formal reporting of exit interview results (summarizations) will be initiated in the spring of 1993.
4. *External program review:*
 - Last accreditation visit 1996; result - accreditation continued, progress reports required
 - Interim accreditation report due 2001
 - CSREES review conducted in 1997; next review tentatively scheduled for 2002
 - All SAF and CSREES review reports are available for outcomes assessment purposes
5. *Survey of alumni:*
 - Survey instrument prepared; spring 1995
 - Survey initiated; July 1995
 - Report available; March 1996
 - Survey of most recent graduates (1994-98); March 1999; summary of data completed; August 1999
6. *Assessment of M.Ag. and M.S. students:* Assessment is in place and ongoing following procedures outlined previously.

Budget

The only additional cost to the program over and above current accreditation assessment costs are to conduct the survey of alumni, summarize the data and prepare the outcomes assessment report. The greatest portion of these added costs is associated with the time required by faculty, staff and the Department Head.

The Department maintains an active and comprehensive file of alumni which can be sorted by year of graduation. This list is used to develop the list for the post-graduate survey.