

CRITERION 2. PROGRAM EDUCATIONAL OBJECTIVES

ABET Definition: Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

ABET definition: Assessment under this criterion is one or more processes that identify, collect, and prepare data to evaluate the achievement of program educational objectives.

ABET definition: Evaluation under this criterion is one or more processes for interpreting the data and evidence accumulated through assessment practices. Evaluation determines the extent to which program educational objectives are being achieved, and results in decisions and actions to improve the program.

Mission Statement

The governing body that oversees the University of Wisconsin-Stevens Point (UWSP) is known as the University of Wisconsin System (UWS). Created in 1974 as a result of the merger of the University of Wisconsin and the Wisconsin State Universities, the UWS is comprised of two doctoral institutions, eleven comprehensive institutions (collectively known as the University Cluster), and thirteen two-year colleges. The Stevens Point campus, originally a member of the Wisconsin State Universities, became part of the University of Wisconsin in 1971. UWSP is one of the eleven comprehensive institutions, charged with providing undergraduate and select graduate degrees. UWSP, in addition to sharing in the missions of the UWS and the University Cluster, has its own list of select goals and responsibilities.

A three-part mission statement for the university appeared for the first time in the 1974-75 UWSP Catalog. This lengthy statement includes the “System Mission” of the UWS, the “Core Mission” of the University Cluster, and the “Select Mission” of the UWSP campus. The “Select Mission” for the campus was retitled as the “Select Goals and Responsibilities” for UWSP and lengthened in 1989-91. The mission statements have remained essentially unchanged since that time. The mission statements presented here are reproduced exactly as they are currently published.

The mission of the UWS broadly defines the purpose of the entire University system:

The mission of this system is to develop human resources, to discover and disseminate knowledge, to extend knowledge and its application beyond the boundaries of its campuses, and to serve and stimulate society by developing in students heightened intellectual, cultural, and humane sensitivities; scientific, professional, and technological expertise; and a sense of purpose. Inherent in this broad mission are methods of instruction, research, extended education, and public service designed to educate people and improve the human condition. Basic to every purpose of the system is the search for truth.

The mission statement of the University Cluster makes more specific statements about the role of the comprehensive campuses, including the responsibility for offering undergraduate and select graduate degrees, fostering teaching excellence, and encouraging faculty to engage in outreach activities (among many other things):

As an institution in the "University Cluster" of the University of Wisconsin System, UW-Stevens Point shares the following core mission with other universities of the cluster. Each university in the cluster shall:

- a. Offer associate and baccalaureate degree level and selected graduate programs within the context of its approved mission statement.*
- b. Offer an environment that emphasizes teaching excellence and meets the educational and personal needs of students through effective teaching, academic advising, counseling, and through university-sponsored cultural, recreational, and extracurricular programs.*
- c. Offer a core of liberal studies that supports university degrees in the arts, letters, and sciences, as well as specialized professional/technical degrees at the associate and baccalaureate level.*
- d. Offer a program of pre-professional curricular offerings consistent with the university's mission.*
- e. Expect scholarly activity, including research, scholarship, and creative endeavor, that supports its programs at the associate and baccalaureate degree level, its selected graduate programs, and its approved mission statement.*
- f. Promote the integration of the extension function, assist the University of Wisconsin-Extension in meeting its responsibility for statewide coordination, and encourage faculty and staff participation in outreach activity.*
- g. Participate in inter-institutional relationships in order to maximize educational opportunity for the people of the state effectively and efficiently through the sharing of resources.*
- h. Serve the needs of women, minority, disadvantaged, disabled, and nontraditional students and seek racial and ethnic diversification of the student body and the professional faculty and staff.*
- i. Support activities designed to promote the economic development of the state.*

The select goals for UWSP define specific programs that, along with the offering of a broad-based liberal education, are the responsibility of the campus. The list of professional programs includes paper science (now Paper Science and Engineering) as part of the select mission of the UWSP campus:

The select goals and responsibilities of UW-Stevens Point are to:

- Provide a broad foundation of liberal studies and selected degree programs in the fine arts, humanities, natural sciences, and social sciences, imparting the heritage of human civilization, critical intelligence, and the skills necessary for a lifetime of learning and upon which education in the professional fields may be built.*
- Provide undergraduate professional programs in communicative disorders, teacher education, home economics*, the visual and performing arts, paper science, and natural resources with emphasis on the management of resources.*
- Provide graduate programs in teacher education, communicative disorders, natural resources, home economics*, communication and other select areas clearly associated with this university's undergraduate emphases and strengths.*
- Provide programs in wellness and health promotion.*
- Provide quality undergraduate and graduate instruction through innovative*

methods using print and non-print library resources, computing, communication technology, and direct student assistance.

- *Expect scholarly activity, including research, scholarship and creative endeavor, that supports its programs at the associate and baccalaureate degree level, its selected graduate programs, and its special mission.*
- *Cooperate with UW-Extension in the development and coordination of statewide outreach programming, integration of the extension function into the institution, and appropriate and adequate recognition of those involved in outreach activities.*

**The former home economics programs are now offered as child and family studies, dietetics, early childhood education, family and consumer education, human development, nutrition, and interior architecture.*

Taken together, these three components comprise the definition of the mission for UWSP, and have formed the basis for operation since their approval by the Board of Regents in 1988. These mission statements are published in both the printed and online versions of the *University Catalog*.

The mission of the College of Natural Resources, according to the CNR Policy Manual, is:

The College of Natural Resources provides education, research, and outreach in integrated natural resources management, environmental education, and paper science.

The College of Natural Resources:

- *Provides undergraduate and graduate instruction that combines theoretical concepts with practical experience, such as laboratory and field oriented courses, summer camps, internships and special projects.*
- *Promotes scholarly activities that enhance the creation or application of knowledge or contribute to the resolution of environmental and natural resource management issues, especially through student research.*
- *Shares faculty and student expertise with citizens, communities, agencies and industries through outreach, scholarship, and consulting.*

The Paper Science and Engineering Department mission is published on the department web page (www.uwsp.edu/papersci/), and reads as follows:

The UWSP Paper Science and Engineering program is committed to preparing students for successful technical careers in the pulp, paper and allied industries. This mission is accomplished by promoting excellence in instruction, undergraduate research opportunities, industrial internships, and involvement in professional organizations.

The UWSP Paper Science and Engineering program is also committed to providing high quality outreach education opportunities for professionals in the pulp, paper, and allied industries. This mission is accomplished by continued development of

courses beneficial to industry professionals that will improve their understanding of the processes for which they are responsible.

Program Educational Objectives

The Program Education Objectives (PEOs) are published on the department web site.

They are:

Graduates of the Paper Science and Engineering Program at UWSP will be productive employees in the paper and allied industries in the three to five years immediately following graduation because they:

1. Have a sound background in fundamental science and engineering principles as applied to paper science and engineering;
2. Understand related societal issues such as environmental protection, occupational health and safety, resource management, and appropriate business skills;
3. Are well-rounded professionals in terms of teamwork, communication, and problem solving;
4. Have developed life-long learning skills and abilities.

Consistency of the Program Educational Objectives with the Mission of the Institution

The PSE PEOs flow naturally from the missions of UWSP and the CNR. In addition to being a specified program in the second point of the UWSP select goals and responsibilities, the first point includes the broad foundation of liberal arts, which is reflected in PEO #2. PEO #1 connects directly to the first point of the CNR mission statement. All four of the PSE PEOs support the mission of the UW System.

Program Constituencies

Members of the PSE Department interact with a wide variety of constituencies. The primary audiences of concern to the department are current students in the program, alumni, employers of PSE students and graduates, the Paper Science Foundation, UWSP administration and the PSE faculty. Each of these groups is described briefly here.

- Current undergraduate students This group consists of the current student body in residence in the PSE program at UWSP. Information is generally sought from the current undergraduate students at the course level and at the outcome level, both formally and informally.
- Alumni The PSE program has a large alumni base from which to get information. These alumni fulfill roles in the industry from entry-level engineers to Vice-Presidents, Presidents, CEO's, Engineering Directors, and Department Chairs. Alumni of the program have many opportunities to interact directly with the Department Chair or individual faculty members by attending Department events throughout the year.
- Employers of PSE students and graduates All students in the program are required to work at least one summer in the pulp, paper, or allied industry. In addition, all students who have graduated from the program in the past 14 years have worked on a cooperative internship (a summer plus a semester). The supervisors for these

internships give us valuable feedback on how the students are doing up to that point and what needs to be improved. Students usually obtain summer and co-op positions through on-campus interviews. The PSE Department also has an active recruiting program for permanent positions for our graduates. Each year, recruiters come to campus to interview students who are graduating in the next year. Most students will have accepted positions by the time they graduate. The permanent employers see our students as “finished products,” so their needs must be satisfied.

- Paper Science Foundation The Paper Science Foundation has both companies and individuals as members. The Foundation President recruits company representatives and individuals to serve on the Board of Directors and the Executive Committee. Many of these member companies are also the employers of the graduates of the program. Employers in the pulp and paper industry are the primary “consumers” of our graduates, thus their concerns and comments are very important. The members of the foundation are keenly aware of the changes that are occurring within the pulp and paper industry. With the input from the foundation members, the PSE Faculty can make adjustments to best serve the needs of the industry.
- UWSP Administration PSE is part of the overall administrative structure of the college, with the chair reporting to the dean of the college. The PSE department chair and the discipline coordinators from other college programs meet weekly with the dean to review program and college matters. Additional ad hoc meetings with campus administration occur throughout the year.
- PSE Faculty The members of the PSE faculty are the key constituents in evaluating the feedback received from other sources, proposing improvements in the curriculum, outcomes, and objectives, and implementing these changes. All changes in the curriculum are initiated by faculty action. In addition, the faculty members continually interact with all of the other constituents, allowing the opportunities for the informal feedback into the process. PSE faculty members are directly responsible for delivery of course materials consistent with the course outcomes and program outcomes. As described in Table 2-1, faculty members perform a number of assessment activities integrated into the class activities.

Table 2-1. Constituencies, Evaluation and Feedback

Constituency	Evaluation and Assessment Instruments	Feedback Instruments
Undergraduate students	End of course survey	End of course survey Informal feedback Student discussion group
Alumni	Alumni survey	Alumni survey Informal feedback
Employers	Internship survey Employment analysis	Recruiter feedback Internship survey
Paper Science Foundation UWSP Administration	Placement analysis	Foundation committees Annual Faculty review
PSE Faculty	Student work Exams Course portfolios	Faculty meetings

In a more general sense, the department interacts with many other constituencies, including the Technical Association of the Pulp and Paper Industry (TAPPI), the Pulp and Paper Education and Research Alliance (PPERA), prospective high school students and their parents, primary and middle school students, and the general public. Each of these groups is described briefly below. Feedback from these groups is usually informal and not well documented.

- Technical Association of the Pulp and Paper Industry The Technical Association of the Pulp and Paper Industry (TAPPI) is the leading association for the worldwide pulp, paper, packaging, and converting industries. PSE students and faculty attend technical conferences sponsored by TAPPI every year. These conferences offer students and faculty opportunities to interact with industry representatives in both formal and informal sessions, and help students understand the nature of professionals in the industry. Faculty and students also have the opportunity to present results of their research.
- Pulp and Paper Education and Research Alliance The Pulp and Paper Education and Research Alliance (PPERA) is an alliance of universities with programs which are individually distinctive but which are similar in being committed to the advancement of the North American pulp, paper and allied industries. Each of the PPERA university partners has various supportive relationships with industry and government designed to strengthen the contributions of higher education to the pulp, paper and allied industries. In recognition of these strategic partnerships, the university programs comprising PPERA work together to develop synergistic programs in education, research, and service, which are mutually beneficial and collectively leverage contributions to the pulp, paper and allied industries.
- Prospective high school students and their parents The faculty and staff work closely with the Admissions Office to recruit prospective high school students. During campus visits, sometimes it is the parents that are the primary contact with us. The parents communicate the perceived needs of the student.
- Primary and middle school students The faculty, staff and students give tours and demonstrations to primary and middle school students to introduce them to Paper Science and Engineering. The PSE students take on much of this responsibility, presenting programs for third and fourth grade classrooms across the state.
- General public As a public institution, UWSP is expected to respond to questions and/or concerns from the general public. Faculty members handle these responsibilities. This usually takes the form of responding to inquiries regarding various aspects of the paper industry from citizens and news reporters.

Process for Establishing Program Educational Objectives

There have been informal expectations of performance by PSE graduates since the program's inception in 1972. The formal statement of ABET Program Educational Objectives has only recently been created. The process began when all PSE faculty members attended Faculty College in May 2006, a week-long retreat sponsored by the UW System Office of Professional Instructional Development. PSE faculty attended workshops on teaching and learning strategies and spent free time discussing ABET requirements for accreditation. The first draft of the Program Educational Objectives came from these discussions. The faculty worked with these statements until we agreed

that they accurately represented what was expected of graduates from the program. The PEOs were then shared with industry representatives at the annual Academic Advisory Meeting in May 2007. Attendees at this meeting affirmed that these PEOs were acceptable.

Achievement of Program Educational Objectives

The PSE program currently uses indirect assessment of the PEOs via an alumni survey. An industry survey and a survey of alumni (graduating in 1988-2001) were completed in 2002 as part of regular program review. These surveys were created by a program review committee within the CNR, and were not intended to evaluate ABET PEOs (since the PEOs did not exist at the time). However, much of the information is comparable with the current alumni survey, and is presented below. The full surveys and results will be available in the team resource room.

The industry survey resulted in 49 responses, 24 of whom supervised PSE graduates. Their ratings of abilities in seven areas of importance are summarized in Table 2-2 and shown in Figure 2-1. Clearly, these supervisors thought highly of our graduates. The Department will send out another survey to industry representatives during the Fall 2008 semester.

Table 2-2. Summary of 2002 Industry Survey

How do you rate UWSP Paper Science graduates on their:	% responding “Excellent” or “Very Good”
Knowledge of pulp and paper raw materials and processes	94
Communications skills	73
Level of computer literacy	86
Ability to work effectively as part of a team	86
Professional comportment	84
Ability to continue learning	90
Ability to take on high levels of responsibility	86

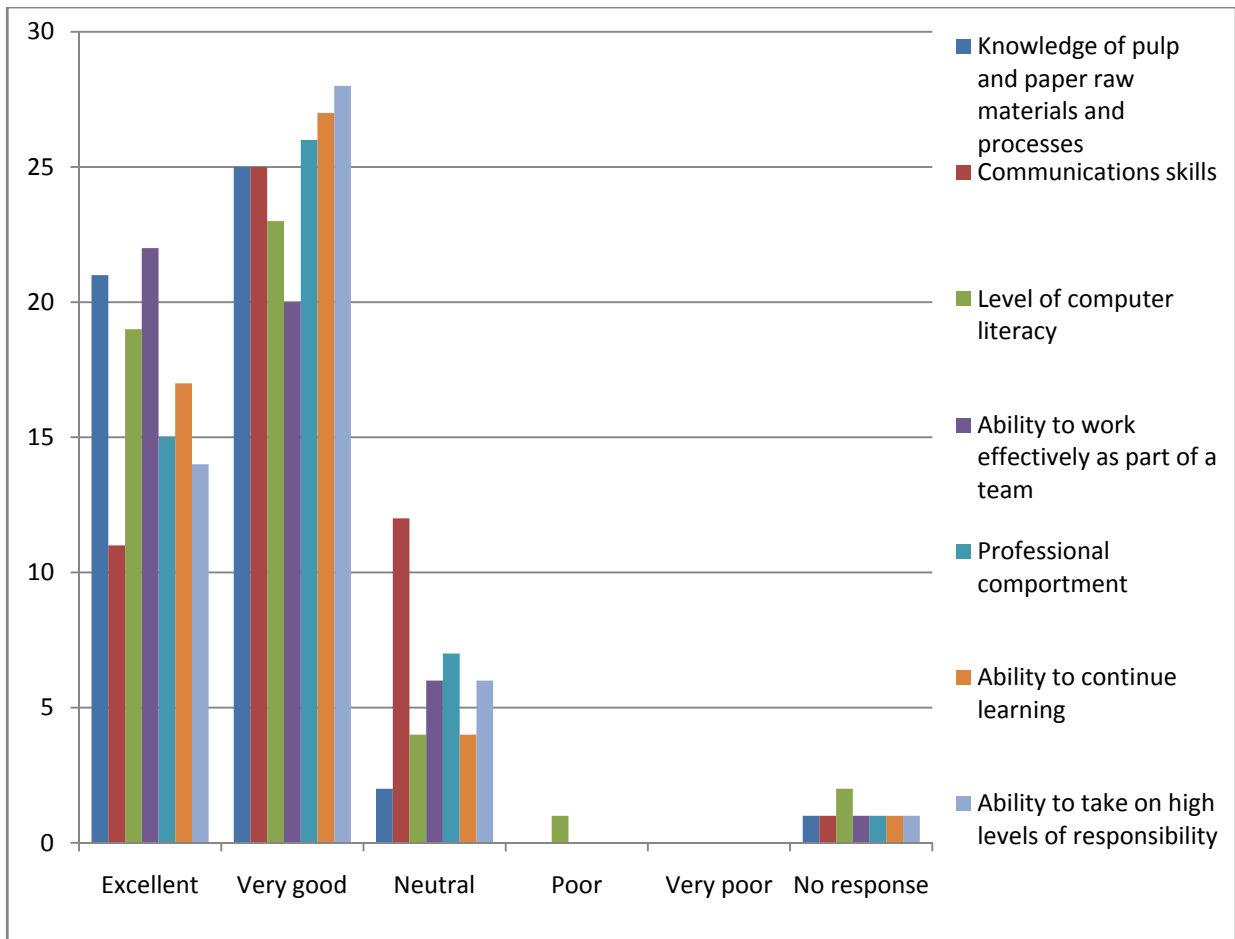


Figure 2-1. Industry survey, 2002

The alumni survey asked several questions that are pertinent to the current PEOs. This paper-based survey was sent to 389 alumni, and 189 responded. Of the 189 respondents, 179 worked in a paper-related field, and 131 supervised others as part of their job. Only 10 expressed dissatisfaction with their job. The results of some of the program-specific questions appear in Table 2-3. There was some concern about the responses on faculty quality and interaction. PSE faculty was rated as poor or very poor by 23 respondents. The quality of advising and the interaction with faculty outside of class was rated poor or very poor by 15 respondents. These results were discussed extensively by the faculty, and some faculty behaviors identified and addressed. The 2008 alumni survey shows improvement in both the interactions with faculty outside the classroom and the overall quality of the faculty. In addition, improvements in the academic advising and PSE courses are noted.

**Table 2-3. Alumni survey responses
% responding “Excellent” or “Very good”**

Please rate the following:	2002	2008
Academic advising in program	65	69
Mill visits and tours	90	87
Technical meetings and conferences	82	76
Quality of Paper Science courses	72	85
Quality of collateral courses	88	92
Quality of general degree courses	55	63
Quality of "co-op" experience	95	91
Interaction with faculty outside of the classroom	69	74
Quality of Paper Science faculty	64	87
Overall quality of preparation for career	79	86
Overall quality of Paper Science program	90	92