**Paper and Bioprocess Engineering**
**Assessment of Graduate Degree Programs**

Graduate degree programs in Paper & Bioprocess Engineering at SUNY ESF enable students to think critically and independently, comprehend the processes of science and effectively apply scientific principles and professional procedures, attain proficiency in current knowledge in their respective fields, develop technical competence and performance and demonstrate high ethical principles (see p.14, ***College Catalog***, (http://www.esf.edu/catalog/08-09catalog.pdf for detailed information). ESF offers two academic degrees at the graduate level, the Master of Science (M.S.) and the Doctor of Philosophy (Ph.D.) and three professional degrees, the Master of Landscape Architecture (M.L.A.), the Master of Forestry (M.F.) and the Master of Professional Studies (M.P.S.). A major professor is appointed for each graduate student and a Steering Committee provides academic guidance, assisting in the development of a Program of Study (Form 3B, specific to each degree; see http://www.esf.edu/graduate/graddegreq.htm for graduate policies and forms). More details of the graduate programs specific to PBE are available in the graduate handbook (2009 Spring Edition).

The M.S. degree is offered by each academic program. To complete the degree, students must investigate a problem that initiates, expands, or clarifies knowledge in the field and prepare and successfully defend a thesis based on this study. A minimum of 30 graduate credits of coursework and thesis work is required.

The Ph.D. degree is offered in the interdisciplinary program in Environmental Science and in each academic program except Environmental Studies and Landscape Architecture. To complete the degree students must pass a doctoral candidacy examination designed to determine the breadth and depth of knowledge in the student's field and assess understanding of the scientific process. Doctoral students conduct original research that generates new knowledge, and produce and defend a dissertation. The degree requires competence with at least one research tool such as statistics, computer science, or foreign language. A minimum of 60 graduate credits is required of

which 30 credits of master's degree credits may be applied with approval of the steering committee.

The M.L.A. degree is the first professional degree offered in Landscape Architecture and requires successful completion of at least 66 credit hours of which 42 must be graduate coursework. Areas of study include Community Design and Land Planning, Cultural Landscape and Conservation, and Landscape and Urban Ecology. The degree is fully accredited by the American Society of Landscape Architecture.

The M.F. degree is intended as a terminal degree offered by the graduate program in Forest and Natural Resources Management. It is designed for students whose undergraduate degree is not in a professional program in forestry. The degree requires 30 graduate credits and an integrative experience such as an internship or team project.

The M.P.S. degree is considered a terminal degree program and is offered by each academic program except Landscape Architecture. The degree requires successful completion of at least 30 graduate credits of which 24 must be coursework. The remainder consists of internship or project activity. Depending on the department offering the degree, an integrative experience, team project, and/or comprehensive exam may be required.

The following tables present the assessment plans for the over-arching learning outcomes for M.S., Ph.D. and M.P.S degree programs. M.F. and M.L.A. program assessments are developed by the sponsoring departments. Graduate program-specific learning outcomes assessments are developed and implemented by each program unit.