

# NATURAL RESOURCES

Itasca Community College/  
University of Minnesota

**Recreation Resource Management** emphasizes resource allocation, management and land use planning for recreation opportunities. The general objectives are to prepare students for careers as specialists in the comprehensive planning and management of land and water resources for recreation; to provide the background for participation in expanding community and government land resource-oriented recreation programs and for private consultant employment; and to prepare students for advanced studies in resource planning and management through forestry, agricultural economics, and other related fields.

**Urban Forestry** involves planning and managing vegetation and associated natural resources in and near urban communities -- along streets and in parks, greenbelts, and open spaces. Urban foresters help communities plan and design their urban forests, supervise tree selection and planting, design insect and disease protection programs, and provide related services. The major also offers a new track in Resource Based Tourism.

## ***Related Learning Experiences***

**Cloquet Forestry Session - Fisheries and Wildlife** -- Forest Resources, and Urban Forestry students have the opportunity to participate in a three-and-a-half-week outdoor field session, beginning about June 1 at Cloquet Forestry Center. Students may attend prior to the start of their junior year.

**Cloquet Forestry Session** -- Forest Resources students spend August before the senior year at the college's Cloquet Center near Duluth. This session offers field educational opportunities in silviculture, forest soils, remote sensing, forest resource inventory, field forest hydrology, forest recreation planning, harvesting and engineering, and techniques of wildlife management.

**Industry Tour** -- The Forest Products Department offers a one-week tour of lake-state industries during spring quarter break. This bus trip typically includes visits to 12 or 13 forest products manufacturing operations in central and northeastern Minnesota, northern and central Wisconsin, and the Upper Peninsula of Michigan.

## ***Career Opportunities***

Fisheries and Wildlife bachelor's degree graduates commonly find positions in county, state, and federal resource agencies ( e.g., State Department of Natural Resources, U.S. Fish and Wildlife Service), with some employment available in the private sector. Beginning positions usually involve population and habitat management for fish and wildlife species or environmental impact analysis.

Forest Products graduates work as process engineers in pulp and paper mills such as Blandin, quality control specialists, or managers of wood products operations. They also find jobs in wholesale or retail sales organizational as salespeople or technical field representatives.

Graduates of the Forest Resources program may become public or industrial forest land managers. As such, they may be managing large land areas for a variety of purposes including water, timber and wildlife.

Recreation Resource Management graduates typically find employment in the public sector at every level. Their careers most often involve recreation planning, the management of land for recreational uses, or the management of recreational users.

Urban Forestry graduates are principally employed by city government as well as state and federal forestry agencies, forestry consulting firms, tree service firms, and utility companies.

**(OVER)**

College of Natural Resources graduates are offered positions in business and industry, consulting firms, and conservation and public forestry agencies. Depending upon the major, baccalaureate degree graduates receive starting salaries ranging from \$22,000 to \$25,000 per year.

Only the minimum major course requirements are listed; students should consult the College of Natural Resources catalog for additional classes to complete their program. The following is a suggested sequence of courses; variations are possible.

			<u>Credits</u>
Biol	1201	General Biology I	4
Biol	1202	General Biology II	4
Chem	1201, 1202	General Chemistry I & II	8
CSci	1201	Beginning Computer Programming	3
Econ	2101	Macroeconomics	3
Econ	2102	Microeconomics	3
Engl	1101	Expository Writing	4
Engl	1113	Research Writing	3
Math	1121	Precalculus	4
Math	1105	Elementary Statistics	4
Phys	1101	Introductory Physics	4
Spch	1105	Fundamentals of Public Speaking	3

Additional requirements: 1 course in category C - Individual and Society (political science, psychology, sociology); 6 credits in category D - Literary and Artistic Expression. For categories, see UM General Education guidesheet or an ICC counselor.

**NOTE:** Students in Forest Resources who stay at Itasca two years will miss taking 4 courses. These courses can be made up at the College of Natural Resources, but you may have to attend the University an extra quarter or two. If you do not want to take the chance of attending the University extra quarters, you should transfer after one year.

### ***PROGRAMS OFFERED***

The Bachelor of Science (B.S.) degree is awarded to students who complete 120-128 credits and other requirements of the undergraduate curricula in the College of Natural Resources. Four-year degree programs are offered in the following areas:

**Fisheries and Wildlife** prepares students to function essentially as field ecologists, qualified to conduct or assist in biological studies and management programs of fisheries or wildlife and their habitats. Basic science and nonscience training provides the broad academic background necessary for the major in either fisheries or wildlife.

**Wood and Paper Science** deals with the manufacturing, marketing, utilization, and research development of wood-based materials ranging from laminated timbers to paper. Courses emphasize the chemical, physical, and mechanical properties of wood, as well as the newest technologies for converting it to its many final forms. Four specializations are available:

**Marketing** includes the sale, distribution, and market development of forest products. The curriculum provides a background in the nature and properties of wood.

**Production Management** is for students interested in industrial management positions associated with the production of wood products, such as lumber, plywood, particleboard, and furniture.

**Residential Building Science and Technology (RBST).** This program concentrates on materials and methods of designing structurally sound and energy-efficient homes.

**Paper Science and Engineering** provides in-depth training in mathematics, physics,

chemistry, and the science, technology, and production of wood and fiber products production.

**Forest Resources** prepares students for careers in the scientific management of forest lands and supporting or related fields. In addition to lower division courses and the Itasca and Cloquet sessions, students must complete a minimum of 20 credits in an area of emphasis:

**Forest Hydrology** is for students interested in hydrology and watershed resources management. The interdisciplinary coursework develops the skills needed to solve water resource problems.

**Forest Soils** is for students interested in careers as forest soil scientists, who are involved in land use, land management planning, and forest production.

**Management and Administration** is for students interested in administrative careers in public resource agencies or in the forest industry.

**Industrial Forest Management** is for students who wish to gain an understanding of the management of industrial forests.

**Resource Measurements and Information Systems** is for students with mathematics and computer skills who want to focus on subjects such as measurement, sampling, mathematical modeling, statistics, computer science, remote sensing, and data base management.

**Forest Harvesting** trains students for careers in logging engineering firms, forest products companies, and government agencies. Typical work includes planning and designing timber sales, supervising logging crews, designing and laying out roads, and managing wood procurement.

**Silviculture/Forest Biology** involves the biological aspects of forestry relating to forest land use and management decisions.

It is also possible for students to design an area of emphasis addressing their own individual interests.

### **The Minnesota Transfer Curriculum and Itasca's Associate in Arts Degree**

The public higher education colleges and universities in Minnesota have developed a common liberal education curriculum called the **Minnesota Transfer Curriculum**, which began Fall, 1995. Students who complete the Associate in Arts degree at Itasca Community College will have automatically met all Minnesota Transfer Curriculum requirements. Students desiring to complete the Minnesota Transfer Curriculum requirements and then transfer without the Associate in Arts degree may pick up a MNTC checksheet in the Counseling and Career Center. For questions regarding the Minnesota Transfer Curriculum, please see an ICC counselor.

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