

## HORTICULTURE

Horticulture is the science and art of producing, improving, marketing, and using fruits, vegetables, flowers, and ornamental plants. It differs from botany and other plant sciences in that horticulture incorporates both science and aesthetics. Horticulture is an art as old as the ancient gardens and a science as new as today's genetic engineering. Horticulture is an industry, profession, business, vocation and avocation. Production and consumption of high quality fruits and vegetables allows us to maintain a healthy, balanced daily diet. Flowers and ornamental plants enrich our homes and communities, and contribute to our sense of well-being. Horticulture impacts our lives on a daily basis by providing nutritious fruits and vegetables, offering visual enjoyment, and promoting recreational activities.

### The Program

The Department of Plant Sciences offers a four-year curriculum in horticulture leading to the Bachelor of Science degree. There are six horticulture options: horticulture science, landscape design, landscape management, production-business, sports and urban turfgrass management, and urban forestry and parks.

### Career Opportunities

**Production** – producers of horticultural food crops for fresh consumption or processing; nursery and greenhouse production of food and ornamental crops; field positions for processing, marketing and seed companies; and plant propagation/tissue culture specialists. Salaries range from \$35,000 - \$80,000

**Landscaping** – planners, designers and installers of residential, commercial, public and recreational landscapes (both exterior and interior), employment with nurseries, landscape management and maintenance firms or private consultants. Salaries range from \$35,000 - \$80,000

**Arborist or Urban Park Forester** – selection, planting and management of woody plants in urban environments. Salaries range from \$36,000 - \$80,000

**Park Management and Maintenance** – positions in national, state and local park systems, botanic gardens and arboreta

**Golf Course Superintendent** – professional manager who manages the labor, time, materials and financial resources needed to care for the turfgrass and landscaped grounds on a golf course. Starting as an assistant, it is possible for a graduate to become a full-fledged golf course superintendent in three to five years. Starting salaries range from \$28,000 to \$35,000, with the national average of head superintendents reaching more than \$80,000

**Sports Turf Management** – professional manager that is entrusted with the operation and management of sports fields and facilities. The average salary of a sports turf manager is about \$44,000. Sports fields include baseball, football, soccer, lacrosse, rugby, lawn bowling and cricket

**Lawn Care Operator** – professional manager responsible for the cultivation and care of the landscaping and grounds surrounding a business or building. Lawn care operators comprise the largest single group of potential career opportunities for the graduate with more than 6,000 companies in the United States servicing millions of American lawns at the residential, commercial and institutional levels. Salaries range from \$35,000 - \$80,000

**Facility Managers** – professional manager that maintains the buildings and grounds of an organization, directing staff and overseeing the upkeep of equipment and supplies. Facilities managers make sure the buildings and grounds are maintained, which entails daily and weekly reduction improvements and safety inspections

**Marketing** – positions in the retail/wholesale distribution of horticultural products and buying, selling and distribution of supplies and products used by the horticultural industries

**Industry** – management and sales positions in horticulture or allied firms for fertilizers, seed, food and ornamental crops, pesticides, equipment, processing and packaging

**Inspection** – field diagnosticians and inspectors for fresh and processed products in federal or private agencies

**Research** – positions at public and private institutions as technicians in field and laboratory research. Areas of research include horticultural plant breeding, pesticide evaluation, crop physiology, product testing and quality control, plant propagation and biotechnology

**Communication** – writers/editors for television, radio, magazines and newspapers

**Teaching and Extension** – extension personnel who assist growers, industry and the public through education and outreach

Graduates with master's degrees find positions in research, extension service and private industry. Teaching positions are available at community colleges, technical schools and other agriculture-related institutions.

They are also in demand for technical, supervisory and managerial positions in various horticultural industries. Graduates with doctoral degrees are qualified for teaching, research and extension positions at universities. They also may be employed for research positions by the USDA, government agencies, public and private botanical gardens and institutions, and various horticulture, breeding and biotechnology companies.

### Financial Aid and Scholarships

Loans, scholarships, grants and the work-study program are available through the Office of Financial Aid and Scholarships. Students requiring financial assistance may contact the Office of Financial Aid and Scholarships or One Stop.

The Department of Plant Sciences awards 15 horticultural scholarships for use during the freshman, sophomore, junior and senior years. The Horticulture and Forestry Club awards three scholarships each year as well. Additionally, scholarships are awarded to freshmen students by the College of Agriculture, Food Systems, and Natural Resources prior to enrollment. Scholarships also are available to students continuing a major in the College. Applications for all college and departmental scholarships may be applied for online between December 1 and March 1, annually. Also, many undergraduate students are employed part-time during the school year and full-time during the summer months as research or teaching assistants.

### Extra-Curricular Activities

There are two clubs associated with the horticulture major, the Horticulture & Forestry Club and Turf Club. Both clubs provide students with opportunities to meet with students who share a common interest, share information, connect with the commercial industry, gain real world experience and broaden their knowledge.

**Horticulture & Forestry Club** – an opportunity for students who enjoy plants to come together and participate in fun plant related events including: collegiate contest, field trips and networking opportunities. The club meets at least monthly. Collegiate contests and exhibits provide educational and leadership opportunities. Field trips are made annually, exposing students to a diversity of horticultural enterprises and potential job opportunities. Club members propagate, grow and sell flowers and ornamental plants to finance social events, field trips and scholarships.

**Turf Club** – the club organizes field trips, topic discussions and presentations by guest speakers. Other activities include attending regional and national turf conferences, community service and fundraising.

### High School Preparation

Students should take high school courses in the sciences, such as biology, chemistry, mathematics, physics and vocational agriculture. English, communication and familiarity with computers also are essential.

### Horticulture Plan of Study

Please note this is a sample plan of study and not an official curriculum. Actual student schedules for each semester will vary depending on start year, education goals, applicable transfer credit, and course availability. Students are encouraged to work with their academic advisor on a regular basis to review degree progress and customize an individual plan of study.

| <b>First Year</b>   |                |  |                |  |                |
|---|----------------|--|----------------|--|----------------|
| <b>Fall</b>   | <b>Credits</b> | <b>Spring</b>  |                | <b>Credits</b>                                       |                |
| PLSC 189 Skills for Academic Success  | 1              | ENGL 120 College Composition II  |                | 3  |                |
| ENGL 110 College Composition I  | 4              | BIOL 151 General Biology II  |                | 3  |                |
| MATH 103 College Algebra  | 3              | SOIL 210 Introduction to Soil Science  |                | 3  |                |
| BIOL 150 General Biology I  | 3              | CSCI 114 Microcomputer Packages  |                | 3  |                |
| Gen Ed Humanities & Fine Arts   | 3              | Gen Ed Humanities & Fine Arts  |                | 3  |                |
|   | <b>14</b>      |  |                | <b>15</b>  |                |
| <b>Second Year</b>  |                |  |                |  |                |
| <b>Fall</b>   | <b>Credits</b> | <b>Spring</b>  |                | <b>Credits</b>                                       |                |
| CHEM 121 & 121L General Chemistry I & General Chemistry I Laboratory  | 4              | CHEM 122 General Chemistry II  |                | 3  |                |
| PLSC 210 Horticulture Science   | 3              | ECON 105, 201, or 202 Elements of Economics, Principles of Microeconomics, or Principles of Macroeconomics |                | 3  |                |
| PLSC 211 Horticulture Science Lab   | 1              | Gen Ed Social & Behavioral Sciences  |                | 3  |                |
| PLSC 355 Woody Landscape Plants   | 3              | Electives  |                | 6  |                |
| Elective  | 5              |  |                |  |                |
|   | <b>16</b>      |  |                | <b>15</b>  |                |
| <b>Third Year</b>   |                |  |                |  |                |
| <b>Fall</b>   | <b>Credits</b> | <b>Spring</b>  | <b>Credits</b> | <b>Summer</b>  | <b>Credits</b> |
| PLSC 365 Herbaceous Landscape Plants  | 2              | PPTH 455 or 457 Plant Disease Management or Landscape Plant Pathology                                      | 3              | PLSC 496 or 494 Field Experience or Individual Study | 3              |
| PPTH 324 Introductory Plant Pathology   | 3              | PLSC 323 Principles of Weed Science  | 3              |  |                |
| ENGL 320, 321, or 324 Business and Professional Writing, Writing in the Technical Professions, or Writing in the Sciences | 3              | PLSC 380 Principles of Plant Physiology  | 3              |  |                |
| STAT 330  | 3              | Electives  | 6              |  |                |
| Electives   | 4              |  |                |  |                |
|   | <b>15</b>      |  | <b>15</b>      |  | <b>3</b>       |
| <b>Fourth Year</b>  |                |  |                |  |                |
| <b>Fall</b>   | <b>Credits</b> | <b>Spring</b>  |                | <b>Credits</b>                                       |                |
| ENT 350 General Entomology  | 3              | PLSC 457 Horticulture and Turfgrass Systems  |                | 3  |                |
| Electives   | 12             | PLSC 491 Seminar   |                | 4  |                |
|   |                | Electives  |                | 8  |                |
|   | <b>15</b>      |  |                | <b>15</b>  |                |
| <b>Total Credits: 123</b>   |                |  |                |  |                |

View NDSU equivalencies of transfer courses at: [www.ndsu.edu/transfer/equivalencies](http://www.ndsu.edu/transfer/equivalencies)

| <b>For Further Information</b>  |   |
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| <b>MAILING ADDRESS</b><br>Horticulture<br>NDSU Dept 7670<br>PO Box 6050<br>Fargo, ND 58108-6050 | <b>DEPT EMAIL</b><br><a href="mailto:ndsu.plantsciences@ndsu.edu">ndsu.plantsciences@ndsu.edu</a><br><b>DEPT PHONE</b><br>(701) 231-7971<br><b>DEPT WEBSITE</b><br><a href="http://www.ag.ndsu.edu/plantsciences/undergraduate/horticulture">www.ag.ndsu.edu/plantsciences/undergraduate/horticulture</a> |

This publication will be made available in alternative formats upon request. Contact the Office of Admission (701) 231-8643 or 800-488-NDSU or ND Telecommunications Relay Service 800-366-6888 (TTY) or 800-366-6889 (voice).