ECOLOGICAL MANAGEMENT OF TURF, LANDSCAPE AND URBAN HORTICULTURE OPTION

The turf, landscape, and urban horticulture industries are large and diverse, offering careers in golf course and athletic field management; landscape design, construction, management, and ecological restoration; conservation; park, botanical, and public garden management; urban forestry policy and management; research; and consulting.

Turf is the central feature of golf courses, sports fields, parks, cemeteries, and landscapes in cities and neighborhoods throughout the United States. Professional lawn care is a thriving industry in Oregon communities that is complimented by a vibrant sports turf and grass seed industry. This continually growing industry offers more career track jobs than any other area in horticulture.

Students in turf management become golf course superintendents, athletic field and park managers, and lawn care professionals. The program focuses on science, technology, ‘in-field’ hands-on experience, and decision making in real-world settings. Activities stress networking and exposure to multiple work environments to help students integrate quickly into the industry.

In the landscape and urban horticulture program, students will learn about sustainable landscape management, urban forestry, and the ecosystem services provided by the built environment, such as carbon sequestration and climate regulation, temperature modulation, waste decomposition and detoxification, purification of water and air, storm and rainwater management, crop pollination, pest and disease control, nutrient dispersal and cycling, seed dispersal, intellectual and spiritual inspiration, recreational experiences, and scientific discovery.

Landscape professionals design, build, and manage aesthetically pleasing, functional, and environmentally responsible natural spaces where we all live, work, and play. In recent years, the industry has expanded and rapidly become more sophisticated to meet the challenges of today's urban environment. Consequently, there is great demand for creative, motivated individuals who love the outdoors and enjoy working with plants, soil, water, nature, and people.

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**Plant Materials**

Select 1 of the following courses: 4

- **HORT 226** LANDSCAPE PLANT MATERIALS I: DECIDUOUS HARDWOODS AND CONIFERS
- **HORT 228** LANDSCAPE PLANT MATERIALS II: SPRING FLOWERING TREES AND SHRUBS

Select 1 additional course from the above or below courses: 2-4

- **BOT 313** PLANT STRUCTURE
- **BOT 321** PLANT SYSTEMATICS
- **BOT 323** *FLOWERING PLANTS OF THE WORLD
- **BOT 425** FLORA OF THE PACIFIC NORTHWEST
- **FES 241** DENDROLOGY

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<tr>
<td>HORT 251</td>
<td>TEMPERATE TREE FRUIT, BERRIES, GRAPES, AND NUTS</td>
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<td>HORT 255</td>
<td>HERBACEOUS ORNAMENTAL PLANT MATERIALS</td>
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<td>HORT 433/ CROP 433</td>
<td>SYSTEMATICS AND ADAPTATION OF VEGETABLE CROPS</td>
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<td>RNG 353</td>
<td>WILDLAND PLANT IDENTIFICATION</td>
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**Ecology**

- **HORT 318** ^APPLIED ECOLOGY OF MANAGED ECOSYSTEMS 3

**Technology**

Select 1 of the following courses: 3-4

- **AG 312** ENGINE THEORY AND OPERATION
- **FW 303** SURVEY OF GEOGRAPHIC INFORMATION SYSTEMS IN NATURAL RESOURCE
- **GEOG 360** GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY
- **HORT 380** SUSTAINABLE LANDSCAPE DESIGN
- **HORT 414/ CROP 414** PRECISION AGRICULTURE

**Horticultural Communication**

- **HORT 318** ^APPLIED ECOLOGY OF MANAGED ECOSYSTEMS 3
- **HORT 407** SEMINAR 1
- **HORT 411** HORTICULTURE BOOK CLUB 1

**Capstone**

Select 1 of the following courses: 4

- **FES 445/FW 445** ECOLOGICAL RESTORATION
- **HORT 418** GOLF COURSE MAINTENANCE
- **HORT 455/FES URBAN FOREST PLANNING, POLICY AND MANAGEMENT**
- **HORT 481** HORTICULTURE PRODUCTION CASE STUDIES

**Science and Technology of Managed Ecosystems**

- **GEOG 340** INTRODUCTION TO WATER SCIENCE AND POLICY 3
- **HORT 314** PRINCIPLES OF TURFGRASS MAINTENANCE 4
- **HORT 315** SUSTAINABLE LANDSCAPES: MAINTENANCE, CONSERVATION, RESTORE 4
- **HORT 358** LANDSCAPE CONSTRUCTION TECHNIQUES 4
- **HORT 360** IRRIGATION AND DRAINAGE 4

Select 2 of the following courses, minimum 6 credits: 6

- **BI 301** *HUMAN IMPACTS ON ECOSYSTEMS
- **BOT 488** ENVIRONMENTAL PHYSIOLOGY OF PLANTS
- **CROP 480/ HORT 480** CASE STUDIES IN CROPPING SYSTEMS MANAGEMENT
- **FES 445/FW 445** ECOLOGICAL RESTORATION
- **FW 462** ECOSYSTEM SERVICES
- **GEOG 450** LAND USE IN THE AMERICAN WEST
- **HORT 285** PERMACULTURE DESIGN AND THEORY: CERTIFICATE COURSE
- **HORT 319** RESTORATION HORTICULTURE
- **HORT 330/ ENT 330** *PLAGUES, PESTS, AND POLITICS
- **HORT 350/FES URBAN FORESTRY 300**
- **HORT 351** FLORICULTURE AND GREENHOUSE SYSTEMS
HORT 361  PLANT NURSERY SYSTEMS
HORT 405  READING AND CONFERENCE
HORT 414/ CROP 414  PRECISION AGRICULTURE
HORT 418  GOLF COURSE MAINTENANCE
HORT 444/ ENT 444  INSECT AGROECOLOGY
HORT 447/FES ARBORICULTURE 447
HORT 455/FES URBAN FOREST PLANNING, POLICY AND 455 MANAGEMENT
HORT 481  HORTICULTURE PRODUCTION CASE STUDIES
HORT 485  ADVANCED PERMACULTURE DESIGN TOOLS FOR CLIMATE RESILIENCE
HORT 499  SPECIAL TOPICS
RING 355  DESERT WATERSHED MANAGEMENT
RING 421  WILDLAND RESTORATION AND ECOLOGY
SOIL 316  NUTRIENT CYCLING IN AGROECOSYSTEMS
SOIL 455  BIOLOGY OF SOIL ECOSYSTEMS
SUS 304  *SUSTAINABILITY ASSESSMENT
WSE 111  RENEWABLE MATERIALS FOR A GREEN PLANET
WSE 475  ENVIRONMENTAL ASSESSMENT OF BUILDING MATERIALS

Business Management
Select 1 of the following courses: 3-4
AEC 211  AGRICULTURAL AND FOOD MANAGEMENT
AEC 221  AGRICULTURAL AND FOOD MARKETING
AEC 250  *INTRODUCTION TO ENVIRONMENTAL ECONOMICS AND POLICY
AEC 251  *INTRODUCTION TO AGRICULTURAL AND FOOD ECONOMICS
BA 215  FUNDAMENTALS OF ACCOUNTING
BA 260  INTRODUCTION TO ENTREPRENEURSHIP
BA 365  FAMILY BUSINESS MANAGEMENT
NMC 311  INTRODUCTION TO NONPROFIT MANAGEMENT

Ecology and Sustainability Ecosystems Courses 1

Contemporary Global Issues
Select 1 of the following courses: 3
AEC 351  *NATURAL RESOURCE ECONOMICS AND POLICY
AEC 352/ ECON 352  *ENVIRONMENTAL ECONOMICS AND POLICY
BI 301  *HUMAN IMPACTS ON ECOSYSTEMS
CROP 330  *WORLD FOOD CROPS
FES 365  *ISSUES IN NATURAL RESOURCES CONSERVATION
FW 325  *GLOBAL CRISIS IN RESOURCE ECOLOGY
GEOG 300  *SUSTAINABILITY FOR THE COMMON GOOD
GEOG 330  **GEOGRAPHY OF INTERNATIONAL DEVELOPMENT AND GLOBALIZATION
HORT 331/ ENT 331  *POLLINATORS IN PERIL
SUS 350  *SUSTAINABLE COMMUNITIES
WSE 470  *FORESTS, WOOD, AND CIVILIZATION

Z 349  *Biodiversity: Causes, Consequences, and Conservation

Science, Technology and Society
Select 1 of the following courses: 3-4
AGRI 411  *INTRODUCTION TO FOOD SYSTEMS: LOCAL TO GLOBAL
ANS 315  *CONTENTIOUS SOCIAL ISSUES IN ANIMAL AGRICULTURE
BI 348  *HUMAN ECOLOGY
BOT 324  *FUNGI IN SOCIETY
CH 374  *TECHNOLOGY, ENERGY, AND RISK
ENGR 350  *SUSTAINABLE ENGINEERING
ENGR 363  *ENERGY MATTERS
ENS 479  **ENVIRONMENTAL CASE STUDIES
FES 435/TOX 435  *GENES AND CHEMICALS IN AGRICULTURE: VALUE AND RISK
FES 477/NR 477  *AGROFORESTRY
FES 485  *CONSENSUS AND NATURAL RESOURCES
FST 421  *FOOD LAW
FW 470/HSTS 470  *ECOLOGY AND HISTORY: LANDSCAPES OF THE COLUMBIA BASIN
GEOG 300  *SUSTAINABILITY FOR THE COMMON GOOD
GEOG 340  *INTRODUCTION TO WATER SCIENCE AND POLICY
HEST 310  *INTRO TO COMMUNITY ENGAGEMENT AND COMMUNITY-BASED DESIGN
HORT 330/ ENT 300  *PLAGUES, PESTS, AND POLITICS
HST 481  *ENVIRONMENTAL HISTORY OF THE UNITED STATES
HSTS 421  *TECHNOLOGY AND CHANGE
NUTR 312  *ISSUES IN NUTRITION AND HEALTH
PH 313  *ENERGY ALTERNATIVES
PHL 325  *SCIENTIFIC REASONING
PS 476  *SCIENCE AND POLITICS
SOIL 395  *WORLD SOIL RESOURCES
SUS 304  *SUSTAINABILITY ASSESSMENT

Total Hours 55-60

1 Meets Synthesis requirements. Each course must be from a different department.

Option Code: 792