

COLLEGE OF NATURAL RESOURCES AND ENVIRONMENT  
Department of Forest Resources and Environmental Conservation  
Bachelor of Science in Forest Resources and Environmental Conservation  
Major: Forestry

For students graduating in calendar year 2022 and for student date of entry under UG Catalog 2020-2021

**Minimum credit hours required for graduation is 120. \*Prerequisites or enrollment restrictions may apply to some courses. Consult the undergraduate course catalog or the timetable of classes.**

**Degree Core Requirements (21 credits)**

- \_\_\_ FREC 2004 Forest Ecosystems (3 credits) **or** FREC 3314 Forest Ecology and Silvics\* (3 credits)<sup>1</sup>  
(*Forestry majors must take FREC 3314 Forest Ecology and Silvics.*)
- \_\_\_ FREC 2214 Introduction to Land and Field Measurements\* (3 credits)
- \_\_\_ FREC 2314 Forest Biology and Dendrology\* (2 credits)
- \_\_\_ FREC 2324 Dendrology Laboratory (1 credit)
- \_\_\_ FREC 2614 Human-Environment Systems\* (3 credits)
- \_\_\_ FREC 4014 (NR 4014) Natural Resources Economics\* (3 credits)
- \_\_\_ FREC 4114 Information Technologies for Natural Resources Management\* (3 credits)
- \_\_\_ FREC 4434 Natural Resource Policy\* (3 credits)

**Forestry Major Requirements (24 credits)**

- \_\_\_ CSES 3134 (ENSC 3134) Soils in the Landscape\* (3 credits)
- \_\_\_ FIW 2114 Principles of Fish and Wildlife Management (3 credits)
- \_\_\_ FREC 2514 Wildland Fire Ecology and Management\* (3 credits)
- \_\_\_ FREC 3214 Forest Biometrics\* (3 credits) (*Pathways 5 Advance Quantitative*)
- \_\_\_ FREC 3354 (HORT 3354) Trees in the Built Environment\* (3 credits)
- \_\_\_ FREC 3724 Forest Boundaries and Roads\* (3 credits)
- \_\_\_ FREC 4214 Forest Photogrammetry and Spatial Data Processing\* (3 credits)
- \_\_\_ FREC 4514 Forest and Tree Pests\* (3 credits)

**Forestry Track Requirements (26–34 credits)**

Students **must** customize their curriculum to complete one of the following forestry major tracks by completing courses listed under their chosen track, as shown below and on the following pages.

- \_\_\_ Forest Resource Management Track (28 credits)
- \_\_\_ Forest Operations and Business Track (34 credits)
- \_\_\_ Urban and Community Forestry Track (26 credits)

**Forest Resource Management Track (28 credits)**

- \_\_\_ ACIS 1004 Accounting Foundations **or** ACIS 2115 Principles of Accounting (3 credits)
- \_\_\_ CHEM 1035 General Chemistry\* (3 credits)
- \_\_\_ FREC 2414 Field Experiences in Forest Resources (2 credits)
- \_\_\_ FREC 3224 Forest Biometrics Lab\* (1 credit)
- \_\_\_ FREC 3324 Silviculture Principles and Applications\* (4 credits)
- \_\_\_ FREC 3544 Outdoor Recreation Planning and Management\* (3 credits)
- \_\_\_ FREC 3714 Forest Harvesting\* (3 credits)
- \_\_\_ FREC 3734 Forest Fiber Supply\* (3 credits) (*Pathways 1 Advance Discourse*)
- \_\_\_ FREC 4354 Forest Soil and Watershed Management\* (3 credits)
- \_\_\_ FREC 4444 Integrated Forest Management Practicum (3 credits) (*Pathways 6 Design*)

*Estimated Free Electives for Forest Resource Management Track: 9 - 11 credits<sup>2</sup>*

<sup>1</sup> Consult with your advisor regarding your forest ecology course selection. Forestry students must select FREC 3314, as it is a necessary prerequisite for other Forestry requirements.

<sup>2</sup> Free elective estimations are calculated utilizing available overlap between major/track requirements and Pathways requirements.

**Forest Operations and Business Track (34 credits)**

- \_\_\_ ACIS 1004 Accounting Foundations **or** ACIS 2115 Principles of Accounting (3 credits)
- \_\_\_ FREC 2414 Field Experiences in Forest Resources (2 credits)
- \_\_\_ FREC 3224 Forest Biometrics Lab\* (1 credit)
- \_\_\_ FREC 3324 Silviculture Principles and Applications\* (4 credits)
- \_\_\_ FREC 3714 Forest Harvesting\* (3 credits)
- \_\_\_ FREC 3734 Forest Fiber Supply\* (3 credits) (*Pathways 1 Advance Discourse*)
- \_\_\_ FREC 4444 Integrated Forest Management Practicum (3 credits) (*Pathways 6 Design*)
- \_\_\_ FREC 4714 Harvest Systems Evaluation\* (3 credits)

*Business Restricted Electives (12 credits – choose from below, substitutions possible with approval)*

- \_\_\_ AAEC 2104 Personal Financial Planning (3 credits)
- \_\_\_ AAEC 3454 (MGT 3454) Small Business Management and Entrepreneurship (3 credits)
- \_\_\_ AAEC 3504 Marketing Agricultural Products\* (3 credits)
- \_\_\_ AAEC 4424 Agricultural Financial Management\* (3 credits)
- \_\_\_ AAEC 4754 Real Estate Law\* (3 credits) **or** AAEC 3314 Environmental Law (3 credits)
- \_\_\_ AAEC 4764 Real Estate Appraisal (3 credits)
- \_\_\_ ACIS 2116 Principles of Accounting\* (3 credits)
- \_\_\_ ENGL 3764 Technical Writing\* **or** ENGL 3774 Business Writing\* (3 credits)
- \_\_\_ FIN 3054 Legal and Ethical Environment of Business\* (3 credits)
- \_\_\_ FIN 3104 Introduction to Finance\* (3 credits)
- \_\_\_ MKTG 3104 Marketing Management (3 credits)
- \_\_\_ SBIO 2614 Introduction to Forest Products and Marketing (3 credits)

*Estimated Free Electives for Forest Operations and Business Track: 3 - 5 credits<sup>3</sup>*

**Urban and Community Forestry Track (26 credits)**

- \_\_\_ CHEM 1035 General Chemistry\* (3 credits)
- \_\_\_ FREC 2254 Arboriculture Field Skills (1 credit)
- \_\_\_ FREC 3364 Environmental Silviculture\* (3 credits) (*Pathways 6 Design*)
- \_\_\_ FREC 3454 Trees in the Built Environment Lab\* (1 credit)
- \_\_\_ FREC 4454 Urban and Community Forestry\* (3 credits) (*Pathways 1 Advanced Discourse*)
- \_\_\_ HORT 3325 Woody Landscape Plants **or** HORT 3326 Woody Landscape Plants (3 credits)

*Applied Plant and Environmental Sciences Restricted Electives (6 credits – choose from courses below)*

- \_\_\_ CSES 3644 (ENSC 3644) Plants for Environmental Restoration\* (3 credits)
- \_\_\_ CSES 4774 (ENSC 4774) Reclamation of Drastically Disturbed Lands\* (3 credits)
- \_\_\_ ENT 4254 Insect Pest Management (3 credits)
- \_\_\_ FREC 4354 Forest Soil and Watershed Management\* (3 credits)
- \_\_\_ HORT 2134 (FREC 2134) Plants and Greenspaces in Urban Communities (3 credits)
- \_\_\_ LAR 1254 Environment and Natural Systems (3 credits)
- \_\_\_ PPWS 3754 Weeds that Shape Our World\* (3 credits)
- \_\_\_ PPWS 4104 Plant Pathology\* (3 credits)
- \_\_\_ PPWS 4604 Biological Invasions\* (4 credits)

*Policy, Planning, and Public Relations Restricted Electives (6 credits – choose from courses below)*

- \_\_\_ AAEC 3314 Environmental Law (3 credits)
- \_\_\_ FREC 3544 Outdoor Recreation Planning and Management\* (3 credits)
- \_\_\_ FREC 4554 (BSE/LAR/HORT/SPIA 4554) Creating the Ecological City (3 credits)
- \_\_\_ GEOG 3244 The U.S. City\* (3 credits)
- \_\_\_ LAR 4034 Evolution of the American Landscape (3 credits)
- \_\_\_ PR 2044 Principles of Public Relations (3 credits)
- \_\_\_ PSCI 3344 (UAP 3344) Global Environmental Issues\* (3 credits)
- \_\_\_ PSCI 3424 State and Local Government\* (3 credits)

<sup>3</sup> Free elective estimations are calculated utilizing available overlap between major/track requirements and Pathways requirements.



- \_\_\_\_\_ SPIA 2244 (GEOG 2244) Sustainable Urbanization (3 credits)
- \_\_\_\_\_ SPIA 2554 Collaborative Policy-Making and Planning (3 credits)
- \_\_\_\_\_ UAP 1024 Public Issues in an Urban Society (3 credits)
- \_\_\_\_\_ UAP 2014 Urbanization and Development (3 credits)
- \_\_\_\_\_ UAP 3434 (PSCI 3414) Public Administration\* (3 credits)
- \_\_\_\_\_ UAP 4344 Law of Critical Environmental Areas (3 credits)
- \_\_\_\_\_ UAP 4374 Land Use and Environment: Planning and Policy\* (3 credits)

*Estimated Free Electives for Urban and Community Forestry Track: 11 - 13 credits<sup>4</sup>*

### **Pathways to General Education Requirements (45 - 47 credits)**

#### **Pathways Concept 1: Discourse (9 credits)**

- \_\_\_\_\_ COMM 1015 Communication Skills **or** ENGL 1105 First-Year Writing (3 credits)
- \_\_\_\_\_ COMM 1016 Communication Skills **or** ENGL 1106 First-Year Writing (3 credits)
- \_\_\_\_\_ Advance Discourse requirement (3 credits) fulfilled by:
  - \_\_\_\_\_ FREC 3734 Forest Fiber Supply\* (3 credits) – Forest Resource Management Track, Forest Operations and Business Track
  - \_\_\_\_\_ FREC 4454 Urban and Community Forestry\* (3 credits) – Urban and Community Forestry Track

#### **Pathways Concept 2: Critical Thinking in the Humanities (6 credits)**

- \_\_\_\_\_ Concept 2 course: \_\_\_\_\_ (3 credits)
- \_\_\_\_\_ Concept 2 course: \_\_\_\_\_ (3 credits)

#### **Pathways Concept 3: Reasoning in the Social Sciences (6 credits)**

- \_\_\_\_\_ AAEC 1005 Econ of the Food & Fiber System **or** ECON 2005 Principles of Economics (3 credits)
- \_\_\_\_\_ AAEC 1006 Econ of the Food & Fiber System **or** ECON 2006 Principles of Economics (3 credits)

#### **Pathways Concept 4: Reasoning in the Natural Sciences (6 credits)**

- \_\_\_\_\_ BIOL 1105 Principles of Biology (3 credits)
- \_\_\_\_\_ BIOL 1106 Principles of Biology (3 credits)

#### **Pathways Concept 5: Quantitative and Computational Thinking (9 - 11 credits)**

- \_\_\_\_\_ MATH 1025 Elementary Calculus **or** MATH 1225 Calculus of a Single Variable (3-4 credits)
- \_\_\_\_\_ MATH 1026 Elementary Calculus **or** MATH 1226 Calculus of a Single Variable (3-4 credits)
- \_\_\_\_\_ Advance Quantitative and Computational Thinking requirement (3 credits) fulfilled by:
  - \_\_\_\_\_ FREC 3214 Forest Biometrics\* (3 credits) – All Three Forestry Major Tracks

#### **Pathways Concept 6: Critique and Practice in Design and the Arts (6 credits)**

- \_\_\_\_\_ Pathways Concept 6 Arts course: \_\_\_\_\_ (3 credits)
- \_\_\_\_\_ Design requirement (3 credits) fulfilled by:
  - \_\_\_\_\_ FREC 4444 Forest Management Practicum (3 credits) – Forest Resource Management Track, Forest Operations and Business Track
  - \_\_\_\_\_ FREC 3364 Environmental Silviculture\* (3 credits) – Urban and Community Forestry Track

#### **Pathways Concept 7: Critical Analysis of Identity and Equity in the United States (3 credits)**

- \_\_\_\_\_ Pathways Concept 7 course: \_\_\_\_\_ (3 credits)<sup>5</sup>

**Free electives** (additional credit hours to total at least 120, estimated 3 – 13 credits)<sup>6</sup>

<sup>4</sup> Free elective estimations are calculated utilizing available overlap between major/track requirements and Pathways requirements.

<sup>5</sup> A course taken to satisfy another Pathways concept that is listed within Pathways Concept 7 will satisfy the Concept 7 requirement simultaneously

<sup>6</sup> Free electives differ by track and are calculated utilizing available overlap between major/track requirements and Pathways requirements.

## FORESTRY NOTES

1. **Satisfactory Progress:** By the end of the semester in which the student has attempted 60 hours (including transfer, advanced placement, advanced standing, and credit by examination), "satisfactory progress" towards a B.S. degree in Forest Resources and Environmental Conservation will include the following minimum criteria:
  - Having an in-major and overall grade point average of at least 2.0
  - Passing at least 24 semester credits that apply to the Pathways to General Education
  - Passing the following courses, or their equivalents: BIOL 1105, BIOL 1106, and MATH 1025
2. **Foreign Language Requirement:** A sequence of two (2) foreign language courses is required for graduation unless two (2) high school units of the same foreign language or six (6) transfer credit hours of foreign language have been earned. These credits do not count toward graduation. See catalog section on "Graduation Requirements".
3. **Policy on Student Exchanges:** Studying overseas or at another U.S. university is a wonderful opportunity to enhance your education. However, planning for an exchange should begin at least 9 months prior to leaving. This will allow time to determine what substitutions, if any, will be allowed and to arrange your schedule at Virginia Tech to ensure that all requirements for graduation are met.
4. **In-major GPA Computation:** Includes all courses designated as FREC.
5. An in-major and overall GPA average of 2.0 is required for graduation.
6. In accordance with university guidelines, courses satisfying degree core requirements may not be double counted to satisfy other areas of a degree (e.g. Pathways to General Education).
7. \*Prerequisites: Some of the listed courses have prerequisites and some courses must be taken in sequence to satisfy prerequisites. Be sure to consult with the University Catalog or check with your advisor.