

## Forestry & Natural Resources Major Snapshot

### Department of Environmental Science, Policy & Management

---

Conserving and restoring the earth's natural resources requires broad knowledge and experience. The Forestry and Natural Resources major offers concentrations in *Forestry & Natural Sciences* or *Human Dimensions of Natural Resources*. Students in the program, regardless of concentration, have ample opportunity to acquire interdisciplinary skills in the ecology, stewardship, and management of ecosystems such as forests, woodlands, and grasslands. Within the program, students can choose to emphasize such topics as wildlife biology, water policy, fire science, ecosystem restoration, environmental justice, remote sensing and GIS, and rural sociology.

A minor in Forestry is available for students who are interested in learning about forestry and renewable resource management as an adjunct to their chosen fields. Students in many diverse majors such as zoology, business administration, and civil engineering may find this minor complementary to their professional career goals. For more information on the minor, please visit [http://nature.berkeley.edu/site/minoring\\_cnr.php](http://nature.berkeley.edu/site/minoring_cnr.php).

Student Affairs is located in 260 Mulford Hall. The academic advisor for FNR is available to answer your questions about the major. Students are encouraged to drop in weekdays between 9:00 – 12:00 and 1:00 to 4:00.

#### Research Opportunities ♦ Honors Program ♦ Forestry, Wildlife Management, & Other Careers

Students with a minimum 3.6 GPA may enroll in the College of Natural Resources Honors Program (H196) once they have reached upper division standing. To fulfill the program requirements, students design, conduct, and report on an individual research project working with a faculty sponsor. For more information, visit [http://nature.berkeley.edu/site/honors\\_program.php](http://nature.berkeley.edu/site/honors_program.php).

In addition to the Berkeley campus Undergraduate Research Apprenticeship Program (URAP), CNR students can also apply for the CNR Sponsored Projects for Undergraduate Research (SPUR). Visit [http://nature.berkeley.edu/site/undergraduate\\_research.php](http://nature.berkeley.edu/site/undergraduate_research.php) for details.

FNR graduates are well-prepared for graduate school and careers in environmental consulting, public agencies, non-profit conservation organizations, and private companies. Students also have the option of preparing for professional careers in forestry, wildlife, and range management. The FNR career snapshot is located at [http://nature.berkeley.edu/site/forms/oisa/fnr\\_career\\_snapshot.pdf](http://nature.berkeley.edu/site/forms/oisa/fnr_career_snapshot.pdf).

#### Getting a Degree

To earn a Bachelor of Science from U.C. Berkeley in Forestry & Natural Resources, students must fulfill unit and GPA requirements, university and campus requirements, college requirements, and major requirements. Please see the major advisor for more details about these requirements.

#### Unit and GPA Requirements

In order to graduate, students must complete a total of 120 units, 36 of which must be upper division units. Students must have at least a 2.0 cumulative GPA, and a 2.0 GPA in the courses required for the major.

#### University and Campus Requirements

- Entry Level Writing Requirement
- American History & Institutions
- American Cultures (if taken for a letter grade, this course may overlap with a major requirement)

#### College Requirements

- Two courses in Reading & Composition (8 units): R1A and R1B
- 15 upper division units must be completed in the College of Natural Resources (EEP, ES, ESPM, NST, PMB)

# Forestry & Natural Resources Major Requirements

## 120 units

<b>Lower Division Requirements for all FNR majors: (note: all courses must be taken for a letter grade)</b>	
<input type="checkbox"/> ESPM Environmental Sci Core: 1 from ESPM 2, ESPM 6, ESPM C10 (L&S C30V), <b>or</b> ESPM 15 (formerly ES 10) <input type="checkbox"/> ESPM Social Science Core: 1 course from ESPM C11 (L&S C30U), ESPM C12, ESPM 50AC <b>or</b> ESPM 60	
<input type="checkbox"/> One course (3-4 units) in Social & Behavioral Sciences <b>or</b> International Studies chosen from the "Seven Breadth" listing: <a href="http://ls-advise.berkeley.edu/requirements/lsreq.html#7breadth">http://ls-advise.berkeley.edu/requirements/lsreq.html#7breadth</a>	
<input type="checkbox"/> One course (3-4 units) in Arts & Literature, Historical Studies <b>or</b> Philosophy & Values chosen from the "Seven Breadth" listing: <a href="http://ls-advise.berkeley.edu/requirements/lsreq.html#7breadth">http://ls-advise.berkeley.edu/requirements/lsreq.html#7breadth</a>	
<b>Forestry &amp; Natural Sciences (FNS) Concentration Lower Division Requirements</b>	<b>Human Dimensions of Natural Resources (HDNR) Concentration Lower Division Requirements</b>
<input type="checkbox"/> <u>Chemistry (4 units)</u> : Chem 1A/1AL <input type="checkbox"/> <u>Biology (4 units)</u> : Biology 1B <input type="checkbox"/> <u>Calculus (6-8 units)</u> : Math 16A-B or Math 1A-B <input type="checkbox"/> <u>Statistics (4 units)</u> : Stat 2 or 20 <input type="checkbox"/> <u>Economics (4 units)</u> : EEP C1 (rec), Econ 1 or 2 <input type="checkbox"/> <u>Physical Science (4 units)</u> : EPS 50, Geog 1 or 40	<input type="checkbox"/> <u>Physical Science</u> : One course from Physical Sciences (see L&S "Seven Breadth" List) <input type="checkbox"/> <u>Biology (3-4 units)</u> : Biology 1B or 11 <input type="checkbox"/> <u>Mathematics (3-4 units)</u> : Math 16A, 1A, or 32 <input type="checkbox"/> <u>Statistics (4 units)</u> : Stat 2, 20, Poli Sci 3 or Soc 5 <input type="checkbox"/> <u>Economics (3-4 units)</u> : EEP C1 (rec), Econ 1 or 2, or UGBA 10

<b>Upper Division Requirements for all FNR majors:</b>
Select one: <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>8-week Forestry Field Program ("Summer Camp")</b> in the northern Sierra Nevada (11 units). Recommended before junior year. More info available at <a href="http://nature.berkeley.edu/espm/summercamp/">http://nature.berkeley.edu/espm/summercamp/</a>.               <ul style="list-style-type: none"> <li>• ESPM 105A: Sierra Nevada Ecology (4)</li> <li>• ESPM 105B: Forest Measurements (1)</li> <li>• ESPM 105C: Silviculture and Utilization (3)</li> <li>• ESPM 105D: Forest Management and Assessment (3)</li> </ul> </li> <li><input type="checkbox"/> <b>Fall Semester Course on the Polynesian Island of Moorea</b> (13 units). More information available at <a href="http://ib.berkeley.edu/moorea">http://ib.berkeley.edu/moorea</a> <ul style="list-style-type: none"> <li>• ESPM C107: Biology &amp; Geomorphology of Tropical Islands</li> </ul> </li> </ul>

<b>Core Courses:</b> <input type="checkbox"/> ESPM 102A: Terrestrial Resource Ecology (4) F <input type="checkbox"/> ESPM 102C: Resource Management (4) Sp <input type="checkbox"/> ESPM 102B/L: Natural Resource Sampling (2/2) F <input type="checkbox"/> ESPM 102D: Resource & Environ Policy (4) Sp <input type="checkbox"/> ESPM 72: Geographic Information Systems (3) Sp
--

<b>Restricted Electives by Concentration (6 courses):</b>	
<b>FNS Restricted Electives:</b> The FNS Concentration has two specializations for the restricted elective requirement: Professional Forestry or Natural Sciences.  <b>PROFESSIONAL FORESTRY SPECIALIZATION:</b> ESPM 108A: Trees-Taxonomy, Growth & Structures (3) F ESPM 134: Fire, Insects, and Diseases in Forest Ecosystems (3) Sp ESPM 182: Forest Operations Management (3) F ESPM 183: Forest Ecosystem Management (4) Sp ESPM 185: Applied Forest Ecology (4) F  Plus one additional course from one of the following subject categories: <b>PE</b> or <b>MM</b> .	<b>HDNR Restricted Electives:</b> Select six courses from four subject categories, one from each category plus two from anywhere: <ul style="list-style-type: none"> <li>(a) Ecology (<b>E</b>)</li> <li>(b) Physical Environment (<b>PE</b>)</li> <li>(c) Monitoring &amp; Measurement (<b>MM</b>)</li> <li>(d) Management (<b>MP</b>)</li> </ul>
<b>NATURAL SCIENCES SPECIALIZATION:</b> Two courses each from both the <b>E</b> and the <b>PE</b> subject categories, plus one additional course from each of the following: <b>MM</b> and <b>MP</b> .	

# Forestry & Natural Resources Major Requirements

## 120 units

Subject Categories	
Ecology (E)	Physical Environment (PE)
<p>ESPM C103: Principles of Conservation Biology                      ESPM 106: American Wildlife: Identification and Conservation                      ESPM 108A: Trees: Taxonomy, Growth &amp; Structures                      ESPM 108B: Forest Genetics                      ESPM 111: Ecosystem Ecology                      ESPM 112: Microbial Ecology                      ESPM 113: Insect Ecology                      ESPM 114: Wildlife Ecology                      ESPM 115B: Biology of Aquatic Insects                      ESPM 115C: Fish Ecology                      ESPM 116A: Forest Ecology                      ESPM 116B: Range Ecology, Improvements, &amp; Management                      ESPM 116C: Tropical Forest Ecology                      ESPM 134: Fire, Insects, &amp; Diseases in Forest Ecosystems                      ESPM 135: Biological Control of Pests                      ESPM 187: Restoration Ecology                      IB 102: Introduction to California Plant Life                      IB 102LF: Introduction to California Plant Life with Lab                      IB 153: Ecology                      IB 154: Plant Ecology                      IB 157LF: Ecosystems of California</p>	<p>ESPM 120: Soil Characteristics                      ESPM 121: Development and Classification of Soils                      ESPM C128: Chemistry of Soils                      ESPM C129: Biometeorology                      EPS 117: Geomorphology                      GEOG 140A: Physical Landscapes: Process and Form</p>
Monitoring & Measurement (MM)	Management & Policy (MP)
<p>ESPM 172: Forest Photogrammetry and Photo Interpretation                      ESPM 174: Design and Analysis of Ecological Research                      ANTH 169A: Data Analysis and Computational Methods                      ANTH 169B: Research Theory &amp; Methods in Socio-Cultural Anthropology                      ARCH 110: Social and Cultural Factors in Design                      EPS C120: Analysis of Environmental Data                      GEOG 187: Advanced Cartographic Methods: GIS for Cartographers                      LD ARCH 110: Ecological Analysis                      LD ARCH C188: Geographic Information Systems</p>	<p>ESPM 155: Sociology of Natural Resources                      ESPM 165: International Rural Development Policy                      ESPM 168: Political Ecology                      ESPM 169: International Environmental Politics                      ESPM 181A: Wildland Fire Science                      ESPM 182: Forest Operations Management                      ESPM 183: Forest Ecosystem Management                      ESPM 184: Agroforestry Systems                      ESPM 185: Applied Forest Ecology                      ESPM 186: Management and Conservation of Grassland and Woodlands                      ESPM 188: Case Histories in Wildlife Management                      CY PLAN 112A: The Idea of Planning</p>

# Forestry & Natural Resources Major Requirements

## 120 units

### Suggested Schedule for Upper Division Requirements

#### Forestry and Natural Sciences Concentration: Professional Forestry Specialization

##### **Summer Session (preceding Junior year):**

Forestry Field Program

- ESPM 105A (4)
- ESPM 105B (1)
- ESPM 105C (3)
- ESPM 105D (3)

##### **Junior Year**

###### Fall Semester

- ESPM 102A (4)
- ESPM 102B/BL (2/2)
- ESPM 108A (3)
- Electives (4)\*

###### Spring Semester

- ESPM 72 (3)
- ESPM 102C (4)
- ESPM 102D (4)
- ESPM 134 (3)

##### **Senior Year**

###### Fall Semester

- ESPM 182 (3)\*\*
- ESPM 185 (4)
- Electives (7)\*

###### Spring Semester

- ESPM 183 (4)
- Electives (11)\*

#### Forestry and Natural Sciences Concentration: Natural Sciences Specialization Human Dimensions of Natural Resources Concentration

##### **Summer Session (preceding Junior year):**

Forestry Field Program

- ESPM 105A (4)
- ESPM 105B (1)
- ESPM 105C (3)
- ESPM 105D (3)

##### **Junior Year**

###### Fall Semester

- ESPM 102A (4)
- ESPM 102B/BL (2/2)
- Electives (7)\*

###### Spring Semester

- ESPM 72 (3)
- ESPM 102C (4)
- ESPM 102D (4)
- Electives (4)

##### **Senior Year**

###### Fall Semester

- Electives (15)\*

###### Spring Semester

- Electives (15)\*

\*Electives should also include completion of the specialization requirements of the degree.

\*\* ESPM 182 is offered fall semester only during even numbered years.