What’s the Difference Between the B.A. and B.S. Degree in ES?  

If you’re thinking about pursuing Environmental Studies (ES) at UC Santa Barbara the first important decision you must make is choosing which degree to pursue, the Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) in Environmental Studies. While both majors are similar in design and stress the importance of understanding the complex interrelationships between the humanities, social sciences, and natural science disciplines, having two-degree options allows students maximum flexibility to choose a major that best fits their environmental interests and long-term goals. In this document we provide a detailed comparison of the academic requirements of the B.A. and B.S. major so one can understand the differences and can make an educated decision. Given your decision will also be based on what you want to do after graduation we thought it might be helpful to also highlight just a few example career paths each degree might lead to. Just remember, no matter which major you choose, your decision should be based on what you believe will ultimately make you happy.

Simply put, the B.A. degree in ES is the more interdisciplinary major, requiring a swath of introductory courses in the humanities, social, physical, and natural sciences. It stresses the importance of comprehending basic social, cultural, and scientific theories and understanding how they interact with one another and play a part of every environmental issues. While this degree will make one science literate, the degree offers maximum flexibility to select ES electives and outside concentration courses from just about every academic discipline at UCSB, including: arts, policy, culture, languages, humanities, and economics to name just a few.

The goal of the B.S. degree in ES is to train students to become proficient in the natural and physical sciences while still being aware of and understand the important role social and cultural influences have on addressing today’s environmental problems. The major curricular differences from the ES B.A. degree are an increased number of chemistry, calculus, biology, and physics courses required in the lower-division and the majority of ES electives and the outside concentration requirements are focused on the physical and natural science disciplines. This is done to enhance the B.S. student’s ability to apply scientific concepts in solving environmental problems. Please see the other side for a comparison of the B.A. vs. B.S. degree requirements.

What are the general employment differences between B.A. and B.S. majors?

Employment options vary widely depending on individual coursework taken by each student. However, as some career fields are heavily dependent on a strong scientific background those who pursue the B.S. degree would be more qualified for certain scientific/technical opportunities. B.S. majors tend to enter fields where the use of science is instrumental and experience with field and laboratory techniques is preferred. B.A. majors often develop a higher degree of writing proficiency and general communication skills and pursue opportunities dealing with interdisciplinary social, political, and economic issues such as planning and law. Below are just a few example careers one might pursue based on the ES degree chosen. PLEASE NOTE: This list is an overall generalization. Because there’s a lot of overlap between the two ES degrees many ES B.A. alumni have successfully secured “science” jobs and B.S. grads have become lawyers, planners, and teachers.

<table>
<thead>
<tr>
<th>B.A. Degree</th>
<th>Both</th>
<th>B.S. Degree</th>
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<tbody>
<tr>
<td>-- Urban/Regional Planning</td>
<td>-- Environmental Education</td>
<td>-- Pollution Monitoring, Control and Prevention</td>
</tr>
<tr>
<td>-- Green Business</td>
<td>-- Environmental Policy</td>
<td>-- Waste Management Specialist</td>
</tr>
<tr>
<td>-- Environmental Law</td>
<td>-- Sustainable Agriculture</td>
<td>-- Environmental Toxicology/Health</td>
</tr>
<tr>
<td>-- Non-government Organizing</td>
<td>-- Environmental Consulting</td>
<td>-- Field Scientist/Technician</td>
</tr>
<tr>
<td>-- Energy Consultant</td>
<td>-- Environmental Health and Safety Management</td>
<td>-- Conservation/Restoration Biology</td>
</tr>
<tr>
<td>-- Environmental Justice</td>
<td>-- Local/State/National</td>
<td>-- Renewable Energy Designer</td>
</tr>
<tr>
<td>Communication Specialist</td>
<td>-- Government</td>
<td>-- Natural Resource Management</td>
</tr>
<tr>
<td>-- Sustainability Management</td>
<td>-- Computing and Information Technologies</td>
<td>-- Environmental Engineering</td>
</tr>
<tr>
<td>-- Environmental Economist</td>
<td>-- Information Technologies</td>
<td>-- Soil Scientist</td>
</tr>
<tr>
<td>-- Parks/Recreation Management</td>
<td>-- Environmental Activism</td>
<td>-- Wildlife Biologist/Management</td>
</tr>
<tr>
<td>-- Waste Management</td>
<td>-- Landscape Designer/Architect</td>
<td>-- Environmental Risk Assessment</td>
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<tr>
<td>-- Environmental Historian</td>
<td></td>
<td>-- Air Quality Specialist</td>
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</tbody>
</table>
## Environmental Studies Major Requirements: B.A. vs. B.S.

### Lower-Division for the Major (1st and 2nd years)

<table>
<thead>
<tr>
<th>Required Courses for Both B.A. and B.S.</th>
<th>UCSB Course(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Four</strong> introductory courses in Environmental Studies</td>
<td>Envs 1, 2, 3 and Envs 40</td>
</tr>
<tr>
<td><strong>One</strong> intro micro, macro, or general/environmental Economics</td>
<td>Econ 1 or 2 or 9 or Envs 30</td>
</tr>
<tr>
<td><strong>One</strong> general or physical Geography or Earth Science</td>
<td>Geog 3 or 4 or Earth Sci. 2 or 4 or 20</td>
</tr>
<tr>
<td><strong>One</strong> introductory Statistics</td>
<td>Pstat 5A or 5LS or Econ 5</td>
</tr>
<tr>
<td><strong>One</strong> introductory Ethics &amp; Justice</td>
<td>Envs 70 or Blkst 4 or Femst 50 or Linguistics 50 or Phil 4 or Pols 1</td>
</tr>
</tbody>
</table>

### Different Lower-Division Requirements: B.A. vs. B.S.

<table>
<thead>
<tr>
<th>Culture &amp; Society</th>
<th>B.A.</th>
<th>B.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>One</strong> course from broad list of options</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>One</strong> course from list of options</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy &amp; Politics</th>
<th>B.A.</th>
<th>B.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>One</strong> course from list of options</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math (calculus)</th>
<th>B.A.</th>
<th>B.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Two</strong> quarters: Math 34A or 2A or 3A and Math 34B or 2B or 3B or Envs 25 (Quantitative Thinking in ES)</td>
<td></td>
<td>Two quarters of Calculus w/applications: Math 3A-B (or 2A-2B)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biology and Ecology</th>
<th>B.A.</th>
<th>B.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>One or Two</strong> courses of intro Biology/Ecology: Envs 60 or MCDB 1A-1LL and EEMB 2</td>
<td></td>
<td>Four courses of fundamental Biology w/2 labs: MCDB 1A-1B-1LL and EEMB 2-3-2LL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemistry</th>
<th>B.A.</th>
<th>B.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Two</strong> courses + <strong>One</strong> lab: Chem 1A-AL and 1B or Envs 15A and 15B-BL (Env Chem series)</td>
<td></td>
<td>Three courses of Intro Chemistry w/labs: Chem 1A-AL, 1B-BL, 1C-CL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physics</th>
<th>B.A.</th>
<th>B.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>None</strong></td>
<td></td>
<td>Three courses of introductory Physics: Phys 6A-AL, 6B-BL, 6C-CL or 7A, 7B, 7C-CL</td>
</tr>
</tbody>
</table>

**Total Lower-Division Units = 61 to 68.5**

### Upper – Division for the Major (3rd and 4th years)

<table>
<thead>
<tr>
<th>Area</th>
<th>Bachelor of Arts (B.A.)</th>
<th>Bachelor of Science (B.S.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>13 units of Required Upper-division ES courses: ENVS 190 (one unit) and one course from each of three clusters of ES courses.</td>
<td>17-18 units of Required Upper-division ES courses: ENVS 190 (one unit), and one course from each of three clusters of ES courses, and an additional upper-division statistics, data science, or modeling course.</td>
</tr>
</tbody>
</table>
| B    | 28 Upper Division ES Elective units: Any Environmental Studies courses #100-199 not used to satisfy Area A for a total of 28 units. | 32 Upper Division ES Elective units from two sections: 
- B-1: 20 UD ES units which must be taken from a list of environmental “science” courses (see major sheet) 
- B-2: 12 units from any ES course #100-199 not already used to satisfy the 20 units in B-1 or Area A |
| C    | 16 Unit Outside Concentration:
- Complete any 16 upper-division units from any one College of L&S department or program (double major or official minor will satisfy this area).
- **OR**
- Choose an interdisciplinary concentration of courses from more than one department forming a coherent environmental emphasis of their choice. Students can use courses from any department/programs or abroad. | 16 Unit Outside Concentration:
- Complete any 16 upper-division units from one of the following STEM departments (dbl. mjr. or minor o.k.): Brain Science, Chemistry, EEMB and/or MCDB (bio), Geography, Earth Sci., Math, Statistics, or Physics.
- **OR**
- Choose an interdisciplinary concentration of courses from one or more of the departments listed above, forming a coherent environmental emphasis of choice. |

**Total Upper-Division Units = 57**

**By petition, upper-division Study Abroad and/or Environmental Field Studies units may be transferred and applied to satisfy part or the entire Outside Concentration. Up to 12 abroad units may also apply to the Area B Electives.**

**Total Upper-Division Units = 65 to 66**
Environmental Studies, UCSB

BACHELOR OF ARTS (B.A.) WORKSHEET 2023-24

LOWER-DIVISION / PREPARATION FOR MAJOR (1st and 2nd years)

A. ES REQUIRED COURSES (13 UNITS)

Environmental Studies 190  (1 unit, P/NP only, offered F,W,S qtrs)*
One course from each cluster of courses below with no more than one additional course from each applying to Area B:
1. Ecosystems & Society:  Envst 101, 130C, 149 or 193GC
2. Energy, Water, Climate: Envst 115 or 117 or 163A
3. Built Environment: Envst 116 or 135A or 155

B. ES ELECTIVES (28 UNITS)

Any upper-division ES courses (#100-199) not used in Area A
No more than 8 units combined and 4 units each from Env. St. 192, 194, 199, and 199RA may apply. Max 12 UCEAP units may apply by petition.

ES Elective Courses  | Units
1. ____________________________ | ________
2. ____________________________ | ________
3. ____________________________ | ________
4. ____________________________ | ________
5. ____________________________ | ________
6. ____________________________ | ________
7. ____________________________ | ________

Total = 28

C. OUTSIDE CONCENTRATION (16 UNITS)

There are 2 options for the Outside Concentration:

1) Single department: Complete any 16 upper-division units from any one UCSB department or program and they will automatically apply. Completion of a double major will automatically satisfy this area as will an official minor as long as 16 UD units don't overlap with Areas A or B.

OR

2) Interdisciplinary emphasis: Combination of 16 upper-division units from more than one department or program outside ES may be used to create a concentration of study as long as they form a coherent focus or emphasis. A student pursuing this option must submit a Request to Petition Degree Requirements form to ES justifying how courses taken relate to each other and one's desired emphasis. Petition forms are available from the ES website: https://es.ucsb.edu/degrees

A list of some example environmental emphases/concentrations one might use is available from the ES Advisors or at: https://www.es.ucsb.edu/advising

NOTE: Study Abroad or Environmental Field Studies units may be used to satisfy part or all of Area C. Units earned must be UC transferable, upper-division level, and relate to a student's chosen emphasis using either option 1 or 2 above. A Request to Petition Degree Requirements must be approved by the ES Program before units will be accepted. See an ES Academic Advisor or ES website for additional info: https://www.es.ucsb.edu/advising

NOTE: All courses, including cross-listed (either version), may apply to one area only in any part of the major. Courses taken to fulfill any major requirement must be taken for a letter grade unless only offered P/NP.

* Denotes specific quarter a course is to be offered; accurate for current academic year ONLY & subject to change year to year

>>> See the other side for more info <<<
Environmental Studies, UCSB

BACHELOR OF Science (B.S.) WORKSHEET 2023-24

LOWER-DIVISION / PREPARATION FOR MAJOR (1st and 2nd years)

Advanced Placement (AP), International Baccalaureate (IB) and Transfer credit may be substituted for Prep for Major requirements!

Envst 40 (P, W S qtrs)*

Culture, Society, Policy & Politics:...

Chemistry 1A/AL

Environ. Sci. 193DS, 164 (193SW); Geog. 172;

Chemistry 1B/BL

EEMB 146, 179; and PSTAT 120A (Math 4A required)

Chemistry 1C/CL

One course from: Envst 193DS, 164 (193SW); Geog. 172;

Earth Sci. 2 or 4

or Hist. 5 or 7 or

or 20 or Geog. 3 or 4

or Poli. Sci. 6 or 7 or 12

or Psychology 1

or Relig. St. 1 or 14

or Sociology 1

Physical Earth Sci.:...

Physics 6A/AL

Math 3A or 2A

Physics 6B/BL

Math 3B or 2B

Physics 6C/CL

PSTAT 5A or 5LS

Physics 7A

or Econ 5

Physics 7B

(Or Comm. 87, Poli. Sci 15,

Physics 7C + L

or Psy. 10B by petition)

* Phy. 1, 2, 3, 3L can apply

Ethics & Justice:...

Economics:

Envst 70 (W qtr)* or

Environ. Sci. 193DS, 193EB

or Black St. 4 or

or Economics 1 or 2 or 9

Fem. St. 50 or Ling. 50

Econ. 30 (F qtr)* or

or Phil. 4 or Pol. Sci. 1

Econ. 120A-B, 121, 128

Econ. 1 or 2 or 9

Environmental Studies 190 (1 unit, P/NP, offered F & S qtrs)*

One course from: Envst 193DS, 164 (193SW); Geog. 172;

1. Ecosystems & Society: Envst 101 or 130C or 149 or 193GC

EEMB 146, 179; and PSTAT 120A (Math 4A required)

2. Energy, Water, Climate: Envst 115 or 117 or 163A

One course from each cluster of courses below with no more than

3. Built Environment: Envst 116 or 135A or 155

one additional course from each applying to Area B:

Section B-1:

1. Ecosystems & Society: Envst 101 or 130C or 149 or 193GC


* denotes cross-listed course w/another dept.

2. Energy, Water, Climate: Envst 115 or 117 or 163A

Courses

3. Built Environment: Envst 116 or 135A or 155

Units

Section B-2: Any 12 UD units of ES courses (#100-199)

No more than 8 units combined and 4 units each

from Env. St. 192, 194, 199, and 199RA may apply.

Total = 32

1.

2.

3.

4.

Total = 16

Section B-2: Any 12 UD units of ES courses (#100-199)

No more than 8 units combined and 4 units each

from Env. St. 192, 194, 199, and 199RA may apply.

Total = 32

1.

2.

3.

4.

Total = 16

NOTE: All courses, including cross-listed (either version), may apply to one area only in any part of the major.

Courses taken to fulfill any major requirement must be taken for a letter grade unless only offered P/NP.

B. ES ELECTIVES (32 UNITS)

Upper-Division (3rd and 4th years)

C. OUTSIDE CONCENTRATION (16 UNITS)

There are 2 options for the Outside Concentration:

1) Single department: Complete any 16 upper-division units from any one of the following STEM departments:

Chemistry & Biochemistry, EEMB and/or MCD (Bio), Earth Sciences, Geography (only courses that apply to the B.S. Physical Geog. major), Math, Statistics, Physics, or Psychological & Brain Sciences. Completion of a double major or minor from the above departments will satisfy this area. Spatial Studies minors must consult an ES Advisor first to assure proper STEM course selection. If pursuing an official minor make sure 16 units don't overlap with Areas A or B.

OR

2) Interdisciplinary emphasis: Combination of 16 upper-division units from more than one department listed above may be used to create a concentration of study as long as they form a coherent focus or emphasis. A student pursuing this option must submit a Request to Petition Degree Requirements to the ES Program justifying how proposed courses relate to each other and the desired emphasis. Petition forms are available from the ES website: https://es.ucsb.edu/degrerequirements

A list of some example environmental emphases/concentrations one might use is available from the ES website at:

https://www.es.ucsb.edu/degrees

NOTE: Study Abroad or Environmental Field Studies

units may be used to satisfy part or all of Area C using either option 1 or 2 above. Units earned must be UC transferable, upper-division, and relate to a student's chosen emphasis. A Request to Petition Degree Requirements must be approved by Environmental Studies before units will be accepted. See an ES Academic Advisor or the ES website for additional info:

https://www.es.ucsb.edu/advising

* Denotes specific quarter a course is to be offered; accurate for current academic year ONLY & subject to change year to year

--- See the other side for more info ---