

# What's the Difference Between the BA and BS Degree in ES?

If you're thinking about declaring a degree in Environmental Studies (ES) the first important decision you will have to make is choosing which major to pursue, the Bachelor of Arts (B.A.) or Bachelor of Science (B.S.). While both majors are similar in they stress the importance of understanding the interrelationships between the humanities, social sciences, and natural science disciplines, the two degree option allows students to choose a major that will most appropriately fit their environmental interests and goals. No matter which major you choose your decision should be based on what you believe will ultimately make you happy.

Given your decision will most likely be based on what you want to do after graduation, we thought it might be helpful to provide a comparison of the academic requirements of the B.A. and B.S. major in ES as well as highlight some of the possible career paths each degree might lead to.

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 an equal part of every environmental issue. While this degree will make one science literate, the degree offers maximum flexibility to select ES electives and an outside concentration from a broad range of disciplines.

The goal of the **B.S. degree in ES** is to train students to become proficient in the natural and physical sciences while still aware of the important role social and cultural influences have on addressing today's environmental problems. The major curricular differences from the ES B.A. degree is the increased amount of chemistry, calculus, biology and physics courses that are required. The majority of ES electives, as well as the outside concentration, are restricted to physical and natural science disciplines in order to enhance one's understanding of the sciences and the role they play 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 BA and BS majors?**

Employment options vary widely depending on individual coursework taken by each student. However, given that some career fields are heavily dependent on a strong scientific background, those who pursue the B.S. degree tend to 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 basic laboratory techniques is preferred. B.A. majors often pursue opportunities that deal largely with interdisciplinary social, political, and economic issues such as planning and law. These students often develop a higher degree of writing proficiency and general communication skills. Below are some example career fields one might pursue based on the ES degree chosen:

<b>BA Degree</b>	<b>Both</b>	<b>BS Degree</b>
-- Urban/Regional Planning	-- Environmental Education	-- Pollution Monitoring, Control and Prevention
-- Green Business	-- Environmental Policy	-- Waste Management Specialist
-- Environmental Law	-- Sustainable Agriculture	-- Environmental Toxicology/Health
-- Non-government Organizing	-- Environmental Consulting	-- Field Scientist/Technician
-- Energy Consultant	-- Environmental Health and Safety Management	-- Conservation/Restoration Biology
-- Environmental Justice	-- Local/State/National Government	-- Renewable Energy Designer/Professional
-- Environmental Media, Communication Specialist	-- Computing and Information Technologies	-- Natural Resource Management
-- Sustainability Management	-- Environmental Activism	-- Environmental Engineering
-- Environmental Economist	-- Landscape Designer/Architect	-- Soil Scientist
-- Parks/Recreation Management		-- Wildlife Biologist/Management
-- Waste Management		-- Environmental Risk Assessment
-- Environmental Historian		

*Note: When thinking about jobs, remember many B.A. majors have secured "science" jobs and B.S. grads have become lawyers, politicians, and businessmen and women. The above is just a generalization!*

# ENVIRONMENTAL STUDIES MAJOR REQUIREMENTS: B.A. vs. B.S.

## LOWER-DIVISION FOR THE MAJOR (1st and 2nd years)

Required for Both B.A. and B.S.	UCSB Course(s)	
Three introductory Environmental Studies courses	Envs 1, 2, 3	
One introductory micro, macro, or general/environmental Economics	Econ 1 or 2 or 9 or Envs 30	
One general or physical Geography or Earth Science	Geog 3A or 3B or Earth Sci. 2 or 4 or 20	
One introductory Statistics	Pstat 5A or 5LS or 109	
One introductory Ethics & Justice	Phil 3 or 4 or Poli. Sci 1	
Different Lower-division Requirements: B.A. vs. B.S.		
	B.A.	B.S.
<b>Culture &amp; Society</b>	One course from broad list of options	One course from a combined list of Culture & Society and Policy and Politics courses
<b>Policy &amp; Politics</b>	One course from list of options	
<b>Math (calculus)</b>	Two quarters: Math 34A or 2A or 3A and Math 34B or 2B or 3B or Envs 25 (quantitative thinking in ES)	Three quarters of Calculus w/applications: Math 3A-B (or 2A-2B) and Math 4A
<b>Intro Biology</b>	One course intro Biology: MCDB 20 or EEMB 22 or w22	Three quarters of fundamental Biology w/labs: MCDB 1A-AL, MCDB 1B, EEMB 2-2L, 3-3L
<b>Chemistry</b>	Two courses: Chem 1A-AL and 1B (no lab) or Envs 15A and 15B-BL (env chem)	Three course of Intro Chemistry w/labs: Chem 1A-AL, 1B-BL, 1C-CL
<b>Physics</b>	None	Three quarters of introductory Physics: Phys 1-2-3-3L or 6A-AL, 6B-BL, 6C-CL

*Total Lower-division Units = 58 to 62*

*Total Lower-division Units = 88*

## UPPER – DIVISION FOR THE MAJOR (3rd and 4<sup>th</sup> years)

Area	Bachelor of Arts (BA)	Bachelor of Science (BS)
<b>A</b>	13 units of Required Upper-division ES courses: ENVS 100, 106 or 188, 115, and 190 (one unit)	17 units of Required Upper-division ES courses: ENVS 100, 106 or 188, 115, and 190 (one unit) AND 4 additional upper-division units of statistics/modeling.
<b>B</b>	28 Upper Division ES Elective units: Any environmental studies courses #101-199 for a total of 28 units	32 Upper Division ES Elective units: • 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 #101-199 that are not already used above to satisfy the 20 units
<b>C</b>	20 Unit Outside Concentration:  Complete any 20 upper-division units from any <b>one</b> College of L&S department or program (double major or official minor will satisfy this area). <b>OR</b> 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 <b>one</b> of the following science departments (dbl. or minor o.k.): Biopsychology, Chemistry, EEMB and/or MCDB, Geography, Earth Sci., Math, Statistics, or Physics. <b>OR</b> Choose an interdisciplinary concentration of courses from one or more of the departments <u>listed above</u> , forming a coherent environmental emphasis of choice.

*Total Upper-division Units = 61*

*Total Upper-division Units = 65*

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

## BACHELOR OF ARTS (B.A.) WORKSHEET 2018-19

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

Env. St. 1 (F qtr)* <input type="checkbox"/> Env. St. 2 (W qtr)* <input type="checkbox"/> Env. St. 3 (S qtr)* <input type="checkbox"/>	<b>Culture &amp; Society:</b> Anthro. 2 or Geog. 5 or Global St. 1 or 2 or Psychology 1 <input type="checkbox"/> or Relig. St. 1 or 14 or Sociology 1	Chemistry 1A/1AL <input type="checkbox"/> <input type="checkbox"/> <b>and</b> Chemistry 1B (no lab) <input type="checkbox"/> -----OR----- Env. St. 15A (W qtr)* and <input type="checkbox"/> Env. St. 15B/BL(S qtr) <input type="checkbox"/> <input type="checkbox"/>	MCDB 20 (W qtr)* <input type="checkbox"/> <b>or</b> EEMB 22 or w22 <input type="checkbox"/> -----OR----- MCDB 1A/AL (1LL) <input type="checkbox"/> <b>and</b> EEMB 2 <input type="checkbox"/>	PSTAT 5A or 5LS <input type="checkbox"/> <b>or</b> 109 <input type="checkbox"/> (Or Comm 87, Poli. Sci 15, or Psych 5 by petition)
Env. St. 30 or <input type="checkbox"/> Economics 1 or 2 or 9	<b>Ethics &amp; Justice:</b> Phil. 3 or 4 <input type="checkbox"/> or Poli. Sci. 1	<b>Policy &amp; Politics:</b> Geog. 7 or Hist. 5 or 7 <input type="checkbox"/> or Poli. Sci. 6 or 7 or 12	Geography 3A or 3B <input type="checkbox"/> or Earth Sci. 2 <input type="checkbox"/> or 4 or 20	Math 34A or 3A (2A) <input type="checkbox"/> <b>and either</b> Math 34B or 3B (2B) <input type="checkbox"/> or Env. St. 25 (S qtr)* <input type="checkbox"/>

Advanced Placement (AP), International Baccalaureate (IB) and Transfer credit may be substituted for Prep for Major requirements! Review your UCSB Course History on GOLD for automatically articulated credit or see an ES Advisor for assistance.

### UPPER-DIVISION (3rd and 4th years)

#### A. ES REQUIRED COURSES (13 UNITS)

- Environmental Studies 100 (F qtr)\*
- Environmental Studies 106 (F & W qtrs)\* or 188 (Summer only)\*
- Environmental Studies 115 (W qtr)\*
- Environmental Studies 190 (1 unit, P/NP, offered F, W, S qtrs)\*

#### B. ES ELECTIVES (28 UNITS of U.D. ES courses #101-199)

ES Course	Units
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____

Total = 28

*Note: No more than 4 units each of ES 192, 194, 199, 199RA and no more than 8 units combined may be applied to this area. By petition up to 12 UD units of Education Abroad coursework may apply.*

#### C. OUTSIDE CONCENTRATION (20 UNITS)

**There are 2 options for the Outside Concentration:**

**1) Single department:** Complete any 20 upper-division units from any **one** UCSB department or program. Completion of a double major will automatically satisfy this area as will an official minor as long as 20 upper-division units are taken and they don't overlap with Areas A or B.

**OR**

**2) Interdisciplinary emphasis:** Combination of 20 upper-division units from more than one department or program outside the ES Program 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 the ES Program justifying how courses relate to each other and desired emphasis. Petition forms are available from the ES website or ES Academic or Peer Advisors.

A list of some example environmental emphases/concentrations one might use is available from the ES Advisors or at: [www.es.ucsb.edu/academics/worksheets](http://www.es.ucsb.edu/academics/worksheets)

**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 or Peer Advisor or ES website for additional info: [www.es.ucsb.edu/student](http://www.es.ucsb.edu/student).

Course	Units
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

Total = 20

**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 reverse side for instructions on how to declare the ES major <<<**

## BACHELOR OF SCIENCE (B.S.) WORKSHEET 2018-19

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

Env. St. 1 (F qtr)\*   
 Env. St. 2 (W qtr)\*   
 Env. St. 3 (S qtr)\*

Env. St. 30 or   
 Economics 1 or 2 or 9

**Ethics & Justice:**  
 Phil. 3 or 4   
 or Poli Sci. 1

**Culture, Society,  
Policy & Politics:**  
 Any one course from list:  
 Anth. 2 or Geog. 5 or 7  
 or Global St. 1 or 2  
 or History 5 or 7   
 or Poli. Sci. 6 or 7  
 or 12 or Psychology 1  
 or Religious St. 1 or 14  
 or Sociology 1

Chemistry 1A/AL    
 Chemistry 1B/BL    
 Chemistry 1C/CL

Physics 6A/AL    
 Physics 6B/BL    
 Physics 6C/CL    
 ----- OR -----  
 Physics 1   
 Physics 2   
 Physics 3/3L

MCDB 1A (F qtr)\*   
 MCDB 1B (W qtr)\*   
 EEMB 2 (W qtr)\*   
 EEMB 3 (S qtr)\*

**AND EITHER:**  
 MCDB 1AL and   
 1BL or EEMB 2L   
 and EEMB 3L   
 ----- OR -----  
 MCDB 1LL and   
 EEMB 2LL

PSTAT 5A or 5LS   
 or 109  
 (Or Comm 87, Poli. Sci 15,  
 or Psych 5 by petition)

Math 3A or 2A   
 Math 3B or 2B   
 Math 4A

Geography 3A or 3B   
 or Earth Sci. 2 or 4 or 20

Advanced Placement (AP), International Baccalaureate (IB) and Transfer credit may be substituted for Prep for Major requirements!  
 Review your *UCSB Course History* on GOLD for automatically articulated credit or see an ES Advisor for assistance.

### UPPER-DIVISION (3rd and 4th years)

#### A. ES REQUIRED COURSES (17-18 UNITS)

Environmental Studies 100 (F qtr)\* or EEMB 120 or 168   
 Environmental Studies 106 (F & W qtrs)\* or 188 (Summer only)\*   
 Environmental Studies 115 (W qtr)\*   
 Environmental Studies 190 (1 unit, P/NP, offered F, W, S qtrs)\*   
**AND**  
 Geog. 172 (F qtr)\* or EEMB 146 or 179 or Pstat 120A (F, W, S qtr)\*

#### B. ES ELECTIVES (32 UNITS of U.D. ES courses)

**Section B-1:** 20 Units must be taken from this list: ES 103A<sup>^</sup>, 105, 111<sup>^</sup>, 113<sup>^</sup>, 114A<sup>^</sup>, 114B<sup>^</sup>, 119<sup>^</sup>, 120A, 120B, 121, 128<sup>^</sup>, 133<sup>^</sup>, 134, 141, 142, 144<sup>^</sup>, 147, 149<sup>^</sup>, 152<sup>^</sup>, 154, 157, 158<sup>^</sup>, 162<sup>^</sup>, 166BT<sup>^</sup>, 166DC, 166FP<sup>^</sup>, 167<sup>^</sup>, 168<sup>^</sup>, 169<sup>^</sup>, 171<sup>^</sup>, 193CP, 193CS, 193SD, 193WM, 197.  
<sup>^</sup> indicates a course cross-listed with 2nd dept

Course	Units
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

**Section B-2:** Any 12 UD units of ES courses #100-199 excluding units used to fulfill Area A or the first 20 units applying to section B-1.

6. _____	_____
7. _____	_____
8. _____	_____

**Total = 32**

*Note: No more than 4 units each of ES 192, 194, 199, 199RA and no more than 8 units combined may apply. By petition up to 12 UD units of EAP may apply.*

1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____

**Total = 16 units**

**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 reverse side for instructions on how to declare the ES major <<<

#### 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 departments: Chemistry & Biochemistry, EEMB and/or MCDB (Bio), Earth Sciences, Geography (only courses that apply to the B.S. Physical Geog. major), Math, Statistics, Physics, or units taken for the B.S. degree in Psychological & Brain Sciences. Completion of a double major or minor from the above depts will satisfy this area (Special Studies minors must first consult an ES Advisor).

**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 Advisors.

A list of some example environmental emphases/concentrations one might use is available from the ES Advisors or at: [www.es.ucsb.edu/academics/worksheets](http://www.es.ucsb.edu/academics/worksheets)

**NOTE: Study Abroad and/or Environmental Field Studies** units may be applied 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 (either option 1 or 2 above). A *Request to Petition Degree Requirements* must be approved by the ES Program before units can be applied. For additional info see the ES Advisors or [www.es.ucsb.edu](http://www.es.ucsb.edu)