

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:

BA Degree	Both	BS Degree
-- 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.
Culture & Society	One course from broad list of options	One course from a combined list of Culture & Society and Policy and Politics courses
Policy & Politics	One course from list of options	
Math (calculus)	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
Intro Biology	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
Chemistry	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
Physics	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 4th years)

Area	Bachelor of Arts (BA)	Bachelor of Science (BS)
A	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	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
C	20 Unit Outside Concentration: Complete any 20 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 science departments (dbl. or minor o.k.): Biopsychology, Chemistry, EEMB and/or MCDB, 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 = 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 2019-20

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"/>	<i>Culture & Society:</i> 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"/> and 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)* or <input type="checkbox"/> EEMB W22 (F and S qtrs)* <input type="checkbox"/> -----OR----- MCDB 1A/1LL (1AL) <input type="checkbox"/> and EEMB 2 <input type="checkbox"/>	PSTAT 5A or 5LS <input type="checkbox"/> or 109 <input type="checkbox"/> (Or Comm 87, Poli. Sci 15, or Psych 5 by petition)
Env. St. 30 (F qtr)* or <input type="checkbox"/> Economics 1 or 2 or 9	<i>Ethics & Justice:</i> Phil. 3 or 4 <input type="checkbox"/> or Poli. Sci. 1 <input type="checkbox"/>	<i>Policy & Politics:</i> Hist. 5 or 7 or <input type="checkbox"/> Poli. Sci. 6 or 7 or 12	Geog. 3 (3A) or 4 (3B) <input type="checkbox"/> or Earth Sci. 2 <input type="checkbox"/> or 4 or 20	Math 34A or 3A (2A) <input type="checkbox"/> and either 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 and Summer)* | <input type="checkbox"/> |
| Environmental Studies 106 (F & W qtrs)* or 188 (W qtr and Summer)* | <input type="checkbox"/> |
| Environmental Studies 115 (W qtr and Summer)* | <input type="checkbox"/> |
| Environmental Studies 190 (1 unit, P/NP, offered F, W, S qtrs)* | <input type="checkbox"/> |

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 UC 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 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

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: 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 2019-20

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 (F qtr)* 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 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 1LL (W, Sum qtrs)*
 and EEMB 2LL (F, S qtrs)

----- OR -----

MCDB 1AL and
 1BL or EEMB 2L
 and EEMB 3L

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 3 or 4
 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, Sum qtrs)* or EEMB 120 or 168
 Environmental Studies 106 (F & W qtrs)* or 188 (W, Summer qtrs)*
 Environmental Studies 115 (W, Summer qtrs)*
 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[^], 105, 111[^], 113[^], 114A[^], 114B[^], 119[^], 120A, 120B, 121, 128[^], 133[^], 134, 141, 142, 144[^], 147, 149[^], 152[^], 154, 157, 158[^], 162[^], 163A, 163B, 166BT[^], 166DC, 166FP[^], 167[^], 168[^], 169[^], 171[^], 193CP, 193CS, 193EB, 197.
[^] denotes a cross-listed course that may be taken through other 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

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