

Sustainability Studies, B.A.

Degree Offered

- Bachelor of Arts

Nature of the Program

Students in the Bachelor of Arts in Sustainability Studies will explore core concepts in sustainable global futures, including development, resilient communities, and global humanitarianism. Graduates of the Sustainability Studies will be prepared to solve global challenges using critical systems thinking and a vision of peace, human rights, promoting cultures of resilience and sustainability and advancing sustainable development in Appalachia and globally. Students will be prepared in career pathways that include Local, Regional, and International Development, Disaster/Humanitarian Relief Assessment and Advocacy, Social Studies Education, Urban/Regional Planning, Environmental/Energy/Labor/International Law, Journalism, Social Entrepreneurship, Public Administration, Business Administration, Public Health, International Diplomacy, and Professional/Academic Geography.

Students in the Sustainability BA will take courses that combine geoscience, environmental, social, and humanities research methods that involve geospatial analysis, mapping, development practice, and community engagement. They will also be well prepared for admission to graduate and professional schools.

Minors

All students have the possibility of earning one or more minors; a list of all available minors and their requirements (<http://catalog.wvu.edu/undergraduate/minors/>) is available. Please note that students may not earn a minor in their major field.

FACULTY

CHAIR

- Brent McCusker - Ph.D. (Michigan State University)

ASSOCIATE CHAIR

- Jaime Toro - Ph.D. (Stanford University)

PROFESSORS

- Kathleen Benison - Ph.D. (The University of Kansas)
Regular Graduate Faculty, Sedimentary Geology - Planetary Geology
- Dengliang Gao - Ph.D. (Duke University)
Regular Graduate Faculty, Exploration Geophysics, Petroleum and Structural Geology
- Amy Hessl - Ph.D. (University of Arizona)
Regular Graduate Faculty, Biogeography, Forest Ecosystems, Climate Variability
- Brent McCusker - Ph.D. (Michigan State University)
Regular Graduate Faculty, Land Use Change, Africa, Policy Making
- Shikha Sharma - Ph.D. (University of Lucknow)
Regular Graduate Faculty, Isotope Geochemistry
- Jaime Toro - Ph.D. (Stanford University)
Regular Graduate Faculty, Structure and Tectonics
- Dorothy Vesper - Ph.D. (Pennsylvania State University)
Regular Graduate Faculty, Aqueous Geochemistry, Hydrogeology

ASSOCIATE PROFESSOR

- Jamison Conley - Ph.D. (Pennsylvania State University)
Regular Graduate Faculty, Spatial Analysis, Geocomputation, Health Geography
- Karen Culcasi - Ph.D. (Syracuse University)
Regular Graduate Faculty, Geopolitics, Identity, Middle East
- Cynthia Gorman - Ph.D. (Rutgers University)
Regular Graduate Faculty, Gender, Migration, Human Rights, Refugee Communities
- James Lamsdell - Ph.D. (The University of Kansas)
Regular Graduate Faculty, Paleobiology, Arthropods, Macroevolution, Heterochrony, Paleoecology, Phylogenetics
- Joseph Lebold - Ph.D. (West Virginia University)
Regular Graduate Faculty, Paleoecology, Paleontology, Regional Geology

- Brenden McNeil - Ph.D. (Syracuse University)
Regular Graduate Faculty, GIS, Environmental modeling, Forest Ecosystem Services
- Maria Alejandra Perez - Ph.D. (University of Michigan)
Regular Graduate Faculty, Cultural Geography, Science & Technology Studies, Speleology, Latin America and the Caribbean
- Amy Weislogel - Ph.D. (Stanford University)
Regular Graduate Faculty, Sedimentology
- Bradley Wilson - Ph.D. (Rutgers University)
Regular Graduate Faculty, Social Movements, Local/Global Food Systems, Food Justice

ASSISTANT PROFESSOR

- Vikas Agrawal - Ph.D. (West Virginia University)
Associate Graduate Faculty, Chemical Hygiene Officer, Isotopic and Biogeochemical Characterization of Geological Materials, Energy and Environment
- Michael Harman - Ph.D. (West Virginia University)
3D visualization, modeling complex landforms and processes, GIS
- Aaron Maxwell - Ph.D. (West Virginia University)
Regular Graduate Faculty, Geospatial Instruction, Remote Sensing, Image Analysis, Spatial Modeling
- Charles Shobe - Ph.D. (University of Colorado - Boulder)
Regular Graduate Faculty, Geomorphology, Earth Surface Processes, Landscape Evolution, Rivers, Source-to-Sink, Numerical Modeling

PROFESSOR EMERITI

- Robert Behling - Ph.D. (The Ohio State University)
- Timothy Carr - Ph.D. (University of Wisconsin - Madison)
- Joe Donovan - Ph.D. (Pennsylvania State University)
- Greg Elmes - Ph.D. (Pennsylvania State University)
- Trevor Harris - Ph.D. (University of Hull)
- Thomas Kammer - Ph.D. (Indiana University)
- Steven Kite - Ph.D. (University of Wisconsin)
- Kenneth C. Martis - Ph.D. (Michigan University)
- Henry Rauch - Ph.D. (Pennsylvania State University)
- Robert C. Shumaker - Ph.D. (Cornell University)
- Richard Smosna - Ph.D. (University of Illinois)
- Timothy Warner - Ph.D. (Purdue University)
- Thomas Wilson - Ph.D. (West Virginia University)

Admissions

- First-Time Freshmen are admitted directly into the Sustainability Studies major.
- Students admitted from within WVU to the Sustainability Studies major must have a minimum overall GPA of 2.0.
- Students transferring from another institution must have a minimum overall GPA of 2.0.

ADMISSION REQUIREMENTS 2024-2025

The Admission Requirements above will be the same for the 2024-2025 Academic Year.

Major Code: 14F7

General Education Foundations

Please use this link to view a list of courses that meet each GEF requirement. (<http://registrar.wvu.edu/gef/>)

NOTE: Some major requirements will fulfill specific GEF requirements. Please see the curriculum requirements listed below for details on which GEFs you will need to select.

Code	Title	Hours
General Education Foundations		
F1 - Composition & Rhetoric		3-6
ENGL 101 & ENGL 102	Introduction to Composition and Rhetoric and Composition, Rhetoric, and Research	

or ENGL 103	Accelerated Academic Writing	
F2A/F2B - Science & Technology		4-6
F3 - Math & Quantitative Reasoning		3-4
F4 - Society & Connections		3
F5 - Human Inquiry & the Past		3
F6 - The Arts & Creativity		3
F7 - Global Studies & Diversity		3
F8 - Focus (may be satisfied by completion of a minor, double major, or dual degree)		9
Total Hours		31-37

Please note that not all of the GEF courses are offered at all campuses. Students should consult with their advisor or academic department regarding the GEF course offerings available at their campus.

Degree Requirements

Students must complete WVU General Education Foundations requirements, College B.A. requirements, major requirements, and electives to total a minimum of 120 hours. For complete details on these requirements, visit the B.A. Degrees tab on the Eberly College of Arts and Sciences (<http://catalog.wvu.edu/undergraduate/eberlycollegeofartsandsciences/#bachelorofartstext>) page.

Departmental Requirements for the B.A. in Sustainability Studies

- **Capstone Requirement:** The university requires the successful completion of a Capstone requirement. In Sustainability Studies, based on their Area of Emphasis and with permission from their advisor, students will select the capstone section of SUST 402, GEOG 411, GEOG 415, or GEOG 452. The course selected for the capstone should not be already used to meet any other major requirement.
- **Writing and Communication Requirement:** Sustainability Studies Bachelor of Arts students fulfill the Writing and Communication Skills requirement by completing ENGL 101 and ENGL 102 (or ENGL 103) and two additional **SpeakWrite Certified Courses™** certified course.
- **Areas of Emphasis:** Sustainability Studies majors will choose a curriculum from one of these Areas of Emphasis:
 - Environmental Studies
 - GIS Methods
 - Sustainable Development
- **Calculation of Major GPA:** A minimum grade of C- is required in all courses applied to major requirements. If a course is repeated, all attempts will be included in the calculation of the GPA, unless the course is eligible for a D/F repeat.
- **Credit Limit:** To graduate with 120 credits, no more than 50 credits of Geography (GEOG), Geology (GEOL) and SUST (Sustainability) combined can be used. If a student has more than 50 credits, then those extra credits must be matched by an equal amount of non-GEOG, non-GEOL and non-SUST courses, and more than 120 credits will be required for graduation. For example, if a student has 52 credits in GEOG, GEOL and SUST the student will need 122 credits to graduate (52 G&G, 68 non-G&G or SUST). 191 and 491 courses are excluded from the 50-credit count.
- **Benchmark expectations:** For details, go to the [Sustainability Studies Degree Progress tab](#).

Curriculum Requirements

Code	Title	Hours
	University Requirements	71
	ECAS B.A. Requirements	12
	Sustainability Studies Major Requirements	37
Total Hours		120

University Requirements

Code	Title	Hours
	General Education Foundations (GEF) 1, 2, 3, 4, 5, 6, 7, and 8 (31-37 Credits)	
	Outstanding GEF Requirements 1, 3, 5, 6, and 8	21
SUST 191	First-Year Seminar	1
	General Electives	49
Total Hours		71

ECAS Bachelor of Arts Requirements

Code	Title	Hours
Fine Arts Requirement		
Foreign Language		12
Global Studies and Diversity Requirement		
Total Hours		12

Sustainability Studies Major Requirements

Code	Title	Hours
CORE COURSES:		16
SUST 102	Global Sustainability	
SUST 202 & 202L	Just Sustainable Development and Sustainable Development Laboratory	
SUST 207 & 207L	Climate System Science and Climate System Science Laboratory	
SUST 250 & 250L	Digital Earth and GIS and Digital Earth and GIS Laboratory	
SUST 388	Careers in Sustainability	
AREA OF EMPHASIS:		15
Select one of the following:		
Environmental Studies		
GIS Methods		
Sustainable Development		
UPPER-DIVISION ELECTIVE:		3
Any GEOG, GEOL, or SUST course at the 300 level or above		
CAPSTONE: *		3
Select from of the following, based on the AoE:		
GEOG 411	Rural and Regional Development	
GEOG 415	Global Environmental Change	
GEOG 452	Geographic Information Science: Applications	
SUST 402	Climate and Environmental Justice	
Total Hours		37

* SUST course(s) selected to fulfill the Capstone should not already fulfill another SUST major requirement.

Suggested Plan of Study

First Year

Fall	Hours	Spring	Hours
F 3		3 ENGL 101 (F1 Course 1)	3
Foreign Language 101		3 Foreign Language 102	3
ECAS Fine Arts Requirement (F6)		3 SUST 250 & 250L (F2A)	4
SUST 102 (F7)		3 General Elective	3
SUST 191		1 General Elective	2
General Elective		2	
		15	15

Second Year

Fall	Hours	Spring	Hours
Foreign Language 203		3 ENGL 102 (F1 Course 2)	3
SUST 202 & 202L (F4)		4 Foreign Language 204	3

SUST 207 & 207L (F 8)	4 F 5	3
General Elective	4 F 8 (Course 2)	3
	General Elective	3
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	15	15

Third Year

Fall	Hours	Spring	Hours
F 8 (Course 3)		3 AoE Course 2	3
AoE Course 1		3 AoE Course 3	3
SUST 388		1 General Elective	3
General Elective		3 General Elective	3
General Elective		3 General Elective	3
General Elective		2	
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	15		15

Fourth Year

Fall	Hours	Spring	Hours
AoE Course 4		3 Capstone Course *	3
AoE Course 5		3 Upper-Division Elective	3
General Elective		3 General Elective	3
General Elective		3 General Elective	3
General Elective		3 General Elective	3
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	15		15

Total credit hours: 120

Areas of Emphasis

- Environmental Studies
- GIS Methods
- Sustainable Development

Environmental Studies Area of Emphasis Curriculum

Code	Title	Hours
ENVIRONMENTAL STUDIES CORE COURSES:		10
SUST 101 & 101L	Sustainable Earth and Sustainable Earth Laboratory	
GEOL 365	Environmental Geology	
GEOG 415	Global Environmental Change	
ENVIRONMENTAL STUDIES ELECTIVES:		6
Select 2 courses from the following:		
GEOG 455 & 455L	Introduction to Remote Sensing and Introduction to Remote Sensing Laboratory	
GEOL 321	Geomorphology	
GEOL 463	Physical Hydrogeology	
GEOL 466	Cave and Karst Geology	
SUST 302	Research for Sustainable Development	
SUST 305	Sustainable Governance	
SUST 308	Climate Modeling	
SUST 340	Urban Sustainability	
SUST 402	Climate and Environmental Justice	

Total Hours

16

GIS Methods Area of Emphasis Curriculum

Code	Title	Hours
GIS METHODS CORE COURSES:		10
GEOG 350 & 350L	Geospatial Problem Solving and Geospatial Problem Solving Lab	
GEOG 451	Introduction to GIS Programming	
GEOG 455 & 455L	Introduction to Remote Sensing and Introduction to Remote Sensing Laboratory	
GIS METHODS ELECTIVES:		6
Select 2 courses from the following:		
GEOG 300	Geographical Data Analysis	
GEOG 409	Applied International Development	
GEOG 452	Geographic Information Science: Applications	
GEOG 453	Spatial Databases	
GEOG 454	Environmental Geographic Information Systems	
GEOG 456	Remote Sensing Applications	
GEOG 457	Open-Source Spatial Analytics	
GEOG 461	Web GIS	
GEOG 462	Digital Cartography	
SUST 302	Research for Sustainable Development	
Total Hours		16

Sustainable Development Area of Emphasis Curriculum

Code	Title	Hours
SUSTAINABLE DEVELOPMENT CORE COURSES:		12
SUST 302	Research for Sustainable Development	
SUST 305	Sustainable Governance	
SUST 402	Climate and Environmental Justice	
SUST 403	Sustainability, Planning and Development	
SUSTAINABLE DEVELOPMENT ELECTIVES:		3
Select 1 course from the following list:		
GEOG 300	Geographical Data Analysis	
GEOG 302	Political Geography	
GEOG 303	Cultural Geography	
GEOG 309	Introduction to International Development	
GEOG 312	Migration and Human Rights	
GEOG 409	Applied International Development	
GEOG 411	Rural and Regional Development	
GEOG 415	Global Environmental Change	
SUST 340	Urban Sustainability	
SUST 372	Sustainable Energy	
Total Hours		15

Degree Progress

Majors are expected to maintain a 2.0 GPA overall and a 2.0 in all SUST, GEOG, and GEOL courses applied to major requirements.

- By the end of their fourth semester in the major, students should have completed their required 100 and 200 level courses with the requisite grade.
- Students should complete SUST 388 (Careers in Sustainability) by their sixth semester in the major.
- In the advising appointment prior to the senior year, students will select an appropriate capstone option.
- All majors must meet with their departmental advisor each semester to evaluate progress.

Students who do not meet these benchmarks may be removed from their major.

Major Learning Outcomes

SUSTAINABILITY STUDIES

1. Understand Earth systems and society relations and their relevance to address sustainability challenges.
2. Describe the cultural diversity and complexity of human-environment relationships.
3. Analyze the spatial dimensions and impacts of political and economic activities.
4. Compare different approaches to social and environmental justice.
5. Evaluate the local, regional, national, and global contributions to sustainability by key agents and institutions.
6. Collect, analyze, evaluate, and visualize data to enable evidence-based decision-making for sustainable futures.
7. Communicate clearly and effectively in written, oral, graphical, and cartographic form about social, environmental, and sustainability issues to audiences of diverse backgrounds.