UW Board of Trustees Committee on Academic and Student Affairs
Agenda-1.21.2026

Closed Session: If necessary, a separate agenda and materials for the Closed Session.

Agenda #	Description	Page #
1.	Consideration and Action: Requests for Authorization: (Pepper/Hilaire) • Graduate Certificate in Global Environmental Futures • Undergraduate Certificate in Global Environmental Futures • Undergraduate Certificate in Subsurface Energy	1
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	If time permits, the following items will be discussed.	

Academic and Student Affairs
COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: **Request for Authorization: Graduate Certificate in Global Environmental Futures** Pepper, Koprowski, Stoellinger

☒ OPEN SESSION
☐ CLOSED SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
☒ Yes
☐ No

FOR FULL BOARD CONSIDERATION:
☒ Yes *[Note: If yes, materials will also be included in the full UW Board of Trustee report.]*
☐ No

☒ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY: The Haub School of Environmental and Natural Resources has proposed a graduate certificate in Global Environmental Futures. After reviews and approval by the faculty senate, and by agreement of the Dean's Council, Haub is putting forth this certificate. This certificate would provide UW students with a global perspective on critical environmental and natural resource issues and apply interdisciplinary tools to analyze and shape future environmental scenarios, and collaborate on policy, research, and resilience strategies.

PRIOR RELATED COMMITTEE DISCUSSIONS/ACTIONS:
The Notice of Intent was approved by the Academic and Student Affairs Committee and the full Board in May 2025.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
University of Wyoming Regulation 2-119 requires Board approval for all new degree programs and outlines the approval process. The Academic and Student Affairs committee will report to the Board on the recommended actions for the new degree program.

ACTION REQUIRED AT THIS COMMITTEE MEETING:
Consideration for approval of the Request for Authorization for the Graduate Certificate in Global Environmental Futures.

PROPOSED MOTION:
"I move to approve the Request for Authorization for the Graduate Certificate in Global Environmental Futures."

Feasibility Study

Graduate Certificate in Global Environmental Futures (GEF)

University of Wyoming
Haub School of Environment and Natural Resources

August 2025

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EXECUTIVE SUMMARY

The Graduate Certificate in Global Environmental Futures (GEF) is a 9-credit, interdisciplinary certificate developed by the Haub School of Environment and Natural Resources. The certificate emphasizes practical tools such as scenario planning, cross-cultural communication, and understanding the relationship between natural systems and community well-being. The curriculum blends ecological, political, and cultural perspectives and offers flexible delivery formats, including online asynchronous, hybrid, and international field-based courses, to support working professionals and distance learners.

Market trends strongly support the need for this credential. Between 2013 and 2023, completions of online post-baccalaureate certificates in related fields surged by 259%, reflecting growing demand for targeted professional development. Graduates will be prepared for a variety of roles in environmental planning, policy, and sustainability leadership, with median salaries ranging from $58,000 to $94,000. Occupations such as Environmental Scientists, Urban Planners, and Natural Sciences Managers show strong projected growth. The GEF graduate certificate aligns with the Haub School's mission and UW's strategic goals, offering a scalable, high-impact credential that strengthens UW's leadership in global environmental education and workforce development.

PROGRAM AT-A-GLANCE

- **Certificate Title:** Global Environmental Futures
- **Level of Certificate:** Graduate
- **Delivery Mode:** Mixed modalities, including online and optional domestic and international field coursework.
- **Estimated Startup Cost of Degree:** Minimal, leveraging existing resources
- **Anticipated Launch Date:** Spring 2026

KEY PROGRAM FEATURES

Targeted Curriculum

This nine-credit graduate certificate focuses on interdisciplinary, future-oriented curriculum that equips students to analyze and address complex environmental challenges through systems thinking, scenario modeling, and culturally informed, transdisciplinary approaches. The curriculum includes one core course in the principles and methods of environmental futures, scenario modeling, and interdisciplinary approaches and two elective courses that broaden learners' global perspectives.

Flexible Delivery Options

The program offers flexible delivery formats with multiple modalities. Optional field-based courses for additional credit enhance learning, while the design ensures accessibility for working professionals and learners across Wyoming and beyond.

Interdisciplinary Approach

The certificate takes an interdisciplinary approach by blending methods from ecology, geography, sociology, economics, political science, and the humanities. Students develop global perspectives on issues like biodiversity conservation, climate change, and sustainable resource use; apply tools such as systems thinking and scenario modeling; and collaborate on innovative policy, research, and resilience strategies across local to global scales.

STRATEGIC ALIGNMENT

The Global Environmental Futures (GEF) certificate directly supports the University of Wyoming’s and the Haub School’s strategic priorities by advancing innovative, interdisciplinary education that prepares students to tackle complex environmental challenges. Through a flexible mix of modalities, the program expands access for diverse and distance learners while fostering global engagement. It aligns with the Haub School’s goals to educate future leaders, expand digital and experiential learning, support collaborative, culturally inclusive problem-solving, and strengthen interdisciplinary research.

The Global Environmental Futures Certificate supports the University of Wyoming’s strategic objectives by:

Enhancing student success: The program equips students with interdisciplinary tools, global perspectives, and hands-on experience to prepare for careers addressing complex socio-environmental challenges, core to UW's student success and graduate readiness initiatives.

Serving Wyoming communities: Through its focus on global environmental issues and international field experiences, the program expands UW's global footprint and strengthens its role in addressing sustainability challenges through local-to-global partnerships.

Expanding access and Global Program Offerings: By offering hybrid, online, traditional, and field-based formats, the certificate aligns with UW's commitment to flexible, accessible, and impactful education that accommodates diverse learners, including non-traditional and distance students. Additionally, it expands access to global field experiences for students who might not otherwise participate in extended international travel.

Since its inception in 1993, the Haub School has led in interdisciplinary education, high-impact research, stakeholder collaboration, and a deep institutional commitment to biodiversity and sustainability. The proposed certificate builds on this foundation, extending our signature expertise to online learners, and preparing students to lead in addressing global environmental challenges.

Aligned not just with UW's, but with the Haub School's own 2023–2028 strategic plan, the certificate reflects the school's goals to evolve its graduate curriculum, expand digital learning, and foster interdisciplinary solutions to global challenges.

DEMAND AND MARKET OUTLOOK

Graduate-level demand for certificates in sustainability and environmental futures is growing steadily, particularly among professionals seeking specialized skills. Between 2013 and 2023, online graduate certificate completions in related fields rose by 259%, reflecting the increasing importance of advanced, interdisciplinary training in global environmental challenges.

The GEF certificate directly meets this market need by offering practical tools such as scenario modeling, systems analysis, and socio-environmental evaluation, all very critical for leadership roles in environmental policy, planning, and international development. Its alignment with the University of Wyoming's online MS in ENRS and compatibility with other graduate programs (e.g., International Studies, MBA) makes it an accessible and stackable option for professionals

and graduate students alike, reinforcing UW's role as a provider of interdisciplinary online education.

RESOURCE CONSIDERATIONS

The GEF certificate builds on the Haub School's existing faculty and course offerings, requiring only one new course, which is currently under development. The Haub School also offers a robust catalog of field courses, including a variety of field and international options each year, providing students with rich experiential learning opportunities. We aim to offer at least one field course each semester and several in the summer, and these consistently enroll 10 or more students, reflecting strong demand and engagement. Each field course is 3-credits that takes place during the regular semester and serves as a pre-trip anchor course. Students then have the option to add 1–3 additional credits for the travel experience, which occurs during the J-term or summer. Participation in the travel component is optional, students may choose to enroll in just the 3-credit course without the additional travel field experience. Marketing efforts will leverage existing infrastructure to ensure cost-effective implementation while expanding the program's visibility and appeal.

The Haub School is actively expanding its online offerings over the next 3–5 years, including the development of several new graduate certificates and an online Master of Science in Environment, Natural Resources & Society (ENRS). These offerings include the Graduate Certificate in ENR Law & Policy and the Graduate Certificate in Collaborative Practice. To support the design, delivery, and continued growth of these programs, the school plans to hire an Online Learning Coordinator. Revenue from these new online programs will help sustain this position as part of a broader strategy to advance the Haub School's strategic initiatives.

ANTICIPATED INSTITUTIONAL IMPACT

Launching in Spring 2026, the GEF certificate is expected to generate new enrollments while enhancing the University of Wyoming's reputation as a leader in global interdisciplinary environmental education. Graduates will be prepared to address urgent challenges in sustainability, governance, and natural resource management, positioning UW as a regional hub for innovative, applied education responsive to evolving workforce and community needs.

The certificate provides immersive, real-world experiences that deepen students' understanding of global environmental systems and cultural contexts. These high-impact, place-based learning opportunities further strengthen the Haub School's commitment to experiential education and

exemplify the university's dedication to accessible, high-quality programs that address real-world needs.

OVERVIEW AND DESCRIPTION OF CERTIFICATE

GEF involves the interdisciplinary study of future environmental scenarios and the interactions between human and natural systems. It integrates tools like biodiversity analysis, scenario modeling, and socio-economic evaluations to address emerging global environmental challenges. A key aspect of this field is incorporating diverse cultural perspectives, traditions, and worldviews to inform decision-making and problem-solving in natural resource management.

CERTIFICATE OBJECTIVES

The program's core objectives are to:

1. Develop a global perspective on critical issues such as biodiversity conservation, climate change, and sustainable resource use.
2. Apply interdisciplinary tools to analyze and shape future environmental scenarios.
3. Collaborate on creative policy, research, and resilience strategies at local, national, and global levels.

INSTITUTIONAL FIT

The GEF certificate complements existing programs at the University of Wyoming, including the MS in Environment, Natural Resources & Society (ENRS), the MA in International Studies, and the MBA in Business Administration. It enhances global and system-level perspectives, interdisciplinarity, and provides applied skills in scenario modeling and global perspectives, all without duplicating existing offerings.

Key points of institutional fit include:

- **Non-Duplication:** While other programs at UW address environmental topics, this certificate uniquely offers a distinctive focus on global environmental futures that fills a curricular gap.
- **Interdisciplinary Synergy:** The certificate draws on coursework that incorporates diverse cultural perspectives, traditions, and worldviews to inform decision-making and problem-solving in natural resource management, making it a valuable addition for students across variable disciplines to lead in using transdisciplinary approaches to global sustainability challenges.
- **Online and Professional Accessibility:** As the Haub School expands its fully online MS in ENRS, the GEF certificate provides a stackable, accessible pathway for distance learners and working professionals to gain advanced skills aligned with their career goals.
- **Global and Regional Relevance:** With its emphasis on climate resilience, biodiversity, and cultural knowledge, the program prepares students to address pressing environmental issues from local to global scales, supporting UW's land-grant mission and extending its impact beyond the state of Wyoming.

CONTEXT & RATIONALE

The Graduate Certificate in GEF is designed for professionals aiming to enhance their expertise in sustainability, environmental policy, and systems thinking, and it serves as a valuable complement to existing master's programs at the University of Wyoming. Online post-baccalaureate certificate completions have risen by 259% over the past decade, and master's-level completions in related fields (e.g., sustainability and environmental studies) have surged up to 600%, demonstrating strong demand for interdisciplinary graduate certificates. This certificate provides the Haub School with a strategic opportunity to lead in this high-growth sector. The curriculum supports career advancement in roles such as environmental scientists, planners, natural resource managers, and sustainability consultants, which are fields that demonstrate steady labor demand. Additionally, the program's global perspective strengthens graduates' competitiveness in the job market. The online format further enhances accessibility for working professionals, contributing to UW's broader goals of expanding graduate enrollment and online education.

Workforce and Professional Development

As global environmental challenges grow more complex, professionals across multiple sectors must navigate interconnected social, ecological, and economic systems. The GEF certificate

prepares learners to address these multifaceted issues through an interdisciplinary lens, fostering collaboration among diverse stakeholders.

Environmental futures research is gaining international prominence in addressing critical concerns such as biodiversity loss, climate change, and sustainable development. However, academic opportunities in this emerging field remain limited in the U.S. The GEF certificate positions the University of Wyoming as a national leader in this area, aligning with global trends and advancing the university's reputation in environmental and natural resource studies.

Building on the Haub School's long-standing commitment to global experiential education and its growing faculty expertise in international environmental research and teaching, the certificate bridges theory and practice. With a flexible, interdisciplinary structure that includes optional international field courses, the program empowers students to tailor their learning to a wide range of career paths while gaining the skills necessary to lead in today's dynamic sustainability workforce. These immersive field experiences provide hands-on engagement with real-world environmental challenges and create valuable opportunities for students to build international professional networks, collaborate with global partners, and develop cross-cultural competencies essential for leadership in the field.

Meeting Regional Needs

The GEF certificate addresses critical regional needs by preparing students to navigate the complex environmental and socio-political dynamics shaping the Rocky Mountain West and beyond. Our regional communities face pressing issues such as water scarcity, land use conflicts, biodiversity loss, and energy transitions, challenges that demand interdisciplinary, forward-thinking leaders.

The certificate equips students with tools such as scenario planning, systems thinking, international experience, and socio-ecological analysis that are essential for addressing these regional concerns. It complements sectors including:

Environmental and Natural Resource Management, by preparing graduates to manage shared resources like public lands and watersheds with long-term sustainability in mind.

Public Policy and Governance, through training that supports integrated decision-making across agencies and communities.

Business and Sustainability Leadership, by helping future leaders assess environmental risks and solutions aligned with both global market and ecological trends.

Education and Outreach, by enhancing the capacity of educators, communicators, and community leaders to foster informed public engagement with environmental futures.

By grounding students in both local relevance and global awareness, the GEF certificate strengthens the region's ability to respond to environmental change while contributing to a broader, more resilient workforce.

Accessibility

The certificate is designed with a hybrid delivery model that emphasizes flexibility and accessibility. Students may complete the program fully online through asynchronous courses, enabling them to balance education with career and family responsibilities. Two elective courses include a required 3-credit anchor course taken during the semester, with the option to add 1–3 additional credits for a field experience during the J-term or summer. Several core courses are available in both online and in-person formats, allowing students to customize the program to fit their learning preferences. This flexible structure is designed to appeal to a diverse range of students with varied academic backgrounds and professional goals.

Stackable Credentials and Pathway to Degree Completion

The GEF certificate is designed to integrate seamlessly with the Haub School's Master of Science in Environment, Natural Resources, and Society (MS ENRS) program. Embedded within the fully online MS ENRS track, the certificate offers a cohesive set of electives that allow graduate students to deepen their expertise in global environmental challenges while gaining practical, applied international experiences.

The certificate also complements a range of other University of Wyoming programs, including the MA in International Studies and the MBA in Business Administration, by enhancing global perspectives and specialized environmental knowledge across disciplines.

For non-degree-seeking students, the GEF certificate serves as a valuable entry point to advanced study. Completing the certificate establishes a strong academic foundation and enables a smooth transition into the MS ENRS or other graduate programs across campus. This stackable credential model supports flexible, lifelong learning and professional development, reflecting the university's commitment to accessible, interdisciplinary education.

Summary of Impact

The Global Environmental Futures certificate empowers students with the interdisciplinary skills, global perspective, and applied tools needed to lead in the face of complex environmental challenges. By bridging academic theory with real-world practice, the program strengthens UW's educational offerings, supports regional and global sustainability goals, and builds a future-ready, workforce. Through immersive field experiences and collaboration with international partners, students also gain valuable cross-cultural competencies and professional networks

STRATEGIC PLANNING

Alignment with the University of Wyoming Strategic Plan

The Global Environmental certificate directly supports UW's strategic priorities by:

- **Enhancing Student Success Through Innovative, Interdisciplinary Learning**
  The program equips students with interdisciplinary tools, global perspectives, and hands-on international experience to prepare for careers addressing complex socio-environmental challenges, core to UW's student success and graduate readiness initiatives.
- **Expanding Online and Global Program Offerings**
  By offering online and international field-based formats, the certificate supports UW's commitment to flexible, accessible, and high-impact education models that accommodate diverse learners, including non-traditional and distance students.
- **Fostering Global Engagement and Community Impact**
  Through its focus on global environmental issues and international field experiences, the program expands UW's global footprint and strengthens its role in addressing sustainability challenges through local-to-global partnerships.
- **Addressing the Increasing Need for Expertise in Sustainability**
  By focusing on topics such as climate resilience, biodiversity, and cultural knowledge integration, this certificate aligns with UW's emphasis on addressing pressing environmental and societal issues through research-informed teaching.

Alignment with Haub School Strategic Plan (2023-2028)

The certificate aligns with the Haub School's goals to:

- **Educate Leaders**
  The program enhances existing academic offerings and cultivates the leadership competencies outlined in the Haub School's learning outcomes through systems thinking, scenario modeling, and inclusive, interdisciplinary problem-solving.
- **Expanding Digital and Experiential Learning**
  The hybrid delivery model and international field courses respond to the school's objectives to improve online course offerings and increase access to high-quality, field-based education in both domestic and global contexts.
- **Supporting Collaborative Solutions:**
  With learning outcomes focused on integrating various cultural perspectives and stakeholder collaboration, the program advances the school's commitment to community-informed, collaborative approaches to sustainability challenges.
- **Interdisciplinary Research and Practice**
  The program is grounded in research-informed curriculum and complements faculty-led scholarship in climate change, conservation, and governance, which further supporting the school's interdisciplinary research goals.
- **Extending Global and Regional Impact**
  Designed to be accessible to students in Wyoming and beyond, the GEF certificate embodies the Haub School's vision to serve as a change agent "from Wyoming to the World," expanding its national leadership in environmental and natural resource education.

The GEF Certificate is well aligned with the strategic priorities of both the University of Wyoming and the Haub School of Environment and Natural Resources. It advances institutional goals in innovative, flexible education, interdisciplinary problem-solving, global engagement, and leadership development. Drawing from the university's commitment to experiential, accessible learning and the Haub School's focus on real-world environmental challenges and collaborative approaches, the certificate positions the University of Wyoming as a national leader in preparing students to navigate and shape environmental futures around the world.

LEARNING OUTCOMES

The Graduate Certificate in Global Environmental Futures prepares students to:

1. **Develop systems-level perspectives** on global environmental challenges across ecological, social, economic, and cultural domains.

2. **Design transdisciplinary solutions** to environmental challenges by integrating diverse methods and cultural insights.

3. **Analyze and communicate environmental futures** through scenario modeling, strategic thinking, and adaptive decision-making.

4. **Incorporate diverse cultural perspectives** into environmental analysis and sustainable solutions.

This program prepares students to think systemically, act collaboratively, and lead adaptively in addressing complex global environmental challenges with cultural awareness, interdisciplinary tools, and future-oriented strategies.

CURRICULUM MAP AND PROGRAM STRUCTURE

The GEF certificate requires nine credit hours, including choosing one of the required courses (3 credits) and choosing two electives (6 credits). The program will be delivered in mixed modalities, including online, traditional, and optional field or international coursework. The certificate can be completed in as little as two semesters or extended up to two years, allowing flexibility for full-time students and working professionals alike.

ADMISSIONS STANDARDS

Admission to the graduate certificate program requires:

- A bachelor's degree or equivalent from a regionally accredited institution
- A minimum cumulative GPA of 3.000 in undergraduate coursework (4.000 scale)

Applicants with professional experience in environment and natural resources management or policy may petition for conditional admission if their academic qualifications fall below the stated thresholds.

REQUIREMENTS

The certificate's nine credit hours are divided as follows:

1. One required course (3 credits)
2. Two required elective courses (6 credits)

Core Courses (3 credits)

The program's required core courses focus on developing a foundational understanding of global impacts and future environmental scenarios through interdisciplinary, systems-based approaches to complex challenges.

Students will choose one course from the list below:

Years 1-2 - ORTM 4050/5050 Global Tourism. Focuses on sustainable development of global tourism by examining its impact through the perspectives of tourists, service providers, regulators, researchers, and local communities.

Years 3 and beyond: ENR 49xx/59xx Global Environmental Futures. Foundational knowledge in environmental futures, scenario modeling, and interdisciplinary approaches to addressing complex environmental challenges. *(In development)*

ENR 4960/5960: Experience of Place. This course explores the concepts, methods, and practices of place through independent landscape inquiry, culminating in a creative portfolio that reflects deep engagement with cultural and ecological landscapes.

ENR 4560/5560: Conservation Entrepreneurship. This course introduces students to foundational concepts in social entrepreneurship and applies them to environmental conservation issues. Students will learn the legal, financial, and ecological concepts underpinning entrepreneurial approaches to conservation. Students will apply concepts to real world examples to understand the strength and weaknesses of these approaches.

These courses are dual listed with current undergraduate courses; however graduate students complete additional advanced requirements. These typically include an independent research project or professional-level deliverable that extends beyond standard coursework.

Electives (6 credits)

Students choose two elective courses from the following options:

Field and global courses combine an online asynchronous anchor course with

companion field experiences for variable credit (1–3 credits), all under the ENR 5965/5900 course number. Courses are offered predictably with 2–3 options each year. Travel courses include additional fees. Electives include, but are not limited to:

■ ENR 5965A: Queensland, Australia – Human & Physical Landscapes: Recreation, conservation, and economic development in Queensland's coastal areas.

■ ENR 5965B: Austrian & Italian Alps – Alpine Climate & Culture: Landscapes and cultures of Europe's high alpine communities.

■ ENR 5965C: Patagonia, Chile – Conservation & Development: Natural resource conservation and development in Patagonia.

■ ENR 5965D: Coastal Belize – Coastal Climate Resilience: Local knowledge and the role of oceans in global sustainability.

■ ENR 5965E: Mongolia – Wild & Working Lands: Nomadic cultures, wildlife conservation, and sustainable land use in grassland steppe and desert environments.

■ ENR 5965F: Nepal – Wildlife Conservation *(In Development)*: Wildlife, biodiversity and community-based conservation.

■ ENR 5965G: Grand Canyon NP–Canyonlands–Climate, Water, Culture: Explores the history, culture, and policies of the Colorado River, with a focus on Tribal experiences, public lands, and climate challenges, culminating in a guided raft trip through the Grand Canyon.

■ ENR 5965H: Norway & Svalbard–Arctic Circle: Examines climate, ecology, and policy as students conduct research in marine, glacial, and tundra environments to deepen understanding of global environmental change.

■ ENR 5900: Tenerife, Canary Islands Spain – Canaries & Climate: Explore the unique environmental challenges facing island ecosystems by examining climate change, conservation, and sustainable development in a dynamic island context.

Additional elective options may become available as the Haub School expands its offerings in the future.

CURRICULUM MAP

The table below outlines the program structure

Required Core Course (Choose one)			
Title	**Focus & Student Learning Outcomes (SLOs)**	**Delivery**	**Credits**
ORTM 5050 Global Tourism	Focus: Examining its impact through the perspectives of tourists, service providers, regulators, researchers, and local communities. SLOs: 1, 2, 3	Online (Fall)	3 credits
ENR 59xx Global Environmental Futures *(In Development)*	Focus: Foundational knowledge in environmental futures, scenario modeling, and interdisciplinary approaches to addressing complex environmental challenges. SLOs: 1, 2, 3, 4	Online (Spring 2027)	3 credits
ENR 5960 Experience of Place	Focus: Explores the concepts, methods, and practices of place through independent landscape inquiry, culminating in a creative portfolio that reflects deep engagement with cultural and ecological landscapes. SLOs: 1, 2, 4	Online (Summer)	3 credits

ENR 5560 Conservation Entrepreneurship	Focus: This course introduces students to foundational concepts in social entrepreneurship and applies them to environmental conservation issues. Students will learn the legal, financial, and ecological concepts underpinning entrepreneurial approaches to conservation. Students will apply concepts to real world examples to understand the strength and weaknesses of these approaches.	In-person (Fall)	3 credits
Electives (Choose Two)			
Title	**Focus & Student Learning Outcomes (SLOs)**	**Delivery**	**Credits**
ENR 5965A: Queensland, Australia	Focus: Human & Physical Landscapes: Recreation, conservation, and economic development in Queensland's coastal areas. SLOs: 1, 2, 3, 4	Online with optional field course (Summer 2026)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 5965B: Austrian & Italian Alps	Focus: Alpine Climate & Culture: Landscapes and cultures of Europe's high alpine communities. SLOs: 1, 2, 3, 4	Online with optional field course (Spring)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 5965C: Patagonia, Chile	Focus: Conservation & Development: Natural resource conservation and development in Patagonia. SLOs: 1, 2, 3, 4	Online with optional field course (J-Term)	3 credits, companion field experiences for additional variable credit (1–3 credits)

ENR 5965D: Coastal Belize	Focus: Coastal Climate Resilience: Local knowledge and the role of oceans in global sustainability. SLOs: 1, 2, 3, 4	Online with optional field course (Spring)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 5965E: Mongolia	Focus: Wild & Working Lands: Nomadic cultures, wildlife conservation, and sustainable land use in grassland steppe and desert environments. SLOs: 1, 2, 3, 4	Online with optional field course (Summer)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 5965F: Nepal	Focus: Wildlife Conservation *(In Development)*: Wildlife, biodiversity and community-based conservation. SLOs: 1, 2, 3, 4	Online with optional field course (J-Term 2026)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 5965G: Grand Canyon NP–Canyonlands	Focus: Explores the history, culture, and policies of the Colorado River, with a focus on Tribal experiences, public lands, and climate challenges, culminating in a guided raft trip through the Grand Canyon. SLOs: 1, 2, 3, 4	Online with optional field course (Summer 2026)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 5965H: Norway & Svalbard–Arctic Circle	Focus : Examines climate, ecology, and policy as students conduct research in marine, glacial, and tundra environments to deepen understanding of global environmental change. SLOs: 1, 2, 3, 4	Online with optional field course (Summer 2026)	3 credits, companion field experiences for additional variable credit (1–3 credits)

ENR 5900: Tenerife, Canary Islands Spain – Canaries & Climate	Focus: Explore the unique environmental challenges facing island ecosystems by examining climate change, conservation, and sustainable development in a dynamic island context. SLOs: 1, 2, 3, 4	Online with optional field course (J-Term 2026)	3 credits, companion field experiences for additional variable credit (1–3 credits)

COMPLETION TIMELINE

- Accelerated Pathway: Students can complete the program in as few as two semesters.
- Flexible Pathway: Students balancing coursework with professional commitments may opt for part-time study and complete the certificate over several semesters or 18 months.

COURSE DEVELOPMENT AND ONLINE MODALITY

Minimal course development is required for the GEF Certificate, as all core and elective courses are either currently offered or currently in development. Students will choose one foundational course from the following options: ORTM 5050: Global Tourism (available Years 1–2), ENR 5960: Experience of Place, ENR 5560: Conservation Entrepreneurship, or ENR 59xx: Global Environmental Futures, which will launch in Spring 2027. Foundational courses are primarily delivered in asynchronous online formats, offering flexibility for students and professionals with varying schedules, with one course also available in a traditional on-campus format. The program is designed to serve distance learners and working professionals through fully online delivery. For electives, students complete the asynchronous online portion of each course and may opt to participate in a field-based travel component for additional credits per course. Alternatively, they can choose an online project as a more affordable option. This flexible model ensures accessibility for diverse learners across Wyoming and beyond, supporting UW's commitment to expanding high-quality digital education.

DEGREE PROGRAM EVALUATION

The GEF Certificate will be evaluated through a comprehensive assessment framework designed to measure its impact on student learning, professional growth, and workforce relevance. Key metrics include the following:

Evaluation of Student Learning

Student learning will be assessed based on mastery of core competencies, including systems thinking, scenario modeling, and interdisciplinary problem-solving. Evaluation methods will include course-based projects, assignments, and faculty feedback, all guided by rubrics aligned with the certificate's defined learning outcomes to ensure consistent evaluation. Each course in the curriculum is mapped to specific student learning outcomes, and the evaluation of these outcomes will form an integral part of the certificate's overall assessment framework.

Student and Alumni Feedback

To gauge the program's impact, students will provide feedback through exit surveys upon completion of the certificate. Follow-up surveys will also be conducted with alumni to evaluate how the program contributed to their career advancement and professional development. This data will help refine the curriculum and delivery methods.

Stakeholder and Employee Engagement

The Haub School will periodically conduct surveys and interviews with employers of graduates, conducted independently by the Haub Career Services team. These efforts will help evaluate the certificate's effectiveness in meeting workforce needs, guide continuous improvement, and ensure ongoing alignment with industry and employer expectations.

Program Metrics and Retention

Key indicators of program success will include enrollment trends, retention rates, and certificate completions. These metrics will help to monitor the program's accessibility and effectiveness for both full-time and part-time learners.

Five-year Review

Consistent with our process for other certificates, a formal review will be conducted every five years, examining:

- Enrollment and retention data
- Graduate outcomes and career placements/professional impact
- Stakeholder feedback and evolving workforce demands
- Evolving state of knowledge in the field

This ongoing review process will ensure the program remains responsive to evolving student needs and workforce demands across a range of sectors, maintaining its relevance and overall impact.

Continuous Improvement

Feedback from students, alumni, and employers will be integrated into the certificate's ongoing design process, enabling timely updates to the curriculum, instructional methods, and elective offerings to ensure the program remains current, relevant, and impactful.

NEW RESOURCES REQUIRED

The GEF Certificate is designed to maximize existing faculty, courses, and institutional infrastructure, requiring minimal additional investment. Key resource considerations are as follows:

Instructional Resources

Current Haub School instructors will deliver all core and elective courses, including optional field courses. No new hires are anticipated. Only one new course (ENR 59xx) is under development, with teaching capacity already identified. All students have the option to take courses online or choose to complete their core course in person, providing a variety of flexible learning formats to suit different needs and preferences.

Marketing and Recruitment

Modest investment in marketing will be necessary to attract students, focusing on regional and national audiences. This will include digital campaigns and targeted outreach to working professionals. Promotional efforts will leverage existing Haub School and UW outreach infrastructure to maximize visibility with minimal added cost. The UW Office of Online and Continuing Education will also assist with marketing and recruitment.

Administrative Oversight

The GEF certificate will be administered within the Haub School's existing organizational framework. As the school expands in the next 3-5 years, we anticipate hiring a coordinator to oversee online teaching and learning. Current roles will support recruitment, advising, and student retention. Future revenue generated by the certificate will help sustain high-quality delivery and support strategic scaling as enrollment increases. This approach leverages the Haub School's institutional strengths while making targeted investments to enhance program accessibility, quality, and long-term impact.

SUBSTANTIVE CHANGE DETERMINATION

The graduate certificate in Global Environmental Futures represents a significant addition to the Haub School's curriculum but does not constitute a substantive change as defined by the Higher Learning Commission (HLC).

- Rationale: The program primarily leverages existing courses and faculty, integrates seamlessly with established UW programs, and requires minimal financial investment.
- HLC Consultation: Upon approval, the program will be submitted to the HLC Accreditation Liaison Officer to confirm alignment with accreditation standards for new certificate programs.

RELATIONSHIP TO OTHER OFFERINGS

The GEF certificate complements existing UW and Haub School programs by enhancing interdisciplinary, global, and future-oriented learning without duplicating current offerings. It aligns particularly well with degrees such as the MS in Environment, Natural Resources & Society, the MA in International Studies, and the MBA in Business Administration, while also expanding access through its online and flexible delivery. The certificate strengthens the Haub School's commitment to applied, systems-based education and serves as a valuable credential for students and professionals seeking to address complex environmental challenges at local to global scales.

Complementarity

The GEF certificate offers a strong complementary option to existing degree programs by providing interdisciplinary skills and perspectives that enhance students' academic and professional development. A key feature is the international field course option, which allows students to engage directly in diverse environmental and cultural contexts abroad. This hands-on, immersive experience strengthens the certificate by deepening students' understanding of global environmental challenges, fostering cross-cultural collaboration, and applying theoretical knowledge in real-world settings. The online option increases affordability by allowing students to complete elective courses without the cost burden of travel, while also offering the flexibility to add an optional course credit field course to either or both electives. Designed to complement a broad range of students across varying degree programs, from natural sciences and social sciences to business and humanities, the certificate enriches students' education by broadening global outlooks and practical skills, making graduates more competitive and effective in addressing complex environmental issues worldwide.

Interdisciplinary Collaboration

This certificate draws on the Haub School of Environment and Natural Resources' strong standing in the discipline of sustainability and environmental leadership. Its design ensures academic breadth and practical relevance, aligning with UW's commitment to interdisciplinary education by integrating diverse perspectives from natural sciences, social sciences, and policy studies to prepare students for real-world global environmental challenges.

SUMMARY OF DEMAND STATISTICS

Global environmental Futures spans multiple disciplines and sectors, making it challenging to isolate a single career path or institutional code that fully captures market demand. Trends in related fields, such as Natural Resources/Conservation (General), Environmental Studies, Sustainability Studies, Systems Science and Theory, Geography and Environmental Studies, and International Globalization Studies. In addition to national data, research was conducted to examine comparable international programs at institutions such as the University of Wollongong, University of Queensland, Freie Universität Berlin, Lancaster University, and the University of Leicester.

Executive Summary of Findings

The market analysis reveals strong and accelerating demand for graduate-level certificates in Global Environmental Futures. Nationally, completions of postbaccalaureate certificates increased by 95% from 2013 to 2023, with online certificate completions rising by over 259%, highlighting the growing preference for flexible, accessible professional credentials.

Key CIP codes relevant to the Global Environmental Futures (GEF) certificate demonstrate particularly robust growth:

Environmental Studies (03.0103): Postbaccalaureate certificate completions grew by 202% over the last decade.

Sustainability Studies (30.3301): Completions increased by 417%, signaling a strong and rising interest in sustainability-focused credentials.

Systems Science and Theory (30.0601): Reported a 1,100% increase in completions—underscoring demand for future-oriented tools like systems thinking and modeling.

Geography & Environmental Studies (30.4401): Identified as an emerging field, with rising interest in spatial and systems-based analysis for environmental solutions.

Importantly, the Rocky Mountain region is underserved at the graduate certificate level in these disciplines, presenting a strategic opportunity for the University of Wyoming to become a regional and national leader in online graduate environmental education. The proposed GEF certificate fills a curricular gap and aligns directly with employer needs in sectors such as

environmental consulting, policy analysis, land management, and global sustainability leadership.

Job Outlook

Employment prospects are promising and provide healthy job availability for graduates. The Bureau of Labor Statistics (BLS) data supports a positive employment landscape, strong 1-year, 3-year historic employment growth. 10-year future employment growth is also positive. 10-year future employment growth is not always a strong indicator of long-term employment opportunities given national economic, political, and technical advancements indicators. It is included in this case given all six (6) CIP Codes are considered to have positive/strong opportunities.

Graduates will be qualified for mid-level to advanced roles in environmental planning, sustainability strategy, climate policy, and natural resource management. According to BLS data, occupations such as *Environmental Scientists* (+6%), *Natural Sciences Managers* (+5%), and *Urban and Regional Planners* (+4%) are projected to grow steadily. Environmental analysts, and interdisciplinary project leads are increasingly in demand, especially in climate adaptation, sustainability leadership, and systems-based policy design.

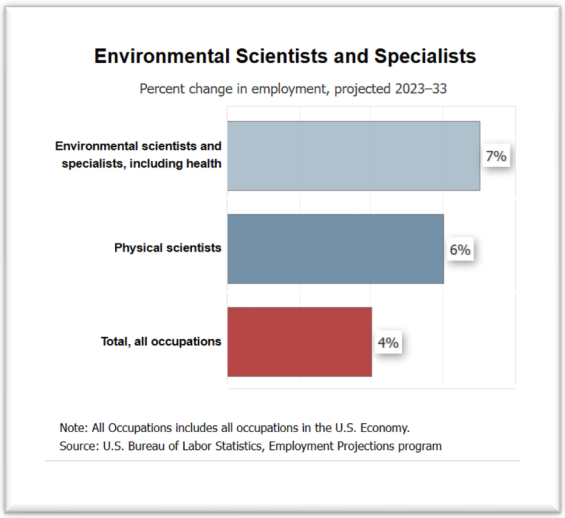
Professionals who complete post-baccalaureate certificates in related fields earn median wages ranging from $58,000 to $94,000 depending on occupation and region. The increase in online graduate program completions (+126.73% for master's and +259.38% for post-baccalaureate certificates) indicates not only rising interest but also alignment with labor market demand. These programs appeal especially to mid-career professionals seeking career advancement and salary growth.

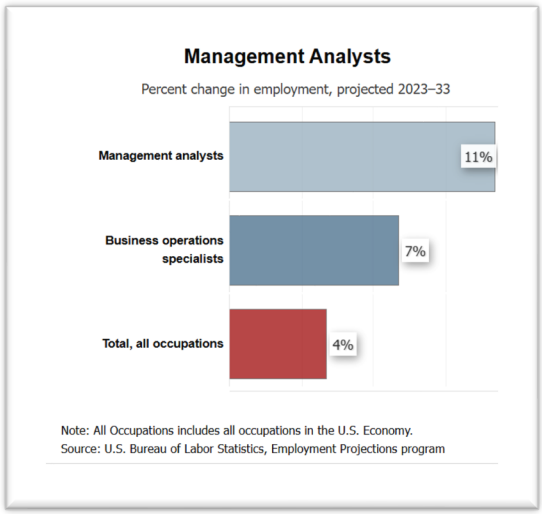
Employment Projections Data, Bureau of Labor Statistics

Occupational Title	SOC Code	Employment, 2023	Projected Employment, 2033	Change, 2023-33	
				Percent	Numeric
Environmental scientists and specialists	19-2041	84,600	90,700	7	6,100
Conservation scientists	19-1031	25,900	27,400	6	1,400

Management analysts (sustainability consultants)	13-1111	1,018,300	1,126,200	11	107,900

Projected percent change in employment, by field





SOURCE: Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*

Market Analysis

The graduate certificate market is experiencing strong growth, particularly for online programs that offer targeted professional development. Nationally, post-baccalaureate certificate completions grew by 259% online from 2013 to 2023, and master's-level completions in environmental and sustainability-related fields have also surged, with increases exceeding 500% in some areas. As environmental and sustainability challenges become more complex, professionals increasingly seek flexible, interdisciplinary credentials to advance in roles such as environmental analysts, planners, and sustainability managers. The GEF graduate certificate directly responds to this market need and aligns with UW's mission to expand online graduate offerings and workforce significant education.

International Programs

The GEF programs examined were University of Wollongong, University of Queensland, Freie Universität, Lancaster University, and University of Leicester, highlights a growing international emphasis on interdisciplinary, future-oriented environmental education. These initiatives integrate themes such as climate change, sustainability governance, environmental justice, and planetary systems thinking, often organized around real-world challenges. Many combine research, policy engagement, and experiential learning through seminars, capstones, or stakeholder partnerships. Notably, programs like Lancaster's MA and QUEX's research collaboration emphasize global perspectives and applied skills in foresight, innovation, and scenario planning. What makes our certificate unique among peer institutions is its inclusion of international, field-based electives featuring immersive, hands-on projects.

These models suggest strong potential for a U.S.-based GEF certificate that blends interdisciplinary coursework, practical application, and global-local engagement, serving both undergraduate and graduate students interested in addressing complex environmental challenges through forward-thinking and systems-based approaches.

Comparative Summary of International Global Environmental Futures Programs

	Leicester IEF	Lancaster MA	DAAD Master's	QUEX (UQ + Exeter)	UOW Research Entity
Level	Research institute	Taught MA	Taught MA (Germany)	Doctoral & research theme	Thematic research cluster
Thematic Focus	Broad: systems, justice, climate	Sustainability, global policy, futures	Global sustainability challenges	Environmental futures, climate, policy	Climate, conservation, ecosystems
Education / Training	PhD, postdoc, seminars	MA with global leadership focus	Master's with interdisciplinary lens	PhD cohort, collaborative research	Seminars, field projects, PhD support
Geographic Reach	UK-led, global engagement	UK with global cases and networks	Germany-based, global applicants	Australia–UK partnership	Australia-based, global fieldwork
Program Age	~2–3 years (launched ~2022)	New: Launching in 2025	Ongoing, date unspecified	~6 years (theme active since ~2019)	~5–7 years

Highlights of the Analysis

- **Significant Online Growth**: Post-baccalaureate and master-level online certificate completions have grown substantially—up to 268% for post-master certificates and 127% for master's degrees.
- **Low Market Saturation**: Market saturation remains relatively low, Environmental Studies and Sustainability Studies, regional and online options remain limited, presenting a strong opportunity for the University of Wyoming to meet growing national and regional demand at both the undergraduate and graduate levels.
- **Rising Master's Completions**: Master's degrees in relevant areas (e.g., Environmental Studies, Sustainability Studies) have seen increases of 50% to nearly 600% in completions from 2013 to 2023.
- **Strategic Fit with Haub School Strengths**: The program's interdisciplinary, place-based, and systems-oriented approach aligns with UW's mission and can complement existing graduate offerings.
- **Online Delivery Preferred**: Online graduate certificates are particularly attractive for working professionals seeking career advancement or specialization without committing to a full degree.

The market analysis demonstrates that the graduate certificate in GEF fills a clear national and regional gap. A 259% increase in online post-baccalaureate certificate completions over the last decade, signals strong and growing demand for flexible, interdisciplinary credentials. Additionally, master's-level completions in related fields such as Environmental Studies and Sustainability Studies have surged by over 90% to 600%, underscoring the increasing importance of advanced, systems-based environmental training. The University of Wyoming is uniquely positioned to lead in this space by offering a high-impact, online graduate certificate that equips professionals with the geographic, policy, and systems-thinking skills needed to address complex environmental challenges in a rapidly evolving workforce.

APPENDIX A: PRELIMINARY MARKET ANALYSIS

Undergraduate Certificate in Global Environmental Futures

Graduate Certificate in Global Environmental Futures

Includes:

1. *Classification of Instructional Programs (CIP) Code Definitions[1]*
2. *Overall Findings[2]*
3. *Market area and primary target markets[2,4]*
4. *Educational market and student demand statistics, including peer comparisons of the size of enrollment, completions, and size trajectory (growth, decline) of comparator programs[2,4]*
5. *Employment trends and projections given core competencies of the degree or certificate[2,4]*
6. *Graduate salary trends and other post-completion trends[2,4]*
7. *Tuition Analysis & Program Comparisons (areas of concentration, delivery method, credits required…)[3]*

[1]National Center of Education Statistics https://nces.ed.gov/ipeds/cipcode/Default.aspx?y=56
[2]Gray Decision Intelligence data subscription
[3]Various Higher Education Institutional websites
[4]Required for Feasibility Study, NOI & RFA

Prepared by Jayne Pearce, Office of Online & Continuing Education

22 July 2025

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1. Classification of Instructional Programs (CIP) Code Definitions

30.4401 Geography and Environmental Studies—Definition: A program that focuses on interactions between people and the natural and built environments. Includes instruction in climate science, sustainability, environmental science and policy, research methods, geographic information systems (GIS), human geography, physical geography, remote sensing, and public policy. *New CIP Code in 2020*

30.2001 International Globalization Studies—Definition: A program that focuses on global and international issues from the perspective of the social sciences, social services, and related fields.

03.0101 Natural Resources Conservation, General—Definition: A general program that focuses on the studies and activities relating to the natural environment and its conservation, use, and improvement. Includes instruction in subjects such as climate, air, soil, water, land, fish and wildlife, and plant resources; in the basic principles of environmental science and natural resources management; and the recreational and economic uses of renewable and nonrenewable natural resources.

03.0103 Environmental Studies—Definition: A program that focuses on environment-related issues using scientific, social scientific, or humanistic approaches or a combination. Includes instruction in the basic principles of ecology and environmental science and related subjects such as policy, politics, law, economics, social aspects, planning, pollution control, natural resources, and the interactions of human beings and nature.

30.3301 Sustainability Studies—Definition: A program that focuses on the concept of sustainability from an interdisciplinary perspective. Includes instruction in sustainable development, environmental policies, ethics, ecology, landscape architecture, city and regional planning, economics, natural resources, sociology, and anthropology.

30.0601 Systems Science and Theory—Definition: A program with a multidisciplinary approach to the analysis and solution of complex problems, requiring a combined approach using data and models from the natural, social, technological, behavioral and life sciences, and other specialized fields.

2. Overall findings

- The national and regional market is open and presents an amazingly strong opportunity for **new** enrollments at the graduate and undergraduate certificate award levels. Stronger **new** enrollment opportunities if delivered online asynchronously.
- The certificate (undergraduate and graduate) option is nationally and regionally unique and great for UW and the Haub School

- An undergraduate certificate, bachelor, post-baccalaureate certificate and or master in sustainability studies is highly recommended for consideration by UW Haub School.
- Geography and Environmental Studies 30.4401 is an emerging program indicating the importance of place. A certificate in Global Environmental Futures will address this consideration perfectly
- Wages are strong. Necessary workforce skills include an understanding of GIS&T. Courses and or a Certificate in this field is strongly recommended for students.
- Consider adjusting tuition rates for Haub School master and graduate certificate programs upwards.

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3. Market area and primary target markets

4. Educational market and student demand statistics, including peer comparisons of the size of enrollment, completions, and size trajectory (growth, decline) of comparator programs

- The market area is defined as either regional (Colorado, Idaho, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming) or the entire nation.
- Delivery method is an important consideration when assessing program completions. Online program completion numbers have grown as programs transition from on-ground to online delivery as higher education institutions attempt to increase student enrollments and tuition revenue while also providing workplace flexibility to faculty and staff.
- Completion numbers indicate student demand trends

3. & 4. A. An 11-year review of all programs (all CIP Codes) completion numbers at undergraduate certificate, bachelor, postbaccalaureate certificate, master and post-master award level.

- Note the significant completion increases in all online certificate (undergraduate, postbaccalaureate, and post master certificates) programs 2013 vs 2023. Indicating strong student demand for certificate programs, specifically delivered online.

2013 all programs (all cip codes) completions vs 2023							
All undergraduate certificates, bachelor, postbaccalaureate certificate, master, and post master certificate program completions	**2013 Online**	**2013 On - ground**	**2013 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**	**2013 vs. 2023 Completions, Percentage increases vs. decreases**
Undergraduate Certificates	**39,072**	**963,828**	**1,002,900**	**161,859**	**932,435**	**1,094,294**	**Online: 314.258% Increase** ***Onground: 3.257% Decrease*** **Total: 9.11% Increase**
Bachelor	184,527	1,775,932	1,960,459	335,261	1,746,202	2,081,463	Online: 81.686% Increase *Onground: 1.674% Decrease*

							Total: 6.162% Increase
Postbaccalaureate Certificates	**9,102**	**26,505**	**35,607**	**32,711**	**36,816**	**69,527**	**Online: 259.382% Increase**
							Onground: 38.90% Increase
							Total: 95.262% Increase
Master	175,867	591,799	767,666	398,751	551,842	950,593	Online: 126.734% Increase
							Onground: 6.751% Decrease
							Total: 23.828% Increase
Post-master Certificates	**2,975**	**14,928**	**17,903**	**10,950**	**14,955**	**25,905**	**Online: 268.067% Increase**
							Onground: 0.180% Increase
							Total: 44.696% Increase

3. & 4. B. Notes:

- The six CIP Codes reviewed capture the curricular needs of a certificate in Global Environmental Futures
- Below includes completion numbers at the associate, undergraduate certificate, bachelor's, postbaccalaureate certificate, and master's award levels for all CIP Codes requested plus one added by the author of this report, International/Globalization Studies to enhance the sense of place.
    - Associate award level completions are included to gauge potential student transfer opportunities regionally and nationally. A strong enrollment audience for the University of Wyoming
    - Undergraduate Certificate level completions are a direct correlation of the market in which the undergraduate certificate in Global Environmental Futures enters. Undergraduate certificates can consist of lower division, upper division or a combination of lower and upper division courses. Online undergraduate certificates also provide an opportunity for students to manage their transfer to campus while finishing an associate degree or other courses at the community college level.
    - Bachelor award level completions are included to gauge potential student numbers and programs that are similar to or have interest in a postbaccalaureate certificate
    - Postbaccalaureate Certificate award level completions are a direct correlation of the market in which the graduate certificate in Global Environmental Futures enters. Like the undergraduate certificate, a graduate certificate may assist students with bachelor graduation requirements or assist in the transition to campus for on-ground programs.
    - Master award level completions are included to gauge potential graduate student opportunities and program interest
- **Please note the brown highlighted background with white font color within each CIP Code for important details**

3. & 4. C. Geography and Environmental Studies 30.4401

Associate Award Level Geography & Environmental Studies 30.4401	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
No Associate Award Level Geography and Environmental Studies 30.4401 completions in the nation in 2013 as this was a new CIP Code in 2020. Between 2021-2023 there were no Associate Award Level completions.									

Undergraduate Certificate Award Level Geography & Environmental Studies 30.4401	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
No Undergraduate Certificate Award Level Geography and Environmental Studies 30.4401 completions in 2013 in the nation as this was a new CIP Code in 2020.									
TOTAL	**0**	**2**	**2**	**1**	**57**	**58**	**2**	**59**	**61**
A 2,950% increase in completions from 2021 to 2023									
Pennsylvania State University, Main Campus	0	0	0	0	57	57	0	33	33
University of Kansas	0	0	0	0	0	0	0	13	13
Onio University, Main Campus	0	0	0	0	0	0	0	8	8
Northeastern State University, OK *(only online completion in the nation)*	0	2	2	0	0	0	2	1	3
University of Wisconsin, Parkside	0	0	0	0	0	0	0	3	3
No Regional (CO, ID, MT, ND, NE, SD, UT, and WY) Undergraduate Certificate Programs									
Bachelor Award Level Geography & Environmental Studies 30.4401	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
No Bachelor Award Level Geography and Environmental Studies completions in 2013 in the nation as this was a new CIP Code in 2020.									
TOTAL	**1**	**37**	**38**	**3**	**205**	**208**	**23**	**544**	**567**
A 1,392% increase in completions from 2021 to 2023									
Dartmouth College, NH	0	0	0	0	0	0	0	78	78
University of Colorado, Boulder	0	0	0	0	0	0	0	59	59
University of California, Los Angeles	0	0	0	0	33	33	0	46	46
University of Washington, Seattle Campus	0	0	0	0	0	0	0	37	37
University of Minnesota, Duluth	0	0	0	0	33	33	0	36	36
Online Bachelor Programs with the highest completion numbers in 2023									
University of Florida, Online	0	0	0	0	0	0	16	0	16
University of Florida	0	0	0	0	0	0	3	22	25
South Dakota State University	0	0	0	3	8	11	3	9	12
Western Michigan University	0	0	0	0	0	0	1	6	7
Regional Bachelor Programs									
CO-University of Colorado, Boulder	0	0	0	0	0	0	0	59	59
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0

SD-South Dakota State University	0	0	0	3	8	11	3	9	12
UT-BYU	0	0	0	0	1	1	0	1	1
UT-Utah State University	0	0	0	0	0	0	0	1	1
WY-No programs	0	0	0	0	0	0	0	0	0
12.874% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Shows potentially strong regional interest and opportunity for UW Haub School									
Post Baccalaureate Certificate Award Level Geography & Environmental Studies 30.4401	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
No Post Baccalaureate Certificate Award Level Geography and Environmental Studies completions in 2013 in the nation as this was a new CIP Code in 2020.									
Below are the only two Post Baccalaureate Certificate programs in the nation									
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**4**
Ohio University, Main Campus	0	0	0	0	0	0	2	1	3
University of Kansas	0	0	0	0	0	0	0	1	1
Potential opportunity for UW Haub School graduate certificate									
Master Award Level Geography & Environmental Studies 30.4401	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
No Master Award Level Geography and Environmental Studies completions in 2013 in the nation as this was a new CIP Code in 2020.									
TOTAL	**0**	**0**	**0**	**0**	**24**	**24**	**3**	**123**	**126**
University of Oklahoma, Norman Campus	0	0	0	0	0	0	0	38	38
University of Illinois, Urbana Champaign	0	0	0	0	0	0	0	10	10
Pennsylvania State University, Main Campus	0	0	0	0	4	4	0	10	10
Western Michigan University *(only online completion)*	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**5**	**8**
Clark University, MA	0	0	0	0	3	3	0	7	7
Regional Master Programs									
CO-University of Colorado, Boulder	0	0	0	0	0	0	0	6	6
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-South Dakota State University	0	0	0	0	1	1	0	1	1
UT-Utah State University	0	0	0	0	0	0	0	2	2
WY-No programs	0	0	0	0	0	0	0	0	0
7.142% of master completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Overall, potentially strong opportunity for UW Haub School, robust student completion growth, interest and trends.									

3.& 4.D. International – Globalization Studies 30.2001

Below is one of many international and or global programs of interest e.g. international economics, agriculture globalization, international affairs and development... Aggregate and regional completions provided for only one international/globalization program, program completion decreases are not of high concern given the variety and number of international/globalization CIP Code programs and pandemic recovery.									
Associate Award Level International - Globalization Studies 30.2001	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Associate Award Level International - Globalization Studies 30.2001 completions was 57									
A 62.711% decrease in completions from 2013 to 2023									
A 46.341% decrease in completions from 2021 to 2023									
TOTAL	**0**	**41**	**41**	**12**	**24**	**36**	**1**	**21**	**22**
Regional Associate Award Level Programs									
NE-Northeast Community College	0	0	0	0	1	1	0	0	0
UT-Salt Lake Community College	0	1	1	0	3	3	0	2	2
WY-Central Wyoming College in 2013 had one (1) completion									
Undergraduate Certificate Award Level International - Globalization Studies 30.2001	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Undergraduate Certificate Award Level International - Globalization Studies 30.2001 completions was 251									
An 11.155% decrease in completions from 2013 to 2023									
A 4.205% increase in completions from 2021 to 2023									
TOTAL	**28**	**186**	**214**	**13**	**149**	**162**	**29**	**194**	**223**
Regional Undergraduate Certificate Award Level Programs									
NE-Southeast Community College Area	0	0	0	0	0	0	5	0	5
SD-Black Hills State University	0	1	1	0	0	0	0	1	1
Bachelor Award Level International - Globalization Studies 30.2001	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Bachelor Award Level International - Globalization Studies 30.2001 completions was 5,943.									
A 12.939% decrease in completions from 2013 to 2023									
A 16.494% decrease in completions from 2021 to 2023									
TOTAL	**235**	**5,961**	**6,196**	**283**	**5,258**	**5,541**	**245**	**4,929**	**5,174**
Regional Bachelor Award Level Programs									
CO-University of Colorado, Boulder	0	180	180	0	135	135	0	122	122
CO-United States Air Force Academy	0	57	57	0	55	55	0	72	72
CO-Colorado State University, Fort Collins	0	49	49	0	50	50	0	37	37

CO-University of Colorado, Denver Anschutz	0	38	38	0	25	25	0	19	19
CO-University of Northern Colorado	0	18	18	0	9	9	0	8	8
CO-University of Denver	1	1	2	4	0	4	6	0	6
CO-Colorado Christian University	7	3	10	0	9	9	0	3	3
ID-BYU Idaho	0	68	58	0	60	60	0	44	44
ID-Boise State University	0	18	18	0	15	15	0	9	9
ID-Idaho State University	1	4	5	2	3	5	1	2	3
MT-No programs	0	0	0	0	0	0	0	0	0
ND-University of North Dakota	0	11	11	0	4	4	0	6	6
ND-North Dakota State University, Main Campus	0	5	5	0	4	4	0	1	1
NE-University of Nebraska, Lincoln	0	39	39	0	25	25	0	27	27
NE-University of Nebraska, Omaha	0	48	48	0	31	31	0	23	23
NE-Concordia University, Nebraska	0	2	2	0	3	3	0	1	1
NE-Wesleyan University	0	1	1	0	2	2	0	1	1
NE-Doane University	0	1	1	0	1	1	0	0	0
SD-South Dakota State University	0	5	5	0	1	1	0	7	7
SD-University of South Dakota	0	6	6	0	6	6	0	4	4
SD-Augustana University	0	2	2	0	1	1	0	1	1
UT-University of Utah	0	133	133	0	110	110	0	105	105
WY-University of Wyoming	0	16	16	0	28	28	0	19	19
10.011% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Post Baccalaureate Certificate Award Level International - Globalization Studies 30.2001	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Post Baccalaureate Certificate Award Level International - Globalization Studies 30.2001 completions was 102.									
A 26.865% decrease in completions from 2013 to 2023									
A 16.666% increase in completions from 2021 to 2023									
TOTAL	**20**	**47**	**67**	**18**	**30**	**48**	**19**	**66**	**85**
Regional Post Baccalaureate Certificate Award Level Programs									
CO-University of Denver	0	5	5	0	4	4	6	2	8
No other Regional Completions									
9.411% of the post baccalaureate completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Master Award Level International - Globalization Studies 30.2001	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Master Award Level International - Globalization Studies 30.2001 completions was 1,257.									
A 12.47% decrease in completions from 2013 to 2023									

A 25.377% increase in completions from 2021 to 2023									
TOTAL	**278**	**556**	**834**	**290**	**562**	**852**	**336**	**602**	**938**
Regional Master Award Level Programs									
CO-University of Denver	16	3	19	10	2	12	9	4	13
ID-No programs	0	0	0	0	0	0	0	0	0
MT-University of Montana	0	2	2	0	2	2	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-University of Utah	0	14	14	0	12	12	0	16	16
WY-University of Wyoming	0	6	6	0	6	6	0	4	4
3.51% of the master completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									

3. & 4. E. Natural Resources Conservation 03.0101

Associate Award Level Natural Resources Conservation 03.0101	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Associate Award Level Natural Resources Conservation 03.2001 completions was 292									
A 4.45% increase in completions from 2013 to 2023									
A 16.412% increase in completions from 2021 to 2023									
TOTAL	**15**	**247**	**262**	**26**	**273**	**299**	**30**	**275**	**305**
Kirkwood Community College, IA	0	13	13	0	21	21	0	29	29
SUNY College of Environmental Science & Forestry	0	22	22	0	25	25	0	22	22
Vincennes University, IN	0	26	26	0	23	23	0	21	21
Fox Valley Technical College, WI	0	16	16	0	26	26	0	21	21
Minnesota North College Association	0	0	0	0	15	15	0	18	18
Online programs with high completion numbers									
Mississippi Gulf Coast Community College	3	4	7	10	2	12	11	3	14
Finger Lakes Community College, NY	0	3	3	0	6	6	8	0	8
Snow College, UT	0	0	0	2	10	12	5	12	17
Regional Associate Award Level Programs									
CO-Northwestern Community College	0	1	1	0	10	10	0	6	6
ID-College of Western Idaho	0	9	9	0	10	10	0	4	4
ID-North Idaho College	0	0	0	0	4	4	0	0	0
MT-Stone Child College	0	1	1	0	2	2	0	1	1
MT-Little Big Horn College	0	5	5	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0

NE-Northeast Community College	0	5	5	0	0	0	0	1	1
SD-No programs	0	0	0	0	0	0	0	0	0
UT-Snow College	0	0	0	2	10	12	5	12	17
WY-No programs	0	0	0	0	0	0	0	0	0
16.4122% of associate award level completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Undergraduate Certificate Award Level Natural Resources Conservation 03.0101	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Undergraduate Certificate Award Level Natural Resources Conservation 03.0101 was 119									
A 60.504% increase in completions from 2013 to 2023									
A 6.703% increase in completions from 2021 to 2023									
TOTAL	**7**	**172**	**179**	**18**	**207**	**225**	**8**	**183**	**191**
American River College, CA	0	21	21	0	13	13	0	26	26
Northwestern Community College, CO	0	34	34	0	36	36	0	22	22
Reedley College, CA	0	22	22	0	25	25	0	16	16
Mount Hood Community College, OR	2	13	15	2	14	16	1	13	14
Bastyr University, WA	0	4	4	0	7	7	0	14	14
Online Undergraduate Certificate Program									
University of Maryland, Global MD	0	0	0	0	0	0	4	1	5
Anoka-Ramsey Community College, MN	0	0	0	1	1	2	2	0	2
Regional Programs (CO, ID, MT, ND, NE, SD, UT, and WY)									
CO-Northwestern Community College	0	34	34	0	36	36	0	22	22
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-Snow College	0	0	0	0	0	0	1	1	2
WY-No programs	0	0	0	0	0	0	0	0	0
12.565% of the completions occurred in this region in 2023 (only one online completion and program in the region. The Snow College program in Utah consists of freshman (1000) and sophomore (2000) level courses, (no upper division courses; https://www.snow.edu/academics/programs/natural-resources.html*). Indicates an opportunity for UW Haub School*									
Bachelor Award Level Natural Conservation Resources 03.0101	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Bachelor Award Level Natural Resources Conservation 03.0101 was 1,448									
A 3.107% increase in completions from 2013 to 2023									
A 2.609% decrease in completions from 2021 to 2023									
TOTAL	**95**	**1,438**	**1,533**	**46**	**1,456**	**1,502**	**64**	**1,429**	**1,493**

Texas A&M University, College Station	0	126	126	0	150	150	0	140	140
University of California, Berkeley	0	104	104	0	99	99	0	119	119
Texas Tech University	0	64	64	0	60	60	0	86	86
Cornell University, NY	0	97	97	0	101	101	0	79	79
University of Massachusetts, Amherst	0	78	78	0	65	65	0	77	77
Online Bachelor Programs									
University of Maryland, Global Campus	66	20	86	46	12	58	63	11	74
Thomas University, GA	0	0	0	0	0	0	1	2	3
Regional Bachelor Programs									
CO-Colorado State University, Pueblo	0	9	9	0	18	18	0	9	9
ID-No programs	0	0	0	0	0	0	0	0	0
MT-University of Montana	0	39	39	0	31	31	0	13	13
MT-Montana State University	0	3	3	0	1	1	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-University of Nebraska, Lincoln	0	17	17	0	17	17	0	14	14
SD-South Dakota State University	0	1	1	0	0	0	0	5	5
UT-Utah State University	0	1	1	0	0	0	0	5	5
WY-No programs	0	0	0	0	0	0	0	0	0
3.08% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Post Baccalaureate Certificate Award Level Natural Resources Conservation 03.0101	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Post Baccalaureate Certificate Award Level Natural Resources Conservation 03.0101 was 21									
An 123.809% increase in completions from 2013 to 2023									
A 2.173% increase in completions from 2021 to 2023									
TOTAL	**23**	**23**	**46**	**37**	**31**	**68**	**20**	**27**	**47**
Northern Arizona University	0	0	0	8	2	10	9	3	12
Auburn University, AL	6	8	14	7	6	13	6	6	12
Colorado State University, Fort Collins	6	5	11	5	3	8	0	7	7
Texas A&M University, College Station	0	1	1	1	1	2	2	2	4
University of Rhode Island	0	0	0	12	8	20	2	1	3
Regional Post Baccalaureate Programs									
CO-Colorado State University, Fort Collins	6	5	11	5	3	8	0	7	7
ID-Bosie State University	0	0	0	0	0	0	0	2	2
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0

NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	1	1
21.276% of all completions occurred in this region (CO, ID, MT, ND, NE, SD, UT, and WY) No online completions in the region, a good opportunity for UW Haub School graduate certificate options.									
Master Award Level Natural Resources Conservation 03.0101	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Master Award Level Natural Resources Conservation 03.0101 completions was 605									
A 50.9% increase in completions from 2013 to 2023									
A 27.461% increase in completions from 2021 to 2023									
TOTAL	**215**	**506**	**721**	**155**	**632**	**787**	**195**	**724**	**919**
University of Michigan, Ann Arbor	0	165	165	0	215	215	0	250	250
Duke University, NC	115	0	115	0	94	94	0	158	158
Colorado State University, Fort Collins	26	20	46	36	23	59	53	14	67
Unity Environmental University, ME	16	0	16	52	0	52	66	0	66
Auburn University, AL	11	13	24	9	8	17	22	19	41
Online Master Programs									
Slippery Rock University of Pennsylvania	12	0	12	26	0	26	21	6	27
University of Missouri, Columbia	9	3	12	17	7	24	21	6	27
Regional Master Programs									
***CO**-Colorado State University, Fort Collins (online program)*	*26*	*20*	*46*	*36*	*23*	*59*	*53*	*14*	*67*
ID-No programs	0	0	0	0	0	0	0	0	0
MT-University of Montana	0	6	6	0	10	10	0	7	7
MT-Montana State University	0	3	3	0	1	1	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-University of Nebraska, Lincoln	0	17	17	0	17	17	0	14	14
SD-South Dakota State University	0	1	1	0	0	0	0	5	5
UT-Utah State University	7	0	7	8	0	8	0	0	0
WY-No programs	0	0	0	0	0	0	0	0	0
10.119% of all completions occurred in this region (CO, ID, MT, ND, NE, SD, UT, and WY). Only one online program in the region.									

3. & 4. F. Environmental Studies 03.0103

Associate Award Level Environmental Studies 03.0103	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Associate Award Level Environmental Studies completions was 183									

An 18.579% increase in completions from 2013 to 2023									
A 9.595% increase in completions from 2021 to 2023									
TOTAL	**5**	**193**	**198**	**21**	**221**	**242**	**9**	**208**	**217**
Hudson Community College, NJ	0	12	12	0	46	46	0	14	14
Mountain San Antonio College, CA	0	7	7	0	18	18	0	11	11
University of Cincinnati-Blue Ash College	0	7	7	0	4	4	0	11	11
Community College of Vermont *(online completions)*	0	8	8	9	3	12	8	2	10
Santa Rosa Junior College, CA	0	10	10	0	13	13	0	10	10
Regional Associate Award Level Programs									
CO-No programs	0	0	0	0	0	0	0	0	0
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-Sitting Bull College	0	2	2	0	2	2	0	4	4
NE-Little Priest Tribal College	0	0	0	0	1	1	0	1	1
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	0	0
2.304% of associate award level completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY), no regional online completions in this region									
Undergraduate Certificate Award Level Environmental Studies 03.0103	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Undergraduate Certificate Award Level Environmental Studies 03.0103 was 38									
A 994.736% increase in completions from 2013 to 2023									
A 19.540% increase in completions from 2021 to 2023									
TOTAL	**23**	**325**	**348**	**27**	**342**	**369**	**38**	**378**	**416**
University of Wisconsin, Madison	0	213	213	0	218	218	0	259	259
Arizona State University, Campus Immersion	0	49	49	0	55	55	0	38	38
Ohio University, Main Campus	0	34	34	0	35	35	0	26	26
Hocking College, OH	0	0	0	0	0	0	0	16	16
Columbia Southern University, AL	16	0	16	16	0	16	15	0	15
Online Undergraduate Certificate Program									
American Public University System, WV	7	0	7	8	0	8	13	0	13
Regional Programs (CO, ID, MT, ND, NE, SD, UT, and WY)									
CO-Metropolitan State University-Denver	0	3	3	0	5	5	0	5	5

ID-Boise State University	0	0	0	0	2	2	0	1	1
MT-University of Montana	0	0	0	0	1	1	0	1	1
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	0	0
1.682% of the completions occurred in this region in 2023, zero online completions in the region. Given zero online programs in the region opportunity exists for UW Haub School, especially combined with the completion percentage increases from 2013-2023 and 2021-2023									
Bachelor Award Level Environmental Studies 03.0103	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Bachelor Award Level Environmental Studies 03.0103 was 6,629									
A 20.500% increase in completions from 2013 to 2023									
A 2.765% increase in completions from 2021 to 2023									
TOTAL	**379**	**7,394**	**7,773**	**376**	**7,478**	**7,854**	**375**	**7,613**	**7,988**
University of California, Santa Barbara	0	377	377	0	318	318	0	338	338
University of California, Berkeley	0	268	268	0	221	221	0	222	222
University of Colorado, Boulder	0	188	188	0	214	214	0	206	206
University of California, Santa Cruz	0	180	180	0	132	132	0	155	155
University of Michigan, Ann Arbor	0	142	142	0	123	123	0	134	134
Online Bachelor Programs									
University of Phoenix, AZ	141	1	142	151	1	152	130	0	130
Arizona State University, Digital Immersion	59	0	59	67	0	67	86	0	86
Columbia Southern University, AL	84	0	84	62	0	62	61	0	61
Regional Bachelor Programs									
CO-University of Colorado, Boulder	0	188	188	0	214	214	0	206	206
CO-Fort Lewis College	0	30	30	0	29	29	0	34	34
CO-Colorado College	0	20	20	0	24	24	0	30	30
CO-Western Colorado University	0	33	33	0	28	28	0	24	24
CO-Naropa University	0	5	5	0	2	2	0	6	6
CO-University of Denver	1	0	1	1	0	1	0	2	2
ID-Boise State University	0	48	48	0	45	45	0	38	38
ID-College of Idaho	0	9	9	0	8	8	0	9	9
MT-University of Montana	0	25	25	0	24	24	0	13	13
MT-Carroll College	0	4	4	0	6	6	0	9	9
MT-Montana State University, Billings	0	3	3	0	6	6	0	6	6

ND-University of North Dakota	0	3	3	0	4	4	0	9	9
NE-University of Nebraska, Lincoln	0	35	35	0	21	21	0	27	27
SD-South Dakota State University	0	9	9	0	13	13	0	13	13
SD-Augustana University	0	0	0	0	4	4	0	7	7
UT-Utah State University	0	24	24	0	22	22	0	37	37
UT-University of Utah	11	87	98	0	35	35	0	35	35
UT-Westminster College	0	16	16	0	14	14	0	14	14
WY-University of Wyoming	0	37	37	0	30	30	0	52	52
7.148% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY). No online bachelor programs in 2023									
Post Baccalaureate Certificate Award Level Environmental Studies 03.0103	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Post Baccalaureate Certificate Award Level Environmental Studies 03.0103 was 34									
A 202.941% increase in completions from 2013 to 2023									
An 1.904% decrease in completions from 2021 to 2023									
TOTAL	**69**	**36**	**105**	**48**	**48**	**96**	**46**	**57**	**103**
American Public University, WV	14	0	14	29	0	29	21	0	21
Antioch University New England, NH	0	16	16	0	9	9	0	20	20
Arizona State University, Digital Immersion	2	0	2	9	0	9	10	0	10
Arizona State University, Campus Immersion	0	0	0	0	4	4	0	8	8
University of Kansas	0	5	5	0	9	9	0	6	6
Online Post Baccalaureate Certificate Programs									
Columbia Southern University, AL	6	0	6	2	0	2	4	0	4
Ohio State University, Main Campus	0	0	0	3	2	5	3	2	5
Regional Bachelor Programs									
CO-No programs	0	0	0	0	0	0	0	0	0
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	1	1
No regional Post Baccalaureate Programs in this region, a strong opportunity for UW Haub School									

Master Award Level Environmental Studies 03.0103	2021 Online	2021 On - ground	2021 Total	2022 Online	2022 On - ground	2022 Total	2023 Online	2023 On - ground	2023 Total
In 2013 Master Award Level Environmental Studies 03.0103 completions was 834									
A 93.525% increase in completions from 2013 to 2023									
A 19.11% increase in completions from 2021 to 2023									
TOTAL	**74**	**1,281**	**1,355**	**150**	**1,363**	**1,513**	**152**	**1,462**	**1,614**
Harvard University	0	168	168	0	87	87	0	149	149
University of Pennsylvania	0	76	76	0	101	101	0	141	141
Yale University	0	94	94	0	160	160	0	121	121
University of Colorado, Boulder	0	76	76	0	85	85	0	103	103
Arizona State University, Digital Immersion	33	0	33	91	0	91	94	0	94
Online Master Programs									
Prescott College, AZ	10	0	13	19	0	19	18	0	18
Webster University, MO	14	21	35	12	15	27	9	9	18
Regional Master Programs									
CO-University of Colorado, Boulder	0	76	76	0	85	85	0	103	103
CO-Western Colorado University	0	29	29	0	26	26	0	41	41
ID-No programs	0	0	0	0	0	0	0	0	0
MT-University of Montana	0	11	11	0	23	23	0	19	19
ND-University of North Dakota	0	1	1	0	1	1	0	0	0
NE-No programs	0	17	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-Utah State University	0	5	5	0	4	4	0	17	17
WY-University of Wyoming	0	8	8	0	113	13	0	16	16
12.143% of all completions occurred in this region (CO, ID, MT, ND, NE, SD, UT, and WY), no online programs in the region									

3. & 4. G. Sustainability Studies 30.3301

Associate Award Level Sustainability Studies 30.3301	2021 Online	2021 On - ground	2021 Total	2022 Online	2022 On - ground	2022 Total	2023 Online	2023 On - ground	2023 Total
In 2013 Associate Award Level Sustainability Studies 30.3301 completions was 25									
A 24% increase in completions from 2013 to 2023									
An 121.428% increase in completions from 2021 to 2023									
TOTAL	**0**	**14**	**14**	**4**	**19**	**23**	**9**	**22**	**31**
Mesa Community College, AZ	0	1	1	2	2	4	5	5	10
Chandler-Gilbert Community College, AZ	0	0	0	2	2	4	2	2	4
Estrella Mountain Community College, AZ	0	0	0	0	3	3	0	3	3
Phoenix College, AZ	0	0	0	0	3	3	0	3	3

Middlesex College, NJ	0	1	1	0	3	3	0	3	3
Regional Associate Award Level Programs									
CO-No programs	0	0	0	0	0	0	0	0	0
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-Sitting Bull College	0	2	2	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	0	0
No associate award level completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Undergraduate Certificate Award Level Sustainability Studies 30.3301	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Undergraduate Certificate Award Level Sustainability Studies 30.3301 was 7									
A 4,285.71% increase in completions from 2013 to 2023									
A 34.0611% increase in completions from 2021 to 2023									
TOTAL	**14**	**215**	**229**	**11**	**295**	**306**	**9**	**298**	**307**
University of Wisconsin, Madison	0	29	29	0	61	61	0	58	58
University of Georgia	0	56	56	0	58	58	0	56	56
University of Pittsburgh-Pittsburgh Campus	0	41	41	0	60	60	0	53	53
University of Texas at Austin	0	24	24	0	16	16	0	20	20
Slippery Rock University of Pennsylvania	0	12	12	0	9	9	0	15	15
Online Undergraduate Certificate Program									
American Public University System, WV	4	0	4	4	0	4	4	0	4
Wichita State University, KS	0	1	1	0	4	4	2	2	4
Regional Programs (CO, ID, MT, ND, NE, SD, UT, and WY)									
CO-Colorado Mesa University	0	6	6	0	4	4	0	9	9
ID-No programs	0	0	0	0	0	0	0	0	0
MT-University of Montana	0	4	4	0	1	1	0	4	4
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-University of South Dakota	0	0	0	0	1	1	0	0	0
UT-University of Utah	0	0	0	0	0	0	0	3	3
WY-No programs	0	0	0	0	0	0	0	0	0
5.211% of the completions occurred in this region in 2023, no online programs in 2023									
Bachelor Award Level Sustainability Studies 30.3301	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Bachelor Award Level Sustainability Studies 30.3301 was 185									

A 785.945% increase in completions from 2013 to 2023									
A 34.897% increase in completions from 2021 to 2023									
TOTAL	**53**	**1,162**	**1,215**	**96**	**1,385**	**1,481**	**156**	**1,483**	**1,639**
University of Wisconsin, Madison	0	1	1	0	33	33	0	119	119
University of Florida	0	84	84	0	100	100	0	114	114
University of Utah	0	0	0	27	53	80	35	68	103
University of Texas at Austin	0	70	70	0	77	77	0	83	83
University of Illinois	0	70	70	0	77	77	0	83	83
Online Bachelor Programs									
Oregon State University	18	25	43	0	56	56	27	28	55
Floridia International University	0	43	43	26	42	68	24	39	63
Regional Bachelor Programs									
CO-Colorado Mountain College	0	39	39	0	36	36	0	21	21
CO-University of Northern Colorado	0	17	17	0	21	21	0	13	13
ID-No programs	0	0	0	0	0	0	0	0	0
MT-Montana State University	0	26	26	0	6	6	0	19	19
MT-University of Montana	0	0	0	0	3	3	0	3	3
ND-No programs	0	0	0	0	0	0	0	0	0
NE-Bellevue University	7	1	8	8	1	9	20	1	21
NE-Creighton University	0	4	4	0	1	1	0	4	4
SD-South Dakota State University	0	6	6	0	12	12	0	6	6
UT-Utah State University	0	25	25	0	25	25	0	24	24
UT-University of Utah	0	0	0	27	53	80	35	68	101
WY-No programs	0	0	0	0	0	0	0	0	0
12.934% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Post Baccalaureate Certificate Award Level Sustainability Studies 30.3301	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Post Baccalaureate Certificate Award Level Sustainability Studies 30.3301 was 115									
A 202.941% increase in completions from 2013 to 2023									
A 1.904% decrease in completions from 2021 to 2023									
TOTAL	**98**	**172**	**270**	**201**	**247**	**448**	**174**	**243**	**417**
Harvard University, MA	88	0	88	152	0	152	146	0	146
Virginia Polytechnic Institute and State University	0	0	0	0	102	102	0	89	89
University of Iowa	0	76	76	0	61	61	0	54	54
Colorado State University, Fort Collins	1	0	1	16	10	26	0	34	34
University of Chicago	0	5	5	0	6	6	0	10	10

Online Post Baccalaureate Certificate Programs									
Arizona State University, Digital Immersion	0	0	0	9	0	9	8	0	8
Ball State University	2	0	2	0	0	0	6	0	6
Regional Bachelor Programs									
CO-Colorado State University, Fort Collins	1	0	1	16	10	26	0	34	34
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-South Dakota State University	0	0	0	0	3	3	0	0	0
UT-University of Utah	0	0	0	0	0	0	0	4	4
WY-No programs	0	0	0	0	0	0	0	0	0
9.11% of regional Post Baccalaureate Programs occurred in this region. No online programs in the region and only two on-campus									
Master Award Level Sustainability Studies 30.3301	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Master Award Level Sustainability Studies 30.3301 completions was 276									
A 593.478% increase in completions from 2013 to 2023									
A 55.99% increase in completions from 2021 to 2023									
TOTAL	**108**	**1,119**	**1,227**	**183**	**1,252**	**1,435**	**186**	**1,728**	**1,914**
Columbia University in the City of New York	0	110	110	0	193	193	0	271	271
Harvard University	0	46	46	0	144	144	0	192	192
Rutgers University, New Brunswick	0	57	57	0	45	45	0	105	105
University of Illinois, Chicago	0	61	61	0	53	53	0	94	94
University of Michigan, Ann Arbor	0	53	53	0	76	76	0	83	83
Online Master Programs									
University of South Florida	31	43	74	56	43	95	42	19	61
University of Wisconsin, Green Bay	23	0	23	12	0	12	20	0	20
Johns Hopkins University	0	0	0	10	3	13	17	5	22
Regional Master Programs									
CO-Colorado State University, Fort Collins	0	0	0	0	0	0	0	19	19
CO-Regis University	0	6	6	0	3	3	0	11	11
CO-University of Colorado, Anschutz Medical Campus	0	15	15	0	12	12	0	11	11
CO-University of Denver	0	0	0	0	0	0	0	7	7
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0

SD-Black Hills State University	2	3	5	3	2	5	2	3	5
SD-University of South Dakota	0	1	1	0	4	4	0	2	2
UT-University of Utah	0	18	18	0	26	26	0	38	38
UT-Utah State University	0	7	7	0	4	4	0	5	5
WY-No programs	0	0	0	0	0	0	0	0	0
5.120% of all completions occurred in this region (CO, ID, MT, ND, NE, SD, UT, and WY)									

3. & 4. H. Systems Science and Theory 30.0601

Associate Award Level Systems Science and Theory 30.0601	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 there were zero Associate Award Level Sustainability Studies 30.3301 completions.									
A 90.909% increase in completions from 2021 to 2023									
TOTAL	**0**	**11**	**11**	**0**	**13**	**13**	**0**	**21**	**21**
Central Wyoming College, Riverton Wyoming	0	11	11	0	13	13	0	21	21
Regional Associate Award Level Programs									
CO-No programs	0	0	0	0	0	0	0	0	0
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-Central Wyoming College	0	11	11	0	13	13	0	21	21
The only associate award level completions in 2023 in the nation occurred at Central Wyoming College in Riverton, Wyoming. A very strong potential for UW Haub School partnership with Central Wyoming College and potential transfer students.									
Undergraduate Certificate Award Level Systems Science and Theory 30.0601	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 there were zero Undergraduate Certificate Award Level Sustainability Studies 30.3301 completions.									
A 200% increase in completions from 2021 to 2023									
TOTAL	**0**	**2**	**2**	**0**	**7**	**7**	**0**	**6**	**6**
Purdue University	0	2	2	0	7	7	0	6	6
No Regional Programs (CO, ID, MT, ND, NE, SD, UT, and WY), opportunity for UW Haub School									
Bachelor Award Level Systems Science and Theory 30.0601	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Bachelor Award Level Systems Science and Theory was 240									
A 98.33% increase in completions from 2013 to 2023									
A 16.097% increase in completions from 2021 to 2023									

TOTAL	**67**	**343**	**410**	**59**	**364**	**423**	**74**	**402**	**476**
Carnegie Mellon University	0	109	109	0	118	118	0	118	118
Rhode Island School of Design	0	68	68	0	75	75	0	92	92
University of Illinois, Urbana Champaign	50	0	50	57	0	57	71	0	71
James Madison University, VA	0	53	53	0	55	55	0	50	50
Claremont McKenna College, CA	0	12	12	0	16	16	0	32	32
Online Bachelor Programs									
Pennsylvania Western University	17	11	28	2	9	11	3	11	14
Regional Bachelor Programs									
CO-No programs	0	0	0	0	0	0	0	0	0
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-Nebraska Wesleyan University	0	1	1	0	3	3	0	2	2
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No *In 2013 UW had 15 completions*	0	0	0	0	0	0	0	0	0
.420% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Post Baccalaureate Certificate Award Level Systems Science and Theory 30.0601	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Post Baccalaureate Certificate Award Level Systems Science and Theory 30.0601 was 5									
A 1100% increase in completions from 2013 to 2023									
A 28.571% decrease in completions from 2021 to 2023									
TOTAL	**45**	**39**	**84**	**12**	**20**	**32**	**27**	**33**	**60**
Purdue University, Main Campus	9	10	19	9	7	16	24	22	46
Old Dominion University	4	1	5	3	0	3	3	1	4
University of Central Florida	0	5	5	0	1	1	0	4	4
Northwestern University	0	9	9	0	8	8	0	4	4
University of Vermont	0	3	3	0	2	2	0	2	2
No Regional Post Baccalaureate Programs, strong opportunity for UW Haub School									
Master Award Level Systems Science and Theory 30.0601	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Master Award Level Systems Science and Theory completions was 261									
A 80.459% increase in completions from 2013 to 2023									
A 37.719% increase in completions from 2021 to 2023									
TOTAL	**37**	**305**	**342**	**74**	**349**	**423**	**89**	**382**	**471**
The New School, New York	14	101	115	43	74	117	60	102	162

Harvard University	0	23	23	0	45	45	0	69	69
North Carolina State University at Raleigh	14	17	36	18	16	36	18	21	39
Binghamton University	0	22	22	0	21	21	0	25	25
Arizona State University, Campus Immersion	0	0	0	0	31	31	0	24	24
Regional Master Programs									
CO-Naropa University	0	0	0	0	6	6	0	2	2
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	0	0
.424% of all completions occurred in this region (CO, ID, MT, ND, NE, SD, UT, and WY)									

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5. Employment trends and projections given core competencies of the degree or certificate.

Employment prospects are promising and provide healthy job availability for graduates. Bureau of Labor Statistics (BLS) data supports a positive employment landscape, strong 1-year, 3-year historic employment growth. 10-year future employment growth is also positive. 10-year future employment growth is not always a strong indicator of long-term employment opportunities given national economic, political, and technical advancements indicators. It is included in this case give all six (6) CIP Codes are considered to have positive/strong opportunities.

Program CIP Code	BLS 1-Year Historic Growth	BLS 3-Year Historic Growth	BLS 10-Year Future Growth
Geography & Environmental Studies 30.4401	Positive/Strong	Positive/Strong	Positive/Strong
International - Globalization Studies 30.2001	Positive/Strong	Positive/Strong	Positive/Strong
Natural Resources Conservation 03.0101	Positive/Strong	Positive/Strong	Positive/Strong
Environmental Studies 03.0103	Positive/Strong	Positive/Strong	Positive/Strong
Sustainability Studies 30.3301	Positive/Strong	Positive/Strong	Positive/Strong
Systems Science and Theory 30.0601	Positive/Strong	Positive/Strong	Positive/Strong

Core Competencies	*Detailed Operational Work Activities*					*Tools/Software Knowledge in addition to Microsoft*				
	Analyze Scientific or Investigative Findings	Perform Statistical Analysis or Modeling and Collect Statistical Data	Advise Clients or Community Organizations Regarding Issues or Problems	Analyze Environmental Data and Perform Environmental Assessment	Conduct Field Research	**ESRI ArcView and ESRI ArcGIS Software**	SAS Software	SPSS Software	StataCorp Stata	AutoCad Software
Geography & Environmental Studies 30.4401	x	x		x	x	**x**	x	x	x	x
International - Globalization Studies 30.2001			x	x		**x**				
Natural Resources Conservation, General 03.0101	x	x	x	x	x	**x**		x		x
Environmental Studies 03.0103	x	x	x		x	**x**	x	x	x	x
Sustainability Studies 30.3301	x	x	x	x	x	**x**		x		x
Systems Science & Theory 30.0601	x	x		x	x	**x**	x	x	x	

Possible Occupational Titles
Geographer
Environmental Scientists
Environmental Engineer
GIS&T Analyst, GIS&T Administrator, Geospatial Data Scientists, or Remote Sensing Analyst
Statistician
Natural Science Managers
Environmental Restoration Planners, Compliance Inspectors, or Urban and Regional Planner
Sustainability Specialist or Chief Sustainability Officer
Energy Engineers

6. Graduate salary trends and other post-completion trends.

Program CIP Code	BLS Entry Level Salary	BLS Post Entry Level Median Salary
Geography & Environmental Studies 30.4401	$60,633	$99,742
International - Globalization Studies 30.2001	$53,968	$90,054
Natural Resources Conservation 03.0101	$51,893	$74,950

Environmental Studies 03.0103	$54,102	$89,266
Sustainability Studies 30.3301	$63,389	$84,782
Systems Science and Theory 30.0601	$65,193	$90,695
Average	**$58,196**	**$88,248**

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7. Tuition & Program Comparisons

Tuition is an important consideration when starting a new or moving a program to asynchronous online delivery. Below contains program or area of concentration, course titles, delivery, and credits required comparisons. Additionally, the below data was borrowed from a previous Haub School graduate certificate and master feasibility project in May of 2025. Graduate certificate rates should follow program master tuition and fee rates. Undergraduate certificate tuition rates should follow bachelor tuition and fee rates.

Master of 03.0101 Natural Resources/Conservation, General ONLINE program tuition and areas of concentration[1]				
	Areas of Concentration	**Online Tuition Rate (pch)**	**Fees (pch)**	**Total (pch)**
Colorado State University, Fort Collins	a) **Ecological Restoration**; b) Forest Science; c) Rangeland Ecology & Management	$726.00	$0.00	$726.00
Unity Environmental University, ME	a) Marine Policy & Management; b) **Climate Change Adaptation & Resilience**; c) Sustainable Food Systems; d) Carbon Ecology & Management; e) Wildlife Conservation & Advocacy; f) **Environmental Data Analytics https://unity.edu/programs/m-s-in-environmental-data-analytics/ --Combination of Environmental Science & Data Analytics;** and g) Wildlife Ecology & Management	$650.00	$6.75	$656.75
Auburn University, AL	Master of Natural Resources combined with one or more graduate certificates: a) Forest Finance & Investment; b) **Restoration Ecology**; and c) **One Health**-interaction between people, animals, and the environment; https://cfwe.auburn.edu/online-professional-graduate-certificate-programs/one-health/	$546.00	$0.00	$546.00
University of Missouri, Columbia	Master of Science in Natural Resources-emphasis in Agroforestry	$603.80	$0.00	$603.80
Slippery Rock University of Pennsylvania, PA	Master of Science in Park & Resource Management-to gain a) ecological understanding; b) planning; and c) management theory	$516.00	$105.40	$621.40
Texas A&M University, College Station	Master of Natural Resources a) natural resources; b) Ecology; c) **Policy**; d) Conservation Efforts; and e) **Human Effects on our Environment**	unknown		
			Average	**$630.79**
Master of 03.0103 Environmental Studies ONLINE program tuition and areas of concentration[1]				

Arizona State University, Digital Immersion	An online program in Environmental Studies was not listed. Although they have online master programs in a) Coastal & Marine Science & Management; b) Sustainability Leadership; c) **Law & Sustainability**; d) Sustainable Tourism; and e) Urban & Environmental Planning plus a certificate in **Sustainability** for future referencehttps://asuonline.asu.edu/online-degree-programs/certificates/graduate-sustainability-certificate/	$665.00	?	$665.00
Prescott College, AZ	Master of Science in Environmental Studies & Sustainability; concentrations a) Conservation Biology; and b) **Resilience Planning & Climate Solutions**	$774.00	$13.75	$787.75
Webster University, MO	The master of science (MS) in Environmental Management program is designed to provide students with the tools and techniques to navigate the business aspects of environmental management. Students learn to assess and convey the business, ethical and **legal information** to those who make or are affected by the decisions that shape our natural resources and environment. Students can also choose an emphasis in **Environmental Sustainability**	$752.00	$0.00	$752.00
Indiana University, Bloomington	There is not a program in Environmental Studies, although there are programs in environmental health (actually a master in public health), global health & sustainable development, tourism management, outdoor recreation, data science etc.. Potentially an institutional mistake, IPEDS mistake, or closure of program.			
			Average	**$734.92**
[1] *based on enrollment in 6 credits (2 classes/part-time) and adjusted for semester-based classes when necessary*				

Average of the Averages	
03.0101 Natural Resources/Conservation, General	$630.79
03.0103 Environmental Studies	$734.92
Average for the two main programs reviewed	**$682.86**

APPENDIX B: PRO FORMA BUDGET

Cells in orange are variables which can be updated as needed. Please enter information in numerical tab order.

Cells in gray calculate automatically

	Fiscal Year				
Haub School Global Environmental Futures Certificate	1	2	3	4	
Revenue					
Cummulative Total NEW headcount enrollment	5	13	23	35	
NEW Resident enrollment (# of new students entering the program each year)	3	5	6	7	
NEW Non Resident Enrollment (# of new students entering the program each year)	2	3	4	5	
Resident (credit hours delivered outside of NEW Program)	0	0	0	0	
Resident (credit hours delivered in NEW Program)	54	153	303	474	
Non Resident (credit hours delivered outside of NEW Program)	0	0	0	0	
Non Resident (credit hours delivered in NEW Program)	36	96	195	312	
Total Resident credit hours generated**	54	153	303	474	
Total Non Resident credit hours generated**	36	96	195	312	
Per Credit Tuition*					
Resident (Posted Tuition Rate)	$134	$139	$145	$151	
Nonresident (Posted Tuition Rate)	$537	$558	$581	$604	
Prior Year's Non Resident Discount Rate (updated annually by the budget office)	30%	30%	30%	30%	
Estimated Actual Non Resident Per Credit Tuition	$376	$391	$407	$423	
Total Resident Tuition generated outside of NEW Program	$0	$0	$0	$0	
Total Resident Tuition in NEW Program	$7,236	$21,322	$43,915	$71,447	
Total Non Resident Tuition outside of NEW Program	$0	$0	$0	$0	
Total Non Resident Tuition in NEW Program	$13,532	$37,530	$79,282	$131,925	
Total Tuition from NEW Enrollment	$20,768	$58,852	$123,197	$203,372	
Fees					
Program Per Credit Hour	$14	$14	$14	$14	$14 per credit to college offering course
Program Fee Revenue	$1,260	$3,486	$6,972	$11,004	
Advising Fee Per Credit Hour	$6.00	$6.00	$6.00	$6.00	
Advising Fee Revenue	$540	$1,494	$2,988	$4,716	
Mandatory Fee (Per Full Time Student)	$690.00	$690.00	$690.00	$690.00	
Mandatory Fee Revenue	$3,450	$8,970	$15,870	$24,150	
Total New Revenue Generated Within New Program	$22,028	$62,338	$130,169	$214,376	
Total New Revenue Generated Outside of the Program	$3,990	$10,464	$18,858	$28,866	
Total New Revenue Generated	$26,018	$72,802	$149,027	$243,242	
New Program Expense Assumptions					
Compensation and benefits					
Faculty	$12,500	$12,500	$12,500	$12,500	Salary split given oversight of several certificate programs, one graduate program, and other online
Other administrative staff					coursework; salary comp based on similar role in ECTL & COB (total starting salary = $75K)
Graduate Assistants					
Supplies	$ 400				Laptop
Travel					
Marketing					Marketing budget provided by UW online
Capital expense	0	0	0	0	
Other (specify)	200	200	200	200	Professional Development

Projected Financial Results for New Program	**FY1**	**FY2**	**FY3**	**FY4**
Total Expenses	$13,100	$12,700	$12,700	$12,700
Total New Revenues Remaining with Program	$22,028	$62,338	$130,169	$214,376
New Program's Total Surplus or Deficit	**$8,928**	**$49,638**	**$117,469**	**$201,676**
Operating margin (surplus or deficit / revenues)	0.41	0.80	0.90	0.94

Complete the worksheet to reflect anticipated coursework required of each student in the proposed program. Indicate in Column E whether each course is new ("Yes") or is currently being taught ("No").			
Semester	**Course # / Name**	**Credit Hours**	**New Course (Yes/No)**
	Core Course (choose one)		
Fall	ORTM 5050	3.0	No
Fall	ENR 5560	3.0	No
Spring	ENR 59xx	3.0	Yes
Summer	ENR 5960	3.0	No
	Electives (Choose two)		
Fall, JTerm, Summer	ENR 5965 • A-Queensland, Australia • B-Austrian & Italian Alps • C-Patagonia, Chile • D-Coastal Belize • E-Mongolia • F-Nepal • G: Grand Canyon NP–Canyonlands • H: Norway & Svalbard • ENR 5900: Tenerife, Canary Islands	3.0 3.0	No
		TOTAL HOURS	**9.0**

Projected enrollment of *net new* students.

Tuition Type*	Year 1			Year 2			Year 3			Year 4			Year 5		
	Projected Total Enrollment	*Tuition Rate (per credit)*	*Total Projected Revenue*	*Projected Total Enrollment*	*Tuition Rate (per credit)*	*Total Projected Revenue*	*Projected Total Enrollment*	*Tuition Rate (per credit)*	*Total Projected Revenue*	*Projected Total Enrollment*	*Tuition Rate (per credit)*	*Total Projected Revenue*	*Projected Total Enrollment*	*Tuition Rate (per credit)*	*Total Projected Revenue*
Resident	3	349.00	$9,423	5	363.00	$16,335	6	378.00	$20,412	7	393	$24,759	8	409	$29,448
Non-resident	2	557.00	$9,972	3	579.00	$15,633	4	602.00	$21,672	5	626	$28,170	5	651	$29,295
			$19,395			**$31,968**			**$42,084**			**$52,929**			**$58,743**

*See Student Fee Book for tuition rates (note that "main campus" and "online" refer to the degree program type (i.e., how the student is classified), and not the location of any particular course offerings.

APPENDIX C: HAUB SCHOOL FIELD COURSE DATA

ENR 4960/5960 Course Title	Term Code	Term Season	Total Students
Winter Ecology	202220	J-Term	21
Canyonlands: Culture & Climate (Undergrad)	202230	Summer	16
Canyonlands: Culture & Climate (Grad)	202230	Summer	4
Winter Ecology	202320	J-Term	11
Canaries Climate (Undergrad)	202320	J-Term	13
Canaries Climate (Grad)	202320	J-Term	3–4
Coastal Belize (Grad)	202320	J-Term	1
Coastal Belize (Undergrad)	202320	J-Term	9–14
Chile: Conservation & Development (Grad)	202320	J-Term	2
Chile: Conservation & Development (Undergrad)	202320	J-Term	14
Queensland: Human & Physical Landscapes	202330/20	Summer/J	35
Canaries Climate (Undergrad)	202420	J-Term	14
Canaries Climate (Grad)	202420	J-Term	2
Winter Ecology (Undergrad)	202420	J-Term	19
Winter Ecology (Grad)	202420	J-Term	2
Alpine Climate & Culture (Undergrad)	202420	J-Term	19

ENR 4960/5960 Course Title	Term Code	Term Season	Total Students
Alpine Climate & Culture (Grad)	202420	J-Term	6–7
Canyonlands (Undergrad)	202420	J-Term	13
Canyonlands (Grad + Law)	202420	J-Term	13 (5 + 3 Law)
West Reservation Resource Management (UG)	202430	Summer	3
West Reservation Resource Management (GR)	202430	Summer	4
Green River Basin: Water & Society (UG)	202430	Summer	4
Green River Basin: Water & Society (GR)	202430	Summer	1
Chile: Conservation & Development (UG)	202510	J-Term	22/14
Chile: Conservation & Development (Grad)	202510	J-Term	4/5
Canaries Climate (Undergrad)	202520	J-Term	15
Canaries Climate (Grad)	202520	J-Term	4
Winter Ecology (Undergrad)	202520	J-Term	13
Winter Ecology (Grad)	202520	J-Term	1
Mongolia: Wild & Working Lands (UG)	202520	J-Term	33 /14 /13
Mongolia: Wild & Working Lands (Grad)	202520	J-Term	4
Expedition Leadership	202520	J-Term	12
West Reservation Resource Management (UG)	202530	Summer	11
West Reservation Resource Management (GR)	202530	Summer	5

ENR 4960/5960 Course Title	Term Code	Term Season	Total Students
Scotland: Experiencing Place	202530	Summer	11

Faculty Senate Resolution 502 **Introduced by Executive Committee**

Haub School Global Environmental Futures Graduate Certificate

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WHEREAS The Haub School (SER) has proposed the addition of a graduate certificate in Global Environmental Futures, as outlined in the attached proposal and feasibility study; and

WHEREAS the Faculty Senate's Academic Planning Committee (APC) has reviewed the proposal; and.

THEREFORE, BE IT RESOLVED by the Faculty Senate of the University of Wyoming that Faculty Senate supports the recommendation of the APC to create a graduate certificate in Global Environmental Futures.

AUTHENTICATION: The foregoing Faculty Senate Resolution 502, duly adopted by the Faculty Senate of the University of Wyoming under date of December 1, 2025, is hereby transmitted to the President of the University of Wyoming for review in accordance with UW Regulations.

Vladimir Alvarado
Secretary, Faculty Senate
Dated: December 2nd, 2025

UNIVERSITY
OF WYOMING

Office of Academic Affairs
1000 E. University Avenue
Dept. 3302, 312 Old Main
Laramie, WY 82071
307.766.4286 • fax: 307.766.2606

December 22, 2025

Board of Trustees:

This letter serves as a Letter of Commitment for a new Graduate Certificate in Global Environmental Futures (GEF) by the Haub School. The certificate requires 9 hours of coursework and emphasizes practical tools such as scenario planning, cross-cultural communication, and understanding the relationship between natural systems and community well-being.

Needs
This certificate provides University of Wyoming (UW) students with an interdisciplinary program designed to prepare students for emerging roles in environmental leadership, sustainability, and systems-based thinking. This certificate is a practical entry point for students pursuing careers in conservation, land and resource management and public service, while providing exposure to international field experiences and deepening their understanding of how global environmental challenges relate to local and national priorities.

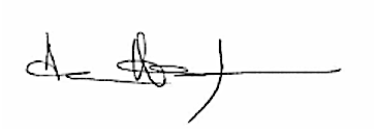
Requirements
This Graduate Certificate in Global Environmental Futures will have students completing 9 hours of applicable coursework. The curriculum consists of one required course (3 credits) and two electives (6 credits).

Resources
This is designed to maximize existing faculty, courses, and institutional infrastructure, requiring minimal additional investment. Promotional efforts will leverage the Haub School's existing infrastructure to maximize visibility. The Office of Online and Continuing Education will also assist with marketing and recruitment.

Timeline
The present implementation timeline is designed to enable students to enroll in this Graduate certificate in Fall 2026.

Campus Review
I affirm that the university community, including the Executive Team, Deans and Directors, Faculty Senate, Staff Senate, and ASUW, has been provided the opportunity to review and present feedback on the proposed Graduate certificate.

Best,



Anne Alexander, PhD
Interim Provost

Academic and Student Affairs
COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: **Request for Authorization: Undergraduate Certificate in Global Environmental Futures** Hilaire, Koprowski, Stoellinger

☒ OPEN SESSION
☐ CLOSED SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
☒ Yes
☐ No
FOR FULL BOARD CONSIDERATION:
☒ Yes *[Note: If yes, materials will also be included in the full UW Board of Trustee report.]*
☐ No
☒ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY: The Haub School of Environmental and Natural Resources has proposed an undergraduate certificate in Global Environmental Futures. After reviews and approval by the faculty senate, and by agreement of the Dean's Council, Haub is putting forth this certificate. This certificate would provide UW students with a global perspective on critical environmental and natural resource issues, apply interdisciplinary tools to analyze and shape future environmental scenarios, and collaborate on policy, research, and resilience strategies.

PRIOR RELATED COMMITTEE DISCUSSIONS/ACTIONS:
The Notice of Intent was approved by the Academic and Student Affairs Committee and the full Board in May 2025.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
University of Wyoming Regulation 2-119 requires Board approval for all new degree programs and outlines the approval process. The Academic and Student Affairs committee will report to the Board on the recommended actions for the new degree program.

ACTION REQUIRED AT THIS COMMITTEE MEETING:
Consideration for approval of the Request for Authorization for the Undergraduate Certificate in Global Environmental Futures.

PROPOSED MOTION:
"I move to approve the Request for Authorization for the Undergraduate Certificate in Global Environmental Futures."

Feasibility Study

Undergraduate Certificate in Global Environmental Futures (GEF)

University of Wyoming
Haub School of Environment and Natural Resources

August 2025

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Undergraduate Certificate in Global Environmental Futures (GEF), proposed by the Haub School, is a forward-looking, interdisciplinary program designed to prepare students for emerging roles in environmental leadership, sustainability, and systems-based thinking. The certificate consists of 9 credit hours and emphasizes practical tools such as scenario planning, cross-cultural communication, and understanding the relationship between natural systems and community well-being. The program is aligned with strategic university goals to expand online learning, foster global awareness, and address environmental challenges.

The program's strong market foundation is supported by a 314.26% increase in online undergraduate certificate completions from 2013 to 2023 nationally, particularly in fields such as Environmental Studies, Geography, and Sustainability Studies. The certificate serves as a practical entry point for students pursuing careers in conservation, land and resource management, and public service, while providing exposure to international field experiences and deepening their understanding of how global environmental challenges relate to local and national priorities. Designed to be accessible and career pertinent, the program offers online, hybrid, and optional field-based experiences, ensuring flexibility for diverse student populations across Wyoming and beyond.

PROGRAM AT-A-GLANCE

- **Certificate Title:** Global Environmental Futures (GEF)
- **Level of Certificate:** Undergraduate
- **Delivery Mode:** Mixed modalities, including online and optional domestic and international field coursework.
- **Estimated Startup Cost of Degree:** Minimal, leveraging existing resources
- **Anticipated Launch Date:** Spring 2026

KEY PROGRAM FEATURES

Targeted Curriculum

This nine-credit undergraduate certificate focuses on interdisciplinary, environmental future-oriented curriculum that equips students to analyze and address complex environmental challenges through systems thinking, scenario modeling, and culturally informed problem-

solving. The curriculum includes one core course in the principles and methods of environmental futures, scenario modeling, sustainable development, and interdisciplinary approaches and two elective courses that broaden learners' global perspectives with optional additional field courses.

Flexible Delivery Options

The program offers flexible delivery formats with multiple modalities. Optional field-based courses for additional credit enhance learning, while the design ensures accessibility for working professionals and learners across Wyoming and beyond.

Interdisciplinary Approach

The certificate takes an interdisciplinary approach by blending methods from ecology, geography, sociology, economics, political science, and the humanities. Students develop global perspectives on issues like biodiversity conservation, climate change, and sustainable resource use; apply tools such as systems thinking and scenario modeling; and collaborate on innovative policy, research, and resilience strategies across local to global scales.

STRATEGIC ALIGNMENT

The GEF certificate directly supports the University of Wyoming's and the Haub School's strategic priorities by advancing innovative, interdisciplinary education that prepares students to tackle complex environmental challenges. Through a flexible mix of modalities, the program expands access for diverse and distance learners while fostering global engagement. It aligns with the Haub School's goals to educate future leaders, expand digital and experiential learning, support collaborative, culturally inclusive problem-solving, and strengthen interdisciplinary research.

The Global Environmental Futures Certificate supports the University of Wyoming's strategic objectives by:

> **Enhancing student success:** The program equips students with interdisciplinary tools, global perspectives, and hands-on experience to prepare for careers addressing complex socio-environmental challenges, core to UW's student success and graduate readiness initiatives.

Serving Wyoming communities: Through its focus on global environmental issues and international field experiences, the program expands UW's global footprint and strengthens its role in addressing sustainability challenges through local-to-global partnerships.

Expanding access and global program offerings: By offering hybrid, online, traditional, and field-based formats, the certificate supports UW's commitment to flexible, accessible, and high-impact education models that accommodate diverse learners, including non-traditional and distance students.

Since its launch in 1993, the Haub School has led in interdisciplinary education, high-impact research, stakeholder collaboration, and a deep institutional commitment to biodiversity and sustainability. The proposed certificate builds on this foundation, extending our expertise to remote learners, and preparing students to lead in addressing global environmental challenges.

Aligned not just with UW's, but with the Haub School's own 2023–2028 strategic plan, the certificate reflects the school's goals to advance its curriculum, expand digital learning, and foster interdisciplinary solutions to global challenges.

DEMAND AND MARKET OUTLOOK

The undergraduate market for environmental and sustainability-related certificates is experiencing significant growth, particularly in online formats. From 2013 to 2023, completions of online undergraduate certificates in related fields increased by 314%, signaling strong demand for flexible, skill-building credentials. Programs emphasizing global perspectives, systems thinking, and interdisciplinary environmental problem-solving are especially attractive to students preparing for diverse careers in conservation, policy, and global development.

The GEF certificate stands out in this context by offering a focused, global oriented approach that complements a variety of majors in natural sciences, social sciences, international studies, and the honors interdisciplinary inquiry concurrent major. With few regional competitors offering similar programs (especially online) the certificate presents a timely and relevant opportunity for students seeking to broaden their global environmental learning.

RESOURCE CONSIDERATIONS

The GEF certificate builds on the Haub School's existing faculty and course offerings, requiring only one new course, which is currently under development. The Haub School also offers a robust catalog of field courses, including a variety of field and international options each year, providing students with rich experiential learning opportunities. We aim to offer at least one field course each semester and several in the summer, and these consistently enroll 10 or more students, reflecting strong demand and engagement. Each field course is 3-credits that takes place during the regular semester and serves as a pre-trip anchor course. Students then have the option to add 1–3 additional credits for the travel experience, which occurs during the J-term or summer. Participation in the travel component is optional; students may choose to enroll in just the 3-credit course without the additional travel field experience. Marketing efforts will leverage existing infrastructure to ensure cost-effective implementation while expanding the program's visibility and appeal.

The Haub School is actively expanding its online offerings over the next 3–5 years, including the development of several new graduate certificates and an online Master of Science in Environment, Natural Resources & Society (ENRS). These offerings include the Graduate Certificate in ENR Law & Policy and the Graduate Certificate in Collaborative Practice. To support the design, delivery, and continued growth of these programs, the school plans to hire an Online Learning Coordinator. Revenue from these new online programs will help sustain this position as part of a broader strategy to advance the Haub School's strategic initiatives.

ANTICIPATED INSTITUTIONAL IMPACT

Launching in Spring 2026, the GEF certificate is expected to generate new enrollments while enhancing the University of Wyoming's reputation as a leader in global interdisciplinary environmental education. Graduates will be prepared to address urgent challenges in sustainability, governance, and natural resource management, positioning UW as a regional hub for innovative, applied education responsive to evolving workforce and community needs.

The certificate provides immersive, real-world experiences that deepen students' understanding of global environmental systems and cultural contexts around the world. These high-impact, place-based learning opportunities further strengthen the Haub School's commitment to experiential education and exemplify the university's dedication to accessible, high-quality programs that address real-world needs.

OVERVIEW AND DESCRIPTION OF CERTIFICATE

Global Environmental Futures involves the interdisciplinary study of environmental scenarios and the interactions between human and natural systems. It integrates tools like biodiversity analysis, scenario modeling, and socio-economic evaluations to address emerging global environmental challenges. A key aspect of this field is incorporating diverse cultural perspectives, traditions, and worldviews to inform decision-making and problem-solving in natural resource management.

CERTIFICATE OBJECTIVES

The program's core objectives are to:

1. Develop a global perspective on critical issues such as biodiversity conservation, climate change, and sustainable resource use.
2. Apply interdisciplinary tools to analyze and shape future environmental scenarios.
3. Collaborate on creative policy, research, and resilience strategies at local, national, and global levels.

INSTITUTIONAL FIT

The GEF certificate complements existing undergraduate programs at the University of Wyoming, including the Haub School's degrees in Outdoor Recreation and Tourism Management, Environmental Systems Science, and Environment & Natural Resources, as well as majors in Anthropology, Sociology, International Studies, and the Honors Interdisciplinary Inquiry Concurrent Major. This allows a variety of students to use their upper-level electives to earn a meaningful credential, rather than taking unrelated or random courses. This certificate enhances global and systems-level thinking, builds interdisciplinary and applied competencies, and introduces students to future-focused tools, all without duplicating existing curricular offerings.

Key points of institutional fit include:

- **Non-Duplication:** While several UW programs address environmental topics, the GEF certificate uniquely centers on *global environmental futures*, filling a curricular gap by preparing students to anticipate, model, and respond to long-term environmental scenarios using culturally informed global perspectives.

- **Interdisciplinary Synergy:** The certificate draws on methods from ecology, geography, political science, sociology, economics, and the humanities. It offers valuable academic

knowledge for students across varying disciplines who seek to engage in sustainability, conservation, policy, international affairs, or global development work.

- **Undergraduate Accessibility:** Designed with flexibility in mind, the certificate is open to students across a wide range of majors as well as non-degree seeking learners. It can serve as a standalone credential or complement a primary degree, equipping students with valuable skills for careers or graduate study in environmental and sustainability fields.

- **Global and Regional Relevance:** Emphasizing climate resilience, biodiversity, and cultural knowledge, the certificate supports UW's land-grant mission by equipping students to address pressing environmental challenges across local, regional, and global scales. It also reflects the Haub School's long-standing leadership in place-based, field, and international experiential learning.

CONTEXT AND RATIONALE

The undergraduate certificate in Global Environmental Futures addresses growing student interest in interdisciplinary, place-based approaches to environmental and sustainability issues. National data shows a 314% increase in online undergraduate certificate completions from 2013 to 2023, indicating strong and rising demand for flexible, skill-based credentials. The program supports transfer pathways from community colleges and enhances degree-seeking students' skills, offering practical value in fields like conservation, environmental education, and sustainability coordination. With job growth projected in environmental roles and increasing workforce demand for systems thinking, the undergraduate GEF certificate equips students with competitive, workforce applicable skills.

Workforce and Professional Development

As global environmental challenges grow more complex, professionals across multiple sectors must navigate interconnected social, ecological, and economic systems. The GEF certificate prepares learners to address these multifaceted issues through an interdisciplinary lens, fostering collaboration among diverse stakeholders.

Environmental futures research is gaining international prominence in addressing critical concerns such as biodiversity loss, climate change, and sustainable development. However, academic opportunities in this emerging field remain limited in the U.S. The GEF certificate

positions the University of Wyoming as a national leader in this area, aligning with global trends and advancing the university's reputation in environmental and natural resource studies.

Building on the Haub School's long-standing commitment to global experiential education and its growing faculty expertise in international environmental research and teaching, the certificate bridges theory and practice. With a flexible, interdisciplinary structure that includes optional international field courses, the program empowers students to tailor their learning to a wide range of career paths while gaining the skills necessary to lead in today's dynamic workforce.

Meeting Regional Needs

The GEF certificate addresses critical regional needs by preparing students to navigate the complex environmental and socio-political dynamics shaping the Rocky Mountain West and beyond. Our regional communities face pressing issues such as water scarcity, land use conflicts, biodiversity loss, and energy transitions, challenges that demand interdisciplinary, forward-thinking leaders.

The certificate equips students with tools such as scenario planning, systems thinking, and socio-ecological analysis that are essential for addressing these regional concerns. It complements sectors including:

- **Environmental and Natural Resource Management**, by preparing graduates to manage shared resources like public lands and watersheds with long-term sustainability in mind.
- **Public Policy and Governance**, through training that supports integrated decision-making across agencies and communities.
- **Business and Sustainability Leadership**, by helping future leaders assess environmental risks and solutions aligned with both market and ecological trends.
- **Education and Outreach**, by preparing students who wish to continue their studies in graduate school by providing a strong interdisciplinary foundation and research skills essential for advanced academic work.

By grounding students in both local relevance and global awareness, the GEF certificate strengthens the region's ability to respond to environmental change while contributing to a broader, more resilient workforce.

Accessibility

The certificate is designed with a hybrid delivery model that emphasizes flexibility and accessibility. Students may complete the program fully online through asynchronous courses, enabling them to balance education with career and family responsibilities. Two elective courses include a required 3-credit anchor course taken during the semester, with the option to add 1–3 additional credits for a field experience during the J-term or summer. Several core courses are available in both online and in-person formats, allowing students to customize the program to fit their learning preferences. This flexible structure is designed to appeal to a diverse range of students with varied academic backgrounds and professional goals.

Pathway to Degree Completion

The GEF certificate complements existing UW programs, including the Haub School's undergraduate degrees, the Honors Interdisciplinary Inquiry Concurrent Major, and BAs in Anthropology, Sociology, and International Studies. It serves as a 9-credit certificate to enhance global perspectives and expertise in environmental futures without competing with broader degree offerings. By focusing on a specialized learning framework, the certificate adds value to these degrees, helping students deepen their knowledge and prepare for global professional challenges. For non-degree-seeking students, the GEF certificate serves as a valuable entry point to undergraduate study. Completing the certificate establishes a strong academic foundation and enables a smooth transition into the University of Wyoming for non-degree seeking students.

Summary of Impact

The GEF certificate equips students with interdisciplinary skills and global perspectives essential for addressing complex environmental challenges locally and globally. By integrating cultural knowledge, scenario planning, and systems thinking, the program prepares graduates for leadership in sustainability, policy, and resource management, while also providing a strong foundation for continued education.

STRATEGIC PLANNING

Alignment with The University of Wyoming Strategic Plan

The GEF certificate directly supports UW's strategic priorities by:

- **Enhancing Student Success Through Innovative, Interdisciplinary Learning**
  The program equips students with interdisciplinary tools, global perspectives, and hands-on experience to prepare for careers addressing complex socio-environmental challenges, core to UW's student success and graduate readiness initiatives.
- **Expanding Online and Global Program Offerings**
  By offering hybrid, online, traditional, and field-based formats, the certificate supports UW's commitment to flexible, accessible, and high-impact education models that accommodate diverse learners, including non-traditional and distance students.
- **Fostering Global Engagement and Community Impact**
  Through its focus on global environmental issues and international field experiences, the program expands UW's global footprint and strengthens its role in addressing sustainability challenges through local-to-global partnerships.
- **Addressing the Increasing Need for Expertise in Sustainability**
  By focusing on topics such as climate resilience, biodiversity, and cultural knowledge integration, this certificate aligns with UW's emphasis on addressing pressing environmental and societal issues through research-informed teaching.

Alignment with Haub School Strategic Plan (2023-2028)

The certificate aligns with the Haub School's goals to:

- **Educate Leaders**
  The program enhances existing academic offerings and cultivates the leadership competencies outlined in the Haub School's learning outcomes through systems thinking, scenario modeling, and inclusive, interdisciplinary problem-solving.
- **Expanding Digital and Experiential Learning**
  The online, hybrid delivery model, and international field courses respond to the school's objectives to improve online course offerings and increase access to high-quality, field-based education in global contexts.
- **Interdisciplinary Research and Practice**
  The program is grounded in research-informed curriculum and complements faculty-led scholarship in climate change, conservation, and governance, which further supports the school's interdisciplinary research goals.
- **Extending Global and Regional Impact**
  Designed to be accessible to students in Wyoming and beyond, the GEF certificate

embodies the Haub School's vision to serve as a change agent "from Wyoming to the World," expanding its national leadership in environmental and natural resource education.

The GEF certificate is well aligned with the strategic priorities of both the University of Wyoming and the Haub School of Environment and Natural Resources. It advances institutional goals in innovative, flexible education, interdisciplinary problem-solving, global engagement, and leadership development. Drawing on the University's commitment to experiential, accessible learning and the Haub School's focus on real-world environmental challenges, the certificate positions the University of Wyoming as a national leader in preparing students to navigate and shape environmental futures around the world.

LEARNING OUTCOMES

The Certificate in GEF prepares students to:

1. **Develop systems-level perspectives** on global environmental challenges across ecological, social, economic, and cultural domains.
2. **Design transdisciplinary solutions** to environmental challenges by integrating diverse methods and cultural insights.
3. **Analyze and communicate environmental futures** through scenario modeling, strategic thinking, and adaptive decision-making.
4. **Incorporate diverse cultural perspectives** into environmental analysis and sustainable solutions.

This certificate prepares students to think globally, act ethically, and lead adaptively in addressing complex global environmental challenges with cultural awareness, interdisciplinary tools, and future-oriented strategies.

CURRICULUM MAP AND PROGRAM STRUCTURE

The GEF certificate requires nine credit hours, including choosing one of the required courses (3 credits) and choosing two electives (6 credits). The certificate equips students with practical

tools and interdisciplinary frameworks to address complex environmental challenges in real-world, cross-cultural contexts. The program will be delivered in mixed modalities, including online, traditional, and optional field or international coursework. This is a great option for students, as each course counts as an upper-level course, providing them with the opportunity to earn a credential rather than taking unrelated electives. The certificate can be completed in as little as two semesters or extended over two years, offering flexibility for both full-time and part-time students, including working professionals and non-degree seeking students.

ADMISSIONS STANDARDS

The certificate is open to current University of Wyoming undergraduate students as well as non-degree-seeking students, who may complete the 9-credit-hour program within their 12-credit enrollment limit.

REQUIREMENTS

The certificate's nine credit hours are divided as follows:

1. Choose One required course (3 credits)
2. Two required elective courses (6 credits)

Core Courses (3 credits)

The program's required core courses focus on developing a foundational understanding of global impacts and future environmental scenarios through interdisciplinary, systems-based approaches to complex challenges.

Students will choose one course from the list below:

Years 1-2 - ORTM 4050 Global Tourism. Focuses on sustainable development of global tourism by examining its impact through the perspectives of tourists, service providers, regulators, researchers, and local communities.

Years 3 and beyond: ENR 49xx Global Environmental Futures. Foundational knowledge in environmental futures, scenario modeling, and interdisciplinary approaches to addressing complex environmental challenges. *(In development)*

ENR 4960: Experience of Place. This course explores the concepts, methods, and practices of place through independent landscape inquiry, culminating in a creative portfolio that reflects deep engagement with cultural and ecological landscapes.

ENR 4560: Conservation Entrepreneurship. This course introduces students to foundational concepts in social entrepreneurship and applies them to environmental conservation issues. Students will learn the legal, financial, and ecological concepts underpinning entrepreneurial approaches to conservation. Students will apply concepts to real world examples to understand the strength and weaknesses of these approaches.

Electives (6 credits)

Students choose two elective courses from the following options:

Field and global courses combine an online asynchronous anchor course with companion field experiences for variable credit (1–3 credits), all under the ENR 4965/4900 course number. Courses are offered predictably with 2–3 options each year. Travel courses include additional fees. Electives include, but are not limited to:

- ENR 4965A: Queensland, Australia – Human & Physical Landscapes: Recreation, conservation, and economic development in Queensland's coastal areas.

- ENR 4965B: Austrian & Italian Alps – Alpine Climate & Culture: Landscapes and cultures of Europe's high alpine communities.

- ENR 4965C: Patagonia, Chile – Conservation & Development: Natural resource conservation and development in Patagonia.

- ENR 4965D: Coastal Belize – Coastal Climate Resilience: Local knowledge and the role of oceans in global sustainability.

- ENR 4965E: Mongolia – Wild & Working Lands: Nomadic cultures, wildlife conservation, and sustainable land use in grassland steppe and desert environments.

- ENR 4965F: Nepal – Wildlife Conservation *(In Development)*: Wildlife, biodiversity and community-based conservation.

- ENR 4965G: Grand Canyon NP–Canyonlands–Climate, Water, Culture: Explores the history, culture, and policies of the Colorado River, with a focus on Tribal experiences, public lands, and climate challenges, culminating in a guided raft trip through the Grand Canyon.

- ENR 4965H: Norway & Svalbard–Arctic Circle: Examines climate, ecology, and policy as students conduct research in marine, glacial, and tundra environments to deepen understanding of global environmental change.

■ ENR 4900: Tenerife, Canary Islands Spain – Canaries & Climate: Explore the unique environmental challenges facing island ecosystems by examining climate change, conservation, and sustainable development in a dynamic island context.

Additional elective options may become available as the Haub School expands its offerings in the future.

CURRICULUM MAP

The table below outlines the program structure

Required Core Course (Choose one)			
Title	**Focus & Student Learning Outcomes (SLOs)**	**Delivery**	**Credits**
ORTM 4050 Global Tourism	Focus: Examining its impact through the perspectives of tourists, service providers, regulators, researchers, and local communities. SLOs: 1, 2, 3	Online (Fall)	3 credits
ENR 49xx Global Environmental Futures *(In Development)*	Focus: Foundational knowledge in environmental futures, scenario modeling, and interdisciplinary approaches to addressing complex environmental challenges. SLOs: 1, 2, 3, 4	Online (Spring 2027)	3 credits

ENR 4960 Experience of Place	Focus: Explores the concepts, methods, and practices of place through independent landscape inquiry, culminating in a creative portfolio that reflects deep engagement with cultural and ecological landscapes. SLOs: 1, 2, 4	Online (Summer)	3 credits
ENR 4560 Conservation Entrepreneurship	Focus: This course introduces students to foundational concepts in social entrepreneurship and applies them to environmental conservation issues. Students will learn the legal, financial, and ecological concepts underpinning entrepreneurial approaches to conservation. Students will apply concepts to real world examples to understand the strength and weaknesses of these approaches. SLOs: 1, 2, 3	In-person (Fall)	3 credits
Electives (Choose Two)			
Title	**Focus & Student Learning Outcomes (SLOs)**	**Delivery**	**Credits**
ENR 4965A: Queensland, Australia	Focus: Human & Physical Landscapes: Recreation, conservation, and economic development in Queensland's coastal areas. SLOs: 1, 2, 3, 4	Online with optional field course (Summer 2026)	3 credits, companion field experiences for additional variable credit (1–3 credits)

ENR 4965B: Austrian & Italian Alps	Focus: Alpine Climate & Culture: Landscapes and cultures of Europe's high alpine communities. SLOs: 1, 2, 3, 4	Online with optional field course (Spring)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 4965C: Patagonia, Chile	Focus: Conservation & Development: Natural resource conservation and development in Patagonia. SLOs: 1, 2, 3, 4	Online with optional field course (J-Term)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 4965D: Coastal Belize	Focus: Coastal Climate Resilience: Local knowledge and the role of oceans in global sustainability. SLOs: 1, 2, 3, 4	Online with optional field course (Spring)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 4965E: Mongolia	Focus: Wild & Working Lands: Nomadic cultures, wildlife conservation, and sustainable land use in grassland steppe and desert environments. SLOs: 1, 2, 3, 4	Online with optional field course (Summer)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 4965F: Nepal	Focus: Wildlife Conservation *(In Development)*: Wildlife, biodiversity and community-based conservation. SLOs: 1, 2, 3, 4	Online with optional field course (J-Term 2026)	3 credits, companion field experiences for additional variable credit (1–3 credits)

ENR 4965G: Grand Canyon NP–Canyonlands	Focus: Explores the history, culture, and policies of the Colorado River, with a focus on Tribal experiences, public lands, and climate challenges, culminating in a guided raft trip through the Grand Canyon. SLOs: 1, 2, 3, 4	Online with optional field course (Summer 2026)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 4965H: Norway & Svalbard–Arctic Circle	Focus : Examines climate, ecology, and policy as students conduct research in marine, glacial, and tundra environments to deepen understanding of global environmental change. SLOs: 1, 2, 3, 4	Online with optional field course (Summer 2026)	3 credits, companion field experiences for additional variable credit (1–3 credits)
ENR 4900: Tenerife, Canary Islands Spain – Canaries & Climate	Focus: Explore the unique environmental challenges facing island ecosystems by examining climate change, conservation, and sustainable development in a dynamic island context. SLOs: 1, 2, 3, 4	Online with optional field course (J-Term 2026)	3 credits, companion field experiences for additional variable credit (1–3 credits)

COMPLETION TIMELINE

- Accelerated Pathway: Students can complete the program in as few as two semesters.
- Flexible Pathway: Students balancing coursework with professional commitments may opt for completion of the certificate over several semesters.

COURSE DEVELOPMENT AND ONLINE MODALITY

Minimal course development is required for the GEF Certificate, as all core and elective courses are either currently offered or already in development. Students will choose one foundational core course from the following: ORTM 4050: Global Tourism (available Years 1–2), ENR 4960:

Experience of Place, ENR 4560: Conservation Entrepreneurship or ENR 49xx: Global Environmental Futures, which will launch in Spring 2027. Foundational courses are primarily delivered in asynchronous online formats, offering flexibility for students and professionals with varying schedules, with one course also available in a traditional on-campus format. The program is designed to meet the needs of distance learners and working professionals through flexibility in delivery. For electives, students may complete the asynchronous online portion of each course and have the option to participate in field-based travel components for additional credits per elective course. This flexible model ensures accessibility for diverse learners across Wyoming and beyond, supporting UW's commitment to expanding high-quality digital education.

DEGREE PROGRAM EVALUATION

The GEF Certificate will be evaluated through a comprehensive assessment framework designed to measure its impact on student learning, professional growth, and workforce relevance.

Evaluation of Student Learning

Student learning will be assessed based on mastery of core competencies, including systems thinking, scenario modeling, and interdisciplinary problem-solving. Evaluation methods will include course-based projects, assignments, and faculty feedback, all guided by rubrics aligned with the certificate's defined learning outcomes to ensure consistent evaluation. Each course in the curriculum is mapped to specific student learning outcomes (seen in table above), and the evaluation of these outcomes will be ongoing.

Student and Alumni Feedback

To gauge the program's impact, students will provide feedback through exit surveys upon completion of the certificate. Follow-up surveys will also be conducted with alumni to evaluate how the program contributed to their career advancement and professional development. This data will help refine the curriculum.

Stakeholder and Employee Engagement

The Haub School will periodically conduct surveys and interviews with employers of graduates, conducted independently by the Haub Career Services team. These efforts will help evaluate

the certificate's effectiveness in meeting workforce needs, guide continuous improvement, and ensure ongoing alignment with industry expectations.

Program Metrics and Retention

Key indicators of program success will include enrollment trends, retention rates, and certificate completions. These metrics will help to monitor the program's accessibility and effectiveness for both full-time and part-time learners.

Five-Year Review

Consistent with our process for other certificates, a formal review will be conducted every five years, examining:

- Enrollment and retention data
- Graduate outcomes and career placements/professional impact
- Stakeholder feedback and evolving workforce demands
- Evolving state of knowledge in the field

This ongoing review process will ensure the program remains responsive to evolving student needs and workforce demands across a range of sectors, maintaining its relevance and overall impact.

Continuous Improvement

Feedback from students, alumni, and employers will be integrated into the certificate's ongoing design process, enabling timely updates to the curriculum, instructional methods, and elective offerings to ensure the program remains current, relevant, and impactful.

NEW RESOURCES REQUIRED

The GEF Certificate is designed to maximize existing faculty, courses, and institutional infrastructure, requiring minimal additional investment. Key resource considerations are as follows:

Instructional Resources

All core and elective courses, including optional credit field courses, will be taught by current Haub School faculty. No new faculty hires are anticipated. One new course (ENR 49xx) is in development, with teaching capacity already identified and will be taught during Spring 2027. All students have the option to take courses online or choose to complete their core course in person, providing a variety of flexible learning formats to suit different needs and preferences. . As enrollment grows, additional teaching capacity will be met through part-time instructors as needed.

Marketing and Recruitment

Modest investment in marketing will be necessary to attract students, focusing on regional and national audiences. Promotional efforts will leverage existing Haub School and UW outreach infrastructure to maximize visibility with minimal added cost. The UW Office of Online and Continuing Education will also assist with marketing and recruitment.

Administrative Oversight

The Global Environmental Futures certificate will be administered within the Haub School's existing organizational framework. As the school expands its online education portfolio over the next 3–5 years, we anticipate hiring a dedicated coordinator to support online teaching and learning. Existing roles within the Haub School will continue to support recruitment, advising, and student retention. Future revenue generated by the certificate will sustain high-quality program delivery and enable strategic scaling as enrollment grows. This approach leverages the Haub School's institutional strengths while making targeted investments to enhance accessibility, academic quality, and long-term program impact.

SUBSTANTIVE CHANGE DETERMINATION

The certificate in GEF represents a significant addition to the Haub School's curriculum but does not constitute a substantive change as defined by the Higher Learning Commission (HLC).

- Rationale: The program primarily leverages existing courses and faculty, integrates seamlessly with established UW programs, and requires minimal financial investment.

- HLC Consultation: Upon approval, the program will be submitted to the HLC Accreditation Liaison Officer to confirm alignment with accreditation standards for new certificate programs.

RELATIONSHIP TO OTHER OFFERINGS

The GEF certificate is designed to complement, not duplicate, existing programs at the University of Wyoming. It aligns closely with the Haub School's undergraduate degrees in Environment and Natural Resources, Outdoor Recreation and Tourism Management, and Environmental Systems Science, as well as interdisciplinary majors such as Anthropology, Sociology, International Studies, and the Honors Interdisciplinary Inquiry Concurrent Major. By offering a focused curriculum on scenario planning, systems thinking, and socio-ecological analysis, the certificate adds depth and global context to these programs. It functions as a specialized certificate that enhances students' academic and professional profiles, particularly those seeking careers or graduate study in environmental policy, sustainability, or government positions.

Complementarity

The GEF certificate offers a strong complementary option to existing degree programs by providing interdisciplinary skills and perspectives that enhance students' academic and professional development. A key feature is the international field course option, which allows students to engage directly in diverse environmental and cultural contexts abroad. This hands-on, immersive experience strengthens the certificate by deepening students' understanding of global environmental challenges, fostering cross-cultural collaboration, and applying theoretical knowledge in real-world settings. The online option increases affordability by allowing students to complete elective courses without the cost burden of travel, while also offering the flexibility to add an optional credit field course to either or both electives. This strengthens the student's ability to address complex environmental challenges and prepares them to be more competitive and effective in careers spanning sustainability, conservation, policy, and international development.

Interdisciplinary Collaboration

This certificate draws on the Haub School of Environment and Natural Resources' strong standing in the sector of sustainability and environmental leadership. Its design ensures academic breadth and practical relevance, aligning with UW's commitment to interdisciplinary education by integrating diverse perspectives from natural sciences, social sciences, and policy studies to prepare students for real-world global environmental challenges.

EXECUTIVE SUMMARY OF DEMAND STATISTICS

Global environmental futures span multiple disciplines and sectors, making it challenging to isolate a single career path or institutional code that fully captures market demand. Trends in related fields, such as Natural Resources/Conservation (General), Environmental Studies, Sustainability Studies, Systems Science and Theory, Geography and Environmental Studies, and International Globalization Studies. In addition to national data, we researched comparable international programs at institutions such as the University of Wollongong, University of Queensland, Freie Universität Berlin, Lancaster University, and the University of Leicester.

Undergraduate-level market data shows steady and growing demand for environmental and sustainability-focused programs, especially those with interdisciplinary and global dimensions. This highlights the value and relevance of the GEF certificate. Bachelor's completions in key CIP codes have grown significantly over the past decade, including:

- **Environmental Studies (03.0103):** Completions grew by 49% from 2013 to 2023.
- **Sustainability Studies (30.3301):** Increased by 65%, reflecting the growing importance of sustainability in undergraduate education.
- **Geography & Environmental Studies (30.4401):** Bachelor's completions rose by a remarkable 1,392%, signaling this as a rapidly emerging field.
- **Systems Science (30.0601):** Though smaller in volume, completions increased by 33%, highlighting growing awareness of complexity and systems thinking in environmental problem-solving.

These trends reflect growing student interest in flexible, interdisciplinary, and globally relevant credentials that enhance employability and prepare them for complex environmental careers. There is limited certificate-level competition in the Rocky Mountain region, particularly for programs that blend systems thinking, scenario planning, and cultural analysis, which are core components of the proposed GEF certificate. The program offers a unique and timely value proposition for undergraduate students seeking to differentiate themselves in sustainability and global environmental leadership.

Job Outlook

Employment prospects are strong and provide healthy job availability for graduates. The Bureau of Labor Statistics (BLS) data supports a positive employment landscape, strong 1-year, 3-year historic employment growth, with 10-year future employment growth is also positive. All six (6) CIP Codes are considered to have positive/strong opportunities.

Students completing an undergraduate certificate in Global Environmental Futures will be prepared for entry-level roles in fields like sustainability coordination, environmental education, and conservation. The Bureau of Labor Statistics (BLS) projects steady growth for jobs such as *Environmental Science and Protection Technicians* (+6% through 2032). The interdisciplinary, place-based curriculum strengthens competitiveness for roles in NGOs, government agencies, and environmental consulting.

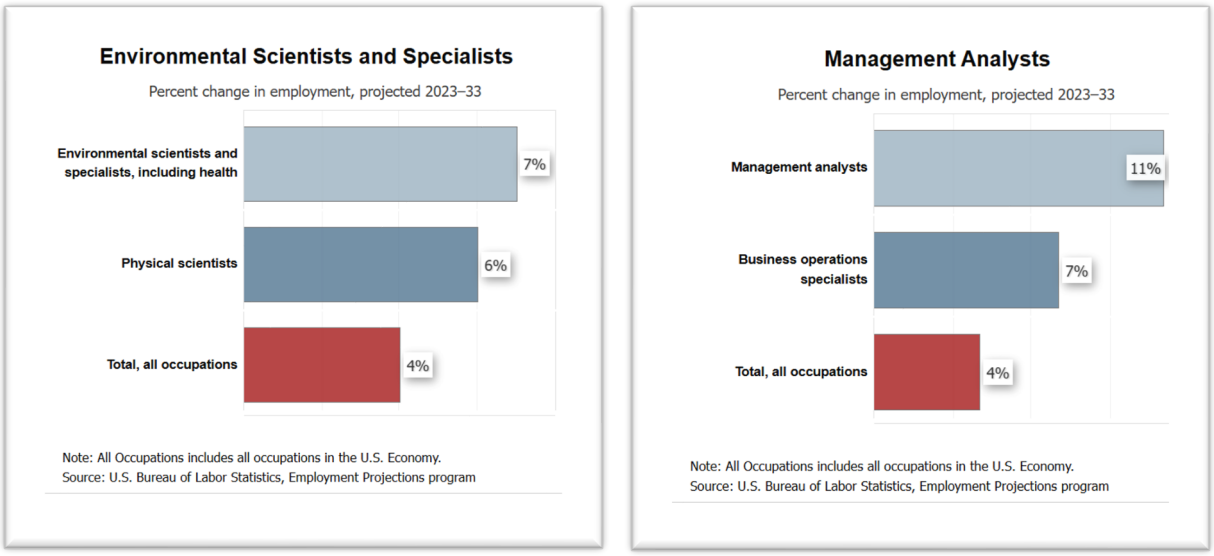
According to the data, individuals with undergraduate certificates in environmental or sustainability-related fields earn median annual wages between $42,000 and $56,000, depending on occupation and location. Entry-level positions such as Environmental Technicians and Conservation Assistants are common pathways for certificate holders. The significant 314.26% increase in online undergraduate certificate completions from 2013 to 2023 suggests both high student interest and recognition of workforce value. Although initial earnings are more modest, the certificate serves as a gateway to both immediate employment and further academic advancement, enhancing long-term career and earnings potential.

Employment Projections Data, Bureau of Labor Statistics

Occupational Title	SOC Code	Employment, 2023	Projected Employment, 2033	Change, 2023-33	
				Percent	Numeric
Environmental scientists and specialists	19-2041	84,600	90,700	7	6,100
Conservation scientists	19-1031	25,900	27,400	6	1,400

Management analysts (sustainability consultant)	13-1111	1,018,300	1,126,200	11	107,900

Projected percent change in employment, by field



SOURCE: Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*

Market Analysis

According to Gray Associates' market analysis, the demand for undergraduate certificates in environmental and sustainability fields is rapidly expanding, particularly through online delivery. From 2013 to 2023, online undergraduate certificate completions increased by over 300%, reflecting a strong national shift toward short-form, skill-focused credentials. Related fields such as Environmental Studies and Sustainability Studies show significant growth in completions, suggesting sustained student demand. This presents a clear opportunity for UW to attract transfer students (Central Wyoming College), complement existing degree programs, and meet increasing workforce needs in conservation, sustainability, and education.

International Programs

The GEF programs examined were University of Wollongong, University of Queensland, Freie Universität, Lancaster University, and University of Leicester, highlights a growing international emphasis on interdisciplinary, future-oriented environmental education. These initiatives

integrate themes such as climate change, sustainability governance, environmental justice, and planetary systems thinking, often organized around real-world challenges. Many combine research, policy engagement, and experiential learning through seminars, capstones, or stakeholder partnerships. Notably, programs like Lancaster's MA and QUEX's research collaboration emphasize global perspectives and applied skills in foresight, innovation, and scenario planning. What makes our certificate unique among peer institutions is its inclusion of international, field-based electives featuring immersive, hands-on projects.

These models suggest strong potential for a U.S.-based Global Environmental Futures Certificate that blends interdisciplinary coursework, practical application, and global-local engagement, serving both undergraduate and graduate students interested in addressing complex environmental challenges through forward-thinking and systems-based approaches.

Comparative Summary of International Global Environmental Futures Programs

	Leicester IEF	Lancaster MA	DAAD Master's	QUEX (UQ + Exeter)	UOW Research Entity
Level	Research institute	Taught MA	Taught MA (Germany)	Doctoral & research theme	Thematic research cluster
Thematic Focus	Broad: systems, justice, climate	Sustainability, global policy, futures	Global sustainability challenges	Environmental futures, climate, policy	Climate, conservation, ecosystems
Education / Training	PhD, postdoc, seminars	MA with global leadership focus	Master's with interdisciplinary lens	PhD cohort, collaborative research	Seminars, field projects, PhD support
Geographic Reach	UK-led, global engagement	UK with global cases and networks	Germany-based, global applicants	Australia–UK partnership	Australia-based, global fieldwork
Program Age	~2–3 years (launched ~2022)	New: Launching in 2025	Ongoing, date unspecified	~6 years (theme active since ~2019)	~5–7 years

Highlights of the Analysis

- **Explosive Growth in Online Certificates**: Online undergraduate certificate completions grew by 314% from 2013 to 2023, indicating strong and rising demand for flexible, accessible options.
- **Minimal Regional Competition**: Across all CIP codes analyzed, market saturation remains relatively low, particularly for certificate programs in Geography and

Environmental Studies (CIP 30.4401), where offerings are scarce, and even in more established fields like Environmental Studies and Sustainability Studies, regional and online options remain limited, presenting a strong opportunity for the University of Wyoming to meet growing national and regional demand.

- **High Program Relevance**: The GEF certificate addresses increasing student interest in sustainability, climate, and place-based education, matching national trends.
- **Supports Transfer Students**: The certificate can serve as a valuable tool for community college transfer students, especially in states like WY and the region. The presence of the only associate-level completions in Systems Science and Theory (CIP 30.0601) at Central Wyoming College in 2023 presents a unique opportunity for the Haub School to establish a strategic partnership, creating a clear transfer pathway and positioning UW as a natural next step for students seeking advanced interdisciplinary training in complex environmental problem-solving.
- **Strong Completion Trends in Related Fields**: Programs in Environmental Studies and Sustainability Studies also saw 994% and 4,286% growth respectively in certificate completions from 2013 to 2023.

The market analysis confirms that the undergraduate certificate in GEF is strong in the market. Nationally, online undergraduate certificate completions have grown by 314% from 2013 to 2023, reflecting student demand for flexible, stackable credentials that enhance career readiness. Related fields such as Environmental Studies and Sustainability Studies have seen significant increases in completions, 994% and over 4,000% respectively, demonstrating sustained interest in environmental education. The certificate offers an accessible, career-focused pathway for students, especially transfer and nontraditional learners, preparing them for roles in sustainability, conservation, and environmental analysis, while also complementing existing majors. Overall, the University of Wyoming is well-positioned to meet this demand and establish itself as a regional leader in interdisciplinary global environmental education.

APPENDIX A: PRELIMINARY MARKET ANALYSIS

Undergraduate Certificate in Global Environmental Futures

Graduate Certificate in Global Environmental Futures

Includes:

1. *Classification of Instructional Programs (CIP) Code Definitions[1]*
2. *Overall Findings[2]*
3. *Market area and primary target markets[2,4]*
4. *Educational market and student demand statistics, including peer comparisons of the size of enrollment, completions, and size trajectory (growth, decline) of comparator programs[2,4]*
5. *Employment trends and projections given core competencies of the degree or certificate[2,4]*
6. *Graduate salary trends and other post-completion trends[2,4]*
7. *Tuition Analysis & Program Comparisons (areas of concentration, delivery method, credits required…)[3]*

[1]National Center of Education Statistics https://nces.ed.gov/ipeds/cipcode/Default.aspx?y=56
[2]Gray Decision Intelligence data subscription
[3]Various Higher Education Institutional websites
[4]Required for Feasibility Study, NOI & RFA

Prepared by Jayne Pearce, Office of Online & Continuing Education

22 July 2025

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1. Classification of Instructional Programs (CIP) Code Definitions

30.4401 Geography and Environmental Studies—Definition: A program that focuses on interactions between people and the natural and built environments. Includes instruction in climate science, sustainability, environmental science and policy, research methods, geographic information systems (GIS), human geography, physical geography, remote sensing, and public policy. *New CIP Code in 2020*

30.2001 International Globalization Studies—Definition: A program that focuses on global and international issues from the perspective of the social sciences, social services, and related fields.

03.0101 Natural Resources Conservation, General—Definition: A general program that focuses on the studies and activities relating to the natural environment and its conservation, use, and improvement. Includes instruction in subjects such as climate, air, soil, water, land, fish and wildlife, and plant resources; in the basic principles of environmental science and natural resources management; and the recreational and economic uses of renewable and nonrenewable natural resources.

03.0103 Environmental Studies—Definition: A program that focuses on environment-related issues using scientific, social scientific, or humanistic approaches or a combination. Includes instruction in the basic principles of ecology and environmental science and related subjects such as policy, politics, law, economics, social aspects, planning, pollution control, natural resources, and the interactions of human beings and nature.

30.3301 Sustainability Studies—Definition: A program that focuses on the concept of sustainability from an interdisciplinary perspective. Includes instruction in sustainable development, environmental policies, ethics, ecology, landscape architecture, city and regional planning, economics, natural resources, sociology, and anthropology.

30.0601 Systems Science and Theory—Definition: A program with a multidisciplinary approach to the analysis and solution of complex problems, requiring a combined approach using data and models from the natural, social, technological, behavioral and life sciences, and other specialized fields.

2. Overall findings

- The national and regional market is open and presents an amazingly strong opportunity for **new** enrollments at the graduate and undergraduate certificate award levels. Stronger **new** enrollment opportunities if delivered online asynchronously.
- The certificate (undergraduate and graduate) option is nationally and regionally unique and great for UW and the Haub School
- An undergraduate certificate, bachelor, post-baccalaureate certificate and or master in sustainability studies is highly recommended for consideration by UW Haub School.

- Geography and Environmental Studies 30.4401 is an emerging program indicating the importance of place. A certificate in Global Environmental Futures will address this consideration perfectly
- Wages are strong. Necessary workforce skills include an understanding of GIS&T. Courses and or a Certificate in this field is strongly recommended for students.
- Consider adjusting tuition rates for Haub School master and graduate certificate programs upwards.

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3. Market area and primary target markets

4. Educational market and student demand statistics, including peer comparisons of the size of enrollment, completions, and size trajectory (growth, decline) of comparator programs

- The market area is defined as either regional (Colorado, Idaho, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming) or the entire nation.
- Delivery method is an important consideration when assessing program completions. Online program completion numbers have grown as programs transition from on-ground to online delivery as higher education institutions attempt to increase student enrollments and tuition revenue while also providing workplace flexibility to faculty and staff.
- Completion numbers indicate student demand trends

3. & 4. A. An 11-year review of all programs (all CIP Codes) completion numbers at undergraduate certificate, bachelor, postbaccalaureate certificate, master and post-master award level.

- Note the significant completion increases in all online certificate (undergraduate, postbaccalaureate, and post master certificates) programs 2013 vs 2023. Indicating strong student demand for certificate programs, specifically delivered online.

2013 all programs (all cip codes) completions vs 2023							
All undergraduate certificates, bachelor, postbaccalaureate certificate, master, and post master certificate program completions	**2013 Online**	**2013 On - ground**	**2013 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**	**2013 vs. 2023 Completions, Percentage increases vs. decreases**
Undergraduate Certificates	**39,072**	**963,828**	**1,002,900**	**161,859**	**932,435**	**1,094,294**	**Online: 314.258% Increase**
							Onground: 3.257% Decrease
							Total: 9.11% Increase
Bachelor	184,527	1,775,932	1,960,459	335,261	1,746,202	2,081,463	Online: 81.686% Increase
							Onground: 1.674% Decrease
							Total: 6.162% Increase
	9,102	**26,505**	**35,607**	**32,711**	**36,816**	**69,527**	**Online: 259.382% Increase**

Postbaccalaureate Certificates							**Onground: 38.90% Increase**
							Total: 95.262% Increase
Master	175,867	591,799	767,666	398,751	551,842	950,593	Online: 126.734% Increase
							Onground: 6.751% Decrease
							Total: 23.828% Increase
Post-master Certificates	**2,975**	**14,928**	**17,903**	**10,950**	**14,955**	**25,905**	**Online: 268.067% Increase**
							Onground: 0.180% Increase
							Total: 44.696% Increase

3. & 4. B. Notes:

- The six CIP Codes reviewed capture the curricular needs of a certificate in Global Environmental Futures
- Below includes completion numbers at the associate, undergraduate certificate, bachelor's, postbaccalaureate certificate, and master's award levels for all CIP Codes requested plus one added by the author of this report, International/Globalization Studies to enhance the sense of place.
    - Associate award level completions are included to gauge potential student transfer opportunities regionally and nationally. A strong enrollment audience for the University of Wyoming
    - Undergraduate Certificate level completions are a direct correlation of the market in which the undergraduate certificate in Global Environmental Futures enters. Undergraduate certificates can consist of lower division, upper division or a combination of lower and upper division courses. Online undergraduate certificates also provide an opportunity for students to manage their transfer to campus while finishing an associate degree or other courses at the community college level.
    - Bachelor award level completions are included to gauge potential student numbers and programs that are similar to or have interest in a postbaccalaureate certificate
    - Postbaccalaureate Certificate award level completions are a direct correlation of the market in which the graduate certificate in Global Environmental Futures enters. Like the undergraduate certificate, a graduate certificate may assist students with bachelor graduation requirements or assist in the transition to campus for on-ground programs.
    - Master award level completions are included to gauge potential graduate student opportunities and program interest
- **Please note the brown highlighted background with white font color within each CIP Code for important details**

3. & 4. C. Geography and Environmental Studies 30.4401

Associate Award Level Geography & Environmental Studies 30.4401	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
No Associate Award Level Geography and Environmental Studies 30.4401 completions in the nation in 2013 as this was a new CIP Code in 2020. Between 2021-2023 there were no Associate Award Level completions.									

Undergraduate Certificate Award Level Geography & Environmental Studies 30.4401	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
No Undergraduate Certificate Award Level Geography and Environmental Studies 30.4401 completions in 2013 in the nation as this was a new CIP Code in 2020.									
TOTAL	**0**	**2**	**2**	**1**	**57**	**58**	**2**	**59**	**61**
A 2,950% increase in completions from 2021 to 2023									
Pennsylvania State University, Main Campus	0	0	0	0	57	57	0	33	33
University of Kansas	0	0	0	0	0	0	0	13	13
Onio University, Main Campus	0	0	0	0	0	0	0	8	8
Northeastern State University, OK *(only online completion in the nation)*	0	2	2	0	0	0	2	1	3
University of Wisconsin, Parkside	0	0	0	0	0	0	0	3	3
No Regional (CO, ID, MT, ND, NE, SD, UT, and WY) Undergraduate Certificate Programs									
Bachelor Award Level Geography & Environmental Studies 30.4401	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
No Bachelor Award Level Geography and Environmental Studies completions in 2013 in the nation as this was a new CIP Code in 2020.									
TOTAL	**1**	**37**	**38**	**3**	**205**	**208**	**23**	**544**	**567**
A 1,392% increase in completions from 2021 to 2023									
Dartmouth College, NH	0	0	0	0	0	0	0	78	78
University of Colorado, Boulder	0	0	0	0	0	0	0	59	59
University of California, Los Angeles	0	0	0	0	33	33	0	46	46
University of Washington, Seattle Campus	0	0	0	0	0	0	0	37	37
University of Minnesota, Duluth	0	0	0	0	33	33	0	36	36
Online Bachelor Programs with the highest completion numbers in 2023									
University of Florida, Online	0	0	0	0	0	0	16	0	16
University of Florida	0	0	0	0	0	0	3	22	25
South Dakota State University	0	0	0	3	8	11	3	9	12
Western Michigan University	0	0	0	0	0	0	1	6	7
Regional Bachelor Programs									
CO-University of Colorado, Boulder	0	0	0	0	0	0	0	59	59
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0

SD-South Dakota State University	0	0	0	3	8	11	3	9	12
UT-BYU	0	0	0	0	1	1	0	1	1
UT-Utah State University	0	0	0	0	0	0	0	1	1
WY-No programs	0	0	0	0	0	0	0	0	0
12.874% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Shows potentially strong regional interest and opportunity for UW Haub School									
Post Baccalaureate Certificate Award Level Geography & Environmental Studies 30.4401	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
No Post Baccalaureate Certificate Award Level Geography and Environmental Studies completions in 2013 in the nation as this was a new CIP Code in 2020.									
Below are the only two Post Baccalaureate Certificate programs in the nation									
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**4**
Ohio University, Main Campus	0	0	0	0	0	0	2	1	3
University of Kansas	0	0	0	0	0	0	0	1	1
Potential opportunity for UW Haub School graduate certificate									
Master Award Level Geography & Environmental Studies 30.4401	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
No Master Award Level Geography and Environmental Studies completions in 2013 in the nation as this was a new CIP Code in 2020.									
TOTAL	**0**	**0**	**0**	**0**	**24**	**24**	**3**	**123**	**126**
University of Oklahoma, Norman Campus	0	0	0	0	0	0	0	38	38
University of Illinois, Urbana Champaign	0	0	0	0	0	0	0	10	10
Pennsylvania State University, Main Campus	0	0	0	0	4	4	0	10	10
Western Michigan University *(only online completion)*	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**5**	**8**
Clark University, MA	0	0	0	0	3	3	0	7	7
Regional Master Programs									
CO-University of Colorado, Boulder	0	0	0	0	0	0	0	6	6
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-South Dakota State University	0	0	0	0	1	1	0	1	1
UT-Utah State University	0	0	0	0	0	0	0	2	2
WY-No programs	0	0	0	0	0	0	0	0	0
7.142% of master completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Overall, potentially strong opportunity for UW Haub School, robust student completion growth, interest and trends.									

3.& 4.D. International – Globalization Studies 30.2001

Below is one of many international and or global programs of interest e.g. international economics, agriculture globalization, international affairs and development... Aggregate and regional completions provided for only one international/globalization program, program completion decreases are not of high concern given the variety and number of international/globalization CIP Code programs and pandemic recovery.									
Associate Award Level International - Globalization Studies 30.2001	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Associate Award Level International - Globalization Studies 30.2001 completions was 57									
A 62.711% decrease in completions from 2013 to 2023									
A 46.341% decrease in completions from 2021 to 2023									
TOTAL	**0**	**41**	**41**	**12**	**24**	**36**	**1**	**21**	**22**
Regional Associate Award Level Programs									
NE-Northeast Community College	0	0	0	0	1	1	0	0	0
UT-Salt Lake Community College	0	1	1	0	3	3	0	2	2
WY-Central Wyoming College in 2013 had one (1) completion									
Undergraduate Certificate Award Level International - Globalization Studies 30.2001	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Undergraduate Certificate Award Level International - Globalization Studies 30.2001 completions was 251									
An 11.155% decrease in completions from 2013 to 2023									
A 4.205% increase in completions from 2021 to 2023									
TOTAL	**28**	**186**	**214**	**13**	**149**	**162**	**29**	**194**	**223**
Regional Undergraduate Certificate Award Level Programs									
NE-Southeast Community College Area	0	0	0	0	0	0	5	0	5
SD-Black Hills State University	0	1	1	0	0	0	0	1	1
Bachelor Award Level International - Globalization Studies 30.2001	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Bachelor Award Level International - Globalization Studies 30.2001 completions was 5,943.									
A 12.939% decrease in completions from 2013 to 2023									
A 16.494% decrease in completions from 2021 to 2023									
TOTAL	**235**	**5,961**	**6,196**	**283**	**5,258**	**5,541**	**245**	**4,929**	**5,174**
Regional Bachelor Award Level Programs									
CO-University of Colorado, Boulder	0	180	180	0	135	135	0	122	122
CO-United States Air Force Academy	0	57	57	0	55	55	0	72	72
CO-Colorado State University, Fort Collins	0	49	49	0	50	50	0	37	37

CO-University of Colorado, Denver Anschutz	0	38	38	0	25	25	0	19	19
CO-University of Northern Colorado	0	18	18	0	9	9	0	8	8
CO-University of Denver	1	1	2	4	0	4	6	0	6
CO-Colorado Christian University	7	3	10	0	9	9	0	3	3
ID-BYU Idaho	0	68	58	0	60	60	0	44	44
ID-Boise State University	0	18	18	0	15	15	0	9	9
ID-Idaho State University	1	4	5	2	3	5	1	2	3
MT-No programs	0	0	0	0	0	0	0	0	0
ND-University of North Dakota	0	11	11	0	4	4	0	6	6
ND-North Dakota State University, Main Campus	0	5	5	0	4	4	0	1	1
NE-University of Nebraska, Lincoln	0	39	39	0	25	25	0	27	27
NE-University of Nebraska, Omaha	0	48	48	0	31	31	0	23	23
NE-Concordia University, Nebraska	0	2	2	0	3	3	0	1	1
NE-Wesleyan University	0	1	1	0	2	2	0	1	1
NE-Doane University	0	1	1	0	1	1	0	0	0
SD-South Dakota State University	0	5	5	0	1	1	0	7	7
SD-University of South Dakota	0	6	6	0	6	6	0	4	4
SD-Augustana University	0	2	2	0	1	1	0	1	1
UT-University of Utah	0	133	133	0	110	110	0	105	105
WY-University of Wyoming	0	16	16	0	28	28	0	19	19
10.011% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Post Baccalaureate Certificate Award Level International - Globalization Studies 30.2001	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Post Baccalaureate Certificate Award Level International - Globalization Studies 30.2001 completions was 102.									
A 26.865% decrease in completions from 2013 to 2023									
A 16.666% increase in completions from 2021 to 2023									
TOTAL	**20**	**47**	**67**	**18**	**30**	**48**	**19**	**66**	**85**
Regional Post Baccalaureate Certificate Award Level Programs									
CO-University of Denver	0	5	5	0	4	4	6	2	8
No other Regional Completions									
9.411% of the post baccalaureate completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Master Award Level International - Globalization Studies 30.2001	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Master Award Level International - Globalization Studies 30.2001 completions was 1,257.									

A 12.47% decrease in completions from 2013 to 2023									
A 25.377% increase in completions from 2021 to 2023									
TOTAL	**278**	**556**	**834**	**290**	**562**	**852**	**336**	**602**	**938**
Regional Master Award Level Programs									
CO-University of Denver	16	3	19	10	2	12	9	4	13
ID-No programs	0	0	0	0	0	0	0	0	0
MT-University of Montana	0	2	2	0	2	2	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-University of Utah	0	14	14	0	12	12	0	16	16
WY-University of Wyoming	0	6	6	0	6	6	0	4	4
3.51% of the master completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									

3. & 4. E. Natural Resources Conservation 03.0101

Associate Award Level Natural Resources Conservation 03.0101	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Associate Award Level Natural Resources Conservation 03.2001 completions was 292									
A 4.45% increase in completions from 2013 to 2023									
A 16.412% increase in completions from 2021 to 2023									
TOTAL	**15**	**247**	**262**	**26**	**273**	**299**	**30**	**275**	**305**
Kirkwood Community College, IA	0	13	13	0	21	21	0	29	29
SUNY College of Environmental Science & Forestry	0	22	22	0	25	25	0	22	22
Vincennes University, IN	0	26	26	0	23	23	0	21	21
Fox Valley Technical College, WI	0	16	16	0	26	26	0	21	21
Minnesota North College Association	0	0	0	0	15	15	0	18	18
Online programs with high completion numbers									
Mississippi Gulf Coast Community College	3	4	7	10	2	12	11	3	14
Finger Lakes Community College, NY	0	3	3	0	6	6	8	0	8
Snow College, UT	0	0	0	2	10	12	5	12	17
Regional Associate Award Level Programs									
CO-Northwestern Community College	0	1	1	0	10	10	0	6	6
ID-College of Western Idaho	0	9	9	0	10	10	0	4	4
ID-North Idaho College	0	0	0	0	4	4	0	0	0
MT-Stone Child College	0	1	1	0	2	2	0	1	1
MT-Little Big Horn College	0	5	5	0	0	0	0	0	0

ND-No programs	0	0	0	0	0	0	0	0	0
NE-Northeast Community College	0	5	5	0	0	0	0	1	1
SD-No programs	0	0	0	0	0	0	0	0	0
UT-Snow College	0	0	0	2	10	12	5	12	17
WY-No programs	0	0	0	0	0	0	0	0	0
16.4122% of associate award level completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Undergraduate Certificate Award Level Natural Resources Conservation 03.0101	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Undergraduate Certificate Award Level Natural Resources Conservation 03.0101 was 119									
A 60.504% increase in completions from 2013 to 2023									
A 6.703% increase in completions from 2021 to 2023									
TOTAL	**7**	**172**	**179**	**18**	**207**	**225**	**8**	**183**	**191**
American River College, CA	0	21	21	0	13	13	0	26	26
Northwestern Community College, CO	0	34	34	0	36	36	0	22	22
Reedley College, CA	0	22	22	0	25	25	0	16	16
Mount Hood Community College, OR	2	13	15	2	14	16	1	13	14
Bastyr University, WA	0	4	4	0	7	7	0	14	14
Online Undergraduate Certificate Program									
University of Maryland, Global MD	0	0	0	0	0	0	4	1	5
Anoka-Ramsey Community College, MN	0	0	0	1	1	2	2	0	2
Regional Programs (CO, ID, MT, ND, NE, SD, UT, and WY)									
CO-Northwestern Community College	0	34	34	0	36	36	0	22	22
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-Snow College	0	0	0	0	0	0	1	1	2
WY-No programs	0	0	0	0	0	0	0	0	0
12.565% of the completions occurred in this region in 2023 (only one online completion and program in the region. The Snow College program in Utah consists of freshman (1000) and sophomore (2000) level courses, (no upper division courses; https://www.snow.edu/academics/programs/natural-resources.html). Indicates an opportunity for UW Haub School									
Bachelor Award Level Natural Conservation Resources 03.0101	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Bachelor Award Level Natural Resources Conservation 03.0101 was 1,448									
A 3.107% increase in completions from 2013 to 2023									
A 2.609% decrease in completions from 2021 to 2023									
TOTAL	**95**	**1,438**	**1,533**	**46**	**1,456**	**1,502**	**64**	**1,429**	**1,493**

Texas A&M University, College Station	0	126	126	0	150	150	0	140	140
University of California, Berkeley	0	104	104	0	99	99	0	119	119
Texas Tech University	0	64	64	0	60	60	0	86	86
Cornell University, NY	0	97	97	0	101	101	0	79	79
University of Massachusetts, Amherst	0	78	78	0	65	65	0	77	77
Online Bachelor Programs									
University of Maryland, Global Campus	66	20	86	46	12	58	63	11	74
Thomas University, GA	0	0	0	0	0	0	1	2	3
Regional Bachelor Programs									
CO-Colorado State University, Pueblo	0	9	9	0	18	18	0	9	9
ID-No programs	0	0	0	0	0	0	0	0	0
MT-University of Montana	0	39	39	0	31	31	0	13	13
MT-Montana State University	0	3	3	0	1	1	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-University of Nebraska, Lincoln	0	17	17	0	17	17	0	14	14
SD-South Dakota State University	0	1	1	0	0	0	0	5	5
UT-Utah State University	0	1	1	0	0	0	0	5	5
WY-No programs	0	0	0	0	0	0	0	0	0
3.08% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Post Baccalaureate Certificate Award Level Natural Resources Conservation 03.0101	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Post Baccalaureate Certificate Award Level Natural Resources Conservation 03.0101 was 21									
An 123.809% increase in completions from 2013 to 2023									
A 2.173% increase in completions from 2021 to 2023									
TOTAL	**23**	**23**	**46**	**37**	**31**	**68**	**20**	**27**	**47**
Northern Arizona University	0	0	0	8	2	10	9	3	12
Auburn University, AL	6	8	14	7	6	13	6	6	12
Colorado State University, Fort Collins	6	5	11	5	3	8	0	7	7
Texas A&M University, College Station	0	1	1	1	1	2	2	2	4
University of Rhode Island	0	0	0	12	8	20	2	1	3
Regional Post Baccalaureate Programs									
CO-Colorado State University, Fort Collins	6	5	11	5	3	8	0	7	7
ID-Bosie State University	0	0	0	0	0	0	0	2	2
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0

NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	1	1
21.276% of all completions occurred in this region (CO, ID, MT, ND, NE, SD, UT, and WY) No online completions in the region, a good opportunity for UW Haub School graduate certificate options.									
Master Award Level Natural Resources Conservation 03.0101	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Master Award Level Natural Resources Conservation 03.0101 completions was 605									
A 50.9% increase in completions from 2013 to 2023									
A 27.461% increase in completions from 2021 to 2023									
TOTAL	**215**	**506**	**721**	**155**	**632**	**787**	**195**	**724**	**919**
University of Michigan, Ann Arbor	0	165	165	0	215	215	0	250	250
Duke University, NC	115	0	115	0	94	94	0	158	158
Colorado State University, Fort Collins	26	20	46	36	23	59	53	14	67
Unity Environmental University, ME	16	0	16	52	0	52	66	0	66
Auburn University, AL	11	13	24	9	8	17	22	19	41
Online Master Programs									
Slippery Rock University of Pennsylvania	12	0	12	26	0	26	21	6	27
University of Missouri, Columbia	9	3	12	17	7	24	21	6	27
Regional Master Programs									
***CO**-Colorado State University, Fort Collins (online program)*	*26*	*20*	*46*	*36*	*23*	*59*	*53*	*14*	*67*
ID-No programs	0	0	0	0	0	0	0	0	0
MT-University of Montana	0	6	6	0	10	10	0	7	7
MT-Montana State University	0	3	3	0	1	1	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-University of Nebraska, Lincoln	0	17	17	0	17	17	0	14	14
SD-South Dakota State University	0	1	1	0	0	0	0	5	5
UT-Utah State University	7	0	7	8	0	8	0	0	0
WY-No programs	0	0	0	0	0	0	0	0	0
10.119% of all completions occurred in this region (CO, ID, MT, ND, NE, SD, UT, and WY). Only one online program in the region.									

3. & 4. F. Environmental Studies 03.0103

Associate Award Level Environmental Studies 03.0103	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**

In 2013 Associate Award Level Environmental Studies completions was 183									
An 18.579% increase in completions from 2013 to 2023									
A 9.595% increase in completions from 2021 to 2023									
TOTAL	**5**	**193**	**198**	**21**	**221**	**242**	**9**	**208**	**217**
Hudson Community College, NJ	0	12	12	0	46	46	0	14	14
Mountain San Antonio College, CA	0	7	7	0	18	18	0	11	11
University of Cincinnati-Blue Ash College	0	7	7	0	4	4	0	11	11
Community College of Vermont *(online completions)*	0	8	8	9	3	12	8	2	10
Santa Rosa Junior College, CA	0	10	10	0	13	13	0	10	10
Regional Associate Award Level Programs									
CO-No programs	0	0	0	0	0	0	0	0	0
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-Sitting Bull College	0	2	2	0	2	2	0	4	4
NE-Little Priest Tribal College	0	0	0	0	1	1	0	1	1
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	0	0
2.304% of associate award level completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY), no regional online completions in this region									
Undergraduate Certificate Award Level Environmental Studies 03.0103	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Undergraduate Certificate Award Level Environmental Studies 03.0103 was 38									
A 994.736% increase in completions from 2013 to 2023									
A 19.540% increase in completions from 2021 to 2023									
TOTAL	**23**	**325**	**348**	**27**	**342**	**369**	**38**	**378**	**416**
University of Wisconsin, Madison	0	213	213	0	218	218	0	259	259
Arizona State University, Campus Immersion	0	49	49	0	55	55	0	38	38
Ohio University, Main Campus	0	34	34	0	35	35	0	26	26
Hocking College, OH	0	0	0	0	0	0	0	16	16
Columbia Southern University, AL	16	0	16	16	0	16	15	0	15
Online Undergraduate Certificate Program									
American Public University System, WV	7	0	7	8	0	8	13	0	13
Regional Programs (CO, ID, MT, ND, NE, SD, UT, and WY)									

CO-Metropolitan State University-Denver	0	3	3	0	5	5	0	5	5
ID-Boise State University	0	0	0	0	2	2	0	1	1
MT-University of Montana	0	0	0	0	1	1	0	1	1
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	0	0
1.682% of the completions occurred in this region in 2023, zero online completions in the region. Given zero online programs in the region opportunity exists for UW Haub School, especially combined with the completion percentage increases from 2013-2023 and 2021-2023									
Bachelor Award Level Environmental Studies 03.0103	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Bachelor Award Level Environmental Studies 03.0103 was 6,629									
A 20.500% increase in completions from 2013 to 2023									
A 2.765% increase in completions from 2021 to 2023									
TOTAL	**379**	**7,394**	**7,773**	**376**	**7,478**	**7,854**	**375**	**7,613**	**7,988**
University of California, Santa Barbara	0	377	377	0	318	318	0	338	338
University of California, Berkeley	0	268	268	0	221	221	0	222	222
University of Colorado, Boulder	0	188	188	0	214	214	0	206	206
University of California, Santa Cruz	0	180	180	0	132	132	0	155	155
University of Michigan, Ann Arbor	0	142	142	0	123	123	0	134	134
Online Bachelor Programs									
University of Phoenix, AZ	141	1	142	151	1	152	130	0	130
Arizona State University, Digital Immersion	59	0	59	67	0	67	86	0	86
Columbia Southern University, AL	84	0	84	62	0	62	61	0	61
Regional Bachelor Programs									
CO-University of Colorado, Boulder	0	188	188	0	214	214	0	206	206
CO-Fort Lewis College	0	30	30	0	29	29	0	34	34
CO-Colorado College	0	20	20	0	24	24	0	30	30
CO-Western Colorado University	0	33	33	0	28	28	0	24	24
CO-Naropa University	0	5	5	0	2	2	0	6	6
CO-University of Denver	1	0	1	1	0	1	0	2	2
ID-Boise State University	0	48	48	0	45	45	0	38	38
ID-College of Idaho	0	9	9	0	8	8	0	9	9
MT-University of Montana	0	25	25	0	24	24	0	13	13
MT-Carroll College	0	4	4	0	6	6	0	9	9

MT-Montana State University, Billings	0	3	3	0	6	6	0	6	6
ND-University of North Dakota	0	3	3	0	4	4	0	9	9
NE-University of Nebraska, Lincoln	0	35	35	0	21	21	0	27	27
SD-South Dakota State University	0	9	9	0	13	13	0	13	13
SD-Augustana University	0	0	0	0	4	4	0	7	7
UT-Utah State University	0	24	24	0	22	22	0	37	37
UT-University of Utah	11	87	98	0	35	35	0	35	35
UT-Westminster College	0	16	16	0	14	14	0	14	14
WY-University of Wyoming	0	37	37	0	30	30	0	52	52
7.148% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY). No online bachelor programs in 2023									
Post Baccalaureate Certificate Award Level Environmental Studies 03.0103	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Post Baccalaureate Certificate Award Level Environmental Studies 03.0103 was 34									
A 202.941% increase in completions from 2013 to 2023									
An 1.904% decrease in completions from 2021 to 2023									
TOTAL	**69**	**36**	**105**	**48**	**48**	**96**	**46**	**57**	**103**
American Public University, WV	14	0	14	29	0	29	21	0	21
Antioch University New England, NH	0	16	16	0	9	9	0	20	20
Arizona State University, Digital Immersion	2	0	2	9	0	9	10	0	10
Arizona State University, Campus Immersion	0	0	0	0	4	4	0	8	8
University of Kansas	0	5	5	0	9	9	0	6	6
Online Post Baccalaureate Certificate Programs									
Columbia Southern University, AL	6	0	6	2	0	2	4	0	4
Ohio State University, Main Campus	0	0	0	3	2	5	3	2	5
Regional Bachelor Programs									
CO-No programs	0	0	0	0	0	0	0	0	0
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	1	1
No regional Post Baccalaureate Programs in this region, a strong opportunity for UW Haub School									

Master Award Level Environmental Studies 03.0103	2021 Online	2021 On - ground	2021 Total	2022 Online	2022 On - ground	2022 Total	2023 Online	2023 On - ground	2023 Total
In 2013 Master Award Level Environmental Studies 03.0103 completions was 834									
A 93.525% increase in completions from 2013 to 2023									
A 19.11% increase in completions from 2021 to 2023									
TOTAL	**74**	**1,281**	**1,355**	**150**	**1,363**	**1,513**	**152**	**1,462**	**1,614**
Harvard University	0	168	168	0	87	87	0	149	149
University of Pennsylvania	0	76	76	0	101	101	0	141	141
Yale University	0	94	94	0	160	160	0	121	121
University of Colorado, Boulder	0	76	76	0	85	85	0	103	103
Arizona State University, Digital Immersion	33	0	33	91	0	91	94	0	94
Online Master Programs									
Prescott College, AZ	10	0	13	19	0	19	18	0	18
Webster University, MO	14	21	35	12	15	27	9	9	18
Regional Master Programs									
CO-University of Colorado, Boulder	0	76	76	0	85	85	0	103	103
CO-Western Colorado University	0	29	29	0	26	26	0	41	41
ID-No programs	0	0	0	0	0	0	0	0	0
MT-University of Montana	0	11	11	0	23	23	0	19	19
ND-University of North Dakota	0	1	1	0	1	1	0	0	0
NE-No programs	0	17	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-Utah State University	0	5	5	0	4	4	0	17	17
WY-University of Wyoming	0	8	8	0	113	13	0	16	16
12.143% of all completions occurred in this region (CO, ID, MT, ND, NE, SD, UT, and WY), no online programs in the region									

3. & 4. G. Sustainability Studies 30.3301

Associate Award Level Sustainability Studies 30.3301	2021 Online	2021 On - ground	2021 Total	2022 Online	2022 On - ground	2022 Total	2023 Online	2023 On - ground	2023 Total
In 2013 Associate Award Level Sustainability Studies 30.3301 completions was 25									
A 24% increase in completions from 2013 to 2023									
An 121.428% increase in completions from 2021 to 2023									
TOTAL	**0**	**14**	**14**	**4**	**19**	**23**	**9**	**22**	**31**
Mesa Community College, AZ	0	1	1	2	2	4	5	5	10
Chandler-Gilbert Community College, AZ	0	0	0	2	2	4	2	2	4
Estrella Mountain Community College, AZ	0	0	0	0	3	3	0	3	3
Phoenix College, AZ	0	0	0	0	3	3	0	3	3

Middlesex College, NJ	0	1	1	0	3	3	0	3	3
Regional Associate Award Level Programs									
CO-No programs	0	0	0	0	0	0	0	0	0
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-Sitting Bull College	0	2	2	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	0	0
No associate award level completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Undergraduate Certificate Award Level Sustainability Studies 30.3301	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Undergraduate Certificate Award Level Sustainability Studies 30.3301 was 7									
A 4,285.71% increase in completions from 2013 to 2023									
A 34.0611% increase in completions from 2021 to 2023									
TOTAL	**14**	**215**	**229**	**11**	**295**	**306**	**9**	**298**	**307**
University of Wisconsin, Madison	0	29	29	0	61	61	0	58	58
University of Georgia	0	56	56	0	58	58	0	56	56
University of Pittsburgh-Pittsburgh Campus	0	41	41	0	60	60	0	53	53
University of Texas at Austin	0	24	24	0	16	16	0	20	20
Slippery Rock University of Pennsylvania	0	12	12	0	9	9	0	15	15
Online Undergraduate Certificate Program									
American Public University System, WV	4	0	4	4	0	4	4	0	4
Wichita State University, KS	0	1	1	0	4	4	2	2	4
Regional Programs (CO, ID, MT, ND, NE, SD, UT, and WY)									
CO-Colorado Mesa University	0	6	6	0	4	4	0	9	9
ID-No programs	0	0	0	0	0	0	0	0	0
MT-University of Montana	0	4	4	0	1	1	0	4	4
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-University of South Dakota	0	0	0	0	1	1	0	0	0
UT-University of Utah	0	0	0	0	0	0	0	3	3
WY-No programs	0	0	0	0	0	0	0	0	0
5.211% of the completions occurred in this region in 2023, no online programs in 2023									
Bachelor Award Level Sustainability Studies 30.3301	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Bachelor Award Level Sustainability Studies 30.3301 was 185									

A 785.945% increase in completions from 2013 to 2023									
A 34.897% increase in completions from 2021 to 2023									
TOTAL	**53**	**1,162**	**1,215**	**96**	**1,385**	**1,481**	**156**	**1,483**	**1,639**
University of Wisconsin, Madison	0	1	1	0	33	33	0	119	119
University of Florida	0	84	84	0	100	100	0	114	114
University of Utah	0	0	0	27	53	80	35	68	103
University of Texas at Austin	0	70	70	0	77	77	0	83	83
University of Illinois	0	70	70	0	77	77	0	83	83
Online Bachelor Programs									
Oregon State University	18	25	43	0	56	56	27	28	55
Floridia International University	0	43	43	26	42	68	24	39	63
Regional Bachelor Programs									
CO-Colorado Mountain College	0	39	39	0	36	36	0	21	21
CO-University of Northern Colorado	0	17	17	0	21	21	0	13	13
ID-No programs	0	0	0	0	0	0	0	0	0
MT-Montana State University	0	26	26	0	6	6	0	19	19
MT-University of Montana	0	0	0	0	3	3	0	3	3
ND-No programs	0	0	0	0	0	0	0	0	0
NE-Bellevue University	7	1	8	8	1	9	20	1	21
NE-Creighton University	0	4	4	0	1	1	0	4	4
SD-South Dakota State University	0	6	6	0	12	12	0	6	6
UT-Utah State University	0	25	25	0	25	25	0	24	24
UT-University of Utah	0	0	0	27	53	80	35	68	101
WY-No programs	0	0	0	0	0	0	0	0	0
12.934% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Post Baccalaureate Certificate Award Level Sustainability Studies 30.3301	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Post Baccalaureate Certificate Award Level Sustainability Studies 30.3301 was 115									
A 202.941% increase in completions from 2013 to 2023									
A 1.904% decrease in completions from 2021 to 2023									
TOTAL	**98**	**172**	**270**	**201**	**247**	**448**	**174**	**243**	**417**
Harvard University, MA	88	0	88	152	0	152	146	0	146
Virginia Polytechnic Institute and State University	0	0	0	0	102	102	0	89	89
University of Iowa	0	76	76	0	61	61	0	54	54
Colorado State University, Fort Collins	1	0	1	16	10	26	0	34	34
University of Chicago	0	5	5	0	6	6	0	10	10

Online Post Baccalaureate Certificate Programs									
Arizona State University, Digital Immersion	0	0	0	9	0	9	8	0	8
Ball State University	2	0	2	0	0	0	6	0	6
Regional Bachelor Programs									
CO-Colorado State University, Fort Collins	1	0	1	16	10	26	0	34	34
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-South Dakota State University	0	0	0	0	3	3	0	0	0
UT-University of Utah	0	0	0	0	0	0	0	4	4
WY-No programs	0	0	0	0	0	0	0	0	0
9.11% of regional Post Baccalaureate Programs occurred in this region. No online programs in the region and only two on-campus									
Master Award Level Sustainability Studies 30.3301	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Master Award Level Sustainability Studies 30.3301 completions was 276									
A 593.478% increase in completions from 2013 to 2023									
A 55.99% increase in completions from 2021 to 2023									
TOTAL	**108**	**1,119**	**1,227**	**183**	**1,252**	**1,435**	**186**	**1,728**	**1,914**
Columbia University in the City of New York	0	110	110	0	193	193	0	271	271
Harvard University	0	46	46	0	144	144	0	192	192
Rutgers University, New Brunswick	0	57	57	0	45	45	0	105	105
University of Illinois, Chicago	0	61	61	0	53	53	0	94	94
University of Michigan, Ann Arbor	0	53	53	0	76	76	0	83	83
Online Master Programs									
University of South Florida	31	43	74	56	43	95	42	19	61
University of Wisconsin, Green Bay	23	0	23	12	0	12	20	0	20
Johns Hopkins University	0	0	0	10	3	13	17	5	22
Regional Master Programs									
CO-Colorado State University, Fort Collins	0	0	0	0	0	0	0	19	19
CO-Regis University	0	6	6	0	3	3	0	11	11
CO-University of Colorado, Anschutz Medical Campus	0	15	15	0	12	12	0	11	11
CO-University of Denver	0	0	0	0	0	0	0	7	7
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0

SD-Black Hills State University	2	3	5	3	2	5	2	3	5
SD-University of South Dakota	0	1	1	0	4	4	0	2	2
UT-University of Utah	0	18	18	0	26	26	0	38	38
UT-Utah State University	0	7	7	0	4	4	0	5	5
WY-No programs	0	0	0	0	0	0	0	0	0
5.120% of all completions occurred in this region (CO, ID, MT, ND, NE, SD, UT, and WY)									

3. & 4. H. Systems Science and Theory 30.0601

Associate Award Level Systems Science and Theory 30.0601	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 there were zero Associate Award Level Sustainability Studies 30.3301 completions.									
A 90.909% increase in completions from 2021 to 2023									
TOTAL	**0**	**11**	**11**	**0**	**13**	**13**	**0**	**21**	**21**
Central Wyoming College, Riverton Wyoming	0	11	11	0	13	13	0	21	21
Regional Associate Award Level Programs									
CO-No programs	0	0	0	0	0	0	0	0	0
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-Central Wyoming College	0	11	11	0	13	13	0	21	21
The only associate award level completions in 2023 in the nation occurred at Central Wyoming College in Riverton, Wyoming. A very strong potential for UW Haub School partnership with Central Wyoming College and potential transfer students.									
Undergraduate Certificate Award Level Systems Science and Theory 30.0601	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 there were zero Undergraduate Certificate Award Level Sustainability Studies 30.3301 completions.									
A 200% increase in completions from 2021 to 2023									
TOTAL	**0**	**2**	**2**	**0**	**7**	**7**	**0**	**6**	**6**
Purdue University	0	2	2	0	7	7	0	6	6
No Regional Programs (CO, ID, MT, ND, NE, SD, UT, and WY), opportunity for UW Haub School									
Bachelor Award Level Systems Science and Theory 30.0601	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Bachelor Award Level Systems Science and Theory was 240									
A 98.33% increase in completions from 2013 to 2023									
A 16.097% increase in completions from 2021 to 2023									

TOTAL	**67**	**343**	**410**	**59**	**364**	**423**	**74**	**402**	**476**
Carnegie Mellon University	0	109	109	0	118	118	0	118	118
Rhode Island School of Design	0	68	68	0	75	75	0	92	92
University of Illinois, Urbana Champaign	50	0	50	57	0	57	71	0	71
James Madison University, VA	0	53	53	0	55	55	0	50	50
Claremont McKenna College, CA	0	12	12	0	16	16	0	32	32
Online Bachelor Programs									
Pennsylvania Western University	17	11	28	2	9	11	3	11	14
Regional Bachelor Programs									
CO-No programs	0	0	0	0	0	0	0	0	0
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-Nebraska Wesleyan University	0	1	1	0	3	3	0	2	2
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No *In 2013 UW had 15 completions*	0	0	0	0	0	0	0	0	0
.420% of the bachelor completions in 2023 occurred within the region (CO, ID, MT, ND, NE, SD, UT, and WY)									
Post Baccalaureate Certificate Award Level Systems Science and Theory 30.0601	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Post Baccalaureate Certificate Award Level Systems Science and Theory 30.0601 was 5									
A 1100% increase in completions from 2013 to 2023									
A 28.571% decrease in completions from 2021 to 2023									
TOTAL	**45**	**39**	**84**	**12**	**20**	**32**	**27**	**33**	**60**
Purdue University, Main Campus	9	10	19	9	7	16	24	22	46
Old Dominion University	4	1	5	3	0	3	3	1	4
University of Central Florida	0	5	5	0	1	1	0	4	4
Northwestern University	0	9	9	0	8	8	0	4	4
University of Vermont	0	3	3	0	2	2	0	2	2
No Regional Post Baccalaureate Programs, strong opportunity for UW Haub School									
Master Award Level Systems Science and Theory 30.0601	**2021 Online**	**2021 On - ground**	**2021 Total**	**2022 Online**	**2022 On - ground**	**2022 Total**	**2023 Online**	**2023 On - ground**	**2023 Total**
In 2013 Master Award Level Systems Science and Theory completions was 261									
A 80.459% increase in completions from 2013 to 2023									
A 37.719% increase in completions from 2021 to 2023									
TOTAL	**37**	**305**	**342**	**74**	**349**	**423**	**89**	**382**	**471**
The New School, New York	14	101	115	43	74	117	60	102	162

Harvard University	0	23	23	0	45	45	0	69	69
North Carolina State University at Raleigh	14	17	36	18	16	36	18	21	39
Binghamton University	0	22	22	0	21	21	0	25	25
Arizona State University, Campus Immersion	0	0	0	0	31	31	0	24	24
Regional Master Programs									
CO-Naropa University	0	0	0	0	6	6	0	2	2
ID-No programs	0	0	0	0	0	0	0	0	0
MT-No programs	0	0	0	0	0	0	0	0	0
ND-No programs	0	0	0	0	0	0	0	0	0
NE-No programs	0	0	0	0	0	0	0	0	0
SD-No programs	0	0	0	0	0	0	0	0	0
UT-No programs	0	0	0	0	0	0	0	0	0
WY-No programs	0	0	0	0	0	0	0	0	0
.424% of all completions occurred in this region (CO, ID, MT, ND, NE, SD, UT, and WY)									

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5. Employment trends and projections given core competencies of the degree or certificate.

Employment prospects are promising and provide healthy job availability for graduates. Bureau of Labor Statistics (BLS) data supports a positive employment landscape, strong 1-year, 3-year historic employment growth. 10-year future employment growth is also positive. 10-year future employment growth is not always a strong indicator of long-term employment opportunities given national economic, political, and technical advancements indicators. It is included in this case give all six (6) CIP Codes are considered to have positive/strong opportunities.

Program CIP Code	BLS 1-Year Historic Growth	BLS 3-Year Historic Growth	BLS 10-Year Future Growth
Geography & Environmental Studies 30.4401	Positive/Strong	Positive/Strong	Positive/Strong
International - Globalization Studies 30.2001	Positive/Strong	Positive/Strong	Positive/Strong
Natural Resources Conservation 03.0101	Positive/Strong	Positive/Strong	Positive/Strong
Environmental Studies 03.0103	Positive/Strong	Positive/Strong	Positive/Strong
Sustainability Studies 30.3301	Positive/Strong	Positive/Strong	Positive/Strong
Systems Science and Theory 30.0601	Positive/Strong	Positive/Strong	Positive/Strong

Core Competencies	*Detailed Operational Work Activities*					*Tools/Software Knowledge in addition to Microsoft*				
	Analyze Scientific or Investigative Findings	Perform Statistical Analysis or Modeling and Collect Statistical Data	Advise Clients or Community Organizations Regarding Issues or Problems	Analyze Environmental Data and Perform Environmental Assessment	Conduct Field Research	**ESRI ArcView and ESRI ArcGIS Software**	SAS Software	SPSS Software	StataCorp Stata	AutoCad Software
Geography & Environmental Studies 30.4401	x	x		x	x	**x**	x	x	x	x
International - Globalization Studies 30.2001			x	x		**x**				
Natural Resources Conservation, General 03.0101	x	x	x	x	x	**x**		x		x
Environmental Studies 03.0103	x	x	x		x	**x**	x	x	x	x
Sustainability Studies 30.3301	x	x	x	x	x	**x**		x		x
Systems Science & Theory 30.0601	x	x		x	x	**x**	x	x	x	

Possible Occupational Titles
Geographer
Environmental Scientists
Environmental Engineer
GIS&T Analyst, GIS&T Administrator, Geospatial Data Scientists, or Remote Sensing Analyst
Statistician
Natural Science Managers
Environmental Restoration Planners, Compliance Inspectors, or Urban and Regional Planner
Sustainability Specialist or Chief Sustainability Officer
Energy Engineers

6. Graduate salary trends and other post-completion trends.

Program CIP Code	BLS Entry Level Salary	BLS Post Entry Level Median Salary
Geography & Environmental Studies 30.4401	$60,633	$99,742
International - Globalization Studies 30.2001	$53,968	$90,054
Natural Resources Conservation 03.0101	$51,893	$74,950

Environmental Studies 03.0103	$54,102	$89,266
Sustainability Studies 30.3301	$63,389	$84,782
Systems Science and Theory 30.0601	$65,193	$90,695
Average	**$58,196**	**$88,248**

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7. Tuition & Program Comparisons

Tuition is an important consideration when starting a new or moving a program to asynchronous online delivery. Below contains program or area of concentration, course titles, delivery, and credits required comparisons. Additionally, the below data was borrowed from a previous Haub School graduate certificate and master feasibility project in May of 2025. Graduate certificate rates should follow program master tuition and fee rates. Undergraduate certificate tuition rates should follow bachelor tuition and fee rates.

Master of 03.0101 Natural Resources/Conservation, General ONLINE program tuition and areas of concentration[1]				
	Areas of Concentration	**Online Tuition Rate (pch)**	**Fees (pch)**	**Total (pch)**
Colorado State University, Fort Collins	a) **Ecological Restoration**; b) Forest Science; c) Rangeland Ecology & Management	$726.00	$0.00	$726.00
Unity Environmental University, ME	a) Marine Policy & Management; b) **Climate Change Adaptation & Resilience**; c) Sustainable Food Systems; d) Carbon Ecology & Management; e) Wildlife Conservation & Advocacy; f) **Environmental Data Analytics https://unity.edu/programs/m-s-in-environmental-data-analytics/ --Combination of Environmental Science & Data Analytics;** and g) Wildlife Ecology & Management	$650.00	$6.75	$656.75
Auburn University, AL	Master of Natural Resources combined with one or more graduate certificates: a) Forest Finance & Investment; b) **Restoration Ecology**; and c) **One Health**-interaction between people, animals, and the environment; https://cfwe.auburn.edu/online-professional-graduate-certificate-programs/one-health/	$546.00	$0.00	$546.00
University of Missouri, Columbia	Master of Science in Natural Resources-emphasis in Agroforestry	$603.80	$0.00	$603.80
Slippery Rock University of Pennsylvania, PA	Master of Science in Park & Resource Management-to gain a) ecological understanding; b) planning; and c) management theory	$516.00	$105.40	$621.40
Texas A&M University, College Station	Master of Natural Resources a) natural resources; b) Ecology; c) **Policy**; d) Conservation Efforts; and e) **Human Effects on our Environment**	unknown		
			Average	**$630.79**
Master of 03.0103 Environmental Studies ONLINE program tuition and areas of concentration[1]				

Arizona State University, Digital Immersion	An online program in Environmental Studies was not listed. Although they have online master programs in a) Coastal & Marine Science & Management; b) Sustainability Leadership; c) **Law & Sustainability**; d) Sustainable Tourism; and e) Urban & Environmental Planning plus a certificate in **Sustainability** for future referencehttps://asuonline.asu.edu/online-degree-programs/certificates/graduate-sustainability-certificate/	$665.00	?	$665.00
Prescott College, AZ	Master of Science in Environmental Studies & Sustainability; concentrations a) Conservation Biology; and b) **Resilience Planning & Climate Solutions**	$774.00	$13.75	$787.75
Webster University, MO	The master of science (MS) in Environmental Management program is designed to provide students with the tools and techniques to navigate the business aspects of environmental management. Students learn to assess and convey the business, ethical and **legal information** to those who make or are affected by the decisions that shape our natural resources and environment. Students can also choose an emphasis in **Environmental Sustainability**	$752.00	$0.00	$752.00
Indiana University, Bloomington	There is not a program in Environmental Studies, although there are programs in environmental health (actually a master in public health), global health & sustainable development, tourism management, outdoor recreation, data science etc.. Potentially an institutional mistake, IPEDS mistake, or closure of program.			
			Average	**$734.92**
[1] *based on enrollment in 6 credits (2 classes/part-time) and adjusted for semester-based classes when necessary*				

Average of the Averages	
03.0101 Natural Resources/Conservation, General	$630.79
03.0103 Environmental Studies	$734.92
Average for the two main programs reviewed	**$682.86**

APPENDIX B: PRO FORMA BUDGET

Cells in orange are variables which can be updated as needed. Please enter information in numerical tab order.

Cells in gray calculate automatically

	Fiscal Year				
Haub School Global Environmental Futures Certificate	1	2	3	4	
Revenue					
Cummulative Total NEW headcount enrollment	5	13	23	35	
NEW Resident enrollment (# of new students entering the program each year)	3	5	6	7	
NEW Non Resident Enrollment (# of new students entering the program each year)	2	3	4	5	
Resident (credit hours delivered outside of NEW Program)	0	0	0	0	
Resident (credit hours delivered in NEW Program)	54	153	303	474	
Non Resident (credit hours delivered outside of NEW Program)	0	0	0	0	
Non Resident (credit hours delivered in NEW Program)	36	96	195	312	
Total Resident credit hours generated**	54	153	303	474	
Total Non Resident credit hours generated**	36	96	195	312	
Per Credit Tuition*					
Resident (Posted Tuition Rate)	$134	$139	$145	$151	
Nonresident (Posted Tuition Rate)	$537	$558	$581	$604	
Prior Year's Non Resident Discount Rate (updated annually by the budget office)	30%	30%	30%	30%	
Estimated Actual Non Resident Per Credit Tuition	$376	$391	$407	$423	
Total Resident Tuition generated outside of NEW Program	$0	$0	$0	$0	
Total Resident Tuition in NEW Program	$7,236	$21,322	$43,915	$71,447	
Total Non Resident Tuition outside of NEW Program	$0	$0	$0	$0	
Total Non Resident Tuition in NEW Program	$13,532	$37,530	$79,282	$131,925	
Total Tuition from NEW Enrollment	$20,768	$58,852	$123,197	$203,372	
Fees					
Program Per Credit Hour	$14	$14	$14	$14	$14 per credit to college offering course
Program Fee Revenue	$1,260	$3,486	$6,972	$11,004	
Advising Fee Per Credit Hour	$6.00	$6.00	$6.00	$6.00	
Advising Fee Revenue	$540	$1,494	$2,988	$4,716	
Mandatory Fee (Per Full Time Student)	$690.00	$690.00	$690.00	$690.00	
Mandatory Fee Revenue	$3,450	$8,970	$15,870	$24,150	
Total New Revenue Generated Within New Program	$22,028	$62,338	$130,169	$214,376	
Total New Revenue Generated Outside of the Program	$3,990	$10,464	$18,858	$28,866	
Total New Revenue Generated	$26,018	$72,802	$149,027	$243,242	
New Program Expense Assumptions					
Compensation and benefits					
Faculty	$12,500	$12,500	$12,500	$12,500	Salary split given oversight of several certificate programs, one graduate program, and other online
Other administrative staff					coursework; salary comp based on similar role in ECTL & COB (total starting salary = $75K)
Graduate Assistants					
Supplies	$ 400				Laptop
Travel					
Marketing					Marketing budget provided by UW online
Capital expense	0	0	0	0	
Other (specify)	200	200	200	200	Professional Development
Projected Financial Results for New Program	**FY1**	**FY2**	**FY3**	**FY4**	
Total Expenses	$13,100	$12,700	$12,700	$12,700	
Total New Revenues Remaining with Program	$22,028	$62,338	$130,169	$214,376	
New Program's Total Surplus or Deficit	**$8,928**	**$49,638**	**$117,469**	**$201,676**	
Operating margin (surplus or deficit / revenues)	0.41	0.80	0.90	0.94	

Semester	Course # / Name	Credit Hours	New Course (Yes/No)
	Core Course (choose one)		
Fall	ORTM 4050	3.0	No
Fall	ENR 4560	3.0	No
Spring	ENR 49xx	3.0	Yes
Summer	ENR 4960	3.0	No
	Electives (Choose two)		
Fall, J-Term, Summer	ENR 4965 • A-Queensland, Australia • B-Austrian & Italian Alps • C-Patagonia, Chile • D-Coastal Belize • E-Mongolia • F-Nepal • G: Grand Canyon NP–Canyonlands • H: Norway & Svalbard • ENR 4900: Tenerife, Canary Islands	3.0 3.0	No
		9 Total Credits	

Projected enrollment of *net new* students.

Tuition Type*	Year 1			Year 2			Year 3			Year 4			Year 5		
	Projected Total Enrollment	*Tuition Rate (per credit)*	*Total Projected Revenue*	*Projected Total Enrollment*	*Tuition Rate (per credit)*	*Total Projected Revenue*	*Projected Total Enrollment*	*Tuition Rate (per credit)*	*Total Projected Revenue*	*Projected Total Enrollment*	*Tuition Rate (per credit)*	*Total Projected Revenue*	*Projected Total Enrollment*	*Tuition Rate (per credit)*	*Total Projected Revenue*
Resident	3	349.00	$9,423	5	363.00	$16,335	6	378.00	$20,412	7	393	$24,759	8	409	$29,448
Non-resident	2	557.00	$9,972	3	579.00	$15,633	4	602.00	$21,672	5	626	$28,170	5	651	$29,295
			$19,395			**$31,968**			**$42,084**			**$52,929**			**$58,743**

*See Student Fee Book for tuition rates (note that "main campus" and "online" refer to the degree program type (i.e., how the student is classified), and not the location of any particular course offerings.

APPENDIX C: HAUB SCHOOL TRAVEL COURSE DATA

ENR 4960/5960 Course Title	Term Code	Term Season	Traveled Students
Winter Ecology	202220	J-Term	21
Canyonlands: Culture & Climate (Undergrad)	202230	Summer	16
Canyonlands: Culture & Climate (Grad)	202230	Summer	4
Winter Ecology	202320	J-Term	11
Canaries Climate (Undergrad)	202320	J-Term	13
Canaries Climate (Grad)	202320	J-Term	3–4
Coastal Belize (Grad)	202320	Spring	1
Coastal Belize (Undergrad)	202320	Spring	9–14
Chile: Conservation & Development (Grad)	202320	J-Term	2
Chile: Conservation & Development (Undergrad)	202320	J-Term	14
Queensland: Human & Physical Landscapes	202330/20	Summer/J	35
Canaries Climate (Undergrad)	202420	J-Term	14
Canaries Climate (Grad)	202420	J-Term	2
Winter Ecology (Undergrad)	202420	J-Term	19
Winter Ecology (Grad)	202420	J-Term	2
Alpine Climate & Culture (Undergrad)	202420	J-Term	19
Alpine Climate & Culture (Grad)	202420	J-Term	6–7

ENR 4960/5960 Course Title	Term Code	Term Season	Traveled Students
Canyonlands (Undergrad)	202420	J-Term	13
Canyonlands (Grad + Law)	202420	J-Term	13 (5 + 3 Law)
West Reservation Resource Management (UG)	202430	Summer	3
West Reservation Resource Management (GR)	202430	Summer	4
Green River Basin: Water & Society (UG)	202430	Summer	4
Green River Basin: Water & Society (GR)	202430	Summer	1
Chile: Conservation & Development (UG)	202510	J-Term	22/14
Chile: Conservation & Development (Grad)	202510	J-Term	4/5
Canaries Climate (Undergrad)	202520	J-Term	15
Canaries Climate (Grad)	202520	J-Term	4
Winter Ecology (Undergrad)	202520	J-Term	13
Winter Ecology (Grad)	202520	J-Term	1
Mongolia: Wild & Working Lands (UG)	202520	J-Term	33 /14 /13
Mongolia: Wild & Working Lands (Grad)	202520	J-Term	4
Expedition Leadership	202520	J-Term	12
West Reservation Resource Management (UG)	202530	Summer	11
West Reservation Resource Management (GR)	202530	Summer	5
Scotland: Experiencing Place	202530	Summer	11

Faculty Senate Resolution 501 **Introduced by Executive Committee**

Haub School Global Environmental Futures Undergraduate Certificate

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WHEREAS The Haub School (SER) has proposed the addition of an undergraduate certificate in Global Environmental Futures, as outlined in the attached proposal and feasibility study; and

WHEREAS the Faculty Senate's Academic Planning Committee (APC) has reviewed the proposal; and.

THEREFORE, BE IT RESOLVED by the Faculty Senate of the University of Wyoming that Faculty Senate supports the recommendation of the APC to create an undergraduate certificate in Global Environmental Futures.

AUTHENTICATION: The foregoing Faculty Senate Resolution 501, duly adopted by the Faculty Senate of the University of Wyoming under date of December 1, 2025, is hereby transmitted to the President of the University of Wyoming for review in accordance with UW Regulations.

Vladimir Alvarado
Secretary, Faculty Senate
Dated: December 2nd, 2025

UNIVERSITY OF WYOMING

Office of Academic Affairs
1000 E. University Avenue
Dept. 3302, 312 Old Main
Laramie, WY 82071
307.766.4286 • fax: 307.766.2606

December 22, 2025

Board of Trustees:

This letter serves as a Letter of Commitment for a new Undergraduate Certificate in Global Environmental Futures (GEF) by the Haub School. The certificate requires 9 hours of coursework and emphasizes practical tools such as scenario planning, cross-cultural communication, and understanding the relationship between natural systems and community well-being.

Needs
This certificate provides University of Wyoming (UW) students with an interdisciplinary program designed to prepare students for emerging roles in environmental leadership, sustainability, and systems-based thinking. This certificate is a practical entry point for students pursuing careers in conservation, land and resource management and public service, while providing exposure to international field experiences and deepening their understanding of how global environmental challenges relate to local and national priorities.

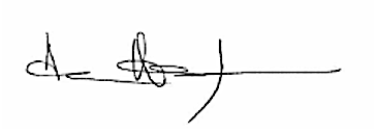
Requirements
This UG Certificate in Global Environmental Futures will have students completing 9 hours of applicable coursework. The curriculum consists of one required course (3 credits) and two electives (6 credits).

Resources
This is designed to maximize existing faculty, courses, and institutional infrastructure, requiring minimal additional investment. Promotional efforts will leverage the Haub School's existing infrastructure to maximize visibility. The Office of Online and Continuing Education will also assist with marketing and recruitment.

Timeline
The present implementation timeline is designed to enable students to enroll in this undergraduate certificate in Fall 2026.

Campus Review
I affirm that the university community, including the Executive Team, Deans and Directors, Faculty Senate, Staff Senate, and ASUW, has been provided the opportunity to review and present feedback on the proposed undergraduate certificate.

Best,



Anne Alexander, PhD
Interim Provost

Academic and Student Affairs
COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: Request for Authorization: Undergraduate Certificate in Subsurface Energy Hilaire, Quillinan, Dale, Danaei, Rasouli

☒ OPEN SESSION
☐ CLOSED SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
☒ Yes
☐ No
FOR FULL BOARD CONSIDERATION:
☒ Yes *[Note: If yes, materials will also be included in the full UW Board of Trustee report.]*
☐ No
☒ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY: The School of Energy Resources (SER) and the College of Engineering and Physical Sciences (CEPS) have proposed an undergraduate certificate in Subsurface Energy. After reviews and approval by the faculty senate, and by agreement of the Dean's Council, SER/CEPS is putting forth this certificate. This certificate would provide UW students with a unique, interdisciplinary credential that includes the basics of petroleum engineering with other subsurface energy topics

PRIOR RELATED COMMITTEE DISCUSSIONS/ACTIONS:
The Notice of Intent was approved by the Academic and Student Affairs Committee and the full Board in May 2025.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
University of Wyoming Regulation 2-119 requires Board approval for all new degree programs and outlines the approval process. The Academic and Student Affairs committee will report to the Board on the recommended actions for the new degree program.

ACTION REQUIRED AT THIS COMMITTEE MEETING:
Consideration for approval of the Request for Authorization for the Undergraduate Certificate in Subsurface Energy

PROPOSED MOTION:
"I move to approve the Request for Authorization for the Undergraduate Certificate in Subsurface Energy."

Subsurface Energy Certificate Feasibility Study

Feasibility Study for Subsurface Energy

Executive Summary

Degree or Certificate Title: Subsurface Energy

Level of Degree or Certificate: Undergraduate Certificate

Delivery Mode(s): In-Person/Online/Hybrid

Estimated Startup Cost of Degree: $12,000- paid by SER

Anticipated Launch Date: Fall 2026

Description: Across the Nation, petroleum engineering undergraduate enrollment has decreased, even as domestic oil and gas production is at record levels and companies have begun expanding their subsurface energy offerings to include carbon storage, geothermal energy, blockchain and digital innovation and more.

While some students have expressed reservations about obtaining a petroleum engineering degree due to its perceived specificity compared to other engineering disciplines, employment opportunities exist for this skill set. To fill the current entry-level skill gap, oil and gas companies have hired engineers from other disciplines and trained them, post-employment, in oil and gas and subsurface disciplines. This certificate is designed to provide University of Wyoming (UW) students with a unique, interdisciplinary credential that includes the basics of petroleum engineering coupled with other subsurface energy topics. This certificate is jointly proposed by the School of Energy Resources (who will list and manage the credential within the UW Catalog) and the Department of Energy and Petroleum Engineering in the College of Engineering and Physical Sciences (who will offer the courses and conduct advising).

Table of Contents

Overview and Description of Degree or Certificate, Purpose, Strategic Play Overlay

Across the nation, petroleum engineering undergraduate enrollment has decreased, even as oil and gas remain a sizeable industry and companies have begun expanding their subsurface energy offerings to include carbon storage, geothermal energy, blockchain and digital innovation and more. While some students have expressed reservations about obtaining a petroleum engineering degree due to its perceived specificity compared to other engineering disciplines, employment opportunities exist for this skill set; especially when coupled with a strong subsurface background. To fill the current entry-level skill gap, oil and gas companies have hired engineers from other disciplines and trained them post-employment. This certificate is designed to provide University of Wyoming (UW) students with a unique, interdisciplinary credential that includes the basics of petroleum engineering with other subsurface energy topics.

Target Audience

Students with technical backgrounds and interests in subsurface energy are the target of this certificate, including undergraduate students studying Geology and Geophysics, Mechanical Engineering, Chemical Engineering, Civil Engineering, Energy Systems Engineering, etc. It is important to note that a student currently seeking a degree in Petroleum Engineering would not be able to add this certificate.

The student survey data (sent to 720 students with 34 respondents) reveals a generally positive interest in the proposed Subsurface Certificate Program at UW. A strong majority expressed interest in the core required courses (PETE 2050 and PETE 2070). Among the optional focus areas, the Geoenergy Engineering and Emerging Subsurface Energy Technologies tracks were the most positively received, with more than half of respondents finding them either “somewhat” or “extremely interesting.” The Economics and Digital Innovation tracks received more mixed responses but still showed moderate interest.

In terms of potential enrollment, most students reported that they were “somewhat likely” or “neither likely nor unlikely” to pursue the certificate, suggesting an openness to the program that could grow with continued outreach and clarification of its value.

Relationship with Other Offerings/Demand

The B.S. degree in PETE is an ABET-aligned engineering degree that prepares students for comprehensive oil-and-gas practice through core courses and capstone design. The Subsurface Energy Certificate is a short, stackable credential designed primarily to prepare non-PETE students for roles interfacing with the oil and gas sector and to build in-demand skills in Digital Innovation, Emerging Subsurface Technologies, and Economics/Law/Communication. No new courses are being developed specifically for this proposed certificate.

Compared to other petroleum related programs in the U.S., this certificate is distinctive in both scope and intent. It fills a critical gap in subsurface energy education by offering a hybrid credential that is rooted in petroleum engineering while incorporating contemporary digital and sustainability themes.

The limited competition in this space, combined with emerging workforce trends, positions UW to lead in offering an innovative and relevant credential that supports both student success and energy workforce development. Compared to other credentials currently available in the U.S., this program stands out in several key areas:

- **Limited National Offerings:** Only two U.S. institutions currently offer undergraduate certificates directly related to petroleum engineering. Texas A&M University offers *Data Analytics for the Petroleum Industry* and *Petroleum Ventures*. However, both have seen declining completions over the past three years, reflecting the broader trend of reduced undergraduate enrollment in petroleum disciplines. The University of North Dakota also offers a certificate, but with very low completion numbers (only one in the latest reporting year), it is not considered a viable or competitive benchmark.
- **Broader Scope and Interdisciplinary Design:** Unlike these narrowly focused petroleum certificates, the proposed program includes not only core petroleum engineering courses but also flexible elective pathways in Geoenergy Engineering, Energy Economics, Law and Communication, Digital Technologies such as GIS, blockchain, data analytics, and emerging energy technologies such as CCUS and geothermal. This broader scope distinguishes the UW certificate from other programs.
- **Growing National Trends in Related Areas:** According to Gray Decision Intelligence data, programs under Energy Systems Engineering and Science, Technology & Society are seeing increased development. These programs typically emphasize interdisciplinary and systems-level approaches, similar to our proposed structure, but few are grounded in subsurface applications like the proposed Certificate in Subsurface Energy.

The proposed Certificate in Subsurface Energy strongly supports the University of Wyoming's Strategic Plan by advancing several of the university's core objectives and commitments. Rooted in interdisciplinary collaboration and real-world application, the certificate aligns with UW's commitment to enhance student success by preparing students for a rapidly evolving, and increasingly digital, energy sector. The program also directly supports the university's mission to engage with and serve the state of Wyoming by leveraging regional strengths in subsurface energy resources, addressing critical workforce needs, and contributing to the state's economic development. By offering components of the program online and making it accessible to engineering students, the certificate expands educational opportunity and promotes inclusive student engagement. Moreover, it reinforces UW's role as a catalyst for innovation and economic vitality through its emphasis on emerging technologies such as carbon sequestration, geothermal systems, and data-driven energy solutions, fulfilling the vision of using UW's unique strengths to make Wyoming and the world a better place.

This certificate also aligns closely with the strategic goals and aspirations of both the Department of Energy & Petroleum Engineering (DEPE) and the College of Engineering and Physical Sciences (CEPS). Building on DEPE's long-standing legacy of excellence in petroleum engineering education and research, this certificate supports the department's mission to provide contemporary, industry-relevant training that prepares students to address the evolving challenges of global energy systems. By offering a multidisciplinary curriculum that integrates foundational petroleum engineering coursework with emerging topics in carbon storage, geothermal systems, energy economics, and digital innovation, the program enhances undergraduate education and fosters the interdisciplinary thinking essential for world-

class research and innovation. The certificate also contributes to CEPS's Tier-1 goals by expanding educational access, particularly through its online components, and cultivating partnerships with industry to ensure the program produces workforce-ready graduates who will advance economic development in Wyoming and beyond. At the course level the learning outcomes and assessments are the same for all students; certificate and degree students complete identical assignments, projects, and exams. The differentiation is at the program level: PETE B.S. outcomes emphasize full engineering design readiness across the petroleum value chain, while the certificate intentionally curates electives (without substituting for PETE core) to synthesize applied, cross-disciplinary competencies that complement, rather than duplicate, the PETE degree.

Student Learning Outcomes (SLOs)

1. Demonstrate a fundamental understanding of petroleum engineering concepts, including reservoir properties, phase behavior, drilling methods, and production techniques.
2. Apply principles of petroleum engineering to identify, analyze, and solve practical challenges in reservoir management, drilling, and production operations.
3. Develop specialized knowledge in areas of interest, such as energy law and economics, digital innovation or energy sustainability, based on elective coursework.
4. Apply interdisciplinary knowledge to address complex energy engineering problems in a professional context.

Curriculum Map

The proposed certificate requires 18 credits to be completed.

The curriculum consists of two courses (no shading in table below) that are foundational for petroleum engineering. All students in the certificate program will take these two courses for a total of six credits. In addition, 12 credits will be required from a grouping of electives (each grouping is color coded in the table below) in targeted areas:

Courses/SLO	SLO 1	SLO 2	SLO 3	SLO 4
PETE 2050 *Fundamentals of Petroleum Engineering*	I			
PETE 2070 *Geology/Geophysics for Petroleum Engineers*	I			
PETE 3110 *Reservoir Petrophysics*	I			
PETE 3200 *Reservoir Engineering*		D		
PETE 3255 *Drilling Engineering*		D		
PETE 3715 *Production Engineering*		D		
PETE 4*** *Petroleum and Geothermal Engineering*			D	M
PETE 4*** *Subsurface Energy Storage*			D	M
ERS 1300 *Oil: Business, Culture, Power*			I	
ERS 3000 *Energy Project Outreach and Communications*			D	
ERS 4130 *Oil and Gas and the Law of Subsurface Property*			D	

ERS 4135 *Advanced Energy Law*			D	M
PETE 4340 *Petroleum Economics and Law*			D	M
GIST 2310 *Intro to Geographic Information Systems*			I	
PETE 4820 *Blockchain in Energy*			I	D
PETE 4*** *Energy Data Analysis using Python*			I	
PETE 4*** *Data Analytics Applications in the Energy Industry*			D	M
PETE 4*** *Visual Analytics for the Energy Industry*			D	
ERS 4480 *Carbon Capture and Storage*			D	
ERS 4481 *Geological Carbon Sequestration*			D	M
ERS 4482 *Global Climate Governance*			D	
PETE 4820 *Blockchain in Energy*			I	D
PETE 4*** *Petroleum and Geothermal Engineering*			D	M
PETE 4*** *Subsurface Energy Storage*			D	M

Core & Elective Courses:

Required /Optional	Prefix	Course Number	Course Title	Course Description	Credits	Current Pre-Requisites
Required	PETE	2050	Fundamentals of Petroleum Engineering	General introduction to petroleum engineering, including petroleum geology, exploration, reservoir rocks, and fluid flow through porous media, drilling fundamentals, completion technology, well logging and testing, methods of production, stimulation methods, enhanced oil recovery, reserves and economics.	3	C or better in MATH 2200 or Concurrent in MATH 2200
Required	PETE	2070	Geology/Geophysics for Petroleum Engineers	This course covers key geological and geophysical principles applied to petroleum engineering, including hydrocarbon systems, sedimentology, and structural geology. Topics such as field life cycles (exploration, development, production), porosity, permeability, and subsurface stresses are examined, highlighting the impact of geology on drilling, reservoir management, and production activities.	3	C or better in PETE 2050
Optional - Geoenergy Engineering Focus Area	PETE	3110	Reservoir Petrophysics	Provides a comprehensive understanding of principles of rock and fluid properties and their associated interactions. and their measurement as part of conventional and special core analysis. Students will learn to calculate and measure the hydrocarbon reservoir's main properties using both mathematical and experimental approaches as part of reservoir characterization routines.	3	C or better in PETE 2050; PETE Major
Optional - Geoenergy Engineering Focus Area	PETE	3200	Reservoir Engineering	Covers rock and fluid properties, reserve estimation using volumetric and material balance methods, discussion of different reservoir drive mechanisms, aquifer models, Darcy's law and single-phase flow through porous media, introduction to well testing, solution of radial diffusivity equation, immiscible displacement, decline rate analysis, and reservoir simulation.	3	PETE 3110; PETE Major
Optional - Geoenergy Engineering Focus Area	PETE	3255	Drilling Engineering	Principles and practices of oil and gas well rotary drilling, including rock mechanics, drilling hydraulics, drilling fluids, and hold deviation. Application of modern computer-based analysis and design methods. Drilling equipment analysis, casing design, measurements of physical and chemical properties of drilling fluids explored in lab sessions.	3	C in ES 2330 and D in PETE 2070
Optional - Geoenergy Engineering Focus Area	PETE	3715	Production Engineering	Provides technical insight for calculating the production rate and deliverability of oil or gas reservoirs, which includes petroleum production systems, well performance, flow assurance, reservoir stimulation, pumping systems and production decline analysis. Students will also be exposed to practical applications of theoretical lectures during lab sessions.	3	C or better in ES 2310, ES 2330 and PETE 2050; PETE Major

Optional - Geoenergy Engineering Focus Area	PETE	4*** **NEW**	Petroleum and Geothermal Engineering	This course introduces the subject of Petroleum Engineering and Geothermal Energy Engineering by comparing these two fields. Disciplines in each of these engineering domains will be reviewed and each discipline described with its relationship with the entire domain. Types of data and tools used in each discipline will be discussed.	3	*TBD*
Optional - Geoenergy Engineering Focus Area	PETE	4*** **NEW**	Subsurface Energy Storage	Some "green energy" sources operate sporadically under only specific conditions. This course will investigate methods for storing energy from these sources in the subsurface of the earth, for later use when needed. Some of these methods utilize processes and equipment repurposed from the oil and gas industry.	3	*TBD*
Optional - Economics, Law, Communication Focus Area	ERS	1300	Oil: Business, Culture, Power	A multi-disciplinary approach to understanding how oil affects the international relations and commerce. The relationships between oil technology, social and political institutions, the unique cultures in oil-producing regions will be investigated in case studies.	3	
Optional - Economics, Law, Communication Focus Area	ERS	3000	Energy Project Outreach and Communications	Development of energy projects requires broad skills related to communications and outreach, especially to express complex energy concepts and projects to the public. Students will develop interdisciplinary communication skills from an energy resources perspective. Communication will include oral, digital, and written forms. Audiences for communication projects will often be live, and from a variety of backgrounds.	3	WA/COM1
Optional - Economics, Law, Communication Focus Area	ERS	4130	Oil and Gas and the Law of Subsurface Property	This course focuses on the two subsurface property interests -the mineral interest and ownership of pore space- and their use and occupation for oil and gas and carbon storage. The course focuses on civil law applicable to subsurface property including property, contract, and tort.	3	ERS 2010 or PETE 3200 and WB/COM2 OR admission into CCUS Certificate
Optional - Economics, Law, Communication Focus Area	ERS	4135	Advanced Energy Law	Energy development/financing arrangements including assignments, leases, farmouts, joint operating agreements, purchase and sale agreements, service agreements and marketing agreements. Energy development regulation of oil and gas conservation commission and state and federal environmental regulation. Ethics of oil and gas, renewables, nuclear, CCUS, hydrogen, and various agreement/regulatory nuances of energy development.	3	ERS 4130
Optional - Economics, Law, Communication Focus Area	PETE	4340	Petroleum Economics and Law	Applies principles of economics to petroleum-related projects. Studies time value of money, economic analysis of private and public sector projects, taxation, sensitivity analysis and decisions under uncertainty. Covers principles and variety of petroleum laws and energy market trends.	3	PETE 3715; PETE Major

Optional - Digital Innovation Focus Area	GIST	2310	Intro to Geographic Information Systems	Introductory course covering fundamental principles of geographic information systems (GIS). Students will be introduced to both the theory and application of GIS, including GIS components, the nature of geospatial data, methods for data acquisition, database models, and GIS operations. Includes hands-on laboratory exercises using widely used software.	4	
Optional - Digital Innovation Focus Area	PETE	4820	Blockchain in Energy	This course provides an overview of the global energy transition. It introduces Blockchain technology and provides hands-on experience in developing Smart Contracts, digital tokes, and Decentralized Applications. The application of Blockchain in energy, sustainability, and the carbon economy will also be explored.	3	Junior status or higher
Optional - Digital Innovation Focus Area	PETE	4*** **NEW**	Energy Data Analysis using Python	This course introduces programming for energy data analysis using the Python programming language. Topics include data import-export, data types, control statements, functions and data visualization. Students will get hands-on training on writing programs for analyzing data from the energy industry using Jupiter Notebook as the Integrated Development Environment (IDE).	3	TBD
Optional - Digital Innovation Focus Area	PETE	4*** **NEW**	Data Analytics Applications in the Energy Industry	This course will provide students with the fundamental concepts of data mining and machine learning methodologies and hands-on experience on applying cutting-edge tools and techniques to solve real-world challenges within the energy sector, such as optimizing energy production, forecasting demand, and enhancing operational efficiency.	3	TBD
Optional - Digital Innovation Focus Area	PETE	4*** **NEW**	Visual Analytics for the Energy Industry	This course presents visual analytics concepts for the energy industry in a comprehensive manner. Information visualization is presenting data in an easy-to-understand manner to help comprehend the underlying information and make useful decisions. Students will gain the required knowledge and skills for visually analyzing energy data through hands-on labs.	3	TBD
Optional - Emerging Subsurface Energy Technologies Focus Area	ERS	4480	Carbon Capture and Storage	To stabilize climate change, carbon capture and storage (CCS) is a key option for deeply reducing carbon dioxide (CO_2) emissions from fossil fuel-fired energy systems. This course offers a systematic view of CCS and then addresses technical, economic, and policy issues related to CCS and its applications.	3	ES 2310 and CE 3400; waived for non-CE students

Optional - Emerging Subsurface Energy Technologies Focus Area	ERS	4481	Geological Carbon Sequestration	Various aspects of Carbon Capture, Utilization and Storage, including Policy & Regulations, Geology, Geostatistics, and Engineering. Students will learn geological concepts, models of the subsurface, engineering of fluids and flow, policy and regulations related to CO2 emissions, pore-volume use, injection, monitoring and safety.	3	MATH 2200
Optional - Emerging Subsurface Energy Technologies Focus Area	ERS	4482	Global Climate Governance	The 2015 Paris Agreement marked a new, more participatory and decentralized, approach to global climate governance which provides countries with substantial latitude to develop plans to adapt to climate impacts and reduce emissions. This course will examine the conceptual framework of climate governance and the challenges of its implementation.	3	Completion of a COM 2 class with a grade C or better
Optional - Emerging Subsurface Energy Technologies Focus Area	PETE	4820	Blockchain in Energy	This course provides an overview of the global energy transition. It introduces Blockchain technology and provides hands-on experience in developing Smart Contracts, digital tokes, and Decentralized Applications. The application of Blockchain in energy, sustainability, and the carbon economy will also be explored.	3	Junior status or higher
Optional - Emerging Subsurface Energy Technologies Focus Area	PETE	4*** **NEW**	Petroleum and Geothermal Engineering	This course introduces the subject of Petroleum Engineering and Geothermal Energy Engineering by comparing these two fields. Disciplines in each of these engineering domains will be reviewed and each discipline described with its relationship with the entire domain. Types of data and tools used in each discipline will be discussed.	3	TBD
Optional - Emerging Subsurface Energy Technologies Focus Area	PETE	4*** **NEW**	Subsurface Energy Storage	Some “green energy” sources operate sporadically under only specific conditions. This course will investigate methods for storing energy from these sources in the subsurface of the earth, for later use when needed. Some of these methods utilize processes and equipment repurposed from the oil and gas industry.	3	TBD

I = Introduced; D = Developed (formative assessment); M = Mastered (summative assessment)

This table identifies seven “new” courses; however, it is important to note that all of these courses already exist and are being offered at the EPE 5000 level. This would create an undergraduate section to be paired with the graduate section so these will occur at the same time/place as existing courses. This will not require any additional funds for content development since these are already being offered at the graduate level.

The sequence of courses largely depends on the focus area the students select. Students must start with PETE 2050, and then PETE 2070, but after that two-course required sequence, it could change based on the students primary major and focus area within the certificate.

Assessment Plan

The program assessment plan is designed to provide actionable feedback for continuous improvement, while remaining sustainable and appropriate for an 18-credit certificate program. To ensure that students achieve the program's learning outcomes and meet UW's Learning Outcomes Assessment standards, the following comprehensive assessment strategy will be employed:

Course-Level Assessments: The course-level assessment will be focused on the two required core petroleum engineering courses and one representative elective from each of the four interest areas. This scaled and sustainable approach allows the program to assess all four learning outcomes using a manageable number of courses and ensures that the program is evaluated in alignment with best practices for certificate-level programs. It allows for meaningful data collection without imposing significant new demands on instructors or departments, while supporting the university's commitment to continuous program improvement and student success. Each of the selected courses for assessment (foundational and electives) will clearly identify relevant program-level learning outcomes in their syllabi, aligning them with at least one explicit assessment method. Examples of these assessments could include:

- Exams or quizzes assessing foundational knowledge.
- Written reports or research papers demonstrating analytical and interdisciplinary skills.
- Practical projects or presentations illustrating applied knowledge and problem-solving capabilities.

Course instructors will consistently collect assessment data each semester to document student performance in relation to these outcomes.

Data Collection and Analysis: A designated faculty member will serve as coordinator and oversee the collection of syllabi and associated course assessment data each semester. This coordinator will ensure timely reminders and consistent communication are conducted with all instructors teaching the selected courses in the certificate program regarding assessment obligations and will collect and aggregate assessment data every semester, making it available for program-level analysis.

Annual Program Assessment Review: An assessment review team consisting of 2-3 faculty members will review the aggregated assessment data annually to evaluate overall student achievement against stated program learning outcomes. The team will also generate an annual Assessment Report detailing findings, strengths, weaknesses, and areas requiring improvement.

Continuous Improvement: Based on the findings of the annual reviews, actionable recommendations will be made to refine curriculum content, teaching methods, and assessment practices. Feedback from this process will be communicated to all instructors involved in the certificate program to inform improvements at the course level. The review team will also track progress on implemented recommendations in subsequent assessment cycles, ensuring continuous improvement.

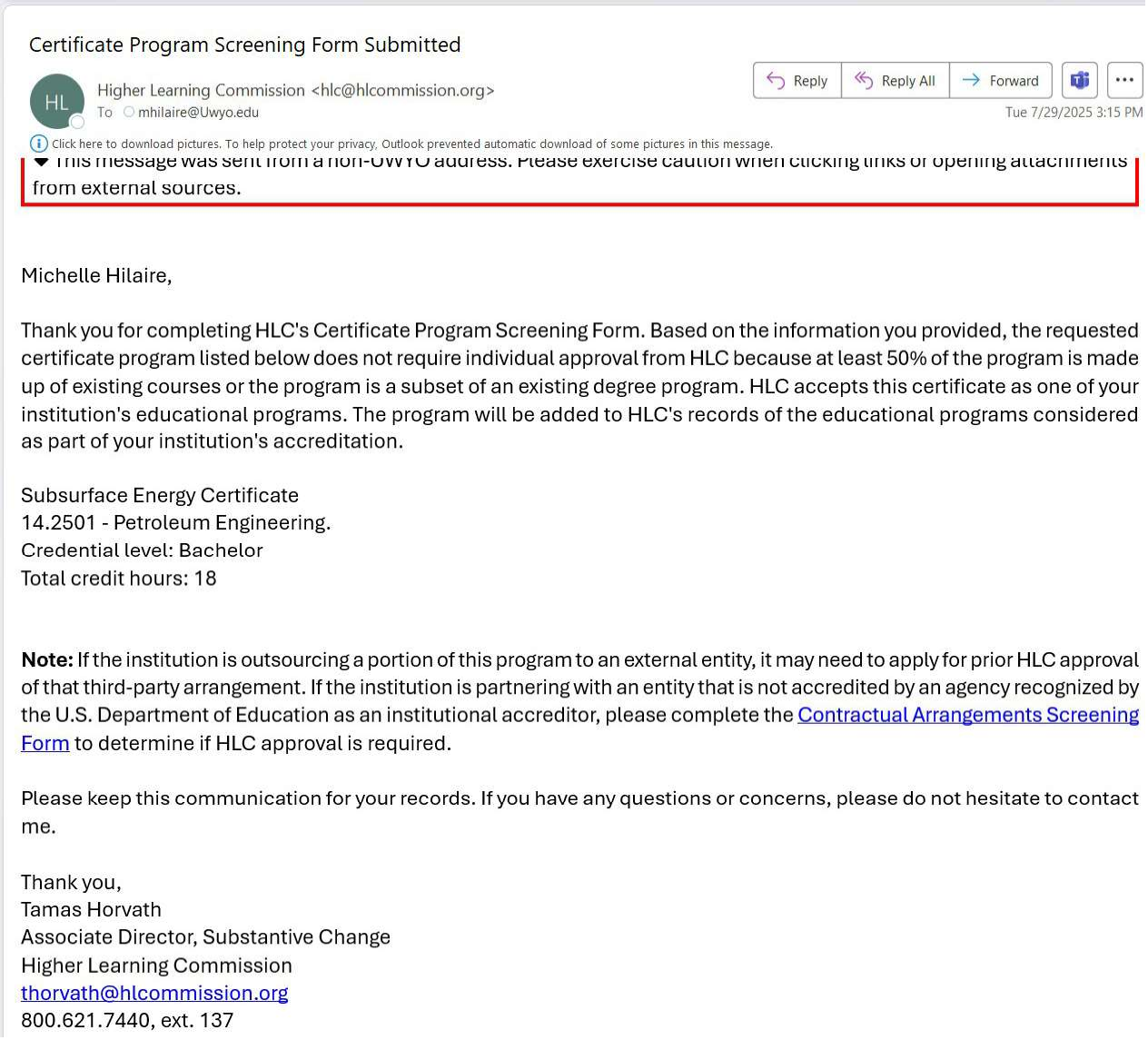
Stakeholder Engagement: Key insights and outcomes from the annual assessment report will be shared periodically with the Industry Advisory Boards at the department and college level to ensure alignment with current industry needs and expectations. Recommendations from industry stakeholders will inform future adjustments and enhancements to the certificate program.

Degree Program Evaluation

Program evaluation is the process of systematically collecting, analyzing, and using data to review the effectiveness and efficiency of an academic program offering. These are used to: identify methods of improving the quality of higher education; provide feedback to students, faculty, and administrators; and ensure that programs, policies, curriculum, departments, and/or institutions are functioning as intended and producing desirable outcomes. Admissions and SER will collect detailed demographic and academic data on each student who declares this undergraduate certificate. Analyzing these data will allow SER/CEPS to better understand the specific student populations drawn to the degree. This knowledge will inform potential curricular changes to the degree, assist in the projection of degree enrollment, and may also identify larger pockets of recruitment and targeted territory for this undergraduate certificate.

The School of Energy Resources will assess student learning outcomes through their assessment process. This will require course data from the courses listed as part of this certificate, as outlined above, and continued collaboration with CEPS. At the conclusion of the certificate, students will complete the first destination survey and gather information on economic benefits from the credential. Additionally, certificate graduates will be required to complete an exit survey to measure students' perception of the certificate. Student reflections will be analyzed to address degree structure, learning outcomes, and the performance of this credential.

Substantive Change Determination



Certificate Program Screening Form Submitted

Higher Learning Commission <hlc@hlcommission.org>
To mhilaire@Uwyo.edu

Reply | Reply All | Forward

Tue 7/29/2025 3:15 PM

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

This message was sent from a non-UWYO address. Please exercise caution when clicking links or opening attachments from external sources.

Michelle Hilaire,

Thank you for completing HLC's Certificate Program Screening Form. Based on the information you provided, the requested certificate program listed below does not require individual approval from HLC because at least 50% of the program is made up of existing courses or the program is a subset of an existing degree program. HLC accepts this certificate as one of your institution's educational programs. The program will be added to HLC's records of the educational programs considered as part of your institution's accreditation.

Subsurface Energy Certificate
14.2501 - Petroleum Engineering.
Credential level: Bachelor
Total credit hours: 18

Note: If the institution is outsourcing a portion of this program to an external entity, it may need to apply for prior HLC approval of that third-party arrangement. If the institution is partnering with an entity that is not accredited by an agency recognized by the U.S. Department of Education as an institutional accreditor, please complete the Contractual Arrangements Screening Form to determine if HLC approval is required.

Please keep this communication for your records. If you have any questions or concerns, please do not hesitate to contact me.

Thank you,
Tamas Horvath
Associate Director, Substantive Change
Higher Learning Commission
thorvath@hlcommission.org
800.621.7440, ext. 137

New Resources Required

- *Faculty and instructional staffing* – SER and CEPS anticipate this certificate could be well supported without the addition of any faculty. This certificate is built on courses that already exist and are offered at UW, with the exception that we will create seven new courses at the 4000 level that are already being offered at the 5000 level. Because these will be in the same place, at the same time, with the same instructor, no new resources are required. There will be incremental costs for advising and marketing, which are expected to be $12,000 or less and covered by existing SER funds. Initial funds to support the cost will come from one-time state funding to SER.

- *Program administration and staff support* - Administration and curriculum development for the certificate is the responsibility of SER and CEPS.
- *Technology* - Because this is built on existing course work, no further technology is needed outside of new catalog entries and a certificate website, both of which SER will oversee.
- *Library and digital resources* - No new resources needed beyond website additions to describe the certificate program to prospective students.
- *Marketing* - This certificate would be marketed by SER and new brochures and pamphlets would be budgeted for at around $1,000. SER and CEPS will jointly market this certificate through established platforms and methods. SER will work with Institutional Marketing to create an SEO website.
- *Support* - No other support is needed outside of a website, catalog entry, and marketing materials- all of which is funded by SER.

Executive Summary of Demand Statistics

The proposed Subsurface Energy Certificate Program aligns with emerging workforce needs and addresses critical gaps in current academic offerings across the nation. It is designed to provide flexible, high-value training for students and professionals interested in subsurface resource development, energy systems, and geoscientific applications.

The national landscape shows very limited availability of undergraduate certificates in petroleum or subsurface-related fields. Only two undergraduate certificate programs in petroleum engineering exist in the U.S. offered by Texas A&M (Data Analytics for Petroleum Industry and Petroleum Ventures) and the University of North Dakota, with the latter producing just one graduate per year. The Subsurface Energy Certificate would therefore offer a unique and differentiated credential, especially if positioned with a focus on data analytics, digital innovation, and workforce-ready applications in energy and environmental sectors.

Demand Growth for Certificates

Over the past decade (2013–2023), student demand for certificates, especially online certificates, has surged, with the undergraduate certificate completions growing 314%, post-baccalaureate certificate completions growing 259% and master's certificate completions growing 268%. This trend underscores a strong national shift toward short-term, skills-focused credentials that support workforce entry, transition, or upskilling, which are the value proposition of this certificate.

National Job Alignment

The program aligns well with national workforce needs, including annual job openings of 663 in Petroleum Engineering and entry-level wages from $77,900, rising to $103,000+ at the median. Statistics suggest that while petroleum engineering programs are experiencing a national decline in enrollment (44.5% decrease from 2013 to 2023), there is growing interest in interdisciplinary energy systems that incorporate digital tools and sustainability themes, which are the key components of this proposed certificate. The certificate is also likely to be attractive to existing and prospective Petroleum Engineering students to demonstrate subsurface mastery above the current core program. Industry favors Petroleum Engineering graduates with a sound subsurface background.

As evidence from several reports from the US Department of Energy and other resources, national demand is strong and growing across the subsurface-energy value chain. U.S. clean-energy employment added ~142,000 jobs in 2023 and now represents 42% of all energy jobs, signaling broad market pull for skills that blend subsurface, data, and policy fluency. Federal investments are catalyzing region-wide hiring: DOE's $8B H2Hubs program is building seven clean-hydrogen hubs, with published estimates of tens of thousands of associated jobs; roles that need storage integrity, geoscience, and project permitting expertise. CCS activity is also surging: EPA and states report a rapid rise in Class VI CO_2-storage permits and applications, creating demand for subsurface site screening, monitoring, and regulatory compliance skills. Independent trackers likewise show the U.S. leading the world in CCS project pipelines, with record growth through 2024–2025. Geothermal expansion potential identified by DOE's GeoVision further underscores a national workforce need in drilling, reservoir characterization, and induced-seismicity risk, capabilities central to our certificate. Together, these data indicate a durable market for graduates who can operate at the intersection of subsurface engineering, digital innovation, and regulatory/economic frameworks, which is the precise focus of this certificate.

- https://www.energy.gov/sites/default/files/2024-10/USEER%202024_COMPLETE_1002.pdf
- https://carboncapturecoalition.org/wp-content/uploads/2025/05/Class-VI-wells-fact-sheet-1.pdf
- https://houstonccs.com/newsroom/2024-global-status-of-ccs-report-shows-record-number-of-projects-in-ccs-pipeline-global-capture-capacity-on-track-to-double/

Program Delivery Mode

Research shows that offering programs online or in a hybrid format could significantly enhance enrollment by attracting transfer students from regional community colleges and working professionals and recent graduates interested in flexible upskilling. A number of courses included in the proposed Subsurface Energy Certificate are already being offered in an online format, providing a solid foundation for flexible program delivery. Additionally, the Department of Petroleum Engineering, which contributes a significant portion of the required and elective courses for this certificate, is actively working toward the launch of a fully online B.S. degree in Petroleum Engineering in the near future. As part of this strategic initiative, the department is in the process of recording and preparing all core petroleum engineering courses for online delivery. This forward-looking effort not only supports the scalability of the certificate program but also ensures that students, whether on campus or remote, can access high-quality, asynchronous instruction aligned with workforce needs and modern educational modalities.

The launch and sustainability of this certificate program is not dependent on launching any other program. Our only program linkage is to the already established online Master of Engineering (M.Eng.) program at the Energy and Petroleum engineering department, from which some undergraduate equivalent courses will be offered as electives for this certificate program. Those M.Eng. courses are either already developed or being developed, ensuring immediate curricular availability and instructional capacity.

Title IV (Federal Student Aid) Program Eligibility Determination Form

UNIVERSITY OF WYOMING

Title IV (Federal Student Aid) Program Eligibility Determination

(For programs that seek to be eligible for Title IV financial aid awards to students)

Certain non-degree seeking programs are eligible for Title IV financial aid. In order for these programs to gain and maintain Title IV financial aid eligibility, federal regulations must be followed to report information about the program to the Department of Education.

Answers to the following questions will determine if the program is considered eligible (circle one) –

1. Yes Does the coursework lead to a certificate awarded by the institution?
    a. If YES, continue below to question 2.
    b. If NO, stop. This program is not considered to be Title IV eligible.

2. No Is the program an embedded certificate in which ALL certificate recipients are enrolled in a degree program and students are awarded the certificate for completing hours as part of and not exceeding those required for the degree plan? (Example: A student needs 120 hours to graduate with the degree. The student takes 120 hours and within those hours chooses required electives that satisfy the certificate requirements. After completing 120 hours the student is awarded the degree and certificate. No additional hours are needed for the certificate.)
    a. If YES, stop. This is not a stand-alone program. Title IV aid would be offered based on the degree program as long as the degree program is Title IV eligible (most degree programs at UW are Title IV eligible).
    b. If NO, continue to question 3. Certificate is considered a stand-alone program in which hours required for the certificate are in excess of those required for the degree plan. This program must be approved in order for students to be eligible for Title IV financial aid. (Example: A student needs 120 hours to graduate with the degree. In order to earn a certificate, the student must take an additional 6 hours, bringing the total hours taken to 126. Since the student is taking hours in excess of those required for the degree, the certificate is stand-alone.)

3. No Do any of the recognized occupations for which this certificate prepares students require a state or federal certification or licensure?
    a. IF YES, continue to question 4
    b. IF NO, please complete the remainder of the Program Worksheet (excluding question 4 below). This program COULD be considered for Title IV financial aid eligibility.

4. Please choose Have you updated your website to include the required disclosures as described in 34 CFR 668.43? Generally, institutions must provide a list of all States for which the institution has determined that: its curriculum meets; curriculum does not meet; and has not made a determination that curriculum meets the State educational requirements for licensure or certification.
    a. IF YES, please complete the remainder of the Program worksheet. This program COULD be considered for Title IV financial aid eligibility.
    b. If NO, stop here and contact the University Compliance & Review Specialist to discuss what information is needed and where it must be posted. Return to this worksheet once you have completed the necessary steps.

Program Worksheet

Please answer the following questions about the program. The information ensures the University of Wyoming remains compliant with federal regulations to ensure that this program and other degree programs remain eligible for Title IV financial aid.

Title of the program	Subsurface Energy Certificate
Total tuition and required fees for the entire program, assuming normal time to completion	In-State 15 credits, $2,700 in tuition and $448.6 in fees: $3148.60
Total estimated costs of books and supplies for the entire program	$275
If the student will be required to live on campus, total costs to the student for on-campus room and board for the entire program, assuming normal time to completion	n/a
Total fees or expenses that students will have in addition to those already entered for tuition and required fees, books and supplies, and room and board (for example: optional equipment, parking permits, etc.)	n/a
Normal time to complete the program that will be published in the catalog and other publications. Enter the amount as weeks of instruction and include only whole numbers. This information is required by the Department of Education.	16-64, depending on full-time status or not
List the website that contains information on the program.	An SEO page will be made with IM if the BOT approve the feasibility study.
List name, email, and phone number for the point of contact to make updates to the website listed above.	for now, Kami Danaei 307-766-6879 kdanaei@uwyo.edu
List name, email, and phone number for the point of contact to update print material and advertisements for this program.	for now, Kami Danaei 307-766-6879 kdanaei@uwyo.edu

1. No If applicable, has this program been programmatically approved by federal/state accrediting agencies as required for graduates to be eligible for employment? (i.e., Dental certificates are accredited by the Commission on Dental Accreditation)
    a. If YES, please attach accreditation documentation to this form.
    b. If NO, please explain.

No, this certificate requires no additional approvals beyond HLC.

2. Term or Module Is the program term based, or module based? (circle one)

a. No If module, is there more than a 2 week break between modules? (select one)

Certification Statement
By signing below, I certify that the information reported here is complete and accurate. I understand that information provided on this form will be reviewed to determine the program's Title IV eligibility for financial aid and additional documentation may be requested.

_____ _____

Signature of Dept. Head Date

Please attach the following documentation with this completed worksheet.

1. A copy of the Feasibility Study Template
2. A copy of the program of study.
3. A copy of the program certificate approval by the Faculty Senate and Provost's Office.
4. A copy of the certificate approval documentation for the program (if applicable).
5. If applicable, a copy of any required programmatic accreditation in order for graduates of program to be eligible for occupation.
6. If applicable, a copy of any federal or state licensure or certification requirements for occupations for which this program prepares students.
7. Send completed/signed form to the Director of Scholarships & Financial Aid.

Last updated 1/4/2022

Letters of Support

- **DEPE/CEPS/GIST**
- **Industry**

BEACON
OFFSHORE ENERGY

August 12, 2025

University of Wyoming – Board of Trustees
1000 E. University Ave - Room 206
Laramie, WY 82071
Dept. 3434

Subject: Subsurface Energy New Certificates

On behalf of the Industry Advisory Board (IAB) of the Department of Energy and Petroleum Engineering (DEPE), I am writing to express our strong support of the School of Energy Resources and the College of Engineering and Physical Sciences for their proposed Undergraduate certificate in Subsurface Energy.

As an advisory body representing diverse sectors of the subsurface energy industry, we recognize the pressing need for a workforce that is well-prepared to address the evolving challenges and opportunities in subsurface energy and storage. The proposed certificate program's structure, anchored in foundational petroleum engineering courses and complemented by multidisciplinary electives aligns closely with the skill sets and knowledge areas demanded by today's energy employers.

We are particularly encouraged by the program's alignment with emerging industry priorities and needs, including carbon capture and storage, geothermal energy development, and advanced data analytics for subsurface operations. These areas are not only vital for the long-term sustainability of the energy sector but also represent high-growth career pathways for students. We also find value in the certificate for conventional Petroleum Engineering graduates. A sound, practicing Petroleum Engineer with a demonstrable knowledge of subsurface geology and economics would be a benefit to our conventional graduates as well.

In closing, we believe the Subsurface Energy Certificate will strengthen the talent pipeline for the energy industry and support innovation and economic development in Wyoming and beyond, by fostering cross-disciplinary skills essential for solving complex energy challenges.

The DEPE-IAB stands ready to support this initiative through ongoing engagement, including curriculum feedback, industry guest lectures and student mentorship.

Please do not hesitate to reach out if you need any further information or have any questions.

Joseph Leimkuhler
Chief Operating Officer
JML@beaconoffshore.com
O – 985-317-2408 | C – 985-789-5437

16564 E. Brewster Rd., Suite 203 | Covington, Louisiana 70433

Continental RESOURCES

University of Wyoming – Board of Trustees
1000 E. University Ave – Room 206
Laramie, WY 82071
Dept. 3434

Subject: Support for the Subsurface Energy Certificate Proposal

Dear Members of the Board,

On behalf of Continental Resources, I am pleased to offer our strong support for the proposed undergraduate certificate in Subsurface Energy, advanced by the School of Energy Resources and the College of Engineering and Physical Sciences.

As a leading independent oil and natural gas producer, Continental Resources relies on a workforce that is well-prepared to address both the opportunities and the challenges within subsurface energy. The structure of this program—built on petroleum engineering fundamentals and expanded through multidisciplinary electives—aligns directly with the technical expertise and cross-disciplinary thinking we seek in our employees.

We are encouraged by the program's attention to emerging areas of the industry, including carbon capture and storage, geothermal resource development, and advanced data analytics. These fields are essential to long-term energy development and represent exciting career pathways for the next generation of energy professionals. At the same time, the certificate enhances the skillset of traditional petroleum engineering graduates by strengthening their understanding of subsurface geology, economics, and integrated resource development.

Continental Resources is confident this program will help ensure Wyoming students are prepared to thrive in a rapidly evolving energy landscape. By equipping graduates with a broader range of tools to solve complex challenges, the Subsurface Energy Certificate will not only advance the industry but also contribute to innovation and economic growth in Wyoming and beyond.

We appreciate the University of Wyoming's commitment to preparing students for leadership in the energy sector, and we look forward to supporting this initiative through continued partnership and engagement.

Sincerely,

Jake Hunter
Director, Powder River Basin
Continental Resources

Faculty Senate Resolution 500 **Introduced by Executive Committee**

SER/CEPS Subsurface Energy Certificate Program

WHEREAS The School of Energy Resources (SER) and the College of Engineering and Physical Sciences (CEPS) have proposed the addition of a certificate in Subsurface Energy, as outlined in the attached proposal and feasibility study; and

WHEREAS the Faculty Senate's Academic Planning Committee (APC) have reviewed the proposal, as shown in the attached reports from APC; and.

THEREFORE, BE IT RESOLVED by the Faculty Senate of the University of Wyoming that Faculty Senate supports the recommendation of the APC to create a certificate in Subsurface Energy.

AUTHENTICATION: The foregoing Faculty Senate Resolution 500, duly adopted by the Faculty Senate of the University of Wyoming under date of November 17, 2025, is hereby transmitted to the President of the University of Wyoming for review in accordance with UW Regulations.

Vladimir Alvarado
Secretary, Faculty Senate
Dated: December 1st, 2025

SENATE RESOLUTION #3065

TITLE: ASUW Supports the Creation of an Undergraduate Subsurface Energy Certificate

DATE INTRODUCED: 10/28/2025

AUTHOR: Senator Pollock

SPONSORS: Senators Morales, Robinson, Shosh, & Smith

1. WHEREAS, the purpose of the Associated Students of the University of Wyoming
2. (ASUW) is to serve our fellow students in the best manner possible; and,
3. WHEREAS, many students have expressed hesitation of obtaining a petroleum
4. engineering degree due to the specificity of the program; and,
5. WHEREAS, enrollment in the undergraduate petroleum engineering program has
6. decreased at the University of Wyoming; and,
7. WHEREAS, there are numerous opportunities in the oil and gas industry across the
8. nation; and,
9. WHEREAS, subsurface technologies extend beyond oil and gas development and into
10. the geothermal, carbon storage, and blockchain and digital technology space; and,
11. WHEREAS, there is an entry-level skill gap in the subsurface energy industry; and,
12. WHEREAS, there is a growing demand for certificate programs in various areas of the
13. energy industry; and,
14. WHEREAS, there are no other Undergraduate Subsurface Energy Certificate programs
15. offered in the nation; and,
16. WHEREAS, a certificate program would give UW graduates the skills and education
17. students would need to be competitive in the energy industry; and,
18. WHEREAS, adding an Undergraduate Subsurface Energy Certificate will make the

19. University of Wyoming a pioneer in the subsurface energy space; and,
20. WHEREAS, the certificate will require 18 credit hours consisting of the 2 foundational
21. petroleum engineering courses and an additional 12 credit hours of elective courses
22. in a specialized area which are listed in Addendum A; and,
23. WHEREAS, the certificate program will utilize only existing courses, resources, and
24. staff from the School of Energy Resources and the College of Engineering and Physical
25. Sciences as outlined in Addendum A; and,
26. WHEREAS, the program will be launched in Fall of 2026; and,
27. WHEREAS, there is much support for this program at the University of Wyoming and
28. the subsurface energy industry as seen in Addendum A.
29. THEREFORE, be it resolved by the Associated Students of the University of
30. Wyoming (ASUW) Student Government supports the creation of an Undergraduate
31. Subsurface Energy Certificate; and,
32. THEREFORE, be it further resolved that this resolution be circulated to the student body
33. through ASUW channels; and,
34. THEREFORE, be it further resolved that this resolution be sent to the Board of Trustees
35. and all applicable departments immediately upon its passage.

Referred to: ___Committee of the Whole_____

Date of Passage: October 28, 2025 **Signed:** Aidan McGuire
(ASUW Chairperson)

"Being enacted on October 28, 2025 **, I do hereby sign my name hereto and approve this Senate action."** Kayla Medina

ASUW President

STAFF SENATE RESOLUTION #253

TITLE: RESOLUTION CONFIRMING STAFF SENATE REVIEW OF SUBSURFACE ENERGY CERTIFICATE

October 1st, 2025

Author: Vice President Jacob Marquez

Sponsors: Senator Mollie Hand

and Senator Christopher Weber

WHEREAS, the Office of Academic Affairs has submitted the proposed *Subsurface Energy Certificate* and related materials in advance of the October 1st full Senate meeting;

WHEREAS, the University of Wyoming Staff Senate has reviewed the proposal and provided feedback on the submitted materials;

THEREFORE, BE IT RESOLVED, that the University of Wyoming Staff Senate approves the proposal in accordance with the New Degree and Certificate Proposal Process.

Dated this day October 1, 2025.

Being enacted on November 10, 2025 , I hereby sign my name hereto and approve this Senate action.

Gwen Dailey

Staff Senate President Gwen Dailey

UNIVERSITY
OF WYOMING

Office of Academic Affairs
1000 E. University Avenue
Dept. 3302, 312 Old Main
Laramie, WY 82071
307.766.4286 • fax: 307.766.2606

December 22, 2025

Board of Trustees:

This letter serves as a Letter of Commitment for a new Undergraduate Certificate in Subsurface Energy by the School of Energy Resources and the College of Engineering and Physical Sciences. The certificate requires 18 hours of coursework and addresses a practical application to solve real-world problems across subsurface energy offerings, including carbon storage, geothermal energy, blockchain, and digital innovation.

Needs
This certificate provides University of Wyoming (UW) students with a unique, interdisciplinary credential that includes the basics of petroleum engineering with other subsurface energy topics. Compared to other petroleum related programs in the U.S., this certificate is distinctive in both scope and intent. It fills a critical gap in subsurface energy education by offering a hybrid credential rooted in petroleum engineering and incorporating contemporary digital and sustainability themes. The proposed program includes not only core petroleum engineering courses, but also flexible elective pathways in Geoenergy Engineering, Energy Economics, Law and Communication, Digital Technologies such as GIS, blockchain, data analytics, and emerging energy technologies such as Carbon Capture Utilization and Storage and geothermal.

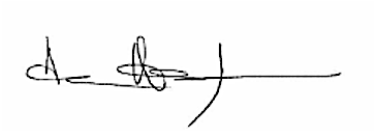
Requirements
This UG Certificate in Subsurface Energy requires students to complete 18 hours of relevant coursework. The curriculum includes two foundational petroleum engineering courses totaling 6 credits, followed by 12 credits from a selection of elective courses.

Resources
There will be incremental costs for advising and marketing, which are expected to be $12,000 or less and covered by existing SER funds. No new resources for coursework or instruction are anticipated.

Timeline
The present implementation timeline is designed to enable students to enroll in this undergraduate certificate in Fall 2026.

Campus Review
I affirm that the university community, including the Executive Team, Deans and Directors, Faculty Senate, Staff Senate, and ASUW, has been provided the opportunity to review and present feedback on the proposed undergraduate certificate.

Best,



Anne Alexander, PhD
Interim Provost

ACADEMIC AND STUDENT AFFAIRS
COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: **Follow-up: WCCC Administrative Rule Approving New Applied Baccalaureate (AB) Degree Programs**, Alexander

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
- ☒ Yes
- ☐ No

FOR FULL BOARD CONSIDERATION:
- ☐ Yes
  [Note: If yes, materials will also be included in the full UW Board of Trustee report.]
- ☒ No

☐ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:
At the September and November 2024, and January 2025 meetings, the Board of Trustees received updates on proposed changes to the Wyoming Community College Commission (WCCC) administrative rules related to Applied Baccalaureate (AB) degrees (i.e., Bachelor of Applied Science). Trustees requested additional information about the University's internal process for reviewing and responding to proposed AB programs and upper-division coursework.

UW leadership has drafted an internal process to guide the University in receiving notice of, reviewing, and responding to proposed Applied Baccalaureate programs submitted by Wyoming community colleges. This draft process has been discussed with academic leadership and is intended to clarify timelines, roles, assessment, and review. The formalization of internal guidance will go through the appropriate campus approval processes for fall 2026.

Under the proposed process, when UW receives formal notice of a proposed AB program from the WCCC, Academic Affairs would coordinate a structured, time-limited internal review with affected deans, academic unit heads, and faculty subject-matter experts. The review would focus on potential program duplication, workforce alignment, upper-division coursework, and transferability considerations. UW's institutional response will be developed within the timeframe established by the WCCC, which is expected to be approximately 30 days from the initial notice.

UW leadership would notify the President and the Executive Committee of the Board of Trustees when an AB proposal is received and would share UW's draft institutional response with the Executive Committee for review before submission to the WCCC. This governance touchpoint is intended to ensure Board awareness and oversight of UW's formal response to proposed AB programs.

This item is before the Committee to notify Trustees that the WCCC rule is now official, to outline the internal review process in anticipation of future proposals, and to clarify the

anticipated role of the Board of Trustees Executive Committee. No formal Board action is requested at this time.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
Response to the Trustees' requested follow-up by outlining UW's process for reviewing proposed Applied Baccalaureate programs. The discussion is intended to ensure the Trustee's awareness of anticipated timelines, including the Executive Committee's review of UW's final institutional response.

ACTION REQUIRED AT THIS COMMITTEE MEETING:
No action required.

PROPOSED MOTION:
No proposed motion.

ACADEMIC AND STUDENT AFFAIRS
COMMITTEE MEETING MATERIALS

AGENDA ITEM TITLE: **Follow-up: Tutoring Access**, Alexander, Hilaire

☒ PUBLIC SESSION
☐ EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:
- ☐ Yes
- ☒ No

FOR FULL BOARD CONSIDERATION:
- ☐ Yes
  [Note: If yes, materials will also be included in the full UW Board of Trustee report.]
- ☒ No

☐ *Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:
At the November 2025 Board of Trustees meeting, a concern was raised regarding perceived inconsistencies in student access to tutoring across academic disciplines. Specifically, a student shared that while mathematics tutoring is available on a drop-in basis, tutoring for many science courses requires scheduled appointments, which the student perceived as less accessible.

University leadership reviewed the concern and examined current tutoring models, usage data, and available options. This follow-up will give an overview of how tutoring is currently structured, why different models exist across subjects, and the choices available to students when same-day appointments are unavailable. The discussion will also address student demand, staffing, and costs, as well as potential paths forward should the Board wish to explore changes to tutoring access.

After discussion in the Academic and Student Affairs Committee, this item will be presented to the full Board in a public session during the AA/SA Committee report for further context and discussion. No formal Board action is requested at this time.

WHY THIS ITEM IS BEFORE THE COMMITTEE:
The Board of Trustees requested this follow-up at the January 2026 meeting.

ACTION REQUIRED AT THIS COMMITTEE MEETING:
No action required.

PROPOSED MOTION:
No motion required.