Mortenson Center
in Global Engineering & Resilience
UNIVERSITY OF COLORADO **BOULDER**

UNU
INWEH

JOINT EDUCATION PROGRAM · DRAFT FOR DISCUSSION

Joint UNU–CU Boulder Graduate Program in Global Engineering & Resilience

Focus: Monitoring, Accountability, and Outcomes-Based Finance for Water, Environment, and Health

DRAFT · JUNE 2026 · MODELED ON THE UNU–CCNY JOINT EDUCATION PROGRAMS · SUBJECT TO UNU APPROVAL

1 Introduction

The University of Colorado Boulder, through the **Mortenson Center in Global Engineering and Resilience**, and the **United Nations University Institute for Water, Environment and Health (UNU-INWEH)** propose a joint graduate program in Global Engineering and Resilience with a focus on monitoring, accountability, and outcomes-based finance for water, environment, and health.

The joint program offers students the option of earning their University of Colorado Boulder graduate degree as part of their regular curriculum while simultaneously earning a UNU diploma. Both institutes share the same three-domain mandate — water, environment, and health — and the program is offered as part of the Education, Training, and Capacity-Building pillar of a proposed UNU Hub on accountable water, environment, and health. In line with the missions of the Mortenson Center and UNU, the program aims to expand educational opportunities for graduate students while strengthening their skills and collaboration networks in environmental sensing, monitoring, outcomes-based and climate finance, and the policy processes they inform, by:

- Delivering an interdisciplinary education program that connects engineering measurement to real-world accountability and finance;
- Empowering students to apply in-situ sensing, data science, and digital measurement-reporting-verification (dMRV) across water, environment, and health;
- Offering students the opportunity to interact with UN and UNU experts, fostering a sense of global connection and community;
- Augmenting career prospects by providing students with international credentials from both CU Boulder and UNU.

2 Program Requirements

The joint program maintains the foundational structure of the student's existing CU Boulder degree — the **Professional MS in Global Resilience & Sustainability Engineering** or the **Professional MS in Environmental Engineering** (PhD tracks in Civil, Environmental & Architectural Engineering and in Aerospace are also eligible) — while integrating a small set of joint additions. The Mortenson Center already runs the building blocks: a **Graduate Certificate in Global Engineering** (12 credits, of which 9 transfer into the MS) and a field **Practicum** across 80+ partner programs. The UNU layer therefore adds global credentialing, not a parallel degree. The following table describes the existing CU Boulder requirements and the proposed joint additions.

REQUIREMENT	CU BOULDER PATHWAY TODAY	JOINT UNU–CU BOULDER ADDITIONS
Graduate degree	Professional MS in Global Resilience & Sustainability Engineering or in Environmental Engineering (30 credits); CEAE / Aerospace PhD tracks also eligible.	**Unchanged.** The CU degree remains the foundation; the joint program builds on it.
Global engineering core	Graduate Certificate in Global Engineering (12 cr): CVEN 5919 *Global Development for Engineers* + Mortenson 1-credit modules; 9 cr transfer into the MS.	Certificate coursework counts toward the joint credential, including **at least one module on environmental sensing, dMRV, or outcomes-based finance.**
Policy / finance course	Electives chosen with the program advisor.	One approved course in **environmental or health policy, or outcomes-based and climate finance.**
UNU seminar series	Departmental seminars.	A semester-long **UNU seminar series** featuring UN and UNU scientists, co-hosted by UNU-INWEH and the Mortenson Center.
Co-supervision	Committee of CU faculty (plus one external member for the PhD).	At least one **UNU, UNU Hub, or UN-system expert** on the thesis or dissertation committee.
Research alignment	Thesis or project on an approved engineering topic.	Research aligned to one or more SDGs, focused on **accountable water, environment, and health**

		and sensor-verified outcomes-based finance.
Applied component	Practicum deliverables.	A policy brief or journal article, a contribution to the co-branded flagship report, delivery of a capacity-building workshop, or design / evaluation of an intervention.
UN-system learning	—	Selected modules from the **UNU-INWEH Online Learning Centre** or other UN e-learning (UN Staff College, FAO, UNEP, UNDRR).
Internship / Practicum	Mortenson Practicum placement (80+ partner programs).	Fulfilled, in person or remotely, at **UNU-INWEH, a UNU Hub, or a UN agency.**
Credential awarded	CU Boulder degree + Mortenson Graduate Certificate.	Plus a **UNU diploma** in *Monitoring, Accountability & Outcomes-Based Finance for Water, Environment & Health*.

2.1 · Course-level mapping (illustrative — drawn from the CU Boulder and UNU-INWEH catalogs)

Following the UNU-CCNY model, the joint additions resolve to specific courses. The Mortenson courses below form a pre-approved shortlist; five-week modules carry 1 credit and stack toward the 12-credit Graduate Certificate (CVEN 5919 + 9 credits of approved modules, 9 of which transfer into the MS). The components slot into the **Professional MS in Environmental Engineering** as electives, and into the **Professional MS in Global Resilience & Sustainability Engineering** via its measurement, policy, elective, and capstone slots.

A Global engineering core — `required · 3 cr`

`CVEN 5919`	Global Development for Engineers

B Measurement, sensing & dMRV — `choose ≥1 · 1–3 cr`

`CVEN 5999`	Data Analytics for Development *(1 cr)*
`CVEN 5989`	Study Design & Impact Evaluation *(1 cr)*

EVEN 5444	Analytical Methods, Experimental Design & Applied Data Analysis *(3 cr)*	

C Policy & outcomes-based / development finance

choose ≥1 · 1–3 cr

CVEN 5109	Intro to Environmental & Development Economics for Engineers *(1 cr)*	
CVEN 5129	Program & Project Management *(1 cr)*	
EVEN 5989	Disaster Risk Reduction *(1 cr)*	
CVEN 5959	International Environmental Impact Assessment	

D UNU seminar series

required · 1–3 cr

new · CVEN/EVEN	Co-hosted seminar featuring UN & UNU scientists, registered as a special-topics / professional-seminar credit

E Applied research & practicum

required · 3–6 cr

CVEN 5939	Global Engineering & Hazard Resilience Practicum	*(3 cr)*	— placement at UNU-INWEH, a UNU Hub, or a UN agency

MS Capstone / thesis	Co-supervised by a UNU expert; deliverable = policy brief, journal article, or flagship-report contribution

F UNU-INWEH Online Learning Centre

select per focus · free / co-curricular

Monitoring · SDG 6	**INWEH-03** SDG 6 Policy Support System · **INWEH-01** Global Water Security
Data & geospatial	**INWEH-02** Big Data Analysis for Water-related Applications · **INWEH-16** Satellite Data for Surface-Water / Flood Mapping · **INWEH-19** Spatial Data Management with Google Earth Engine · **INWEH-17** Spatiotemporal Drought Assessment (GEE)
Water · env · health	**INWEH-26** Water and Health · **INWEH-15** WASH in Healthcare Facilities · **INWEH-07** Mangroves Biodiversity & Ecosystem · **INWEH-11** Integrated Water Resource Management

Course codes and credits per the CU Boulder and UNU-INWEH catalogs (June 2026); the UNU Online Learning Centre is free and self-paced. UN Staff College, FAO, UNEP, and UNDRR e-learning may substitute for Component F where relevant.

3 Implementation Plan and Timeline

The joint program can be implemented through the existing CU Boulder graduate framework, following the timeline below:

- **Fall 2026:** Finalize the program structure, faculty collaborations, the UNU diploma definition, and the necessary UNU approvals.
- **Spring 2027:** Program promotion, recruitment and outreach, and student selection and admission into the inaugural cohort.
- **Fall 2027:** Official launch of the joint program with the inaugural cohort.

4 Impact and Benefits for Students

- **Joint credential advantage:** earn a CU Boulder graduate degree and a UNU-certified diploma in *Monitoring, Accountability & Outcomes-Based Finance for Water, Environment & Health*, enhancing career and academic prospects.
- **Global exposure and networking:** participate in the UNU seminar series with leading international experts and access UNU's global research network.
- **Specialized, interdisciplinary learning:** gain expertise in environmental sensing, dMRV, and outcomes-based and climate finance across water, environment, and health.
- **Hands-on research and practical training:** conduct a UNU-aligned thesis or project, co-supervised by Mortenson and UNU scientists, with real-world applications.
- **Expanded career opportunities:** increase employability in international organizations, UN agencies, research institutions, and outcomes-based-finance ventures.
- **Minimal additional coursework:** the program builds on existing degree requirements, allowing students to earn the UNU diploma with little added load.

5 Within a Broader Partnership

This joint education program is the first of three parts of a jointly developed partnership between the Mortenson Center and UNU-INWEH; it is designed to be reinforced by, and to reinforce, the other two:

- **Research partnership.** Co-hosting the global microbial water-quality dataset (10M+ E. coli observations across ~180,000 sites) as a UN-aligned open-data product and a co-branded annual flagship report, plus joint authorship on the evidence base for sensor-verified outcomes-based finance across water, environment, and health.
- **Practice partnership.** A live operational base — the Mortenson Center's "Clean Water for Millions" flagship of seven carbon-financed programs across sub-Saharan Africa, targeting 5 million people and 3 million carbon credits by 2030 — anchored in a decade-plus peer-reviewed cluster-randomized-trial record spanning water, environment, and health, with executive education and capacity-building for member states.

Students in the joint program draw their applied components, internships, and theses from this research and practice base.

6 Pathway to a Joint UNU Hub

The three parts of the partnership are deliberately sequenced toward a shared destination: formalizing a **joint UNU Hub on accountable water, environment, and health**, differentiated from the existing UNU-INWEH Hubs by methodological focus — measurement-to-finance — rather than geography.

> This joint education program is the anchoring Education, Training, and Capacity-Building pillar of that prospective Hub. Launching the program — alongside the co-hosted dataset, the flagship report, and the co-authored evidence base — builds the track record, relationships, and shared infrastructure on which the Hub would be formalized in Year 2 and beyond.

7 Conclusion and Request for Approval

The joint program is a strategic initiative that enhances the academic offerings of the Mortenson Center while strengthening the collaboration between the University of Colorado Boulder and the United Nations University. It aligns research and training with global sustainability, resilience, and accountability goals, provides mutual benefits including knowledge exchange and expanded research opportunities, and establishes the educational foundation for a joint UNU Hub. The partners submit this draft for review and approval and welcome refinement of its specific configuration to best leverage the expertise of each institute.

For the Mortenson Center in Global Engineering & Resilience

University of Colorado Boulder

Name · Title · Date

For UNU-INWEH

United Nations University Institute for Water, Environment and Health

Name · Title · Date