2023 Capstone Project

Team Handbook & Deliverables

Masters of the Environment
University of Colorado **Boulder**

What's In This Packet

This document contains assignment descriptions for all team-based capstone deliverables for 2023 Capstone Projects. All Capstone team assignments contribute to the final Capstone grade. These assignments are not graded individually. For Capstone project policies and expectations, see the 2023 Capstone Handbook. All students are responsible for understand and upholding the expectations in the Capstone Handbook.

For questions, please reach out to: Taber.ward@colorado.edu

Last Updated: January 2023

Key Dates

EVENT OR ASSIGNMENT	DUE DATE	GRADES ASSIGNED BY:
Capstone Networking Event	January 27: 10am – 1pm	N/A
Final Capstone Rankings Due	February 3: 11:59pm	CIL 2 (Pass/Fail)
Personal Success Metrics Due	February 10: 11:59pm	CIL 2
Resume and Cover Letter Due	February 14: 11:59pm	CIL 2 (Pass/Fail)
Team Charter Due	March 10: 11:59pm	CIL 2
Capstone Design Workshop	April 7: 8:30am – 1:00pm	CIL 2 (Pass/Fail)
Self-Assessment/Reflection Due	May 5: 11:59pm	CIL 2
Stakeholder and Partner Mapping Due	May 5: 11:59pm	Advisor

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Key Dates

Capstone Project – Anticipated Impact Metrics Due	May 5: 11:59pm	CIL 2
Scope of Work (SOW) Due	May 5: 11:59pm	Advisor
Capstone Poster Due	September 7: 11:59pm	CIL 3
Project Brief Due	September 22: 11:59pm	CIL 3
Capstone Symposium	November 17: 9am – 1:30pm	Advisor
Capstone Project Impact Assessment Due	December 8: 11:59pm	CIL 3
Capstone Professional Engagement Reflection Due	December 15: 11:59pm	Advisor
Final Deliverables Due	December 15: 11:59pm	Advisor

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What is a Capstone Project?

The MENV Capstone Project is the central pillar of the University of Colorado Boulder's graduate program in environmental management. It is an interdisciplinary team project in which students work closely with external sponsoring organizations, called Capstone Partners, to propose innovative solutions to real-world environmental and sustainability challenges that partners face. The Capstone Project is the crowning achievement of a Masters of the Environment (MENV) student's experience in graduate school – providing real-world opportunities to partner with an external organization to work on environmental management and sustainability issues that matter.

The purpose of the Capstone Project is to give students applied experience working in teams on complex challenges alongside professionals in real-world settings. The goals of the project are

(1) to prepare students to work on real-world, long term, collaborative projects,

(2) to help students grow and strengthen their professional networks in their respective fields, and

(3) to provide client organizations with specific solutions to identified environmental and sustainability questions and challenges.

All Masters of the Environment (MENV) professional graduate students at the University of Colorado Boulder must successfully complete a 5-credit hour Capstone Project and three accompanying courses, Capstone Innovation Lab 1 (CIL 1, Autumn Year 1), Capstone Innovation Lab 2 (CIL 2, Spring Year 1), and Capstone Innovation Lab 3 (CIL 3, Autumn Year 2) as part of their degree requirements. CIL courses are designed to help guide students from the project planning phase through synthesis, analysis, and the production of professionally oriented work products and services. The five credits that constitute the Capstone Project are undertaken over the summer.

Capstone Overview & Expectations

The format of a Capstone Project differs significantly from both a research thesis and traditional summer internship. Capstone Projects are curated by MENV faculty and staff, co-developed by student teams (3 - 4 students) and external partner organizations, and guided and evaluated by MENV faculty advisors. While all Capstone Projects certainly have research elements, the projects do not consist solely of research, data collection and analysis. Instead, Capstone Projects can take a variety of forms, depending on the needs of the partners organizations. Capstone Projects must have applied and professional elements integrated into their design (e.g., interactions with professionals and community members, time in the field and/or office, professional development opportunities, and presentations to professional audiences). The products should be professionally oriented and consist of work products and/or services that include, but are not limited to, planning documents, management plans, public awareness and advocacy campaigns, product proposals, reports, toolkits, models, prototypes, or proof of concept projects.

Capstone Project Criteria

The purpose of this handbook is to guide MENV students and partner organizations in the creation, management, execution, and evaluation of a Capstone Project. The MENV Capstone Project, conceptually, should be a discrete project that can be completed in accordance with the MENV timeline. In addition to being a new project developed for the organization, it can also be a phase of a larger project with which the partner is engaged or a continuation of a previous Capstone Project. The project should be value-added to the organization with a clear practical application. It should consist of products and/or services that have clear educational benefits and professional development opportunities for students.

Capstone Overview & Expectations

Rigor: The project should be substantive enough to serve as a masters-level project for the number of students involved (typically 3 – 4). Students will be expected to demonstrate the following:

- Knowledge of the academic and professional literature relevant to the project
- Specific rigorous methods appropriate to address the problem or question at hand. The methods may include qualitative and/or quantitative analysis.
- Identification and prioritization of results, recommendations and next steps based on the professional work completed over the course of the project.
- Assessment of the project's impact (both short-term and long-term).
- A written, professionally-formatted, comprehensive deliverable that illustrates an understanding of the needs of the Capstone partner as well as exemplifies the depth and extent of professional work completed over the course of the project.

Finally, each student should have clearly defined roles and responsibilities, and demonstrate skill development.

- **Professional Relevance:** The project should provide opportunities for the students to engage with a professional network and contribute meaningfully to the profession as a whole. It should not be something that will "sit on a shelf," rather, it should be actionable and usable by the partner. It should define broader, long-term criteria for success, e.g., behavior change, policy change, or technology implementation.

The Capstone Project should encompass at least three components that reflect the criteria discussed above:

- A written deliverable (e.g., report, white paper, toolkit, story map, etc.)
- A product demonstrating engagement with the broader professional community (e.g., conference presentation, webinar, workshop, etc.)

The Capstone Partner may also require other deliverables of the group (e.g., community meetings, presentations for a board or other group, and other types of interactions or engagement efforts with the public, stakeholders, or internal teams).

Capstone Partner Expectations

All Capstone Partners are expected to be supportive of the educational objectives of the project and to be active participants in their sponsored project. Successful Capstone Partners do the following:

- Provide a Project Lead who can **dedicate an average of at least one hour per week to the project during the academic year and an average to two hours per week to the project during the summer;**
- Communicate regularly with the student team and provide timely and constructive feedback (It is suggested that partner-student interactions take place weekly during the academic year and generally at least once per week during the summer);
- Communicate with the faculty advisor on a regular basis – providing feedback regarding project progress.
- Provide mentoring and professional development opportunities to students and help them develop their skill sets and networks;
- At a minimum, cover the direct financial costs of the project, including but not limited to travel expenses (including travel expenses for work outside of the Denver Metro Area), software programs, and printing/supplies. While partners are not required to compensate students, we encourage them to do so.

Capstone Overview & Expectations

MENV Student Expectations

One important aspect of the MENV Graduate Program is to train students to become leaders and innovators. As such, once teams are selected and the research scope of the project is defined, the planning, research, and associated work are expected to be student-driven. Faculty and partner input are critical, but ultimately student teams are responsible for managing the project and taking initiative to move the project forward. Successful MENV students:

- Research prospective partners, submit professional application materials, and present a clear and compelling pitch to the Capstone Selection Committee;
- Work closely with teammates and faculty advisors to set clear project goals and benchmarks;
- Drive the progress of the project with solution-oriented approaches;
- Demonstrate professionalism in all interactions with partner organizations and other community members;
- Communicate regularly and professionally with partners and faculty advisors and submit materials for them to provide feedback;
- Produce and deliver on-time, high-quality, sophisticated, professional products and services to Capstone Partners.

Role of Capstone Advisors

MENV Capstone Advisors are the primary faculty points of contact for the Capstone Partners and Capstone student teams from February - December. Many of the advisors' duties are akin to an academic advising position, detailed below. Capstone Advisors will provide the grades for the students who are members of the capstone teams they are advising. The Advisor and Students will work together to determine if grades will be provided per student, or per team.

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Meetings

Capstone Advisors will conduct regular check-ins with students regarding their projects. Teams typically meet with their advisor once every two weeks for 45 minutes to 1 hour. Meeting schedules and structure will be determined between advisor and advisees in the first part of the spring semester.

Advising

Capstone Advisors will advise students on the direction of their projects as well as help guide engagement with the Capstone Partner, as necessary. These tasks include:

- Meet with students at the beginning of the semester to set a meeting schedule and expectations;
- Conduct regular check-ins and coaching sessions with students regarding their projects;
- Advise students on the direction of their projects as well as how they should engage with the Capstone Partner;
- Guide students to establish appropriate project timeline & benchmarks;
- Help as needed to create the substantive content of project planning, including project design, methods, budget, & resources;
- Promote equitable workload and creative contributions among team members;
- Connect students with other experts as needed or source required expertise.
- Monitor and help ensure academic rigor of Capstone Projects and adherence to Capstone Project policies;
- Help students problem-solve and prompt them to think creatively and critically about various aspects of their projects.

Capstone Overview & Expectations

Conflict Resolution

If students are experiencing conflicts with their Advisor, students should contact the Capstone Manager, Taber Ward, taber.ward@colorado.edu. If students need to escalate further, they can contact Joel Hartter, Director of Professional Programs, Joel.Hartter@colorado.edu.

Engagement with Capstone Partners

Capstone Advisors should be the first point of contact for any concerns or questions from the Capstone Partner. Except for meetings noted below, Capstone Advisors and partners will meet as needed.

- Capstone Advisors will join at least one initial meeting, either in person or by phone/video conference, between the Capstone Partner and the student team within the first few weeks of the project launch.
- Capstone Advisors will check in with Capstone Partners quarterly: at the end of the spring semester, at least once during the summer semester, and at least once during the fall semester.

Advisees are expected to have a high level of independence and take the lead in project design and implementation of their projects and interaction with the Capstone Partner. Capstone Advisors may also provide memoranda to the Capstone Partners as well as the MENV faculty and staff periodically throughout the semester to keep all appraised of progress.

Grading

Grading will be based on the quality of the work completed by members of the Capstone Project teams. Elements taken into account will include the final deliverable, work and project elements conducted over the the course of project, adherence to the SOW, and contributions to the project. In addition to Student Teams developing success metrics for their projects, a grading rubric will be provided to Students and Advisors to help guide this process.

Formation of Teams

Team size and composition are dependent upon the project topic, project scope, and partner needs and resources available for the Capstone Project. Because navigation of team dynamics is a core Capstone learning objective, under no circumstances are individual Capstone Projects permitted. Capstone team members may all represent one specialization area, or they may be comprised of students across specializations. Please note that not all prospective partners are guaranteed a team of MENV students. Similarly, there are no assurances that students will work with a specific partner, on a specific project, with a specific group of students, or with a specific advisor.

The Capstone Selection Committee, made of MENV faculty and staff, is responsible for final decisions regarding partner selection, team composition, and advisor assignment. Decisions of the Capstone Selection Committee are based on:

> (1) individual student professional goals and objectives,
>
> (2) individual student preferences,
>
> (3) the ability of teams to meet qualifications set forth by partner organizations,
>
> (4) the ability of a team to accomplish the stated goals of the project,
>
> (5) feedback from partner organizations,
>
> (6) the appropriate number of teams/projects/advisors, and
>
> (7) interdisciplinarity and team diversity, when possible.

All committee decisions are final and not subject to reconsideration or appeal based on student interests or preferences. Maintaining a cohesive team throughout is an important and desirable feature of the Capstone process. Nevertheless, MENV reserves the right to administratively move a student to a different team under exceptional circumstances for the purposes of

maintaining academic standards and/or providing an appropriate learning environment. This may happen at any point during the Capstone Project cycle. The committee's decisions regarding teams are final.

Project Timeline

Students will be presented with the final list of the project partners at the end of the fall semester before winter break (mid-December).

Winter/Spring 2023:

Partners/Team Selection, Project Planning, and Preliminary Research

Students begin the spring semester on Tuesday, January 17. As part of the Capstone Innovation Lab 2 (CIL 2) course, students will have the opportunity to research the prospective Capstone Partners and project areas. On January 27, students will also have the opportunity to attend both in-person and remote networking sessions with partners. On February 3rd, following the networking events, students will submit a survey with an ordered ranking of project/partner preferences as well as their competency on required skills. In addition, a resume and cover letter will be due by 11:59pm on February 14th to the Capstone Selection Committee. These materials will include the learning objectives that students hope to achieve, as well as their career interests and skills and attributes that the students have to offer.

On Friday, February 17, our 2023 Capstone Partners and final student teams will be notified. We anticipate approximately 30 projects in 2023. Each Capstone team will be assigned an MENV faculty advisor. Advisors will be assigned to teams by February 17. Over the spring semester, student teams and Capstone Partners shall agree on a communications schedule. Students will also develop Team Charters, conduct background research, and refine the project scope to create

a professional Scope of Work (SOW) document to present to the Capstone Partner. Additional detail on all assignments can be found later in this document.

Other important elements for spring semester:

- Each student is expected to work an average of approximately 8 – 10 hours per week on the Capstone Project outside of the CIL class during the spring semester (February - April).
- Student teams are expected to have team meetings at least once per week.
- Students and faculty advisors are expected to meet once every two weeks
- Capstone Partners are expected to check in with their student teams no less than every other week. These check-ins can be remote or in-person.
- Some dates are subject to change based on the MENV course schedule.

Summer 2023:

Intensive Capstone Immersion

MENV students enroll in five credits of Capstone Project work over the summer. This is, generally, the primary academic activity taken by MENV students over this term. The nature of the Capstone Project activities during the summer terms will vary from team to team and will be stipulated in the finalized SOW. While MENV students are not required to take classes on campus over the summer session, some may choose to do so. Capstone teams will need to plan accordingly and ensure that they communicate work and academic schedules clearly to their Capstone Partners.

Summer capstone work may involve co-location at the partners' facilities and other travel, including on and off-site visits, and professional, data-gathering, and analytical obligations as part of the project. <u>All of these elements should be included in the finalized SOW.</u>

*Students are required to work a minimum 60 hours for every credit hour earned over the summer. To earn five credit hours for the Capstone Project over the summer, students are therefore required to work a minimum of 300 total hours, and produce high quality work. Most students spread these hours out over 10 – 12 weeks, for an average of 25 – 30 hours/week of work. Students will be required to track their hours.

Fall 2023:

Synthesis, Analysis, and Projection of Deliverables

In their second fall semester in MENV, students resume classes, synthesize their Capstone work, continue their final analyses, and, ultimately, submit their final deliverables to the Capstone Partner and to MENV. During this term, students shall continue to work on and produce agreed-upon deliverables for the Capstone Partner, as well as any stipulated additional academic components for MENV faculty. By the end of the fall semester, student teams will present these deliverables to client organizations, MENV faculty, and any relevant community members.

The Capstone Project will culminate in a written product and presentation at the annual Capstone Symposium hosted by the MENV Graduate Program on campus in mid-November (November 17). **All materials must be completed by December 15.**

- Students are expected to work an average of approximately 5 – 10 hours per week on the Capstone Project outside of the CIL3 class during the fall semester. (Students time investment into the Capstone Project over the fall semester may vary depending on the progress made toward final deliverables over the summer. Students may work as few as five hours/week during the fall semester, or as many as or in excess of 10 hours/week, in order to provide their Capstone Partners with high quality deliverables. This work is completed in addition to the fall CIL3 class.)
- Student teams and partners are expected to check in either in-person or remotely no less than every other week.

Project Budget

The MENV program has a clear and explicit expectation that Capstone Partner organizations pay for the costs associated with the project and agreed upon as part of the proposal. Partner organizations are also encouraged to directly compensate team members. Development of the project budget is the Capstone team's responsibility and must include projection of both expenditures and funding. This budget shall be developed in concert with the Capstone Partners. The group must operate within this budget unless additional funding is obtained. Cost overruns must be covered by the project team members. Funding may be received from a sponsoring organization, provided by team members, allocated by the MENV program (e.g., to support work with under resourced and historically underrepresented organizations), or a combination of the above.

Compensation from Partner Organizations

Capstone project selection is a competitive process. While compensation is one of many factors that students consider, paid projects are the most sought after and competitive. We *highly encourage*, but do not require, Capstone partners to compensate students. Capstone partners commonly offer compensation of $2,000-$6,000, which could come in the form of W-2 employment, 1099 contractor status, or a stipend. If you have questions about your method of payment, please contact your Capstone Advisor or Taber Ward for guidance.

Note: Partners are required the cover all of the direct costs associated with projects, e.g. travel expenses, software, printing, supplies, etc.

Capstone Overview & Expectations

Client Privacy

While it is the preference of the MENV Graduate Program to share students' work publicly, Capstone Partners may request non-disclosure agreements (NDAs) due to the nature of the data they share with student team members. This is an agreement between the students and client organization. Students do not sign this document on behalf of the University of Colorado Boulder. Whatever proprietary statement is signed cannot prohibit student work from being shared with the general public, but the agreement can be written to mask proprietary information, for example, substituting a pseudonym (e.g., Company X) for a specific organization name. Capstone Partners must discuss the terms of an NDA with the faculty advisor in advance of any agreement between students and the partners organization. Negotiation of the terms and conditions of an agreement may be necessary. These negotiations are conducted through the University of Colorado Boulder Office of Contracts and Grants, who has expertise related to openness of research. A sample Capstone Project non-disclosure agreement is available upon request. Please contact the Capstone Manager, Taber Ward, for more information.

Grading for Capstone Projects

The Capstone sequence consists of two types of courses: a three-course classroom sequence (Capstone Innovation Lab 1, 2, and 3 (CIL 1, 2, and 3)), and a five (5)-credit Capstone Project immersive summer course. The CIL courses are offered during the fall semester and spring semesters, respectively. The summer component of the Capstone course is listed as ENVM 6003 in the course catalog. It is a 10-week, five (5)- credit course taken during Summer Session D. There are no traditional classroom activities associated with the summer session; students are expected to be primarily working on their Capstone Projects at this time.

Capstone Overview & Expectations

The CIL courses provide a letter grade that is determined at the end of each respective semester. Individual components of the CIL grades will be outlined in the syllabus for those classes. The CIL 1, CIL 2, and CIL3 instructor(s) will provide grades for these classes. Summer Capstone Project hours will receive an interim 'In Progress (IP)' grade at the end of the summer. Capstone advisors will review students' final deliverable at the end of the fall semester and provide the Capstone deliverable grade. Capstone Partners may provide input and feedback but may not grade students' work.

This grade will be determined through the quality of the final Capstone product(s) and/or deliverable(s), the quality of the Capstone presentation, a review of work done over the summer, as well as feedback from the Capstone Partner. Minimum grades for both course types are C+.

If a student receives a grade of C or lower for any element of the Capstone project - including CIL 1, CIL 2, CIL3, and other parts of the Capstone Project – the student will have to retake that part of the Capstone Project. A grade of C on the 5-credit summer component will result in a student having to begin a new Capstone project in 2024.

Workers' Compensation and Liability Insurance Coverage

UNIVERSITY OF COLORADO CAPSTONE PROJECTS

CU students participating in a Boulder Campus Capstone Project are covered for workers' compensation and liability insurance through the university's self-insured program. If injured while performing the duties agreed on for the Capstone Project, students will need to file a Workers' Compensation Claim with University Risk Management within four days. If it is an emergency go to the nearest emergency clinic/hospital, otherwise, students will need to go to one of the university's Designated Medical Providers. For assistance with the process or questions,

please call: Carolyn Peet, Director, University Risk Management, 303-735-5900 or Chadd Medina, Assistant Director, 303-492-6138.

Resources for International Students

MENV recognizes that work authorization can be complex and is dedicated to helping each student to navigate these topics and have a positive Capstone experience. We recommend that international students seek guidance from CU Boulder's Office of International Student and Scholar Services (ISSS). ISSS offers a number of remote employment workshops throughout the Fall and Spring semester that address the work authorization options for students in F-1 status (CPT, Pre-Completion OPT, Post-Completion OPT, STEM OPT, Steps for after a student applies for OPT). Each workshop runs for approximately an hour and allows for Q&As. Employment workshop series dates and times can be found on the ISSS website here.

Students in need of additional guidance should reach out to Interim Capstone Lead Taber Ward for assistance.

Team Charter

DUE: FRIDAY, MARCH 10, 2023

ABOUT THIS ASSIGNMENT

The Capstone Team Charter is an essential agreement between all members of your Capstone team. Your team members likely bring different backgrounds, perspectives, strengths, and values. Therefore, you will bring different individual expectations and work styles to your capstone project. By developing a Team Charter, you will identify the shared norms and expectations that will guide your team.

The only way to write a useful Team Charter is by first engaging in robust real-time conversation with everyone on the team. This is not something that you can delegate to one team member. Nor is it an activity you can complete by divvying up sections of the charter for different people to write.

The Team Charter should be written in clear, direct, succinct language. All of the agreements must be crystal clear to all team members and to the Capstone Advisor. When you complete the written Charter, ask each team member what they believe they have agreed to do. If there is any disagreement, discuss the Charter again and revise it until all team members are 100% in agreement.

All team members and your Capstone Advisor must sign the Charter. Use the free Docusign account that CU provides you to circulate the Charter for signatures.

Your Team Charter must include all sections listed in the Team Charter Template and Guidelines. *Include only the headers (listed in bold) in your Charter. Do not include the discussion prompts and explanations provided below in your Charter.*

Team Charter (Template)

TEAM CHARTER TEMPLATE & GUIDELINES

PROJECT TITLE:

GROUP MEMBERS:

DATE:

CONTACT INFORMATION FOR TEAM MEMBERS, PARTNER, AND ADVISOR:

TEAM PURPOSE

What is your shared purpose as a team? What is your vision of what you want to accomplish together?

TEAM EXPECTATIONS

A high-level 2-3 paragraph statement that describes the work styles of each individual team member, and also how you, as individuals will come together to form a team culture. This will include, how the team will generally share and coordinate work, the expected standards of quality for deliverables, and how the team will address conflict and give feedback to each other. Remember, these are established by consensus. Each person on the team must be willing and able to abide by all of the rules in the Charter, and must be willing to hold each other accountable to abiding by these rules.

Consider the following common elements of a Team Charter. These are not items for you to respond to line-by-line in your Charter. Instead, they are discussion prompts. Your team will determine which issues need to be addressed in the Charter in order for you to work together effectively and happily for the whole of the year.

- How do you, as an individual perform best? What are your needs and workstyles?
- What strengths do you bring to the team as individuals? How could these strengths be leverages in this project? What gaps might there be on the team?
- How will you work together as a team?

Team Charter (Template)

- What is the team communication protocol and expectations for responsiveness?
- What challenges do you anticipate?
- When and how will you meet together as a team?
- Are team work sessions mandatory for all team members?
- When you have disagreements or conflict between team members, how will you address them? What is your conflict resolution process?
- If you believe that a team member is doing more or less than their fair share of the work, how will you address that?
- What is your agreement on how you will handle deadlines? Keep in mind that some people may want to finish work well in advance, while others may prefer to wait until the last minute.
- How will your team attribute work on complete deliverables? If work was shared unevenly, will all team members still receive credit and have their name listed as an author? If a deliverable is completed by one team member, will they alone be listed as the author? Will there be "tiers" of authorship?
- How will you provide feedback to each other on deliverables?
- How will you hold each other accountable? What are the consequences for failing to abide by this Charter?

TEAM NORMS

The detailed norms and standards for the team. These should include the schedule for team meetings, client meetings, and capstone advising meetings, use of deadlines, attitudes toward work and family obligations, location of shared files, internal communications such as meeting notes, peer feedback and conflict management, processes for internal review of documents and deliverables, how the team will deal with emergencies and absences. and how the team will deal with members who are not contributing their share or meeting quality expectations.

CONCLUSION

A clear statement of commitment from the team members to uphold the expectations and norms described in the document.

Project Design Workshop

FRIDAY, APRIL 7, 2023

Session 1: 8:30 - 10:30am

Session 2: 10:45am – 12:45pm

Each team will only need to attend their scheduled session. The session schedule will be posted to Canvas at least two weeks prior to the event.

ABOUT THIS ASSIGNMENT

The purpose of the Project Design Workshop is to facilitate useful peer feedback to help Capstone teams develop their Capstone Projects. Teams will present their Capstone Project approach and facilitate conversation with their peers to solicit questions, input, and suggestions to address challenges that their projects face.

FORMAT

A group of three capstone teams will meet together in-person at an assigned room in SEEC. The grouping of Capstone teams will be pre-selected, bringing together teams that are addressing similar core themes in their projects and therefore are likely to understand each other's methodology and challenges.

Each group design session will be scheduled for two hours, allowing about 35 minutes per team for presentation and discussion. Each team's presentation should be 12-15 minutes in length, followed by 20-25 minutes of Q&A and discussion/feedback to the presenting team.

TEAM PRESENTATION GUIDELINES

Your team should prepare a presentation (using PowerPoint or a similar option.) Your presentation should be geared toward generating discussion. Your team may choose to use a conversational approach to this presentation, rather than the type of formal presentation you might provide at a conference or public event. You may also bring additional visuals that will be

helpful, such as: maps, process diagrams, outreach materials, product samples, examples of past work done on this project, organizational charts, systems maps, etc.

Your presentation and conversation should cover the following points:

- Purpose of the project

- Goals and outcomes of the project

- Your approach to achieving those outcomes (methodology)

- What is working well on your project so far?

- What is challenging about your project? What do you need help to address?

- What are your discussion questions for your audience?

Scope of Work

Due Dates:

- **DRAFT 1 SOW Due to Advisor: Friday, March 24, 2023**
- **DRAFT 2 SOW Due to Partner: Friday, April 14, 2023**
- **FINAL SOW Due: Friday, May 5, 2023**

ABOUT THIS ASSIGNMENT

The Scope of Work (SOW) is a client-facing document that defines the purpose, process, and outcomes of your capstone project. A clear and precise SOW ensures that each member of your capstone team, your Capstone Partner, and your Capstone Advisor are in agreement about the expectations of your project.

A well-written SOW is concise yet detailed. The final SOW must be a minimum of 8 pages in length, and a maximum of 10 pages in length (single spaced.) Every statement within the SOW should convey useful information, without any filler. However, this does not mean that the SOW should lack detail. All aspects of the project should be addressed with precision. All projects have some uncertainty in them. For aspect of the project that are uncertain, note the unknowns and how you will address them.

The SOW describes the resources that all of the stakeholders contributing to the project will need to successfully achieve the desired outcomes. That means that you should identify all financial, physical, intellectual, and human resources that are necessary for the project to be a success.

The SOW is a professional document. Use professional writing and professional formatting. Include page numbers, headings, headers and footers with the title of your project, etc.

Each section should begin with a 1-2 sentence overview. After that, you may choose to use text, bullet points, tables, charts, and/or graphics to present your information.

Scope of Work

Citations are required wherever you include reference material from external sources. Include your citations as footnotes. Please use APA, MLA, or Chicago style to format your citations. Do not include only hyperlinks in your citations. Full citations are required. See CU Boulder Library guidance.

Your SOW must include all sections listed in the Scope of Work (SOW) Template and Guidelines. *Include only the headers (listed in bold) in your SOW. Do not include the discussion prompts and explanations provided below in your SOW.*

SCOPE OF WORK (SOW) TEMPLATE AND GUIDELINES

PROJECT TITLE:

PARTNER ORGANIZATION NAME, ADDRESS, & WEBSITE:

CAPSTONE PARTNER CONTACT NAME, TITLE, & CONTACT INFORMATION:

TEAM MEMBER NAMES & CONTACT INFORMATION:

CAPSTONE ADVISOR NAME & CONTACT INFORMATION:

SUMMARY & PROJECT UNDERSTANDING

(Required length: 200 words maximum)

Provide a clear, succinct summary of the project purpose and outcomes. Include: project context, methods, and deliverables. Your overview should be written in a way that anyone can understand your project, even if they don't have experience in the type of work you are doing.

BACKGROUND

(Suggested length: 300-500 words)

Answer the question: why is this project necessary and important? Describe the impetus for the project and any previous relevant work conducted on it. What motivated your Capstone Partner organization to address this particular issue? Why is addressing it important to them? Have they worked on this issue before? If so, what was the outcome of that work? What other major projects related to this one does the organization have planned or underway? If your project builds on previous work, include citations that point to that work (including organizational websites, published papers, online articles, etc.) When researching and reflecting upon the project background, include a justice, equity, diversity, and inclusion (JEDI) lens. To what extent have stakeholder communities - especially historically marginalized communities - been included or considered in the work that preceded this project?

DELIVERABLES & METHODS

(Suggested length: 1000 word minimum)

Deliverables and methods drive the strategy of your project, and therefore they are the heart of your SOW.

List and describe all deliverables that you will produce over the course of your project. Include both the final deliverables, and any interim deliverables that you will provide to your Capstone Partner or other stakeholders. Describe the purpose, intended audience, and outcome of each deliverable. Indicate whether your deliverables will be shared with a broader audience. For each deliverable, one or more team member should be assigned ownership for completion and submission of the deliverable so it is clear to a reader who holds primary (and secondary) responsibility for each item.

For each deliverable, describe the methods and tasks you will use to achieve the deliverable. Methods are the processes and strategies that you will use to identify, select, and analyze information about your project in order to reach your goals. Methodology can be qualitative, quantitative, or a combination of the two.

- Qualitative methods could include stakeholder engagement interviews, surveys, focus groups, community outreach, policy analysis, literature review, and other means of qualitative data collection and engagement.

- Quantitative methods could include technical data collection, data or financial analysis, building and/or using software tools, and other means of gathering and making use of quantitative data.

For each deliverable, consider: will you be analyzing existing data? If so, where will these data be sourced? Will you be engaging with the community, designing outreach campaigns, or interviewing stakeholders? If so, how will you go about doing that? For community engagement,

how will you understand the needs and interests of the communities you are engaging with, particularly if those stakeholders are part of historically marginalized or underrepresented communities?

Please be as specific as possible and note at which stage in the project each methodological approach will be used. For example, if you are conducting surveys, interviews, or focus groups, include examples of the questions you might ask. Note how you will collect and organize these data – e.g. will you use an online survey distribution platform? Will you record interviews? Please include citations or references to specific software, reference books, etc.

RISK MANAGEMENT PLAN

(Word count at team discretion)

List the risks and challenges you anticipate for your project, along with the way that you anticipate addresses each item.

Consider: internal challenges with partners/project group (e.g., work allocation among team members, change in personnel in organization), termination or alteration of key programs that support your project, budget constraints, meeting timelines, defining the scope of your project, current or changes in policies and regulations, etc. What are the consequences if you cannot deliver on your project?

STAKEHOLDERS

(Word count at team discretion)

List all stakeholders who will need to be engaged and/or consulted with as part of your project. Include stakeholder prioritization, and your team's stakeholder communication plan, per guidance shared in CIL2.

PROJECT TIMELINE

(Word count at team discretion)

Scope of Work (Template)

Include your team's estimated schedule with checkpoints and milestones. You can use a high-level Gantt chart or other methods to present a visual timeline. Identify how you will track progress on the project. Be sure to address ALL key milestones, activities, and tasks from February – December 2023. Identify who will be responsible for leading each task (even if completing the specific task is a group effort.)

ITEMIZED PROJECT BUDGET

(Word count at team discretion)

Create a spreadsheet that lists ALL of the expenses you anticipate to complete the capstone project. Work with your Capstone Partner to agree on the project budget.

Consider the following expenses:

- Travel, including hotels and food for any overnight stays and mileage expenses to visit client site(s). Any travel must follow then-current University of Colorado public health guidelines.
- Per diem rates established by the US General Services Administration (GSA)
- Books, software, hardware, technology, equipment, or tools necessary to complete the project.
- Conferences, trainings, or events you will attend as part of the project.
- Printing or photocopying.

If your expenses include mileage expenses for driving, estimate the number of miles traveled. Calculate the mileage expense in alignment with CU guidelines. CU reimburses mileage at rate of $0.59/mile.

Scope of Work (Template)

PROFESSIONAL ENGAGEMENT

(150-200 words)

As part of your capstone project, your team is required to engage with the broader professional community by delivering a conference presentation, webinar, workshop, or talk; organizing a community event; or by a similar means approved by your Capstone Advisor. This engagement should be on the subject of your Capstone Project. You have significant professional discretion to be creative in how you approach your professional engagement.

Please explain your plan to fulfill this requirement. Be as specific as possible, including: the event, dates or timeframe, location, and other logistics.

Your Professional Engagement must be completed prior to submitting your final deliverables for your Capstone Project to MENV in December 2023. As part of your final deliverables, you will submit a write-up describing the outcome of your Professional Engagement.

IRB REVIEW FOR HUMAN SUBJECT RESEARCH

(Word count at team discretion)

If your Capstone Project involves research with human subjects, such as collecting data through interviews, focus groups, surveys, or observations, you may need approval from the [University of Colorado Institutional Review Board](#) (IRB) prior to engaging in your research. The IRB Office provides a [useful tool](#) for determining whether your project may require IRB review. While it is rare for MENV capstone projects to involve work that requires IRB review, performing this due diligence work is important for your professional integrity. It is better to err on the side of caution. Reach out to IRB for guidance if you are uncertain about whether your project requires IRB review. If you are planning to publish your work in the academic literature, or your project creates generalizable knowledge to be shared/used beyond the purview of your Capstone Partner, it is likely you will need to have your project plan go through review.

Please indicate whether you believe that your project requires IRB review, and where you are in the process of obtaining that review.

REFERENCES/CITATIONS

(Word count at team discretion)

Please include all of the citations that you have used within this document. Use a standard citation format, such as APA or Chicago. You may wish to include citations as footnotes or endnotes. Do not include only the URL for a reference. Refer to writing resources outlined in MENV Guide to Professional Writing.

GLOSSARY

(Word count at team discretion)

Please include all acronyms used in the document and define any unusual or jargon terms that someone unfamiliar with the topic or field may not know.

PROJECT TIME TRACKING

Each team is required to maintain a Google sheet that tracks the time each team member spends on the project, using the MENV time tracker template. Make a copy of the template and save it to your Google drive. Provide your Capstone Advisor with a link to your team's project time tracker.

Create one tab per person for spring semester, and one tab per person for summer semester. The sheets for all team members should live in one Google Sheets document.

- **In the spring semester, each individual is expected to work 8-10 hours/week** on Capstone Project work (which includes capstone team assignments, but does not include classroom time in CIL.)

Scope of Work (Template)

- **In summer, each individual is expected to invest approx. 30 hours/week. The Graduate School requires a <u>minimum</u> of 300 hours/person of work to earn 5 graduate credits over the summer.** Many teams invest up to 400 hours/person.

- **In the fall semester, each individual is expected to work 5-10 hours/week** on capstone project work (which includes capstone team assignments, but does not include classroom time in CIL.)

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Capstone Poster Session

POSTER DUE: THURSDAY, SEPTEMBER 7, 2023

INTERACTIVE POSTER SESSION: FRIDAY, SEPTEMBER 8, 2023

<u>ABOUT THIS ASSIGNMENT</u>

Additional detail regarding this assignment will be provided at the end of the CIL 2 course. Students will have the summer term to prepare their poster, which will be presented in early Autumn 2023.

Project Brief

ABOUT THIS ASSIGNMENT

The purpose of the capstone project brief is twofold: First, the project brief allows your team to share your project outcomes and process with the MENV community, including the incoming cohort, faculty, staff, and capstone partners. Second, the project brief becomes part of your professional portfolio. You may share your project brief via LinkedIn, or with prospective employers to demonstrate the tangible skills you developed and professional outcomes you accomplished. MENV will post project briefs to the website and share them with future cohorts.

Everyone in your team benefits from investing your analytic and creative talents into writing and designing a high-quality, compelling project brief.

WHAT IS A PROJECT BRIEF?

PART 1: A project brief is an external-facing two-page document that showcases the outcomes from your capstone project to a professional audience.

Your project brief couples concise, precise, and succinct text descriptions of your work with visuals such as photos, graphs, charts, or maps that help your audience engage with your project. Creating a project brief challenges you to practice conveying real world value of your project clearly to members of your academic and professional community. When writing and designing your project brief, remember that your audience could range from fellow students who do not have experience with the type of work you did, to experienced professionals who are experts in the field.

PART 2: In addition, each team should create and submit a 200-400 word text-only description of the project to be posted on the MENV website page highlighting Capstone Projects.

Project Brief

This text-only description should briefly convey the goals, methods, and outcomes of your project with a reader. Students are encouraged to include links to any deliverables that can be publicly shared and may help your audience to quickly understand your work.

<u>GUIDELINES</u>

For any visual presentation, begin by clearly determining what the content will be before beginning the visual design. That way, you can choose a design that highlights the most important information rather than trying to shoehorn information into a nice design.

Include the following content in your project brief:

- What are the two or three key things that you want your audience to remember? Design your project brief to convey these messages!
- Purpose: What is the purpose of your project and the problem you are solving for your Capstone Partner?
- Methods: What methods or processes have you used to arrive at your findings and/or recommendations? You may also highlight key data or findings.
- Outcome: What is the outcome of the project? What are the deliverables? How are the deliverables, results and/or recommendations being used by the capstone partner (and, if applicable, by the broader community)? What is the most interesting thing you have learned?
- Be sure to include the title of your project, the name of the Capstone Partner organization and their logo, and names of all project team members. It is customary to include a brief acknowledgements section that recognizes your Capstone Advisor, Capstone Mentor, and any other key collaborators.

Follow these formatting tips:

- File format: You can use Canva (free), Adobe Illustrator, or any other design program. Save your project brief as a pdf before you submit it.

Project Brief

- Length: The standard length for a Project brief is two pages. You may not do a project brief that is shorter than two pages. However, you may choose to extend your project brief up to three pages if necessary. *Remember that readers' attention drops off quickly after the first few pages. If you choose to do a longer project brief, make sure you are using the visual space well and not overloading on text.*

- Size: Your project brief should fit on 8.5 x 11" pages, allowing it to be printed on standard sized paper if your team or capstone partner chooses to do so.

- Images and graphics: Use high resolution images formatted to at least 300 dpi to allow for printing. Use .jpg, .tif, or .png images.

- Captions: Include captions for all graphics, images, figures, etc.

- Citations: ALL outside sources should be properly cited, including text, images, graphs, etc.

- Visual flow: Your design will help to guide your reader's eye through the story of your capstone project. Orient your design in a way that it is logical to the viewer to know how to "read" it – top to bottom, left to right. You may wish to use arrows or numbers to direct the viewer as to how to navigate your project brief.

TIPS

- Think about a clear, take-home message. If your audience was going to walk away and describe why your project matters in one sentence, what would you want them to say?

- Avoid overcrowding – keep the project brief simple and concise.

- Make sure visuals can stand alone – label axes in graphs, include north arrows on maps, use legends to describe symbols, etc.

- You may want to think beyond the requirements of this assignment and consider other potential uses for this project brief. Could your Capstone Partner share the project brief on their website or social media? Could you distribute it to project partners? Could you share it with your network to demonstrate the results of your graduate work?

SAMPLE PROFESSIONAL PROJECT BRIEFS

Here are some examples of project briefs from the professional world. You'll see that they use a variety of styles. Use these to inspire your creativity!

Past MENV Project Briefs

- Community Trails and Mobile Equity
- Tools for Wind Energy Development: Jobs and Economic Development Impact Modeling and County Siting Guide
- Cooperatives at a Crossroads: Challenges and Opportunities for Clean Energy in Electric Cooperatives
- Impact Investing to Reduce Deforestation
- Water and Agriculture: Contemporary Analyses for the Colorado Water Plan Update
- Urban Ecosystems Initiative
- Boundless Growth: Recommendations & Tools for the Continued Success of Boundless Landscapes

Past MENV Text Descriptions

- County at a Crossroads: Outdoor Recreation in Moffat County
- The Grain Revival Project
- National Scale-Up of Carbon Drawdown & Management Planning

Capstone Symposium

FRIDAY, NOVEMBER 17, 2023

8:30am - 1:30pm

Location: IN PERSON AT SEEC - specific room assignments will be shared within the event schedule.

Attendance at the full event is required for all MENV students.

WHAT IS THE CAPSTONE SYMPOSIUM?

The Capstone Symposium is a conference-style showcase and celebration of your capstone accomplishments. You will present the outcomes of your project to an audience that includes capstone partners; MENV students, faculty, and staff; and members of the broader environment and sustainability community.

FORMAT

Each team will present their Capstone Project **IN PERSON** to an audience that includes your cohort, MENV faculty and staff, and Capstone Partners.

Each team will have a 25-minute presentation session. The session includes a presentation and time for substantive Q&A. Teams should plan for roughly 20 minutes presenting and five minutes for questions. There will be a hard stop at 25 minutes to allow for the next presenters to set up and audience members to change rooms.

Invite your Capstone Partner to attend your presentation. If your project has partners and collaborators from multiple organizations, we encourage you to invite them. Capstone Advisors are also expected to attend their teams' presentations.

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Capstone Symposium

PRESENTATION GUIDELINES

Your goal is to share the results of your Capstone year with your professional community. The content guidelines are intentionally brief. This provides you with the freedom to use your professional judgment on how to showcase your unique project.

Include the following content. (You can use your Project Brief as a starting point.)

What are the two or three key things that you want your audience to remember? Design your presentation to convey these messages!

- Purpose: What is the purpose of your project and the problem you are solving for your capstone partner?
- Methods: What methods or processes have you used to arrive at your findings and/or recommendations? You may also highlight key data or findings.
- Outcome: What is the outcome of the project? What are the deliverables? How are the deliverables, results and/or recommendations being used by the capstone partner (and, if applicable, by the broader community)? What is the most interesting thing you have learned?

We encourage you to design an engaging presentation that includes stories about the challenges or surprises you encountered and insight into the analysis, strategy, and collaboration that contributed to your project.

Check with your Capstone Partner to make sure all of the content in your presentation can be shared with the public. Do not include any sensitive or confidential information.

Please note that at this time MENV does not have the resources to professionally film, edit, and produce student presentations.

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Final Deliverables

DUE: FRIDAY, DECEMBER 15, 2023

Each team's final Capstone Project deliverables are defined in the Scope of Work (SOW) and must meet the requirements outlined below in this document.

At the conclusion of the Capstone Project, each capstone team will submit a packet to MENV with a complete set of their capstone deliverables.

The following project documents should be included, and will be part of your graded team Capstone work:

- **Table of Contents:** 1–2-page document that lists everything you have submitted, including the exact file name and a brief description of what the file contains.
- **Project Impact Assessment:** Assessment of the short-term impact of your Capstone work (including impacts on the Capstone Partners and stakeholder groups) as well as anticipated longer term impacts that the Capstone Project is likely to have.
- **Deliverables:** Reports, guidebooks, data sets, websites, or anything else that you and your capstone partner agreed upon.
- **Data Sets (if applicable to your project):** Any data sets that your team collected as part of the project. For example, if you conducted stakeholder interviews, submit your transcripts and coding.
- **Professional Engagement:** one-page description of how you met the "professional engagement" requirement, as described in the Scope of Work (SOW). Include the purpose of the professional engagement; description of the stakeholders who were engaged; description of the event or activity (including date(s) and location(s)); and outcomes of the engagement (350-500 words).
- **Project Portfolio:** Your final portfolio offers an opportunity to present the comprehensive body of work you've produced over the year, representing your

development as a writer, reader, and researcher. Combine relevant and non-confidential elements of your Final Deliverables into a comprehensive portfolio. This could be in the form of a storymap, photojournalism display, project website, blog, toolkit, or other presentation materials that can be used to showcase your work to external stakeholder and potential employers. One example is HERE.

Please include the following documents that you previously submitted to MENV in your project folder, to give MENV a centralized repository of your work. These items will not be included in your grade for your final deliverables. They are simply included to help MENV to stay organized with a ready reference of past capstone work.

- Project Brief
- Scope of Work (SOW)
- Stakeholder and Partner Mapping
- Capstone Symposium presentation slides
- Please **do not submit draft versions of your documents.** We only need to see the complete, final versions.

<u>SUBMISSION GUIDELINES</u>

Each team should create a Google drive folder that includes the full packet of all your final deliverables. When your folder is complete and ready for submission, you should take the following actions:

1) Title the folder using this naming convention: PartnerName_ProjectName_FinalDeliverables
2) If any materials you are submitting are confidential, rename the file so the title is "CONFIDENTIAL_Title". All files, regardless of confidentiality, should be submit to MENV and your advisor. However, all files marked confidential will be treated as such

and will not be shared with other students or faculty members in accordance with any approved nondisclosure agreements. If you have many confidential files, you may create a folder labeled "Confidential Materials". If your entire project is confidential, please include "CONFIDENTIAL" at the beginning of your folder name before submitting to MENV.

3) Provide your advisor with access.

4) Transfer ownership of the folder first, and then transfer each individual document within the folder to MENV_capstone@colorado.edu.

Note that you must individually transfer ownership of each document that you are submitting. Be sure that the filenames are clear and easy-to-understand for someone outside your team.

MENV Use of Documents and Confidentiality

MENV may post your Project Brief and Capstone Symposium presentation to our website, social media, or other public channels for marketing and recruitment purposes.

MENV may share your Capstone Project deliverables internally with staff, faculty, and students who are part of the program. We will not post your capstone project deliverables in a public forum without your permission.

If any of the files submitted include strictly confidential information that may not be shared per a designated non-disclosure agreement (NDA) with the capstone partner, your team must alert the Capstone Lead prior to submitted said files. Include the word "Confidential" at the start of the filename for any confidential materials. Please note that MENV expects to be able to share all final deliverables among students, faculty, and staff within the program, unless a specific agreement to the contrary is reached with the Capstone partner in advance of the deliverable deadline.

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