INTRODUCTION

These guidelines define the Bren School’s expectations for Master’s Eco-Entrepreneurship (Eco-E) Projects and explain the Eco-E Project process, timeline, and required deliverables.

MESM students have the option to complete either a Master’s Group Project or an Eco-E Project to fulfill core requirements. The Eco-E Project prepares students for careers as solution-oriented environmental entrepreneurs who can identify opportunities where market demands overlap environmental solutions. Students who complete an Eco-E Project will work as a team to develop a business model, build a prototype concept, and create a go-to-market strategy for a new environmental venture. Students will cultivate innovative and agile thinking and leadership skills.

Without exception, all students pursuing the Master of Environmental Science and Management (MESM) degree must successfully complete a Group Project or an Eco-E Project. For more information about Group Projects, please refer to the MESM Group Project Guidelines.

In completing Eco-E and Group Projects, students are expected to seek advice from outside sources, which may include individuals affiliated with industry, government, and non-government organizations. However, unlike Group Projects, students may not conduct an Eco-E Project in collaboration with an outside client. The Eco-E Project, which includes all ideas and concepts set forth in the business model, must be the original work of the student team members.

All Eco-E Projects begin in spring quarter of the first year of study and end in mid-spring quarter of the second year. The project requires:

- an environment in which the students can learn to operate as an independent professional team;
- a spirit of trust and collaboration;
- student-generated projects to allow students to develop their own ideas and approaches;
- healthy and professional communication and rapport; and,
- the ability of students to choose courses of action, make mistakes, and learn from those experiences.

Students who complete Eco-E Projects are required to participate in two new venture competitions as part of the training. Participation in such competitions gives students valuable experience and increases the visibility of the Bren School and its students.
**ECO-E PROJECT TIMELINE OVERVIEW**

Below are the key deadlines in this year’s Eco-E Projects. Note that there may be additional deadlines associated with ESM 402A or faculty advisors may request additional milestones and may set internal deadlines for drafts or other materials in addition to deadlines listed here.

### Spring Quarter 2019

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>Mon April 15</td>
<td>Project management plan due</td>
</tr>
<tr>
<td>Fri April 26</td>
<td>Eco-E Advisory Council (EEAC) Meeting</td>
</tr>
<tr>
<td>Fri May 3</td>
<td>Complete environmental problem literature review</td>
</tr>
<tr>
<td>Wed June 5</td>
<td>“Lessons Learned” Presentation to Eco-E Program Committee</td>
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<tr>
<td>By Fri June 7</td>
<td>Submit Team Evaluation to Eco-E Project Coordinator</td>
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<td>By Fri June 14</td>
<td>Send web link for Eco-E Project website to GP Coordinator</td>
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### Fall Quarter 2019

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<th>Date</th>
<th>Event Description</th>
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<tr>
<td>Fri November 1</td>
<td>Complete environmental benefit literature review</td>
</tr>
<tr>
<td>Early December</td>
<td>Eco-E Advisory Council (EEAC) Meeting</td>
</tr>
<tr>
<td>Fri December 13</td>
<td>• Submit outline of Final Report to faculty advisors;</td>
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<td></td>
<td>• Submit Team Evaluation</td>
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### Winter Quarter 2020

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tr>
<td>Late January or</td>
<td>Eco-E Advisory Council (EEAC) Meeting</td>
</tr>
<tr>
<td>Early February</td>
<td></td>
</tr>
<tr>
<td>Fri February 7</td>
<td>Draft of overview, business model environment, research methods and results, and business model sections of Final Paper due to faculty advisors</td>
</tr>
<tr>
<td>Fri February 7 &amp; 14</td>
<td>Master’s Project Faculty Reviews</td>
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<tr>
<td>Fri February 21</td>
<td>Complete draft of Final Report due to faculty advisors</td>
</tr>
<tr>
<td>Fri March 20</td>
<td>• Final Report (.pdf version) due to faculty advisors, Eco-E Project Coordinator and GP Coordinator;</td>
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<tr>
<td></td>
<td>• Submit Final Presentation Program Abstract to GP Coordinator (Template sent out by GP Coordinator 2 weeks prior);</td>
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<tr>
<td></td>
<td>• Submit Team Evaluation to Eco-E Project Coordinator</td>
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### Spring Quarter 2020

<table>
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<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>Fri April 10</td>
<td>Draft Marketing Collateral Piece AND Project Poster due to faculty advisors</td>
</tr>
<tr>
<td>1-2 weeks before Final Presentation</td>
<td>• Take team photo w/ faculty advisors to use as the first slide in the Final Presentation;</td>
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<tr>
<td></td>
<td>• Submit draft Final Presentation to faculty advisors for review</td>
</tr>
<tr>
<td>Fri April 17</td>
<td>Final Marketing Collateral Piece and Project Poster (.pdf version) due to faculty advisors, Eco-E Project Coordinator and GP Coordinator</td>
</tr>
<tr>
<td>No later than Mon April 20</td>
<td>Print Final Poster and Marketing Collateral Pieces</td>
</tr>
<tr>
<td>Fri April 24</td>
<td>Master’s Project Final Presentations</td>
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1. GENERAL INFORMATION

A. Eco-E Project Timeline
MESM students begin their Eco-E Projects in the spring quarter of their first year of study and complete their project by the middle of spring quarter of their second year of study. Master’s Project Faculty Review, including Group Projects and Eco-E Projects, are held in the middle of winter quarter, with the Final Report due at the end of winter quarter. Master’s Project Final Presentations are generally held on Friday during the fourth week of spring quarter. The timeline overview provides deliverable due dates. Working with their faculty advisors, teams define their own deadlines for intermediate products.

B. Academic Units and Grading
Students must register for ESM 402A, 402B, 402C and 402D for a total of 14 units in spring, fall, winter, and spring, respectively. The instructor grades the ESM 402A course. The team’s faculty advisor(s) grade(s) all other ESM 402 courses and the grades will be assigned at the end of their respective quarters.

**Students must achieve a grade of B or better on their Eco-E Project to be eligible for the MESM degree.** Students working together on a project may not necessarily receive the same grade. Additionally, students cannot be recommended for graduation until they have submitted an approved final report.

By the last day of each quarter, students are required to complete and submit an Eco-E Project Peer and Self Evaluation Form to the Eco-E Project Coordinator. These evaluations will be considered by the faculty advisor when grades are being assigned. The Eco-E Project Coordinator will provide an evaluation form.

C. Student Time Commitment
Students should expect to devote **at least 10-12 hours per week** to their Eco-E Project, although more time may be needed for some tasks. Work on Eco-E Projects should be evenly allocated over the 3.5 quarters to avoid excess workload at the end of the project.

D. Summer Eco-E Project Work
Some students may participate in a summer internship associated with the Eco-E Project. Students who are not involved in an Eco-E Project-related internship may continue some level of work on their projects during the summer, as determined by the team and faculty advisors.

E. Deliverables
The major deliverables for the Eco-E Project are:

- Project management plan
- Quarterly meetings with the Eco-Entrepreneurship Advisory Council (EEAC)
- “Lessons Learned” presentation
- Website
- Faculty Review presentation
- Final report
- Marketing collateral piece
- Project poster
- Final presentation
- Participation in two approved new venture competitions
F. Authorship/Ownership
Each member of the team is an equal owner of the intellectual property of the project, unless it is Prior IP. Prior IP is intellectual property that is developed by a student before the Eco-E Project began and that is both recognized and protectable under United States copyright, patent or trademark laws. Any Prior IP introduced by a student during the course of an Eco-E Project may be used by all student team members in the course of the Eco-E Project for academic purposes. To avoid misunderstandings and confusion, if a student wants to contribute Prior IP to an Eco-E Project, that student should clearly identify it as Prior IP to the other student team members and notify the Eco-E Project Coordinator that the Prior IP is being contributed to the project for academic use in the Eco-E Project.

Frequently, teams divide the responsibility for some tasks that further the project; one or several individuals may invest more time in one aspect of the project than others. However, each member of the team ultimately contributes to the body of work that emerges from an Eco-E Project. Therefore, every required paper, poster, presentation, etc. (except for the marketing collateral piece) that is produced by the team MUST list every member as an author.

Teams are encouraged, but not required, to present their Eco-E Project findings in formal conferences outside the university. Participation in such conferences gives students valuable experience and increases the visibility of the Bren School and its students. Teams also may want to publish results in a peer-reviewed journal. Teams may collectively develop criteria for authorship of these supplemental materials (e.g., 2-unit independent study with advisor) but all members of the team must agree to these criteria. A team member may choose not to be included as a co-author on a publication. However, ALL team members must be offered the opportunity to make their own decision about their authorship. Even after the project has ended, if a team member adapts the deliverables for presentation at a meeting or submission to a journal, EVERY team member should be listed as a co-author. Teams also may include faculty advisors or others who contributed substantially to the research as co-authors.

G. Data Distribution
Datasets obtained or derived during your work may be licensed, copyrighted or confidential. Students should NOT make them available to third parties, or generally available online, without authorization from their faculty advisor AND the original source of data. If a team is working with confidential data, a Non-Disclosure Agreement (NDA) will likely be necessary between the source and UCSB. NDAs are developed, approved, and signed by UCSB’s Office of Technology and Industry Alliances. Under NO circumstances can a student sign an NDA with a source.

H. Publishing
If a team would like to publish its work, team members must discuss this with their advisor. Faculty advisors are experts in peer-reviewed publication, and students should take advantage of their knowledge and experience. Publishing peer-reviewed literature requires interfacing with a larger scholarly community, and this should be done in a way that reflects well on the students, their advisor, and the Bren School. Note that it often takes a prolonged period (months to years) to get a paper published.

I. Use of Human Subjects
Faculty and students who engage in research involving human subjects generally must obtain prior approval from the UCSB Human Subjects Committee (HSC). "Human Subject" means a living individual about whom an investigator (whether professional or student) conducting research obtains (i) data through intervention or interaction with the individual or (ii) identifiable private information. This means that if a survey will be conducted, HSC approval MUST be obtained in advance. Approval is required no matter with whom the team will interact - even your friends or family!
The Office of Research Human Subjects Department reviewed and discussed “Bren Eco-Entrepreneurship Market Research” related to the Eco-E Project and determined that it did not meet the criteria for human subjects research as defined in the Common Rule (45 CFR 46). IRB review and oversight is not required because the activities are not considered a systematic investigation designed to develop or contribute to generalizable knowledge; instead the activities are designed to allow students enrolled in courses within the program to meet their learning objectives.

At this time, the Eco-E Project teams may conduct market research as IRB approval is not necessary. Should student activities develop into meeting the criteria for human subjects research as defined in 45 CFR 46, the students will need to obtain IRB approval before continuing with the project(s).

2. COMPOSITION OF THE ECO-E PROJECTS

A. Team Members
Each team is composed of 3 to 5 students. Students are responsible for building their own teams.

B. Faculty Advisors
Each Eco-E Project is assigned one or two faculty advisors; however, each team must have at least two advisors who are Bren School ladder faculty (or 0% affiliates) on their master’s thesis committee. If one ladder faculty is assigned as the advisor, then the students must find at least one other Bren faculty member (or 0% affiliate) who will serve on their external advisory committee. The primary faculty advisors monitor progress and provide technical assistance, expertise, project evaluations, and grades, if applicable. Bren faculty and others experts on the external advisory committee are expected to review the team’s progress at least once per quarter during review meetings but they are not expected to read and give detailed feedback on the team’s deliverables (see External Advisors below). Project leadership, management, and the quality of the final products are ultimately the students’ responsibilities.

Primary faculty advisors do not serve as project managers; their role is similar to that of a consultant. They are expected to attend regular meetings with the team and are responsible for grading. Advisors may offer reactive advice, responding to activities in the team and providing guidance when asked. The advisors also may give proactive advice regarding deficiencies and deadlines. It is important that students understand the role of the advisors and the limited, though important, role they play in directing the project. Each faculty advisor has his/her own unique approach. Students should expect variability in engagement, expectations, and feedback from one advisor to the next. During the first quarter, each team should clarify the expected level of interaction with their advisors.

C. External Advisors
Interacting and networking with the professional community are critical components of the Eco-E Project process. Teams must obtain the counsel of two or more external advisors, individuals from government agencies, industry, non-governmental organizations, universities, or private citizens who may be interested in the project, its data or deliverables. An external advisor is someone who has knowledge about the project topic and can provide unbiased feedback. If one Bren faculty advisor is assigned to the team, then the team must select another Bren faculty member (or 0% affiliate) for the external advisory committee. However, only one of the two or more external advisors may be drawn from Bren faculty. Each team will be responsible for identifying external advisors and maintaining professional contact with them for the duration of the project. Teams should schedule quarterly meetings with external advisors, in order to provide updates and gather feedback. If an external advisor is not able to attend a meeting in person, the team should engage the
person by teleconference or Zoom. External advisors do not need to review the entire final report, although the team may ask for feedback on specific sections if the external advisor has time. External advisors also should be invited by the students to attend the project’s faculty review and final presentation. External advisors are likely busy people and their time should be respected. When scheduling a meeting, the team should be prepared with an agenda and specific questions so the meeting time is valuable for all parties.

D. Eco-E Project Coordinator
The Eco-E Project Coordinator is a Bren staff member who assists students, faculty advisors, and the Eco-E Program Committee in facilitating the Eco-E Project process. The Eco-E Project Coordinator for the Class of 2020 is Emily Cotter (ecotter@bren.ucsb.edu), Bren School Eco-Entrepreneurship Program Manager. Any questions or concerns regarding your team should be addressed to the Eco-E Project Coordinator.

E. Group Project Coordinator
The Group Project Coordinator is a Bren staff member who assists students, faculty advisors, and the Group Project Committee in facilitating the Group Project process. The Group Project Coordinator is Sean Kerr (sean@bren.ucsb.edu). Any questions or concerns regarding a Group Project should be addressed to the Group Project Coordinator.

F. Eco-E Advisory Council (EEAC)
The Eco-Entrepreneurship Advisory Council (EEAC) guides, supports, and promotes eco-entrepreneurship education at the Bren School, and serves as the primary conduit between the school and the entrepreneurial and investor communities. Members of the EEAC are leading innovators in business. Eco-E Project teams will meet with the EEAC on a quarterly-basis (Fall, Winter and Spring) to receive feedback, guidance and support. The Eco-E Program Manager will schedule the EEAC meetings and notify all participants of the expectations for each quarterly meeting.

G. Eco-E Program Committee
The Eco-E Project process is overseen by the Eco-E Program Committee, which consists of 3 Bren School faculty members. The Committee is responsible for selecting Eco-E Projects and monitoring the progress of each Eco-E Project. Additionally, the Eco-E Program Committee selects recipients of Eco-E Summer Internship Fellowships. Any questions or concerns regarding your team or project should be presented to the Eco-E Project Coordinator or a member of the Eco-E Program Committee.

3. PROJECT MANAGEMENT

A. Team Meetings
Teams are encouraged to meet as often as necessary, but all teams must meet at least once a week at a designated place and time. However, it is the responsibility of the students to schedule the meetings and make necessary arrangements. Regular team meetings should not be scheduled on Monday through Thursday between 11:00 am – 12:15 pm as these days and times are reserved for seminars, career talks, faculty meetings, and mandatory academic programs workshops. Additionally, all teams are expected to participate in the scheduled ESM 402A class sessions and weekly “Eco-E Lab” sessions for ESM 402B and ESM 402C. Advance notification of absences is expected as a matter of courtesy. Participation in the 402-series class/lab sessions and team meetings is a portion of each student’s grade; missed sessions negatively affect the overall grade.

B. Scheduling Meeting Rooms
Students are responsible for scheduling their own rooms using Google Calendar for regular Eco-E Project meetings. Three rooms are available to be directly reserved by students using Google Calendar: Bonsai (BH 4402), the Visitors Center (1410),
and Manzanita (BH 4329). Each team should designate a scheduler for the team and this person should be responsible for all calendar entries for their team.

**It is imperative that the scheduler check availability before scheduling and never schedule over an existing reservation.** In addition, if plans change and the room is not needed as scheduled, the reservation should be removed immediately from Google Calendar since meeting rooms are in high demand.

Google Calendar instructions can be found on the web at: [https://bren.zendesk.com/hc/en-us/articles/205802859-Students-Scheduling-rooms-using-Google-Calendar](https://bren.zendesk.com/hc/en-us/articles/205802859-Students-Scheduling-rooms-using-Google-Calendar)

To schedule a room:

- Click the drop-down arrow next to the "Other Calendars" section on the left side bar in Google Calendar. Click "Browse interesting calendars." Click "more." Click "resources for ucsb.edu." Click the "bren" link, followed by the "bren-rm" link.
- Subscribe to the calendars needed;
- Click on the day and time of the meeting directly on the calendar. Use the ‘edit’ field to adjust meeting details. Schedule team meetings only if the room is free at the desired time (**if scheduling recurring meetings, please check all dates for potential conflicts**).
- The scheduler MUST include the **team’s and scheduler’s names** in the title of the meeting so that the Bren scheduling team can easily contact the team in the event of a conflict.

**Students may not make reservations on any room calendar other than these 3 designated rooms.** If none of the designated student rooms are available, Eco-E Project meetings may be scheduled by Bren staff on behalf of the team in other rooms. Students may request a room by sending an email to scheduling@bren.ucsb.edu. Requests should be made at least 48 hours in advance.

Please also use scheduling@bren.ucsb.edu to reserve a conference phone if needed. A regular phone line can receive only one call at a time; however, conference phones may dial out to two different numbers. Please contact Finance Manager Bridget Mastopietro (bridget@bren.ucsb.edu) at least 24 hours before your event if you need a Ready Talk account (for two or more parties calling in) or a UCSB authorization code (required for long distance calls).

**C. Conflict Resolution**

The primary responsibility for intra-group conflict resolution lies with the team members. The faculty advisors should help to resolve any issues that cannot be adequately addressed by the team members. If a team is still unable to resolve a conflict after faculty arbitration, the team may seek assistance from the Eco-E Project Coordinator or the Chair of the Eco-E Program Committee, who will consult with the Eco-E Project Committee if needed. Students may also wish to contact the campus ombuds office (http://www.ombuds.ucsb.edu). Trained mediators are available at no cost throughout the year. Their mediation techniques are informal, confidential, and impartial.

If students have difficulty with a member of their team, it is critical that they maintain written documentation of the problem and attempted solutions. For example, if one member of a team is not doing his/her share of work or not providing timely products or products of adequate quality, the other team members must document dates of specific incidents and what efforts were made to address the problem. Only under these circumstances will it be possible for faculty advisors and administrative personnel to intervene and help craft a solution. Administrative involvement is generally limited and occurs only when there are serious issues that remain unresolved after considerable effort by the students and faculty advisor(s). Because of federal privacy laws, students may not be informed of specific
interventions or disciplinary actions taken with other students; however, this does not mean the problem was not acted upon by administration.

4. PROJECT DELIVERABLES

Refer to the timeline overview for a summary of Eco-E Project deadlines and deliverables.

Students must pass all ESM 402 courses with a B or better in order to be eligible for the MESM degree. Students shall be actively involved with their team throughout the year-long project.

A. ESM 402A (Spring Quarter)
MESM students begin Eco-E Projects in spring quarter of their first year of study and are required to register for ESM 402A New Venture Formation (4 units). ESM 402A requires completion of the following elements to support the project.

1. Project Management Plan
Each team will prepare a 1-2-page project management plan detailing the following:

- Names of participants
- Purpose of the project
- Participant responsibilities
  - A definition of each area of responsibility (e.g., project manager, financial manager, data manager, outreach manager, etc.)
- Idea generation and prior IP
- Termination date of project

A signed hard copy should be submitted to the Eco-E Project Coordinator. If any components of the project management plan change during the project, a revised project management plan should be created and signed by the team.

2. Eco-E Advisory Council (EEAC) Meeting
Each team will give an overview of their Eco-E Opportunity and introduce their initial business model hypotheses to the EEAC in spring quarter of the first year of study. Following the presentation, the team will receive feedback from the EEAC.

3. Sprint Updates
During ESM 402A, each team will manage its business model development process online using Lucidchart and will document progress and lessons learned by submitting progress reports on GauchoSpace. For each sprint, the latest Business Model Canvas should be downloaded from Lucidchart and submitted as a PDF on GauchoSpace.

Each sprint, teams should perform the following:

- Update the Canvas
  - Create new hypotheses, under individual canvas building blocks.
  - Create a new canvas, if appropriate.
  - Submit latest canvas on GauchoSpace.
- Submit a progress report
  - Write a brief report summarizing what the team did during the last sprint and discuss next steps.
10

- Submit sprint update on GauchoSpace.

4. Sprint Presentations
During ESM 402A, each team will present to the instructor and to the other teams their progress from sprint to sprint. Each sprint presentation should cover the following:

Which Business Model Canvas building block(s) did you test? What did you learn during the last sprint?
- Current Business Model Canvas
- Assumptions
- Experiments
- Results
- Lessons Learned
- Next Steps

Each team presentation will be followed by class discussion on the project’s recent progress, providing each team with peer feedback.

5. Environmental Problem Literature Review
Early in the project, the team should find out what is known about the environmental problem that it is addressing. The team needs to locate materials already written about the specific problem and its location or other context, including agency, industry, and consultants’ reports, which will often lead to critical datasets and useful scientific literature. The team will also need to search for technical literature (journals, books, electronic resources) describing and explaining the problem and methods for studying it.

The team should resist the temptation to locate a source on the basis of keywords or a title, and then to download it and absorb only enough information to write a sentence about it in a literature review. Storing a PDF file on the computer is not the same as absorbing the content well enough to explain which material in the paper is relevant and usable for a particular problem. At the same time, a team often cannot afford the time to become as broadly knowledgeable about the subject as an academic researcher. This task of locating relevant, useful information for a single project requires strong focus and balance between obtaining directly useful information, and developing a breadth of perspective which can lead to innovation. It is not simply a matter of meeting a quantitative target, such as “refer to n articles.”

Teams typically start their literature review with keyword searches (e.g. general concepts, species or chemical names, region or environment type) of publication databases such as the Web of Science. Teams unfamiliar with these databases should take advantage of the training in library research techniques provided by UCSB Research Librarian Kristen LaBonte (klabonte@ucsb.edu). Each team is encouraged to schedule a meeting with the Research Librarian (separate from the workshop provided) at least once in spring quarter to learn more about the available resources that are related to their specific topic.

6. “Lessons Learned” Presentation
At the end of spring quarter (see timeline for date), each team will present the evolution of the project’s business model, to date. Each team will give a 15-minute “Lessons Learned” presentation about their environmental venture. Following the presentation, the team will participate in a Q&A session with the Eco-E Program Committee. In addition, the team will receive written feedback from the Eco-E Program Committee.
7. Website
By the end of spring quarter, each team is required to create and maintain a public website through the Bren School. The website’s URL should be sent to the faculty advisor(s) and Casey Hankey, the Group Project Coordinator, by the end of spring quarter. The following information must be accessible through this website:
   a. Names and email address for each team member, and a team email address
   b. Faculty Advisors names and emails
   c. Project name and brief description

Once the website is created, the team should continue to update the website for the duration of the project. At the end of the project, the team should archive the website. The team’s website will remain on the Bren School’s website so it is important to post accurate and complete information about the project. Prior to archiving the team’s website, students should remove any material that will not remain accurate over time (e.g., resumes or CVs of team members).

8. Evaluations
Each individual on the team must complete a self and peer evaluation and submit them to the Eco-E Project Coordinator by the last day of classes of the quarter. The evaluation requires realistic reflection on the progress and functioning of the team. The primary goal of the evaluations is to inform the faculty advisor(s) and Eco-E Project Coordinator of team dynamics and any problems that may require future intervention. With appropriate justification, self and peer evaluations may impact grade assignments by the faculty advisor. Evaluations are confidential from other team members. This form will be provided to students via GauchoSpace.

B. ESM 402B (Fall Quarter)
Students must enroll in ESM 402B Eco-E Project in Environmental Science and Management for 4 units with their advisor in the fall quarter of the second year of study.

Students should meet three times a week in fall quarter with (1) all team members; (2) all team members and the faculty advisor(s); and, (3) all Eco-E Project teams and the 402-series instructor (i.e., weekly “Eco-E Lab” sessions for 402B). In fall quarter, students typically work on developing a minimum viable product (i.e., small-scale prototype or pilot project). Students work on data analysis and interpretation. Students create figures and charts for their final report and other products. They write an annotated outline of their final report and complete as much of the writing of the final report as possible.

1. Environmental Benefit Literature Review
Now that the team has started testing its business model and refined its product/service concept, the team should find out what is known about potential environmental benefits that may be created. The team needs to locate materials already written about environmental solutions and their locations or other context, including agency, industry, and consultants’ reports, which will often lead to critical datasets and useful scientific literature. The team will also need to search for technical literature (journals, books, electronic resources) describing and explaining the problem and methods for studying it. The team needs to gather data that will help quantify the environmental benefits that may result from implementing its business model.

The team should resist the temptation to locate a source on the basis of keywords or a title, and then to download it and absorb only enough information to write a sentence about it in a literature review. Storing a PDF file on the computer is not the same as absorbing the content well enough to explain which material in the paper is relevant and usable for a particular problem. At the same time, a team often cannot afford the time to become as broadly knowledgeable about the subject as an academic researcher. This task of locating relevant, useful information for a single project requires strong focus and balance between
obtaining directly useful information, and developing a breadth of perspective which can lead to innovation. It is not simply a matter of meeting a quantitative target, such as “refer to n articles.”

Teams typically start their literature review with keyword searches (e.g. general concepts, species or chemical names, region or environment type) of publication databases such as the Web of Science. Teams unfamiliar with these databases should take advantage of the training in library research techniques provided by UCSB Research Librarian Kristen LaBonte (klabonte@ucsb.edu). Each team is encouraged to schedule a meeting with the Research Librarian (separate from the workshop provided) at least once in spring quarter to learn more about the available resources that are related to their specific topic.

The Environmental Benefit Literature Review should be completed during fall quarter (see timeline for exact date).

2. Eco-E Advisory Council (EEAC) Meeting
Each team will present the project’s current business model and lessons learned during the EEAC meeting in fall quarter of the second year of study. Following the presentation, the team will receive feedback and guidance from the EEAC.

3. Outline for Final Report
At the end of fall quarter of the second year of study, each team submits an outline for the final report to the faculty advisors. The outline should include:
   a. Eco-E Opportunity overview
   b. Business model environment
   c. Current business model direction
   d. Environmental benefit. Describe how it can be quantified.
   e. Customer research methods to the extent completed. Describe anticipated methods, if not completed.
   f. Results to the extent completed. Include figures and tables to the extent completed. Describe anticipated results, if not completed.
   g. Discussion and conclusions to the extent completed.
   h. References

For each section of the outline, include as much information as completed to date and note the extent to which the section is completed, and/or any remaining obstacles to its completion (e.g., data availability).

As an appendix to the outline, describe the work to be completed in the winter quarter and a timeline for remaining tasks and deliverables. Keep in mind that the draft background, methods and preliminary results are due to the faculty advisors by the end of the fifth week of winter quarter and the complete draft final report is due at the end of the seventh week. Build in sufficient time for the team’s editor to review and revise the draft final report so that the various sections are written in a single, professional voice. The draft final report should be the team’s first best effort to present its work!

4. Evaluations
Each individual on the team must complete a self and peer evaluation and submit them to the Eco-E Project Coordinator by the last day of classes in fall quarter. This form will be provided to students via GauchoSpace.

Teams must complete these deliverables by the end of fall quarter to the satisfaction of their faculty advisor(s). Failure to do so will result in a grade of B- or lower, or I (incomplete) or NG (No Grade) in ESM 402B until the work is completed.
C. ESM 402C (Winter Quarter)
Students must enroll in ESM 402C Eco-E Project in Environmental Science and Management for 4 units with their advisor in the winter quarter of the second year of study.

Students should meet twice a week in winter quarter with (1) all team members and (2) all Eco-E Project teams and the 402-series instructor (i.e., the weekly “Eco-E Lab” sessions for 402C) or all team members and the faculty advisor(s).

The following academic deliverables are due in or at the end of winter quarter (see timeline for dates):
   a. Draft overview, business model environment, research methods and results, business model, (Week 5)
   b. Eco-E Project Faculty Review (Weeks 5 and 6)
   c. Complete draft final report (Week 7)
   d. Final report (End of winter quarter)

Teams must complete these deliverables by the end of winter quarter to the satisfaction of their faculty advisor(s). Failure to do so will result in a grade of B- or lower, or I (incomplete) or NG (No Grade) in ESM 402C until the work is completed.

1. Final Report
The final report is a complete discussion of the Eco-E Opportunity, business model environment, business model iterations, proposed business model based on validated learning, research methods and results, and environmental benefit(s) to be derived from the proposed business model. A draft of the overview, business model environment, research methods and results, and business model must be submitted to the faculty advisors by the end of Week 5. A complete draft of the final report must be completed by the end of Week 7. The revised final report is due at the end of winter quarter (see timeline for dates). The deadline for the final report is firm. If additional time is needed, the team must complete a formal petition including justification for an extension to the deadline. If a petition form is needed, please contact the Group Project Coordinator.

The Final Report typically includes the following:

- Title page
- Completed signature page
- Brief description of Eco-E venture (not to exceed 200 words)
- Executive summary (not to exceed 4 pages)
- Table of contents
- *Overview of Eco-E Opportunity, including environmental problem analysis, environmental policy analysis and environmental solution analysis
- *Business model environment (context, design drivers and constraints), including industry/market analysis and analysis of analogous business models
- *Research methods and results
- *Business model, including discussion of business model iterations and environmental benefit(s) to be derived from the proposed business model
- Next steps for future research
- Appendix, including technical literature review

*A draft of Eco-E Opportunity overview, business model environment, research methods and results, and business model is due to the faculty advisor at the end of Week 5 of winter quarter. A complete draft of the final report is due to the faculty advisor at the end of Week 7 of winter quarter. The revised final report is due at the end of winter quarter.
The final report should acknowledge any individuals or organizations that have supported the project in any significant way. Students must obtain their permission to include such acknowledgement; supporters have the right not to be publicly associated with the final report.

Adherence to accepted rules of citation is required. Teams should use the Chicago Notes and Bibliography style guide for all citations and use it consistently. Chicago footnotes are part of the “Notes and Bibliography” citation style. These footnotes are used to cite the sources you refer to in your text. Only readily retrievable sources are acceptable. The Chicago style includes the footnote and an alphabetical bibliography that lists all of your references. The bibliography can also include sources that you consulted but did not cite.

Interviews should be listed separately from written sources (i.e., “List of Interview”), following the Bibliography. For interviews, include the date of the interview, whether it was conducted in person or by phone, name of interviewee, name(s) of interviewer(s), and location for in-person interviews (or location of interviewee).

Teams should expect multiple revisions and iterations with the faculty advisor before their report is finalized. It is strongly recommended that one team member should serve as the editor to review all sections of the final report to make sure that the report is presented in a single and professional voice. It is NOT acceptable to submit a draft report that cobbles together several sections created by different team members without at least one team member (the editor) having reviewed all sections to make sure that the style and level of detail are consistent throughout the report.

Students and advisors must discuss and agree upon a realistic timeline and have consistent expectations for the review process. Some advisors will expect drafts earlier and may require longer periods for review and comment than others. In general, students should expect that their advisors will require at least one week, but maybe two weeks, to thoroughly review the report. More than one iteration likely will be necessary before the advisors find the report to be acceptable. The project timeline must take into account the required iterations for review and revision of the report and other project deliverables. The team’s faculty advisors likely will be the only people who read and provide feedback on the complete draft final report. Faculty reviewers at the project’s faculty review (see below) are not expected to read the draft final report, although some may choose to do so. Some external advisors also may have the interest, time and expertise to review and provide feedback on some or all of the draft final report and/or other deliverables.

Final reports must not exceed 100 pages (including Appendices), and must be free of typographical, formatting, and other errors. Any deviations from the format guidelines must be approved by the faculty advisors prior to submission of the final report. All final reports must be formatted in compliance with “Bren School Filing Guidelines” (see Appendix II).

Once approved, each team must provide an electronic copy (PDF format) of the final report, including the completed signature page, to the Eco-E Project Coordinator, the Group Project Coordinator, and faculty advisors. Since the team's business model may be considered proprietary, the final report will not be posted to the Bren School website, unless all team members agree to post the final report to their Eco-E Project website.

2. Faculty Review
In Weeks 5 and 6 of winter quarter (see timeline for dates), each team presents a faculty review presentation of its project. By the end of Week 5, groups should have completed their draft of sections on the Eco-E Opportunity overview, business model environment, research methods and results, and business model and submitted it to their faculty advisors for review. The defense is an opportunity for students to present their approach to testing
their proposed business model, their lessons learned and next steps. The project faculty review is a checkpoint in the Eco-E Project process so that students receive feedback from other Bren faculty in addition to their advisors; the primary emphasis is on methodology, technical approaches, and preliminary results. At the time of the review, the project is still underway and students should integrate feedback from the faculty reviewers to the extent possible.

For the faculty review, teams will prepare a 20-25 minute presentation. The focus should be on the customer discovery research performed and preliminary results that validates the business model, key findings from the literature review, how the business model will generate environmental benefits and any current prototype or pilot project development. Following the presentation, two Bren faculty reviewers will engage students in 15-20 minutes of questions and discussion. It is recommended that no more than two team members present, since speaker transitions are disruptive and generally reduce the effectiveness of the presentation, especially when there is limited time. However, three team members can present if the team works on seamless transitions between the speakers to reduce disruption. All members of the team must be in attendance and will be part of a panel seated in front of the audience. The entire team will participate in answering questions, as appropriate. Every team member must present either the faculty review presentation or public presentation; teams should discuss in advance who will present at these events.

Teams should expect questions and criticism from their reviewers that may result in some revisions to their final reports. Faculty reviewers will likely not have been formally or informally involved in advising the project over the last year and hence can provide a new, fresh perspective. It is not expected that the two faculty reviewers will read the draft final report although some may choose to do so. It is the team’s responsibility during the faculty review to explain their work to the faculty reviewers and audience. The faculty reviewers provide oral and written feedback to the team summarizing the strengths of the project and/or recommendations for improvement. The Group Project Coordinator will collect and distribute written feedback to the team members and faculty advisor(s).

The entire Bren School community is invited to attend the Master’s Project faculty review presentations. The Group Project Coordinator makes all arrangements, including securing rooms and setting the defense presentation schedule. As a courtesy, teams should invite their external advisors to attend the project faculty review.

**D. ESM 402D (Spring Quarter)**

Students must enroll in ESM 402D for 2 units with their faculty advisor in spring quarter of the second year of study. Students should meet twice a week for the first 5 weeks of spring quarter with (1) all team members and (2) all team members and the faculty advisor(s).

The following academic deliverables are due in spring quarter (see timeline for dates):

a. Eco-E Project marketing collateral piece  
b. Eco-E Project poster  
c. Eco-E Project final presentation  
d. Website (revised and archived)

At the end of the fourth week of spring quarter (April 24, 2020), the Bren School hosts a special public event featuring presentations of the Group and Eco-E projects. The School invites academics from other UCSB departments and other universities, environmental professionals, Corporate Partners, and other Bren affiliates, in addition to the entire Bren community and public at large. Teams should personally invite their external advisors and other professionals with whom they interacted over the course of their project. Students may also extend invitations to personal guests.
1. Marketing Collateral Piece
Each team must prepare a marketing collateral piece that communicates the venture’s marketing strategy (see Appendix VI). Pictures and diagrams are encouraged, as is the use of color.

A draft of the project brief must be submitted to the faculty advisor(s) by the second Friday in spring quarter (see timeline for dates). The faculty advisor(s) is expected to provide feedback on the project brief within one week or so. Students are expected to integrate the feedback and submit an electronic (PDF) copy of the final project brief to the faculty advisor(s) and Eco-E Project Coordinator by the end of the third week of spring quarter.

Groups should make enough (at least 100) hard copies of their marketing piece for distribution at the Master’s Project Final Presentation event. This event typically attracts approximately 400 people. Teams also should upload the final marketing collateral piece to their Eco-E Project website.

2. Project Poster
Each team must prepare a professional poster that summarizes the Eco-E Project. The poster is a visual way to communicate the Eco-E Opportunity analysis. Since the business model is considered proprietary, only the Eco-E Opportunity analysis is required.

Students should create unique poster designs, but every poster must include the project title, names of all Eco-E Project members and faculty advisors at the top of the poster, and the Bren logo, “Bren School of Environmental Science & Management, University of California, Santa Barbara,” and the event date. You also may include your own logo.

The Eco-E Project poster should include the following information:
- Environmental problem analysis
- Environmental policy analysis
- Environmental solutions analysis
- Core customer problem
- Proposed solution
- Proposed environmental benefits

Information regarding project posters is available on the Bren School website at: http://www.bren.ucsb.edu/services/student/documents/PosterWorkshop2018Horst_000.pdf. The poster should be at least 48 inches by 36 inches (but no larger than 72 inches by 48 inches) including borders and must be laminated so that it may be preserved for future use.

A draft of the project poster must be submitted to the faculty advisors by the second Friday in spring quarter (see timeline for dates). The faculty advisors shall provide prompt feedback on the poster within a week. Students should integrate the feedback and submit an electronic (PDF) copy of the final project poster to the faculty advisors, Eco-E Project Coordinator, and Group Project Coordinator by the end of the third week of spring quarter. Teams should also upload the final project poster to their Eco-E Project website.

Students should contact a poster printer several weeks before the poster will be printed. The Bren School has an agreement with PIP (www.pipsantabarbara.com) so that posters may be directly paid by purchase order. If you would like to use PIP, please contact the Purchasing Coordinator to request a purchase order. You also may select another printer and request reimbursement for poster printing expenses.

Ask the printer what format they can print, how large the poster can be, and what resolution (dpi or ppi) is needed for any photos or other graphics. Tell the printer when the digital file will be provided and when the poster must be picked up. Posters should be
printed no later than the Monday of the fourth week of spring quarter so that any mistakes can be corrected. Posters must be laminated or otherwise coated for durability. Please do not print on vinyl material; the weight is too heavy and it will ‘sink’ in the poster display cases.

The project posters will be displayed at the Master’s Project Final Presentation event on Friday of the fourth week of spring quarter. The Group Project Coordinator will collect all posters after the poster session. The posters will be displayed in the hallway of the third floor lab wing of Bren Hall for the subsequent year.

3. Final Presentation
Master’s Project final presentations celebrate the completion of innovative, leading edge research and offer the opportunity for Bren MESM students the opportunity to share their work with the faculty, peers, potential employers, members of the community, family and friends. The final presentation should focus on the project findings and their significance. Final presentations contribute to the reputation and prestige of the Bren School and, hence, on the value of the students’ degrees. All 2nd year MESM students are expected to participate in the final presentations. Participants are advised to dress in business attire.

Each team has 40 minutes, which includes 20-25 minutes for the presentation and 15-20 minutes for questions. It is recommended that no more than two team members present, since speaker transitions are disruptive and generally reduce the effectiveness of the presentation, especially when there is limited time. However, three team members can present if the team works on seamless transitions between the speakers to reduce disruption. All members of the team must be in attendance and will be part of a panel seated in front of the audience. The entire team will participate in answering questions, as appropriate.

The audience at the final presentations is different than the audience at the faculty review presentations. The final presentations need to be understandable to a diverse group (employers, experts, non-experts, family, and friends, etc.). This does not mean that it is necessary to "dumb down" the presentation. However, students should prepare a presentation for an audience that is more interested in substance and findings and less interested in, for example, analytical methods or data management.

Teams will have a videotaped practice session in advance of the final presentation.

Each project has one page in the Master’s Final Presentations program. A brief description, along with the project title, team members, advisor(s), and acknowledgements must be sent electronically to the Group Project Coordinator by the end of the winter quarter (see timeline for date).

4. Website
The team should continue to update their website during the project. The website should be well designed, accurate, and simple to navigate. By the end of the project, the website should describe the Eco-E Opportunity, in addition to names of team members, faculty advisors and external advisors. The team should remove any information from the website that will not remain accurate (e.g., email addresses, resumes or CVs).

5. PROJECT EVALUATION

A. Faculty Evaluation of Students
Each student on the team will receive a separate grade for each quarter of the project (ESM 402A/B/C/D). If a team performs well together, it is likely that all team members will receive the same grade, but this is not guaranteed.
Student performance on an Eco-E Project is evaluated and graded based on demonstrated critical thinking, depth of understanding, interdisciplinary approach, originality, external development, resourcefulness, professionalism, and communication skills. Specific criteria that faculty advisors will use in assigning project grades include:

1. A critical perspective on the viability of the business model. This should include analysis of lessons learned through customer research.

2. A working understanding of the published literature and facts immediately relevant to the environmental problem addressed by the new venture. A literature review should be largely completed by the end of fall quarter of the second year.

3. Knowledge and synthesis. A working understanding of the social and natural science dimensions of the issues and an aggressive plan for integration of these dual perspectives into the project.

4. Originality. Originality of analysis and all ideas and concepts set forth in the business model. This should be demonstrated throughout the project.

5. Relationships. Formation of working relationships with industry experts and environmental professionals outside of the Bren School. Students will have to identify sources of information, outside consultants, and/or experts who can provide assistance to the Eco-E Project.

6. Resourcefulness. Throughout the project, students shall demonstrate initiative in finding information, performing customer research, seeking outside advisors, and establishing internships for themselves, as appropriate.

7. Punctuality. Students shall deliver intermediate and final products on schedule.

8. Knowledge and analytical thinking. Students shall gain knowledge about the environmental problem, conduct a rigorous scientific analysis and produce well-reasoned conclusions and recommendations.

9. Communication skills. Oral presentations and written reports shall be well-organized, professional, and well-communicated. Each team member must co-present the work orally, either at the Faculty Review or Public Presentation, and be present and participate in both events.

   All team members, particularly Project Managers, are expected to communicate concerns and issues with each other and their faculty advisors in a timely manner.

10. Participation. Students shall participate and actively contribute in meetings, training sessions, and events.

**B. Student Evaluation of Faculty Advisors**

At the end of the project, all Eco-E Project members should complete an evaluation for their faculty advisor(s) and submit it to the Group Project Coordinator (see Appendix I). The Group Project Coordinator compiles all comments for anonymity and provides them to faculty only after the final grade for ESM 402D is issued.

In the event that there are any serious advising problems mid-way through the project, this should be brought to the attention of the Eco-E Project Coordinator or the Assistant Dean.
for Academic Programs. These staff understand and are committed to respecting privacy and anonymity in working with students to try to find solutions to problems.

6. CREATING A PROJECT BUDGET

Each Eco-E Project is allotted $1,300 as a base budget, and up to an additional $200 of printing at the Bren School. The Financial Manager (FM) for each team must attend a meeting with the Bren School’s Finance Team in spring of the first year of study in order to activate the team’s account.

Each team must create a budget for its project, estimating expenses to the best of its ability and accounting for the following costs:

   a. Phone calls
   b. Final poster (laminated)
   c. Marketing collateral piece
   d. Printed copy of final poster (if requested by faculty advisor)

In addition to the above costs, each team must consider appropriate additional expenses such as travel, software, datasets, laboratory fees, business cards, reference books, poster production, presentation materials, photocopying, and research expenses when preparing the budget. The budget is for reasonable expenses related to the Eco-E Project.

Bren School Purchasing Procedures:
http://www.bren.ucsb.edu/services/admin/purchasing_procedures.html

Please note: There are numerous restrictions to use of Eco-E Project funds provided by the Bren School. **These funds cannot be used (*see exception below) to pay for gifts, awards, or donations.** There are strict eligibility requirements related to hiring. The team’s Financial Manager must discuss all potential hires with the Bren School’s Business Officer before proceeding with the hire. Restrictions related to use of funds for food and beverages are as follows:

- Funds may only be used for food and beverages associated with entertainment/business meetings if (1) prior approval is obtained from the Bren School’s Business Officer; and (2) the entertainment is associated with a meeting that includes other people who are not from the University (i.e., external advisor). **The funds cannot be used to provide food and beverages for meetings that include only UC personnel and/or students.** There are NO exceptions to this UC policy.
- Funds may only be used for food and beverages related to travel if the travel conforms to UC travel policies (http://www.bren.ucsb.edu/services/admin/travel_regulations.html).

*Under special circumstances, the team can request an exception to policy for expenditure for a gift. However, request for exception to the policy must be made to the Bren School’s Business Officer in advance of the expenditure and approval is not guaranteed.

Bren School Financial Unit
Eco-E Project members will likely interact with some or all of the Bren School’s Financial Unit staff over the course of their project.

- The Bren School’s Business Officer is the primary contact for budget matters related to Group Projects. The Business Officer is Kim Fugate (finance@bren.ucsb.edu; kim@bren.ucsb.edu); Bren Hall 2516; 805-893-3540.
• The Bren School’s Financial Manager assists with budget matters related to Group Projects. The Financial Manager is Bridget Mastopietro (finance@bren.ucsb.edu; bridget@bren.ucsb.edu); Bren Hall 2514; 805-893-7457.

• The Bren School’s Personnel/Payroll & Travel Coordinator processes paperwork related to travel associated with Group Projects. The Personnel/Payroll & Travel Coordinator Onella Gayraud may be reached at travel@bren.ucsb.edu; Bren Hall 2522; 805-893-6114.

• The Bren School’s Purchasing Coordinator processes purchase orders and reimbursements for items associated with Group Projects. The Purchasing Coordinator is Briny Litchfield (purchasing@bren.ucsb.edu; briny@bren.ucsb.edu); Bren Hall 2522; 805-893-6114.

• The Bren School’s Resource Coordinator processes parking permit requests and paperwork related to domestic travel. The Resource Coordinator is Dee White (dee@bren.ucsb.edu); Bren Hall 2400A; 805-893-8452.

Eco-E Project Financial Managers
Each team must designate one person to serve as the team’s Eco-E Project Financial Manager (FM). Teams inform the Group Project Coordinator of the name of the Eco-E Project Financial Manager by the first Friday of spring quarter of the first year of study. The list of student Eco-E Project Financial Managers will be provided to the Bren School’s Finance Team and an informational/training meeting will be scheduled to discuss policies and procedures.

A. Project Codes
Each Eco-E Project is assigned a unique Project Code. A Project Code is an account number in the School’s internal accounting system designated to track expenses. Each Project Code number looks something like “GP087.” Team members must use this Project Code to identify charges (Purchase Orders [PO], faxes, phone calls, petty cash receipts, lab fees, etc.) for appropriate allocation and/or reimbursement.

B. Expense Tracking
The student Financial Manager will receive login information for GUS, the school’s internal accounting system used to track expenses. Students may log into GUS at any time to check their group’s budgetary activity. The student Financial Manager will be responsible for tracking, managing, communicating about, and updating the group’s budget. If expenses (phone, copies, travel, etc.) exceed the budgeted amount, the reimbursement requests will be returned, and the team members will be responsible for funding the activity. Please note: there may be a slight delay from the time a team makes a purchase or submits a reimbursement request to when it is posted in GUS. It is important for the student Financial Manager independently record and track all expenses for the team to avoid exceeding the project budget. Students are responsible for paying expenses above the project budget or not in compliance with UCSB and Bren School policies.

C. Printing
Each team receives up to $200 of printing on Bren Hall printers. These funds CANNOT be used for the printing of final posters or marketing collateral; they are for use on Bren Hall printers only. These funds must be transferred to the individual printing accounts of Eco-E Project members. If teams require more than $200 of Bren printing, then teams must request a transfer of some of their project funds to printing accounts. If there are not adequate funds remaining and teams require more printing, they will have to pay for it themselves and the charge will be billed to students’ BARC account.
D. Copying
Bren copiers are for staff and faculty use only. Copying may be done at Davidson Library or the University Center.

E. Phone Authorization Code
Each Eco-E Project also receives a 5-digit phone authorization code, which allows members to make phone calls from any Bren Hall meeting room with an outside phone line. The telephones in the administrative offices are not available for student use. Instructions are below for how to make calls using an authorization code. All phone expenses are automatically allocated to each team’s Project Code.

F. Instructions for making Eco-E Project phone calls:
- Pick up the phone handset
- Dial #55. Wait for the confirmation tone.
- Dial the 5 digit phone authorization code. Wait to hear a dial tone.
- Dial 9 (to get outside dial tone), followed by the phone number.
- If there is an interrupted or “stutter” dial tone, reenter the Authorization Code.

G. Teleconferencing
The Bren School has several speaker phones, which can be reserved and checked out for conference calling. These phones, along with a specific meeting room that has as an outside phone line, can be scheduled by contacting scheduling@bren.ucsb.edu. When dialing the number, please use the phone call instructions above to ensure the call will be charged to the appropriate team account. Incoming phone calls to the specific phone line will not be charged to the team. A regular phone line can receive only one call at a time; however, conference phones may dial out to two different numbers. Please contact Finance Manager Bridget Mastopietro (bridget@bren.ucsb.edu) at least 24 hours before your event if you need a Ready Talk account (for two or more parties calling in) or a UCSB authorization code (required for long distance calls). Other options for conference calling include Skype or Zoom.

H. Visitor Parking Permits
Parking permits may be purchased for external advisors, etc. for parking on the UCSB campus to attend Eco-E Project meetings. To obtain a permit, contact Dee White (dee@bren.ucsb.edu) at least 48 hours before your visitor’s arrival, and provide the: 1) name of the Eco-E Project; 2) Eco-E Project Code; 3) name of the visitor and his/her affiliation; 4) date and time of arrival; and 5) location of the meeting (building and room number). Each permit costs $10/day and is charged to the Eco-E Project budget. Reserved parking (where a parking spot is designated for the visitor near Bren Hall) is more expensive ($30/day) and should be used only when the visitor is an important individual with a time constraint.

I. Purchasing
All purchasing must be processed through the Bren School Financial Office Coordinator. The preferred purchasing method is to email purchasing requests, the project team name, and project code to purchasing@bren.ucsb.edu so the Purchasing Coordinator can place the order. Another method of purchasing is to use personal funds to purchase the item and then submit a reimbursement request. Original receipt(s) are required for all expense claims. Student Financial Managers should understand purchasing policies and procedures (http://www.bren.ucsb.edu/services/admin/purchasing_procedures.html) and ensure that their team abides by these rules. Please note: Any non-consumable items purchased by the team with project funds are the property of the Bren School and must be returned to the school at the close of the project (e.g. an external hard drive). Purchase of clothing for Master’s Project final presentations, or other project-related activity is not allowed.
J. Reimbursement
If a vendor does not accept a purchase order, team members may use personal funds and then submit a receipt to the Purchasing Coordinator to be reimbursed. When submitting receipts for reimbursement, please complete a Miscellaneous Reimbursement Form and include the following:

- Original receipt with name of vendor, date, and description of what was purchased
- Name of person to be reimbursed
- Original signature

Teams have access to their Eco-E Project funding until the last day of spring quarter. In some instances, access can be temporarily extended with advance approval from the Business Officer.

K. Travel
All travel must be processed through the Bren School Financial Office. Student Financial Managers should familiarize themselves with the Bren School Travel Regulations. Questions regarding travel should be sent to travel@bren.ucsb.edu. All travel reimbursement claims must be submitted to the Bren School Travel Coordinator no later than 30 days upon completion of travel to allow time for internal processing, and transfer to the UCSB Central Accounting Office in time for the 45-day UCSB processing deadline.

L. Outside Funding
Most Eco-E Projects do not require outside funding and are able to fully complete the scope of work within the budget provided by the Bren School. Eco-E Projects may not be funded by an outside client. In order to compete in most new venture competitions and business plan challenges, all ideas and concepts set forth in the business model must be the original work of the team members. Funding by an outside client may jeopardize the team’s eligibility to compete.

Gifts
In limited circumstances, an external advisor or other external funding source may wish to make a contribution to support an Eco-E Project or the Eco-E Program. In this case, please contact the Bren School’s Assistant Dean for Development, Lotus Vermeer, lvermeer@bren.ucsb.edu. It is imperative that individuals and organizations are NOT solicited for gifts. Active fundraising by students without guidance from the Assistant Dean for Development is NOT appropriate. Any discussion about potential gifts to the Bren School should be directed to the Assistant Dean for Development. A gift cannot have deliverables of any kind. If there are deliverables, or if there is paperwork to be signed, it is highly unlikely that it is a gift. No one in the Bren School has the authority to sign paperwork related to acceptance of money.

7. COMPUTER RESOURCES
The following describes computer resources available to each Eco-E Project and recommended management practices. Most of these suggestions do not require any special privileges; those that require the involvement of the Bren School Compute Team are clearly noted.

A. Data Manager and Outreach Manager
Each team should designate a Data Manager (DM) who will have primary responsibility for maintaining the team’s shared online information. Designating a single Data Manager ensures that a team’s information is consistent by allowing only the manager to modify it (except as specifically described below). The Data Manager should also be responsible for briefing team members on the use of directory and file permissions and managing
Each team should also designate an Outreach Manager (OM). The Outreach Manager also will manage public communications, such as educational materials about the project, a public blog, etc., on behalf of the team and be responsible for presenting at a Flash Talk presentation to provide a public update on the team’s progress during the beginning of fall quarter of the second year of study.

B. Project Alias
Each team chooses a short alias (less than 20 characters) for their project. The alias is used to label the project’s online artifacts (directories, mailing lists, etc.) and identify the project in shorthand. The alias should be professional and should reflect some aspect of the team’s research topic.

C. Team Email List
Each team will be added to an email list for their project; the email is gp-alias@bren.ucsb.edu. This will be used as a contact email for the entire team and is accessible to Bren staff and outside parties. Teams can also make an internal list for only team members and/or their advisors as necessary. Directions for setting up a Google Group are located here: https://bren.zendesk.com/hc/en-us/articles/115002102646-How-do-I-get-an-email-list-for-my-group-project

D. Shared Directory
The Bren School Compute Team will create a directory on the shared drive for each Eco-E Project. The shared directory will be named “[alias],” and will be housed on a Bren School Windows server (Babylon). This shared directory will be accessible from all Windows systems in the ESM domain via \babylon\GroupProjects2020GPSHARE. For Eco-E Project members, this will be mapped to G:\. The pathname “gpshare” in the remainder of this document refers to this shared directory.

E. Team Access Permissions
The Bren School Compute Team will create a Windows group for each Eco-E Project, named “[alias].” The members of these Windows groups will be the student members of each team and their faculty advisors. Unless otherwise specified, all files and directories discussed in these guidelines will be owned by the team’s Data Manager. The Data Manager should assign, read, and execute permissions to the members of the team. The Data Manager and all team members are responsible for ensuring that the Windows group “ESM – System Admins” have “full control” permissions on all directories within the Eco-E Project's directory structure that the team wishes to be backed up. Without appropriate permission, regular backups of a team’s electronic files will not occur, and lost files will not be recoverable. Students can access the permissions for a folder or files by right-clicking on it -> Properties -> Security.

F. Working Documents (Recommended)
Each team’s Data Manager may create a team-writeable directory GPSHARE\workdocs, under which each project member may create their own subdirectory GPSHARE\workdocs\member. These subdirectories should be readable by a team’s Windows group, but writeable only by the owner and the Data Manager. The protocol for collaborating on a document is as follows: Each collaboratively authored document should be assigned a lead author who is responsible for maintaining the master copy. Each collaborator should be free to place components or edited versions in their own GPSHARE\workdocs\member\document subdirectory, where the document has a unique name for the document, assigned by the document’s lead author. It should be the lead author’s responsibility to synthesize the final version of the document for submission to the Data Manager to post for the team members to read.
G. Library (Recommended)
Each team’s Data Manager may create a team-writeable directory \$\text{GPSHARE}\text{library}, in which team members can place static (i.e., read-only) documents for the project to share. Team members should give the Data Manager their files that they would like to house in the Library. This directory should be “read only” for all team members with the exception of the Data Manager.

H. Calendar (Optional)
Each team’s Data Manager and/or other specified team members may maintain a project calendar for project events and deadlines, Google Calendar, etc. Each student has an individual Google Calendar account, which can be used to propose Eco-E Project meetings, etc. Please remember that when using individual accounts, only the person proposing the meeting may make changes to the meeting. Therefore, one person should be selected to schedule meetings. For more Google Calendar information, visit: 

I. References (Optional)
Each team’s Data Manager may maintain a shared file of bibliographic references that will be incorporated into project reports, papers, etc. The Bren School currently supports EndNote bibliographic software, which can be installed upon request on an Eco-E Project computer. Some teams choose to use an online citation manager; basic accounts are often free.

J. Public Website (Required)
Each team is required to create a public website. Students may select the program in which to design the website (e.g., Weebly, Wix, Dreamweaver, etc.). A web design workshop for Outreach Managers will be offered in the spring quarter of the first year of study to provide instruction on website design, if needed.

The Outreach Manager is responsible for attending training workshops, designing and maintaining the team’s website, and posting information in a timely manner. The Outreach Manager must verify all links on the team’s web pages when editing or adding information to them. In the spring quarter of the second year of study, the Outreach Manager must conduct an assessment of their site and complete revisions as appropriate.

Functioning website links must be sent to the Group Project Coordinator by the end of spring quarter of the first year of study (see timeline for date).
Appendix I

Evaluations

Peer & Self Evaluation:
The team evaluation form will be submitted via GauchoSpace. The form template will be posted on GauchoSpace two weeks prior to the end of each quarter.

Faculty Evaluation:
The faculty evaluation will be submitted via Survey Monkey. The Group Project Coordinator will send a link to the survey in the second half of spring quarter of the second year of study. Survey results will be kept anonymous, compiled in summary format, sent to advisors and recorded in personnel files.
Responsibility for the Content of the Final Report
The team members and faculty advisors are responsible for the content of the final report. The faculty advisors must review the entire draft report before giving final approval. This review includes:

- All preliminary pages or front matter (e.g., preface, dedication, acknowledgements, etc.)
- The main body of the report (including figures, charts or other inserted matter)
- The back matter (e.g., notes and bibliography, appendices, etc.)

In general, no changes may be made to the final report after the faculty advisors have signed the approval page. If changes are necessary after the faculty advisor has approved the report, the team must have their advisor(s) sign a new approval page.

The organization, presentation, and documentation of each Eco-E Project must meet the standards set by the faculty advisors and the Bren School. For general information, students may consult a standard style guide; The University of Chicago Manual of Style is recommended as an authoritative source. Students who have discipline-specific questions should consult their faculty advisor(s).

Eco-E Project title and signature page requirements

Title page requirements
Each Eco-E Project final report must include a title page with the following information:

- Company Logo (optional)
- Title of the Eco-E Project (name of Eco-E venture and tagline)
- "Master of Environmental Science and Management" as the students' degree objective
- Bren School of Environmental Science & Management, University of California, Santa Barbara
- Names of team participants (alphabetical order recommended) and faculty advisor(s)
- Month and year the project is signed by the faculty advisor(s)

Signature page requirements
The format of the signature page is displayed in Appendix IV. The signature page should be placed immediately following the title page. The signature page should not be numbered but should be counted toward subsequent numbering.

Due to concerns over privacy, if the Eco-E Project final report will be posted to the Bren website, students may include an unsigned signature page in the .pdf of their final report. The unsigned signature page must include the typed names of students, in alphabetical order, followed by a section with names of faculty advisors, also in alphabetical order. “This Eco-E Project is approved by:” must appear immediately above the faculty advisors’ names. The approval page must contain the month and year the project is signed by the faculty advisors.

Eco-E Project faculty advisors and project members must sign the original printed copy of the signature page, whether or not the signed page is included in the final report. All
signatures must be in black or blue ink; no other color ink is acceptable. The typed name of the person signing must appear immediately to the right of or below the signature.

The signed signature page, rather than a blank, may be scanned and displayed in the final report, immediately following the title page, but signatures will be redacted from the version posted online.

**Standards for Eco-E Project titles**
The Eco-E project title should use specific, unambiguous descriptive words that will ensure electronic retrieval. Do not use formulae, symbols, superscripts, Greek letters, or other non-alphabetical symbols in the title. Eco-E project titles should represent the name of the new venture or provide a brief description of the new venture (i.e., tagline). Titles that contain more than 10 words are considered wordy. Subtitles should be used only when absolutely necessary.

**Dates on title and signature pages**
The approval/signature page and the title page must have the month and year the project is signed by the faculty advisors.

**Table of Contents**
A table of contents is required. The table of contents should include the major chapters, subchapters, and figures and tables.

Other preliminary pages such as those for acknowledgements or list of figures and charts are optional.

**Brief Description**
A brief description is required. It should provide a brief synopsis of the Eco-E venture and be succinct (200 words). The brief description should be placed following the table of contents and any optional preliminary pages (i.e., acknowledgements).

The table of contents, other preliminary pages, and brief description must meet all formatting requirements delineated below. All preliminary pages, with the exception of the title page and approval (signature) pages, must be numbered with lower case Roman numerals beginning with Roman numeral iii; see below for additional information on pagination and placement of page numbers.

**Key Words**
Select up to 10 key words to describe the project

**Executive Summary**
The executive summary has more detail than the brief description and should be no longer than four pages. Since most people will read the summary rather than the entire report, it should include, at a minimum, the compelling Eco-E opportunity (core customer-problem-environment-solution) and concise description of the proposed business model. **The executive summary should be text only; do not include graphs or photos.**

**Legibility and appearance**
The final report must be produced using a font that is highly legible and dark enough that it can be reprinted clearly.

**Dimensions**
The final report must be formatted to letter-size (8.5 x 11 inches). For information on handling oversize materials such as maps, please consult the Group Project Coordinator.

**Margins**
The following are minimum margin dimensions. The group may set larger margins but must be sure that the final text is well within these guidelines.

**LEFT** = 1.25 inches (this margin is wide for binding requirements)
**TOP** = 1 inch from top of paper
**RIGHT** = 1 inch
**BOTTOM** = 1 inch from bottom of paper

Aside from page numbers, nothing must intrude into the margins. These minimum specifications also apply to all figures, charts, graphs, illustrations and appendices. When oversize pages are used, the same margin measurements must be maintained.

**Page Numbers**
Page numbers should be centered on the page 0.75 inches from the bottom of the edge of the page. Placement of page numbers must be consistent throughout the final report. Provide space between the text and the page numbers.

**Pagination**
Every page must be numbered consecutively. Except where noted below, each page of the entire report must be numbered in accord with the following standards:

Neither the title page nor the approval (signature) page is to be numbered; however, these two pages are counted when numbering the following preliminary pages even though they are not numbered.

The preliminary pages following the title and approval pages must be numbered sequentially beginning with lower case Roman numeral “iii.” All preliminary pages are to be numbered using lower case Roman numerals (iii, iv, v, vi, etc.). This includes dedications; the tables of contents; lists of figures, tables, symbols, illustrations, and photographs; prefaces; acknowledgments; and brief description.

The main body of the text and any back matter must be consecutively numbered with Arabic numerals (1, 2, 3, etc.), including text, illustrative materials, bibliography, notes, and appendices.

Correct pagination is required for the final report to be acceptable: no missing pages, blank pages, or duplicate numbers or pages.

**Line Spacing**
The final report should be single spaced with double spacing between paragraphs and sections.

Single spacing should also be used in those places where conventional usage calls for it, i.e., title page; figure, table, and photo captions; footnotes; indented quotations; and bibliography. When individual footnote or bibliographic entries are single-spaced, there must be double spacing between entries.

**Fonts and Font Sizes for the Text and Notes**
A font size of at least 12 point must be used for the basic report text. Standard fonts such as Arial, Century Gothic, Helvetica, Verdana, Tahoma, or Times are recommended.

A font size of at least 10 point must be used for footnotes and captions. Script, calligraphy, italics, and specialized art fonts are not acceptable for the main body of the text.

Italics may only be used for quotations, headings, labels, book titles, foreign words, scientific names or occasional emphasis. Fonts for appendices, charts, drawings, graphs,
and tables may differ from that used for the text. The print should be letter quality with dark black characters that are consistently clear and dense.

**Filing the Eco-E Project Final Report**

Once the faculty advisors approve and sign a team’s project, no changes can be made to the final report. The final report, including the completed signature page, must be submitted in electronic (.pdf) format to the Eco-E Project Coordinator and Group Project Coordinator by the end of winter quarter. A petition is required for late submissions. Please contact the Group Project Coordinator with any issues or questions about these guidelines.

The Group Project Coordinator will review each final report to verify that it meets the filing standards and will notify each team if corrections are necessary.

**FORMATTING & FILING CHECKLIST**

<table>
<thead>
<tr>
<th>CHECKLIST AREA</th>
<th>BREN REQUIREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Legibility</strong></td>
<td>Clear and legible font used.</td>
</tr>
<tr>
<td>Dimensions</td>
<td>8.5 x 11 inches (exceptions made for oversize or special materials).</td>
</tr>
<tr>
<td>Number of copies</td>
<td>One electronic (.pdf) copy of final report for Bren School</td>
</tr>
<tr>
<td>Margins</td>
<td>Left margin at least 1.25 inches; top line of type, right margin, and bottom line of type at least 1 inch from edge. Other than page numbers, nothing intrudes into margins.</td>
</tr>
<tr>
<td>Page Number Placement</td>
<td>Page numbers placed 0.75 inches from bottom edge of pages and consistently placed throughout the report.</td>
</tr>
<tr>
<td>Pagination Standards</td>
<td>Each page of final report numbered (except title and approval pages). No missing, blank, or duplicate numbers or pages. Lower case Roman numerals used on preliminary pages. Arabic numerals used to number text and back matter.</td>
</tr>
<tr>
<td>Numbering of Preliminary Pages</td>
<td>Title and approval pages counted but not numbered. Subsequent pages (e.g. the table of contents) numbered beginning with Roman numeral iii.</td>
</tr>
<tr>
<td>Spacing Between Lines</td>
<td>Text single spaced, except where conventional usage calls for only single spacing (title page, long quotations, etc.) or double spacing (between paragraphs and sections).</td>
</tr>
<tr>
<td>Fonts &amp; Font Sizes</td>
<td>A font size of at least 12 point for preliminary pages and text. A font size of at least 10 point for footnotes and captions. Use of standard font recommended.</td>
</tr>
<tr>
<td>Dates Used On Approval and Title Pages</td>
<td>Month and year the faculty members will sign the approval and title page.</td>
</tr>
<tr>
<td>Brief Description</td>
<td>Not to exceed 200 words</td>
</tr>
<tr>
<td>Executive Summary</td>
<td>Not to exceed 4 pages</td>
</tr>
<tr>
<td>Standards Governing Taglines</td>
<td>Concise taglines (not to exceed 10 words) that summarize the new venture.</td>
</tr>
<tr>
<td>Faculty Signatures on Approval Pages</td>
<td>Faculty advisors signatures in black or blue ink.</td>
</tr>
<tr>
<td>Responsibility for Content</td>
<td>Students and faculty advisors responsible for all content of the final report. Primary faculty advisor(s) must review entire final report before signing.</td>
</tr>
</tbody>
</table>
Appendix III

Sample Final Report Title Page

UNIVERSITY OF CALIFORNIA
Santa Barbara

LOGO (OPTIONAL)
PROJECT TITLE

An Eco-E Project submitted in partial satisfaction of the requirements for the degree of
Master of Environmental Science and Management
for the
Bren School of Environmental Science & Management

by

MEMBER NAME
MEMBER NAME
MEMBER NAME
MEMBER NAME
MEMBER NAME

Committee in charge:

ADVISOR NAME
ADVISOR NAME
(if more than one)

MONTH AND YEAR OF FILING
Appendix IV

Sample Final Report Signature Page

PROJECT TITLE

As authors of this Eco-E Project report, we are proud to archive this report in the Bren School’s library of Eco-E Projects. Our signatures on the document signify our joint responsibility to fulfill the archiving standards set by the Bren School of Environmental Science & Management.

_________________________________
MEMBER NAME

_________________________________
MEMBER NAME

_________________________________
MEMBER NAME

_________________________________
MEMBER NAME

[The faculty advisors may change this statement prior to submitting this report].

The Bren School of Environmental Science & Management produces professionals with unrivaled training in environmental science and management who will devote their unique skills to the diagnosis, assessment, mitigation, prevention, and remedy of the environmental problems of today and the future. A guiding principal of the School is that the analysis of environmental problems requires quantitative training in more than one discipline and an awareness of the physical, biological, social, political, and economic consequences that arise from scientific or technological decisions..

The Eco-E Project fulfills a core requirement for the Master of Environmental Science and Management (MESM) Program. The project is a year-long activity in which small teams of students conduct customer discovery research to develop a business model for a new environmental venture, in addition to focused, interdisciplinary research on the scientific, management, and policy dimensions of a specific environmental issue. This Eco-E Project Final Report is authored by MESM students and has been reviewed and approved by:

_________________________________
ADVISOR

_________________________________
ADVISOR

_________________________________
DATE
## Appendix V

### Sample Eco-E Project Budget

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference Calls</td>
<td>$30</td>
</tr>
<tr>
<td>Marketing Collateral</td>
<td>$200</td>
</tr>
<tr>
<td>Software</td>
<td>$100</td>
</tr>
<tr>
<td>Presentation expenses</td>
<td>$50</td>
</tr>
<tr>
<td>Final poster production and lamination</td>
<td>$240</td>
</tr>
<tr>
<td>Conference attendance</td>
<td>$360</td>
</tr>
<tr>
<td>Administrative supplies</td>
<td>$20</td>
</tr>
<tr>
<td>Business cards</td>
<td>$60</td>
</tr>
<tr>
<td>Travel / Site visits</td>
<td>$240</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$1,300</strong></td>
</tr>
<tr>
<td><strong>Printing</strong></td>
<td><strong>$200</strong></td>
</tr>
</tbody>
</table>

* Printing budget is fixed at $200 to an individual in the Eco-E Project.*
Appendix VI
Eco-E Project Marketing Collateral Piece Guidelines

The importance of clearly articulating your customer’s need and communicating the value of your new venture is paramount. One of the most important phases occurs at the end: Preparing your final report, final presentation, poster and marketing collateral piece. The marketing collateral piece is particularly important since it represents messaging to your customer.

Content of the Marketing Collateral Piece
The marketing collateral piece is intended to be a form of marketing communication aimed at your customer(s). It is important that the piece be polished, eye-catching, substantive, technically impressive and easy to read at multiple levels (a skim, a casual read, a careful read).

Use graphics, tables, summary boxes, headings and whatever works to convey your messages. Color is appropriate, although keep in mind that some people may print the brief in black and white; color must be readable and intelligible when rendered in black and white.

A successful marketing collateral piece follows three overarching design principles:

- **Fundamentally sound**: contains clear messaging of benefits (benefits over features), targets a specific customer segment and clearly articulates customer pain points.
- **Educational**: addresses a new way for customers to think about a business challenge they are experiencing or leads the customer to desire your solution to solve their challenges.
- **Advocate friendly**: easy to share and targets advocates who may influence the purchase decision.

Technical Guidelines
The length of the marketing collateral piece is two pages, 8.5” x 11.” Print the piece on a single piece of paper (back-to-back). For text, use single spacing. It is recommended to use 11 point Garamond type (or something comparable), 0.75 inch margins, flush left and right, and 0.5 inch between any columns. Section headings may be in larger type.

You may change the template for the marketing collateral piece. Please submit your marketing collateral piece to the Eco-E Project Coordinator for review before the due date (see timeline overview).