



UC SANTA BARBARA  
Bren School of Environmental  
Science & Management

Business Model Development for New Environmental Ventures  
ESM 402A, Spring 2025

Class: MW 12:30-1:45 pm

Instructor: Emily Cotter  
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Office Hours: By Appointment (See Booking Calendar)  
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**Course Description**

ESM 402A teaches students how to practice evidence-based entrepreneurship and rigorously evaluate a business idea that could make a positive and measurable environmental impact. Students will test their assumptions and gather evidence to reduce risk and uncertainty, in order to develop a viable business model. This class is not about how to write a business plan. It is about how to turn a great eco-opportunity into a viable business model, with the intention of launching a new environmental venture.

Working on a team, students will learn how to use a business model to brainstorm each part of the new environmental venture and how to use customer development to get out of the classroom to see whether anyone would want/use your product or service. Each week will be a new adventure outside the classroom, as students test each part of their team's business model and then share the hard-earned knowledge with the rest of the class.

This course is structured as a "lab," using a flipped classroom approach. Instructional content will be reviewed outside the classroom, while application of that content will occur in the classroom. Therefore, students are responsible for watching lectures online and reviewing supplemental materials as homework. Class sessions will be used for teams to work on their business model hypotheses, including:

- Developing their initial hypotheses;
- Discussing plans to test their assumptions;
- Sharing lessons learned (key insights from research results);
- Validating/invalidating hypotheses;
- Creating pivots; and,
- Planning their next steps.

Teams will also work with assigned mentors to develop their hypotheses, plan their research, and apply their learnings.

## **Idea Generation**

As part of the educational process, throughout the Environmental Innovation & Entrepreneurship (“Innovation”) program, individual students will bring a variety of ideas and information to a class project for discussion, review, and analysis. Any ideas or information introduced to a class project by an individual student will be available for use by any student team member, both during or after the class project, for any purpose, unless it is Prior IP. Prior IP is intellectual property that is developed by a student before the class 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 Innovation class project may be used by all student team members in the course of the class project for academic purposes only.

To avoid misunderstandings and confusion, if a student wants to contribute Prior IP to an Innovation class project, that student should clearly identify it as Prior IP to the other student team members and notify the instructor that the Prior IP is being contributed to the class project for academic use in the Innovation class project.

## **Course Software**

Box – File Sharing Service

Canvas – Learning Management System

Google Drive – File Storage and Synchronization Service

Slack – Messaging Application – Students should register for an account with Slack and join the **mesm2026eco-e** workspace.

Zoom – Online Conference System

## **Required Videos**

Udacity

How to Build a Startup – The Lean LaunchPad, Steve Blank

<https://www.udacity.com/course/how-to-build-a-startup--ep245>

Students must register online to view the lectures.

## **Required Reading**

*Harvard Cases*

Cases are listed in the schedule below. See course entitled “Business Model Development for New Environmental Ventures (ESM 402A, S25)” on Harvard Business Publishing site at:

<https://hbsp.harvard.edu/import/1282495>

All the cases are listed under the Harvard course entitled “Business Model Development for New Environmental Ventures (ESM 402A, S25).” Each Harvard Case costs \$4.50-\$8.75. The total approximate cost for the coursepack is \$26.50 (paid directly to Harvard Business Publishing).

## **Recommended Reading**

*Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers, Alexander Osterwalder and Yves Pigneur.*

<https://www.strategyzer.com/books/business-model-generation>

(Preview version to be posted on Canvas – for required reading)

Testing Business Ideas, David J. Bland and Alex Osterwalder  
<https://www.strategyzer.com/books/testing-business-ideas-david-j-bland>  
 (Preview version to be posted on Canvas)

All other supplemental materials and reading will be made available via download on Canvas.

**Attendance and Participation**

Students are expected to attend every class. The participation portion of the grade is 400 points. Participation is evaluated in a number of ways. Obviously, participation is correlated with attendance. It is impossible to earn participation points if a student is not in class. Students remain responsible for submitting work due even if absent. Students should e-mail the instructor prior to any missed class. Students remain responsible for the material covered and assignments given during an absence.

Attendance at all class sessions is critical to the learning process and the participation component of the course. Entrepreneurship is a collaborative and interactive process. Entrepreneurs find opportunities, adapt, and improve themselves by listening and learning from others. Please come to class prepared to participate in the day’s activities.

**Course Assessment**

	Individual Contribution	Team Contribution
Individual Participation <ul style="list-style-type: none"> <li>• Attendance</li> <li>• Lab Discussions</li> <li>• Sprint Presentations</li> <li>• Feedback to Other Teams</li> </ul>	400 points (20%)	
Sprint Updates (“Progress Reports”) – 4 Sprints <ul style="list-style-type: none"> <li>• How much the team learns each week</li> <li>• Documented via progress reports (4)</li> <li>• Updated business model canvas (4)</li> </ul>		400 points (20%)
Sprint Presentations <ul style="list-style-type: none"> <li>• Sprint 1</li> <li>• Sprint 2</li> <li>• Sprint 3</li> </ul>		600 points (30%)
“Lessons Learned” Presentation (Final Presentation)		400 points (20%)
Individual Contribution to Team Project, Based on Peer Evaluation	200 points (10%)	
	600 points (30%)	1,400 points (70%)

TOTAL 2,000 points (100%)

All assignments must be turned in on time. Assignments will be submitted in soft copy format on Canvas or Slack, unless otherwise instructed. All assignments submitted on Canvas should use the following file format:

Team Assignment  
 (Assignment Name)\_(Team Name)

Example: Sprint 1 Presentation\_Green Gauchos

### Individual Assignment

(Assignment Name)\_(Last Name)

Example: Peer Evaluation\_Cotter

The deadline is at the beginning of class (i.e., 12:30 pm) on the due date listed for each assignment. If class is not held on the date an assignment is due, the deadline is still at 12:30 am (unless otherwise noted). Assignments submitted after the deadline but within 24 hours will lose 5% of the total points; after that, an additional 5% for each day that the assignment is late.

### **Description of Course Deliverables**

#### Eco-E Project

Working on a team, students will demonstrate their ability to perform Customer Discovery Research and develop a viable business model. Eco-E Project Teams should be comprised of two to five students.

During the quarter, teams will conduct Customer Discovery Research in an effort to develop a viable business model and will present results-to-date in four (4) "sprints," as follows:

	<u>Sprint Period</u>	<u>Sprint Length</u>	<u>Presentation Date</u>
Sprint 1	4/2/25 to 4/15/25	14 days	4/16/25
Sprint 2	4/16/25 to 4/29/25	14 days	4/30/25
Sprint 3	4/30/25 to 5/13/25	14 days	5/14/25
Sprint 4	5/14/25 to 5/27/25	14 days	5/30/25*

\*The "Lessons Learned" Presentations with a Judging Panel will be held on Friday, May 30<sup>th</sup>.

The goal of each sprint is to "get out of the building" and talk to 10-15 customers and/or industry experts face-to-face, in order to validate your business model hypotheses.

#### *Sprint Updates*

Each team will manage its business model development process online using collaborative software (e.g., Box, Canva or Google Drive/Slides) and will document progress and lessons learned by submitting progress reports. For each sprint, the latest Business Model Canvas should be downloaded and submitted as a PDF with the progress report.

Each team submit a Progress Report (PDF) on Canvas, which includes the latest Business Model Canvas. For further instructions, see Progress Report Guidelines on Canvas.

Each sprint, teams should perform the following:

- Update the canvas
  - Create new hypotheses, under individual canvas building blocks.
  - Create a new canvas, if appropriate.
- Write up a progress report

- Write a brief report summarizing what the team did during the last sprint, the building block(s) tested, how the team tested specific business model hypotheses (experiments), and what were the results.
- The progress report should also discuss next steps.

Sprint Updates will account for 20% of your grade (max. 400 points). These points will be the same for each team member.

*Sprint Presentations*

On each presentation day, teams will present progress made during the last sprint. Each team will present a sprint update, followed by feedback from the instructor and peers.

Each sprint presentation should cover:

Which Business Model Canvas building block(s) did you test? What did you learn during the last sprint?

- Current Business Model Canvas: Here's the building block we tested
- Assumptions: Here's what we thought
- Experiments: So, here's what we did
- Results: So, here's what we found
- Learnings: So, here's what we learned
- Next Steps: So, here's what we are going to do next

Guidelines for sprint presentations:

Slide 1	Cover slide <ul style="list-style-type: none"> <li>- Team name</li> <li>- Team members/roles</li> <li>- Number of customers/industry experts interviewed (current sprint, cumulative to date)</li> <li>- Tagline (optional)</li> </ul>
Slide 2	Latest "Positioning Statement"
Slide 3	Current business model canvas with any changes clearly marked and building blocks to be discussed highlighted
Slide 4-n	What did you learn about the building block(s) you tested? <ul style="list-style-type: none"> <li>- Assumptions: Here's what we thought</li> <li>- Experiments: So, here's what we did</li> <li>- Results: So, here's what we found</li> </ul>
Slide 5	Illustrate what you learned (e.g., diagram of customer archetype, customer workflow, ecosystem map, payment flows, distribution channel diagram, production/service process, etc.)
Slide 6	Next Steps: So, here's what we are going to do next

Each team presentation will be followed by class discussion, providing each team with instructor and peer feedback.

Sprint Presentations will account for 30% of your grade (max. 600 points). These points will be the same for each team member.

### "Lessons Learned" Presentation

The purpose of this assignment is to present, at the end of the quarter, the evolution of your team's business model. This presentation should cover research conducted over the entire quarter (Sprints 1-4). Each team will give a "Lessons Learned" presentation, followed by Q&A with a judging panel.

For this final presentation, you will use the following format for your slides:

Cover Slide – Be sure to highlight customer discovery results! (n=?)

Slide 1 – Team Name, with a few lines of what your initial idea was. Team members – name, background, expertise and roles.

Slide 2 – Environmental Problem Narrative.

Slide 3 – Customer Problem Definition.

Slide 4 – Business Model Canvas Version 1. Here was our original idea.

Slide 5 – So here's what we did (explain how you got out of the building).

Slide 6 – So here's what we found (what was reality). So then, ...

Slide 7 – Business Model Canvas Version 2. We iterated or pivoted... explain why and what you found.

Slide 8 – So here's what we did (explain how you got out of the building).

Slide 9 – So here's what we found (what was reality). So then, ...

Slide 10 – Business Model Canvas Version 3. We iterated or pivoted... explain why and what you found.

Etc. ... Every presentation requires at least three Business Model Canvas slides.

Slide n – "So here's where we ended up." Provide a "one-sentence pitch," "Positioning Statement" or clear, concise description of your proposed venture. Talk about:

1. what did you learn
2. whether you think this a viable business,
3. next steps, etc. (remaining hypotheses to be tested)

Other slides should include:

Customer Archetype

Diagram on channel or customer process, if there are multiple players

Lessons Learned summary

Final Slides – Click through each one of your business model canvas slides.

A soft copy must be uploaded onto Canvas by 10:00 AM on the day of the final presentation.

The "Lessons Learned" Presentation will account for 20% of your grade (max. 400 points). These points will be the same for each team member.

In addition, 10% of your grade (max. 200 points) will depend on your individual contribution to the team, as evaluated by your teammates. An evaluation form will be completed during the last week of class to provide these peer evaluations.