

Hacking 4 Oceans Syllabus

CSP 281A Spring 2023

Day/Time: M/W 3:30-5pm Pacific **Location:** Zoom (see calendar invite)

Teaching Team Contact: Hacking4Oceans@ucsc.edu

Instructor: Professor Anne R. Kapuscinski, email: akapusci@ucsc.edu

Anne's Office Hours: XX (to be announced in first week of class)

Student Liaisons:

- XX
- XX

Course Website : <https://hacking4oceans.ucsc.edu/>

Course Drive: XXX

Mentoring by interdisciplinary teaching team:

- **Anne Kapuscinski**, Professor and Director, Coastal Science & Policy Program
- **Sue Carter**, Provost, Rachel Carson College
- **Andrea Carafa**, UCSC entrepreneur in residence and lecturer
- **Steve Weinstein**, Stanford lecturer and entrepreneur
- **Radhika Malpani**, Former Google Senior Director, founder Google Images, Adjunct Professor in Coastal Science & Policy Program
- **Sarah Eminhizer**, Director Programs and Workforce Development, Coastal Science & Policy Program

Credits: This is a 5-credit course, involving 3 hours/week of class meeting and 9-12 hours of team/individual work outside of class for meetings with team mentors, conducting interviews, teamwork to synthesize weekly progress, preparing weekly class presentations and written reports, and office hours meetings with teaching team members. Getting out of the classroom is what the effort is about. Teams are expected to complete 10+ zoom/phone interviews each week focused on a component of the mission model canvas.

Prerequisite : A passion for tackling Ocean challenges and discovering how to innovate.

Goal : Hands-on experience in understanding and working as an interdisciplinary team (4-5 students) with sponsors/mentors to solve real world problems facing the oceans and to design and evaluate solutions to pressing challenges using technology, innovation, and policy design.

Course learning objectives:

1. Learn and apply Lean Design Methodologies.
2. Develop your own familiarity in using Lean Design methods to design practical and scalable solutions to complex problems that pose risks to our oceans -- to marine life and ecosystems, human coastal communities, and other people whose well-being depends on healthy oceans.

VIDEOS / TEXTS

Online Lectures : <https://www.udacity.com/course/how-to-build-a-startup> -- ep245 (assigned weekly)

Required Readings During the Quarter (free download for students and professors)

- [Startup Owner's Manual \(SOM\): Blank & Dorf](#) (use your UCSC login to access)
- [Business Model Generation \(BMG\): Osterwalder & Pigneur](#) (use your UCSC login to access)

Optional Readings (for further information)

- Talking to Humans: Constable, Rimalovski www.talkingtohumans.com
- [Value Proposition Design: Osterwalder, et al](#) (use your UCSC log in to access; also available from Library from a few sources)
- Thinking in Systems: Donella Meadows ([UCSC online copy](#); click "temporary access")

Class Format: The class is a "flipped classroom" where students take the lead in presenting their learnings from the week after which instructors provide feedback. The general format of class sessions each week is:

- Introduction remarks.
- Each team presents their progress for the week for about 10 minutes with real- time
- feedback from the teaching team.
- Lecture by instructor and Q&A about the next week's assignment.

Anything your team develops in doing work for this course (software, hardware, ideas, etc.) is open source. You do not give up any IP rights of anything you bring to the class. Your software, technology, or hardware IP, if not shown or uploaded as part of presentations to the class, is not considered open-sourced.

OVERVIEW

Solve real problems, right now. Tackle complex problems critical to oceans by innovating new technologies, policies or community solutions with a team of natural scientists, social scientists, engineers, and policy students. This course will teach students techniques of being an entrepreneur and work on the tough problems facing the world's oceans.

Hacking4Oceans (H40) is an exciting course where student teams work on a variety of environmental problems that are critical to the Oceans. Example problems include: How might we provide quicker processing for people living in coastal communities in order to expedite relocation and access to help in a flooding event? Or how might we increase compliance with Belize marine protected area regulations for Belizean fishers in order to expedite recovery of depleted fisheries and biodiversity? Additionally, teams can start with a technology internal to the university and work to match the technology with a problem facing ocean health and use the same lean techniques to determine if the solution has desirability, feasibility, and viability as a potential solution.

This course involves multidisciplinary student teams (approximately four students/team) that form to address a problem or challenge provided by real world sponsors or identified by a

student group. Up to eight teams take the course at a time, each working on a different problem with the help of a problem sponsor and a group of advisors and mentors to find a solution to the problem. Student teams take actual problems and learn how to apply Lean Launchpad and Lean Startup principles, ("business model canvas", "customer development", and "agile engineering") to discover and validate customer needs and to continually build iterative prototypes to test whether they understood the problem and solution. We stress learning-by-doing. Weekly assignments have you work outside of class on steps or skills in the design process and then you share your work for peer-review in class the following week. Expect to do the reading and a substantial assignment each week **BEFORE** the next week's session on that topic.

BACKGROUND

Across the country startups are using lean design principles to create the next generation of technology companies and policy solutions. Now is the time to solve actual problems that are facing the health of the oceans.

Startups have learned how to be extremely efficient with resources and time using lean startup methodologies. The Lean Startup methods have been adopted to take on actual problems that are curated and presented either to students taking a class or made broadly available in open challenges to a community.

This course is part of a bigger movement of tackling big problems facing governments, foundations, social sector, environment, and NGOs by teaming students with problems. The movement started with Hacking 4 Defense (H4D) at Stanford. H4O has served as a model being expanded to other U.S. universities. Other variants also have been created: Hacking for Impact (Prof Amy Herr and Tom Kalil were involved) at Berkeley and Hacking for Diplomacy at Stanford (Sec. John Kerry was involved). Even further back the H4X problem classes find their roots in the Lean Startup movement and I-Corps classes created by Steve Blank.

DELIVERABLES

Meaningful customer discovery requires the development of a minimum viable product (MVP). In this course, we use the word "customer" to also refer more broadly to beneficiaries and stakeholders engaged with a solution. **Each team** will deliver:

1. Your prototype of a product or policy or community solution. For example:
 - For a physical product, prototype design with a list of materials cost.
 - For websites, aim to build the site, and provide images of front-end websites
 - For mobile apps, beta versions of app (have working code)
 - For policy, draft language and identify authorizing and implementing entities.
2. Each week, in one document, a record of interviews in summary notes and next steps.
3. Weekly team presentation in- class, 8-minute summary of progress
4. Final presentation of the class journey on your project.

GRADING CRITERIA

Grading is Satisfactory/Unsatisfactory (S/N) for graduate students; and for undergraduate students given permission to register for CSP281A. This course's team--based structure means

that 75% of your grade will come from your team progress and final project and 25% of your grade will come from your final culminating report. Your peers will also grade your contribution to your team, which will be used to determine your peer grading multiplier.* Grading criteria are:

- 10% Individual participation in class. You will be giving feedback to your peers.
- 30% Out--of--the--building progress as measured by weekly interview summary/next steps and presentations each week. Each week, team members must complete the required number of interviews and update the Mission Model Canvas.
- 30% Team weekly “lesson learned” update presentation (see weekly schedule for required content and format)
- 30% Team final presentation (see final class info below for outline)

** YOUR SCORE IS MULTIPLIED BY A “PEER GRADING MULTIPLIER” AS ASSIGNED TO YOU BY YOUR TEAM AT THE END OF THE QUARTER. YOU WILL RECEIVE SEPARATE GUIDANCE ON CONDUCTING YOUR CONFIDENTIAL ASSESSMENT OF YOUR TEAM PEERS, WHICH THE INSTRUCTOR WILL USE TO DEVELOP THE PEER GRADING MULTIPLIER.*

OFFICE HOURS, MENTORS AND SPONSOR MEETINGS

Each student team will meet with one member of the teaching team once a week in a rotating manner for about 20 minutes. Each team should be in contact with their sponsor at least weekly if not more often. Each team should have a meeting once a week with their team’s mentor.

COURSE CULTURE

This course pushes many people past their comfort zone.

THIS IS A COURSE, NOT AN INCUBATOR

While the problems you are working on have come from sponsors from the community, you are not working for them, nor are you providing products and services for them. You are building MVPs to test hypotheses. What they provide are tough problems and complex environments for you to learn Lean Startup methods.

SCHEDULE AND TOPICS

The course meets twice per week for 1.5 hours per meeting, thus 3 hours per week. Class meetings mostly focus on each team presenting results of the work they did in the prior week, as well as usually one short lecture per week. Expect at least 9-12 hrs/week (outside of class) for team and individual work.

Week	Team Presentation	Lecture Topic/ Other Notes
Week 1	None	<ol style="list-style-type: none"> 1. Attend Class – must attend 2. Team formation 3. Introduction to Oceans Ecosystem 4. Work on MMC, problem definition <i>Lecture 1</i> Course Logistics, Course Expectations, Intro to Drive, Introduction to MVP, Customer Discovery
Week 2	Mission Model Canvas	<i>Lecture 2</i> Mission Model, Customer Development, Beneficiaries
	Workshop	Beneficiary Discovery (how to talk/interview)
Week 3	Beneficiaries	<i>Lecture 3</i> Value Proposition
Week 4	Value Proposition	<i>Lecture 4</i> Product/Mission Fit
Week 5	Product/Mission Fit	<i>Lecture 5</i> Mission Achievement
Week 6	Mission Achievement	<i>Lecture 6</i> Deployment, Buy-in & Support
Week 7	Deployment, Buy-in & Support	<i>Lecture 7</i> Activities, Resources
Week 8	Activities and Resources	<i>Lecture 8</i> Partners and Mission Costs
	<i>DUE:</i> Draft Lessons Learned slides and video due 9 am May 24, 2023	
Week 9	Partners and Mission Costs	<i>Lecture 9</i> Reflections
	<i>DUE:</i> Final slides and video due 5pm June 2, 2023	
Week 10	Lessons Learned	<i>Student Presentations</i>

Week 1 Orientation to the Course & Team Formation

The goal of the first week is to orient you to the course and to finalize interdisciplinary teams of 4-5 students and choose a problem to work on. Each team works on a different problem.

Lecture topic: Course Logistics, Course Expectations, Intro to Drive, Introduction to MVP, Customer Discovery

Assignments:

- Watch Videos & Complete the Readings (see below “Watch & Read”)
- Identify and reach out to 15-20 potential beneficiaries/customers this week
- Create weekly presentation (see next page for outline and upload before class to the [team presentation folder](#))
- Set Up Your Team Interview and Next Steps Summary in a Google Doc in your Team Folder

Each week your team will write a short summary that highlights what you learned in your interviews and describe your next steps. The summary will be read by the teaching team. This allows us to use the class time to get deeper into your presentation rather than us asking you about each customer meeting. In your summary, consider some of these questions:

- *Who did you talk to?*
- *What did you learn from them?*
- *What key/innovative insight did the interview provide you?*
- *Was your hypothesis validated/invalidated?*
- *Does this learning suggest a pivot?*

Watch & Read

“How to Do Customer Discovery” videos

- [CD41](#) Pre-Planning: Contacts
- [CD42](#) Customer Interview Dry Runs
- [CD44](#) Pass/Fail Experiments
- [CD46](#) Conducting a Customer Interview
- *Optional*
 - [CD50](#) Looking for Insights
 - [CD01](#) Death By PowerPoint
 - [CD04](#) Understanding the Problem

Review the Mission Model Canvas

- Read about the business model canvas for background understanding: <http://businessmodelgeneration.com/canvas/bmc>
- The Mission Model Canvas <http://steveblank.com/2016/02/23/the-mission-model-canvas-an-adapted-business-model-canvas-for-mission-driven-organizations/>
- Read: *BMG*:
pp. 14-49 [Loc 275 – 823] The 9 Building Blocks of the Canvas.
pp 134-142 [Loc 1801 – 2003] Ideation

- *Optional:* Skim *Talking to Humans*: Constable & Rimalovski

This first week will also give students an overview of the organization of the Ocean “Ecosystem” (key actors who affect or are affected by oceans), who are the key customers/beneficiaries and how they specify, buy and deploy products or how they drive nonprofit interventions such as pro-ocean conservation policy. We might assign readings about key organizations, coalitions and programs that are relevant to the final problems around which teams organize during the term.

Week 2

Lecture Topic: Mission Model, Customer Development, Beneficiaries

- Review 4 types of "Customers"
- Who are your beneficiaries?
 - What are their relationships to each other? What are their interests?
- Dual-use technologies – who might be commercial customers. Can you serve both market segments?
- Limits of Customer Development in the Ocean Sector

Team Presentation: Mission Model Canvas (10 min + 5 min Q&A)

To prepare for your first presentation on **Mission Model Canvas** Consider:

- What is the Mission Model Canvas?
- What are the 9 components of the Mission Model Canvas?
- What is a hypothesis?
- What do we mean by “experiments”?
- What is Customer Development?
- What are the key tenets of Customer Development?
- What is an MVP?
- What are your first few of MVPs going to be?
- **Slide 1: Title slide**
 - Team name, team members/roles, support team (liaisons, mentors, problems sponsors)
 - Number of beneficiaries interviewed this week
 - Total number interviews completed
 - Three sentence description of what the team does and **why users should care**
- **Slide 2: Show us the team-only include in First Presentation**
- **Slide 3: Minimal Viable Product**
 - Show us your MVP of the week
 - Tell us what hypothesis the MVP is testing, what data you expected and what you actually received.
- **Slide 4: Customer/Beneficiary Discovery**
 - Tell us about your first 10 beneficiary interviews.
 - Hypothesis: Here’s What we Thought
 - Experiments: Here’s What we Did
 - Results: Here’s What we Found
 - Action: Here’s What we Are Going to Do Next
- **Slide 5: Mission Model Canvas**
 - Updated Mission Model Canvas with week-to-week changes shown in red
 - Multi-sided markets shown in different colors
- **Slide 6: What Are You Going to Do Next Week?**

Assignment

- Identify, reach out to 15-20 potential customers/beneficiaries and set up interviews (now and into future weeks). Aim for 10-15 interviews per week.

- Update interview summary and next steps document in your team drive
- Create weekly presentation (see next page for outline)
- To prepare for the next team presentation on **Beneficiaries** Review Customer

Development:

- o Read BMG: pp 127-133 [Loc 1691 – 1800] customer insights, pp 161-168 [Loc 2205 – 2381] prototyping
- o Read: SOM:
 - pp. 1-75 [Loc 384 – 1447] intro to customer development and discovery, market size
 - pp. 76-81 [Loc 1448 - 1537] value proposition and MVP
 - pp 85-92 [Loc 1582 – 1680] customer segments
 - pp 189-199 [Loc 2998 – 3138] getting out of the building/experiments/contacts
 - pp. 203-214 [Loc 3198 – 3375] problem understanding
 - pp. 218-219 [Loc 3433 – 3455] gain customer understanding
 - pp. 222-224 [Loc 3482 – 3517] Market Knowledge
 - pp. 260-266 [Loc 4013 – 4129] product/market fit
 - pp. 476-477 [Loc 7068 – 7099] customer segment checklist
 - pp. 487 [Loc 7275] Contacts checklist

- o **Review the Value Proposition Canvas**

[Read the Value Proposition Canvas Instruction Manual](#) and [download it here](#)

Value Proposition Canvas at <http://sblank.com/valuepropcanvas> and <http://sblank.com/testingvalueprops>

Week 3

Lecture Topic: Value Proposition

Team Presentation: Beneficiaries (10 min + 5 min Q&A)

- **Slide 1: Title slide**
 - Team name, team members/roles, support team (liaisons, tech mentors, problems sponsors)
 - Number of customers spoken to this week
 - Total number spoken to
 - Three sentence description of what the team does and **why should the sponsor care**
- **Slide 2: Our Journey So Far**
 - A few lines on your progress of each week to date
- **Slides 3 & 4: Customer/Beneficiary Discovery Summary Table and Photos**
 - Tell us about your 10 customer interviews.
 - Hypothesis: Here's What we Thought
 - Experiments: Here's What we Did
 - Results: Here's What we Found
 - Action: Here's What we Are Going to Do Next
- **Slide 5: Mission Model Canvas**
 - Updated Mission Model Canvas with week-to-week **changes shown in red**
 - Multi-sided markets shown in different colors
- **Slide 6: Value Proposition Canvas**
 - For each customer segment develop a value proposition canvas: [download it here](#)
 - What are the Gains, Pain, Customer Jobs?
 - How do they solve this problem(s) today? Does your value proposition solve it? How?
 - What is the Customer Archetype?
 - What's the MVP you'll test?
- **Slide 7: Diagram the Customer workflow Slide 6 Minimal Viable Product**
 - Show us your MVP of the week
 - Tell us what hypothesis the MVP is testing, what data you expected and what you actually received.
- **Slide 8: What Are You Going to Do Next Week?**

Assignment

- Watch Videos & Complete the Readings
 - Read *BMG*: pp. 127-133 [Loc 1691 – 1800] Customer Insights, pp 134- 145 [Loc 1801 – 2003] Ideation, pp 161-169 [Loc 2205 – 2381] prototyping
 - Read *SOM*: pp 85-92 [Loc 1582 – 1680] Customer Segments, pp 203-226 [Loc 3198 – 3532] test problem understanding, pp 260-266 [Loc 4013 – 4116] Have we found product/market fit, pp. 476-477 [Loc 7068 – 7092] customer segments checklist
 - Read Autonomow at <http://steveblank.com/2014/10/03/my-students-grow-into-a-company/>
- Identify, reach out to 15-20 potential customers/beneficiaries and set up interviews (now and into future weeks). Aim for 10-15 interviews per week.

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- Update interview summary and next steps document in your team drive
- Create weekly presentation (see next page for outline and upload before class to the [team presentation folder](#))

Week 4

Lecture Topic: Product/Mission Fit

Team Presentation: Value Proposition (10 min + 5 min Q&A)

- **Slide 1: Title slide**
- **Slide 2: Journey So Far**
- **Slide 3: Mission Model Canvas** with week-to-week **changes shown in red**
- **Slide 4: Value Proposition Canvasses** (one for each primary beneficiary)
- **Slide 5: Beneficiary Understanding and Discovery**
- **Slide 6: What Are You Going to Do Next Week?**

Assignment

- Watch Videos & Complete the Readings
 - Watch [Mission Achievement](#)
- Identify, reach out to 15-20 potential customers/beneficiaries and set up interviews (now and into future weeks). Aim for 10-15 interviews per week.
- Update interview summary and next steps document in your team drive
- Create weekly presentation (see next page for outline and upload before class to the [team presentation folder](#))

Week 5

Lecture Topic: Mission Achievement

- How do you measure if your solution is valuable and achieves solving the problem?

Team Presentation: Product/Mission Fit (10 min + 5 min Q&A)

- **Slide 1: Title/ Intro Slide**
- **Slide 2: Our Journey So Far**
- **Slide 3: Beneficiary Discovery (Table)**
- **Slide 4: Beneficiary Discovery Photos**
- **Slide 5: Mission Model Canvas**
- **Slide 6: Beneficiaries**
 - Capture weekly beneficiary discovery experience in a chart.
 - Have they changed over time?
- **Slide 7: Value Proposition Canvasses**
 - What are the Products/Services, Pain Relievers, Gain Creators?
- **Slide 8: Diagram Product-Mission work flow**
 - Show us your expanded understanding of how the pieces fit together.
- **Slide 9: What Are You Going to Do Next Week?**

Assignment

- Watch Videos & Complete the Readings

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- o Read *BMG* pp. 147-159 [Loc 2004 – 2204] Visual Thinking
- Identify, reach out to 15-20 potential customers/beneficiaries and set up interviews (now and into future weeks). Aim for 10-15 interviews per week.
- Update interview summary and next steps document in your team drive
- Create weekly presentation (see next page for outline and upload before class to the [team presentation folder](#))

Week 6

Lecture Topic: Deployment, Buy-In/Support

- *How do you get buy-in from potential customers?*
- *Who needs to buy-in and in what order?*
- *What can accelerate the process? What can impede it?*
- *How do products get from a company to be deployed or how do public policies or civic engagement get from proposal to implementation (via the government, private sector, foundations, internationally)?*
- *What's the standard procurement/implementation and funding process? How long does it take?*
- *Role of foundations, governments, R&D labs. How to find short cuts.*

Team Presentation: Mission Achievement (10 min + 5 min Q&A)

- **Slide 1:** Title slide (Has your [restated] problem changed?)
- **Slide 2:** Customer Discovery
 - How does the product get deployed? Are there alternatives?
 - What was it that made deployment partners interested? excited?
 - Draw the deployment diagram - Annotate it with the deployment economics
- **Slide 3:** Mission Model Canvas
- **Slide 4:** Value Proposition Canvas
- **Slide 5:** Minimal Viable Product
 - What are the Products/Services, Pain Relievers, Gain Creators?
 - What's the MVP you'll test?
 - What were reactions to the MVP you shared?
- **Slide 6-n:** Mission Achievement
- **Slide ?:** What Are You Going to Do Next Week?

Assignment

- Watch Videos & Complete the Readings
 - Watch [Online lesson 8 Customer Relationships](#)
 - Read: SOM
 - pp. 126-143 [Loc 2167 – 2348] customer relationships hypotheses,
 - pp. 296-303 [Loc 4495 – 4582] Get/Keep/Grow,
 - pp. 480-482 [Loc 7141 – 7207] Relationships checklist,
 - pp. 489 [Loc 7303] Test the Problem and its importance
- Identify, reach out to 15-20 potential customers/beneficiaries and set up interviews (now and into future weeks). Aim for 10-15 interviews per week.
- Update interview summary and next steps document in your team drive
- Create weekly presentation (see next page for outline and upload before class to the [team presentation folder](#))

Week 7

Lecture Topic: *Activities, Resources*

Team Presentation: Deployment, Buy-In/Support (10 min + 5 min Q&A)

- **Slide 1:** Title slide -- Mention “New vs. Old Problem” (!)
- **Slide 2:** Customer Discovery
 - Draw the Get/Keep/Grow diagram - Annotate w/ key metrics
- **Slide 3:** Mission Model Canvas
- **Slide 4:** Value Proposition Canvas
- **Slide 5:** Minimal Viable Product (+Experiments conducted)
 - What are the Products/Services, Pain Relievers, Gain Creators?
 - What’s the next MVP you’ll test?
- **Slide 6:** Organizational/ Influence Chart
- **Slide 7:** Buy-in/Support
- **Slide 8:** Get-Keep-Grow Diagram
- **Slide 9:** What Are You Going to Do Next Week?

Assignment

- Watch Videos & Complete the Readings
 - Watch: [Online lesson 11 Resources, Activities](#)
- Identify, reach out to 15-20 potential customers/beneficiaries and set up interviews (now and into future weeks). Aim for 10-15 interviews per week.
- Update interview summary and next steps document in your team drive
- Create weekly presentation (see next page for outline and upload before class to the [team presentation folder](#))

Week 8

Lecture Topic: *Partners & Costs*

Team Presentation: Activities & Resources (10 min + 5 min Q&A)

- **Slide 1:** **Title slide**
- **Slide 2:** **Weekly Beneficiary Discovery**
- **Slide 3:** **MMC**
- **Slide 4:** **Value Proposition Canvasses**
- **Slide 5:** **MVP (+ Experiments Conducted)**
- **Slide 6:** **Key Partner Canvas**
- **Slide 7:** **Gantt Chart**
- **Slide 8:** **Activities Map**
 - What are your critical Activities?
 - Software Development? Manufacturing? Freedom to operate/Intellectual Property? Regulatory approval?
- **Slide 9:** **Resources Map**
 - What are your critical Resources? (*Resources should match your critical Activities*)
 - Are they resources you already have? Do you need to acquire or partner with others to get them? How much will they cost?
 - What human resources will you need? What equipment resources will you need? What financial resources will you need to acquire all these resources?
- **Slide 10:** **Metrics that Matter**

Assignment

- Watch Videos & Complete the Readings
 - **Read SOM**
 - pp. 180-188 [Loc 2854 – 2982] revenue and pricing hypotheses,
 - pp. 260-269 [Loc 4013 – 4162] verify business model,
 - pp. 438 [Loc 6425] metrics that matter,
 - pp. 528 [Loc 8001] Validate Financial Model
 - Best practice examples on Dropbox at: <http://bit.ly/1WDOUez>
 - **Watch** sample presentations from past participant in H4X program:
 - <https://venturewell.org/i-corps/nih/>
 - Presentation library at: <http://www.slideshare.net/sblank>
- Identify, reach out to 15-20 potential customers/beneficiaries and set up interviews (now and into future weeks). Aim for 10-15 interviews per week.
- Update interview summary and next steps document in your team drive
- Create weekly presentation (see next page for outline and upload before class to the [team presentation folder](#))
- **DUE** 9 am on May 24: Draft of 10-minute Lessons Learned slides and 2-minute video for final week **(see section under final class for information on final presentation).**

Class 9 Reflections Day

1. Come prepared with your *Partners and Costs* presentation
2. Come prepared with a draft of your final *Lessons Learned* presentation
 - a. You should have a draft of the slides you will present on last day of class
 - b. You do not need the final fancy graphics or finished diagrams (can use placeholders)
 - c. Upload to class website before class
3. We will review best practices for Lessons Learned
4. We will select two teams to present their draft to the entire class
 - a. The teaching team will go through those presentations slide-by-slide
 - b. Then the teaching team will rotate through the rest of the teams giving you specific pointers on how to tell the story of what you've learned

Team Presentation: Partners & Costs-What are incentives & impediments for the partners?

- **Slide 1: What did you learn about your Costs?**
 - Hypothesis: Here's What We Thought
 - Experiments: So Here's What We Did
 - Results: So Here's What We Found
- **Slide 2: What experiments do you run to test your fixed and variable costs**
- **Slide 3: Diagram of Costs flows** (*a costed bill of materials for hardware/services*)
- **Slide 4: Rough one-year finance, operations, and fundraising timeline** (*note syllabus says 3 years*)
- **Slide 5: Show us your MVP**
- **Slide 6: Experiments Conducted: What were your hypotheses about what Partners you will need?** (*Partners should match your critical Resources and Activities*)
 - Why do you need these partners and what are risks?
 - Why will they partner with you?
 - What's the cost of the partnership?
 - **Diagram** the partner relationships with any dollar flows

Assignment

1. Submit revised draft of your slides by 5pm May 30; the teaching team will give your slides one final review and send comments that evening
2. Final slides and videos – approved by teaching team - need to upload by June 2 at 5pm.

Class 10 Team Presentations of Lessons Learned

On the final day of class, each team will present a 10-minute *Lessons Learned* presentation (2-minute video summarizing your journey; 8 min final presentation)

Goal

Communicate what you learned in 10 weeks. Show what you learned and how you learned it.

Use the Language of the Course

Interview, iterations, pivots, restarts, experiments, MVPs, evidence. The focus of your presentation will be on how you gathered evidence and how it impacted your understanding of your business models, while you were building your MVP.

Strategy

Tell us how you used customer discovery and MVPs to evolve your mission model through iterations, and how the accumulation of evidence outside the classroom led you to pivot.

H4O Final Class Presentations on Lessons Learned (~8 minutes) (Examples from Hacking4Oceans 2020 in Course Drive [Here](#))

- In this presentation, tell us your journey:
 - Start with before the class
 - Key weeks of the class (highlights only)
 - Tell it like a story
 - We started here and we ended there
 - And it was rocky and frustrating
 - We pivoted and changed our minds
- Potential slides
 - Initial problem, sponsor, etc.
 - Your journey, initial hypotheses and petal diagram
 - Quotes from customers that illustrate learnings/insights
 - Diagrams of key parts of the Canvas: customer flow, channel, get/keep/grow (before and after)
 - Pivot stories
 - Screenshots of the evolution of MVP
 - Demo of final MVP
- Some questions to think about:
 - Why did we initially want to devote 10 weeks of our lives to this project? Make it personal
 - What did we learn?
 - How did we learn it?
 - Who did we learn it from – talk about the people we met along the way. Make it personal. Show quotes, insights
 - Use numbers – for instance, how many people did we talk to? How many people did we interact with?
 - Tell the highs and lows of the story. What were we feeling that week? Excited? Disappointed?

- o Where did you end up, pivots on the way
- o Tell us about your solution and how it addresses the problem

2-Minute Video:

In addition to your 8-minute presentation, create a 2-minute video to be shown at the beginning of your final presentation. The video should summarize the customer/beneficiary discovery journey your team went on, highlighting the key customer insights that took you from your initial idea to today. Storytelling quality is critical. High production value is not (some of the best videos have been very straightforward). Make it personal include the team in the video as well as key "aha" moments. This video is about the discovery process. It is NOT a marketing video for your product/service.

RESOURCES FOR WRITING

Outstanding Writing Guide ([Order e-version here](#)): Williams, J. and J. Bizup. 2015. *Style: The Basics of Clarity and Grace*, Fifth edition. Longman, Boston. 147 pp.

COLLABORATION AND CITATION POLICY AND RESOURCES

This course requires you to collaborate in teams. The Instructor will provide detailed guidance for conducting your confidential assessment of collaboration by each of your team members; and the instructor will use these assessments to develop a “peer grade multiplier.”

We expect you to *always* cite sources (Use Author-Year system) and to avoid plagiarism:

- <https://guides.library.ucsc.edu/citesources/plagiarism>
- <https://guides.library.ucsc.edu/citesources>

Your writing must cite sources of major ideas, assertions, and facts that you got from other sources. Please use the Author-Year citation style, as used by many interdisciplinary fields spanning natural and social sciences. Specifically, follow the guidance in CSE Citation Style – Quick Guide 7th Edition (which we will provide on the course website or Canvas site). A good source of additional examples and specific guidance is the style-guide for *Elementa: Science of the Anthropocene*, an open-access, peer-reviewed journal: <https://www.elementascience.org/about/style-guide/>.

ACADEMIC INTEGRITY

Academic integrity encompasses the core values and basic principles of honesty and responsibility that govern our practices as scholars, researchers, and creative artists in the university. Unfortunately, incidents of academic dishonesty, especially plagiarism, have been increasing throughout colleges and universities in the United States. Plagiarism is the act, intentional or unintentional, of using other people’s words or ideas as your own. This trend in part results from the ready availability of papers, codes, and other resources on the internet. The university, graduate division, Coastal Science and Policy program, and I expect you to write your own papers and to provide full and accurate citations for any specific ideas or language—words, phrases, sentences—that you take from outside sources, including the internet. **Becoming effective, well-informed leaders at the interface of science, practice and policy includes committing to fully cite and credit sources for your entire career.**

Refer to <https://ue.ucsc.edu/academic-misconduct.html> for the university’s policy on Academic Dishonesty. Any act of academic dishonesty in this class will be reported to the relevant administrators

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and may result receiving a no-pass on the assignment, dismissal from class with a final grade of no pass, and even suspension or expulsion from the university, depending upon the severity of the violation.

UCSC STUDENT RESOURCES

UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me privately during my office hours or by appointment, preferably within the first two weeks of the quarter. At this time, I would also like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at [831-459-2089](tel:831-459-2089) or by email at drc@ucsc.edu.

Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the Campus Advocacy Resources & Education (CARE) Office by calling (831) 502-2273. In addition, Counseling & Psychological Services (CAPS) can provide confidential, counseling support, (831) 459-2628. You can also report gender discrimination directly to the University's Title IX Office, (831) 459-2462. Reports to law enforcement can be made to UCPD, (831) 459-2231 ext. 1. For emergencies call 911. Please know that additional student resources are available for you via Campus Advocacy, Resources and Education [CARE](#).