

Ho'oulu iā Kamehameha - Making Kamehameha a Better Place

Over the past seven months you have learned a good deal of theory about how our natural physical world works and our role within it. We have looked at cycles, and feedback loops, how all things are interdependent and how the modification of one small thing has long lasting effects. You have been exposed to sustainability and sustainable practices that help to have the world that we live in be more efficient and to be thinking of our future. You have already developed a better understanding of the natural world around you and our place in it.

You don't have to wait years to apply your newfound mālama mindset to hō'ola and to kokua others, you can start right now. During the fourth quarter, you will work in a group to identify a need at Kamehameha that deals with sustainability, research solutions to that need, build a working resolution, formally present the results of your work to an audience and write an in-depth research paper. You will work in a **group of three of four individuals** to conduct the investigation.

This project will encompass the entire fourth quarter. All of the tasks with the exception of the oral presentation will constitute your fourth quarter grade. The oral presentation will account for your second semester exam grade. Tasks will include...

1. Blog. (Points distributed among other tasks, Ongoing)
2. Developing an Idea. (100 points, 1 ½ weeks (plus spring break); Mar 5 to Apr 6)
3. The Proposal. (100 points, ½ week: due April 11)
4. Detailed Design. (100 points, 1 week: due April 13)
5. Project Construction. (300 points, 3 weeks: Apr 16 to May 1)
6. Mid-quarter Peer Review. (25 points, due April 21)
7. Oral Presentation. (50 points + 2nd Semester Exam Grade, 1 ½ weeks; May 18)
8. Written Report. (300 points, due May 21)
9. Final Peer Review. (25 points, due May 22-7:30am)

TOTAL: 1,000 points

This handout provides a general overview of the project tasks.

GENERAL GUIDELINES

- Your teacher will periodically feature outstanding blog entries on the main project website. Bonus points will be awarded to your group if your blog is featured!
- You will have a significant amount of class time to work on this project. You and your group are expected to remain in the classroom and use the time wisely.
 - However, if on a workday you prefer to spend the period working outside of the classroom, you may request a leave that period by filling out a form and requesting your teacher's approval. You will need to provide justification and proof where you will be and what you will accomplish.
 - In order to ensure a productive work environment, your teacher will monitor your classroom conduct and issue a "strike" in the event of disruptive or unproductive behavior. Three strikes will decrease your individual multiplier by .02 (2% of your quarter grade)
- We expect you to work hard but have fun with this project! It is an opportunity for you to leave your make and truly make Kamehameha a better place.

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TASK 1: Blog (ongoing)

Design is an ongoing, iterative process. A group blog will document your progress and provide a forum to exchange and work through ideas. The blog also provides the opportunity for you teacher to provide feedback on your progress and for other members of the class to share in your experience.

Your homework for the first night of the project (March 3rd) is to create a webpage for your group and will post it to the project website: <http://malamahonua.weebly.com>. Please allow each group member to become an author to the group page.

Guidelines: Blog entries should be made when we are working on the project, such as with guest speakers. You should blog one of two times during spring break, and then **daily**, starting on Monday, April 2nd. The target length for each entry is 100 words minimum and a photo/video. The photo should be relevant to the project and taken by you or one of your group members. (You are welcomed to exceed this length, but 100 words and a picture is the minimum.) You may also add multimedia links and images, as long as they are properly referenced. Group members should take turns updating the blog. It is your group's decision whether to rotate daily or weekly.

What will you blog about? Here are a few ideas:

- What are you currently working on?
 - What did you accomplish today?
 - What challenge are you currently facing?
- What ideas are you considering?
 - What are your thought processes?
 - Pros and Cons?
- How is sustainability related to all this?
- What are you learning from this project?
 - General reflections?

Evaluation: Your teacher will be checking your blog regularly. Each blog entry is worth 5 points, which will be awarded as follows:

- 2 pts: entry on time & meets guidelines (-1 pt for each day late)
- 3 pts: quality of blog content

By the end of the project, you will have approximately 40 entries for a total of 200 points (20% of your quarter grade). Points for the blog will be incorporated into various stages of the design process.

Comments: You will also be expected to visit other groups' blogs (listing on the [Mālama Honua Website](#)) and to comment. Please check on the commenting rubric on the page for guidelines on comments.

TASK 2: Developing Your Idea: Brainstorming, Interviews, Shadowing (Mar 2-Apr 13)

How can you utilize sustainability to make Kamehameha a better place? To do this, you will need to identify needs around campus, many of which you might normally overlook. During the first two weeks you will...

- *Brainstorm.* In class we will be working on problem finding and brain-storming with Mr. Blake during class in March and brainstorm ideas in class that day. If you miss Mr. Blake's session, you are required to watch a video recording of it.
- *Conduct Informational Interviews.* Conduct short informational interviews (10-15 minutes) with at least two different people on campus to identify needs that they see. Remember to practice good interview etiquette: (1) Contact the person in advance to check their willingness and availability, (2) Schedule a mutually agreeable time with the person, (3) prepare questions prior to the interview, (4) Send a thank you card/email following the interview. You will present a summary of your interviews to the class on April 10.
- *Create A Bug List.* Throughout the first week, walk around campus and pay attention to things that bug you or bug others. Do observe anything that can be fixed or improved? Anything that would make Kamehameha a better place? Creative, unique bugs are encouraged. Each person should keep an individual note card, so as to generate as many ideas as possible. Toward the end of the week, your group will consolidate bug lists and present your best bugs to the class on April 10.
- *Shadow Someone. Optional* At the start of week two (April 2) your group may shadow someone, for approximately half a day. If you do not have a continuous window of time, you may tag team among your group members. The objective is to discover challenges that they face and possible solutions to the problems. Again, remember to practice good interview etiquette, as described above. On April 4, you will share what you found with the class.

At the end of this process, you should have found several good ideas for your project.

Evaluation: The preliminary phase of identifying and developing your idea will be worth a total of 100 points (10% of your quarter grade), awarded as follows:

- 25 points: 5 blog entries
- 10 points: Mr. Blake's brainstorm session
- 20 points: Create bug list and present to class
- 20 points: Conduct interview & present to class
- 25 points: (Shadow) & present to class

You will be evaluated based on your presentations to the class and blog entries

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TASK 3: The Proposal (DUE: April 11)

Consider the ideas you generated in Task 2. Which of these ideas will your group pursue for the project? In Task 3, you will narrow down your ideas, choose one for your project, and present a written proposal explaining your project ideas. The proposal ensure that you will have thought through your idea and done some preliminary research. Although you many change things later on, this proposal will provide an excellent starting point. The proposal should address several key items...

- *What is your project?*
 - How will it make Kamehameha a better place? What need does it address?
 - Who will benefit? How will they benefit?

Note: Each group should have a unique project; so if you are concerned that there may be duplication of projects, check with your teacher. The team of teachers will also help groups avoid duplication.

- *What is your proposed solution?*
 - What other solutions did you consider/research? Is your solution unique or does it replicate something already available commercially?
 - How in our solution beneficial compared to other alternatives? In other words, why are you choosing your particular solution?
 - What is the longevity and maintenance of what you are proposing?
 - Is your solution practical? How long will it take you to do it? Can it be designed and build in a month?
 - Does construction of your project require special tools or special knowledge?
 - What is the approximate cost for the project?
- *What underlying principles of sustainability does it incorporate? This question is key!*
 - What sustainability concepts will drive your design? You are expected to investigate and understand these concepts in depth throughout the course of the project, in order to justify your project's design and relevance to this course.

While there are several bullet questions, your proposal should be in narrative form with different sections clearly identify by headings. Use tables and figures uses as needed. Consider using a Google doc to enable several members of your group to contribute. The proposal should be a minimum of 3 pages, typed.

Evaluation: The proposal is key to the project and will be worth 100 points (10% of your quarter grade), awarded as follows:

- 15 points: 3 blog entries
- 85 points: 2 copies of the proposal+shared via googledocs, **due April 11**

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TASK 4: Detailed Design (DUE: April 13)

Once your proposal is approved, you will begin the detailed design of your project. The detailed design consists of:

- A detailed schedule and plan for the design, construction, and installation of your project. Also include a continuing schedule for completing the oral presentation and written report. Since this project is a group effort, it is important that you plan in advance how the work will be divided. On your schedule, identify who will do each task.
- A complete list of material and equipment needed. You should refine the approximate costs provided in your proposal and submit formal cost estimates.
- Discussion of the design of your project. You should continue investigating and elaborating on the underlying sustainability principles. Please find and refer to at least five quality sources that aid in your design.

The detailed design should contain narrative text, figures, and pictures. It should be 5-10 pages in length. Your proposal is an excellent starting point for your detailed design.

Evaluation: The design is worth 100 points (10% of your quarter grade), awarded as follows

- 20 points: 4 blog entries
- 80 points: Detailed design, **due April 13**

TASK 5: Project Construction (April 16-April 25)

Three weeks are allotted for the construction of your project. During the first two weeks, you will develop a prototype version of your project. A prototype is an actual working project. At this stage, a few bugs might still need to be worked out, but your project should be largely complete. **The prototype should be completed by April 20.**

Once your prototype is complete, you should improve and test it during the third week. You are strongly recommended to test the final product and ensure that it satisfies the original “need” identified in your project. If applicable, follow up with the “customer” or “consumer” of your project. Does your project truly make Kamehameha a better place through sustainability? Once perfected, the project should be installed. **The final project should be debugged and installed by April 25.**

Evaluation: The construction project will be worth 300 points (30% of the quarter grade), awarded as follows:

- 70 points: 14 blog entries
- 100 points: Working prototype, **due April 20**
- 130 points: Final Project, **due April 25**

Your teacher will consider factors such as, but not limited to:

- Does your project satisfy the original need you identified?
- Is your project well built? Is it durable? Is it sustainable?
- Did you stay on schedule and under budget?

TASK 6: Midterm Peer Review (DUE: April 24)

At this point, you have spent 4 weeks collaborating with your group and have accomplished a significant amount of work together. The Midway Peer Review is designed to give each student feedback as to how their peers view their performance and therefore, how each student can improve. **Each individual will complete and submit his or her own peer review; this is NOT a group assignment.** Do not discuss your peer review with others. Your teacher will also keep your review confidential. The length should be 1-2 pages, typed.

Format: For each team member including yourself, select the descriptor below which best describes his or her contribution to the project. Then, justify your selection with concrete examples of his/her performance and effort (or lack thereof). Be honest in your assessment, as it will be kept confidential. In addition to providing rationale, you should also provide constructive feedback for improvement, if appropriate:

- Excellent: A sustained, outstanding contribution to team effort; above and beyond
- Very Good: Above average effort and contribution
- Satisfactory: Met all team requirements and contributed fairly
- Ordinary: Contributed some good material but quality/effort not always reliable
- Marginal: Barely satisfactory contribution w/ deficiencies in effort/quality/teamwork
- Deficient: Some attempt, but contribution very weak due to absence/poor skill
- Unsatisfactory: Hinders team from making progress and/or does not follow through
- Superficial: Little participation with virtually no success
- No Show: Virtually zero contribution; played no effective part in team effort

Remember, you must select one rating per team member and provide rationale that supports your assessment for each person. Note: you are allowed to give multiple team members the same rating. The peer review should contain your name.

Here is an example of Bob's peer review for his team of 3:

Bob (himself) – Excellent – I have contributed ideas during all meetings and have not missed any deadlines. I have written a majority of the blog entries in my group because if I don't do it, no one will. I've also taken the lead in setting up interviews, preparing for them, and following up afterwards. I drafted the proposal and detailed design, while my group members only proofread for typos. Honestly, I have done way more than my fair share of the work. For example...

Ann – Ordinary- She is often distracted and doesn't know what needs to be worked on during class with out being told by someone else on the team. She has good ideas (in fact, our project idea is based on one of her ideas) but she usually needs to be reminded to blog and of upcoming deadlines. Her work effort has been sincere otherwise. One way to improve her rating would be if she was more prompt about turning in her share of the written work, and did not need us to remind her so often. Also...

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Joe –Unsatisfactory- Absences can't always be prevented (you can't help it when you're sick) but Joe's absences have hurt the team because they happen so frequently and he can't be depended upon reliably to have completed his portion so the work. The project couldn't be worked on for two days last week because he was absent and had the parts. This caused delays that nearly caused us to miss a deadline. In the future, he should call us ahead of team when he knows he will be absent, to make arrangements for us to get the material so that delays are minimized. His writing skills could also be utilized more. He...

What if someone takes my comments the wrong way? The peer reviews are designed to give each student a fair chance to improve their performance. Without positive feedback, how can anyone get better? We are all sensitive to criticism, but the peer review process is fruitful if these guidelines are kept in mind:

- Provide rationale for your statements.
- Don't alienate or insult the individual.
- Emphasize the individual's relevant strengths.
- Offer realistic and specific means for improvement.
- Avoid personal statements unrelated to performance and effort.
- Write in a non-inflammatory and non-confrontational manner.

Remember, this is not busy work, nor is it to measure how badly you've failed. The peer review process is intended to help you do good work, and therefore, increase your team's future probability of success. Your teacher will share your comments with your fellow group members—but the origin of each particular comment will be anonymous.

Evaluation: The midway peer review is **due on April 24** (the mid-quarter) and is worth 25 points. It will be graded based on how well supported and thoroughly your assessments are, and whether you follow the guidelines above. Throughout the following week, your teacher will meet with you individually to share comments (anonymously) from your group's assessment of your contribution. This will give you the opportunity to adjust your effort, if necessary, for the remainder of the project.

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TASK 7: Oral Presentation (May 8 – May 19)

This part of the project will enable you to showcase your work and demonstrate to your peers, parents and teachers how you have applied the principles of sustainability to solve a real-life problem. After a refresher seminar in speech making, you will develop, rehearse and give a **10 minute-long formal presentation** describing your project.

Your presentation can take a variety of forms. You will probably use a PowerPoint/Keynote presentation, but are welcome to include a short video and/or physical demonstrations. Below are some ideas that you may want to include in your presentation (you may also present elements that are not listed):

- Description of the sustainability challenge faced at Kamehameha. How did you identify it?
- Your solution to this problem, including the relevant supporting ideas (sustainability, etc).
- Your design, construction, and implementation process
- Description/pictures of your project in use. Attempt to convince the audience that this project is a GOOD thing!
- Conclusions. What did you learn?
- Diagrams and figures. The purpose of each should be clear to the audience.

Refresher seminars on PowerPoint/Keynote and oral speech delivery will be held in early May. **A draft presentation will be due Friday, May 11.** The remaining days will be for rehearsal. *The Formal presentation will be Friday, May 18th at 5:30 pm in Konia 108-109.* It will be open to the public, and you are encouraged to support your classmates!

Evaluation: The presentation will count for your second semester exam grade. On the night of the formal presentation, you will be evaluated individually, based on the quality of your portion of the presentation as well as on the quality of the overall group presentation. Details on the grading criteria are forthcoming.

During these 1½ weeks, you should continue blogging. 10 blog entries (50 points) will go toward your project grade. Note that 10 blog entries means a couple extra blogs for this week (more than 1x per day), but you should have a lot to blog about during this period!

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TASK 8: Report (DRAFT DUE: May 15; FINAL DUE: May 21)

You will document your findings in a formal report. Please submit two copies (one to be retained at Kamehameha and one to be returned to you.) At a minimum the report should contain...

- *Title Page.* The first page should contain the project title, course name, date, project team members, and a relevant picture.
- *Background.* What is the problem/need that you addressed to make Kamehameha a more sustainable place? Provide background.
- *Theory and Device Design.* Discuss the design of your device and the underlying the sustainable principles/ideas. Include the information from Task 4 above, Detailed Design.
- *Construction.* Describe your procedures and process in your construction. What kinds of difficulties did you run into? How did you solve them? What did you discover?
- *Implementation.* How is your project used? Whom does it serve?
- *Reflection.* Evaluate your project experience. What lessons did your group learn? Would you have done anything differently? What factors and/or skills are required for a successful project? What kinds of unexpected results were observed?
- *Conclusion.* This is important, as it is your final word to the reader!! You want to wrap up your project and leave a lasting impression. Summarize, but do not simply repeat, what your project was about. What is its significance? What relevance do your findings have? Convince the reader that your project was worthwhile.
- *Bibliography.* Cite references used (APA format).

Diagrams, figures and pictures should be used whenever helpful. The purpose/relevance of each should be clear to the reader. If applicable, data should already have quite a bit of information from your blog, proposal, and detailed design, and are encouraged to build upon those sources. Please submit your 2 copies of your final report, each in a formal binder.

Evaluation: The report will be worth 300 points (30% of your quarter grade), awarded as follows:

- 20 points: 4 blog entries
- 100 points: Draft report, **due May 15**
- 180 points: Final report, **due May 21**

TASK 9: Final Peer Review (Due: Final Exams Day)

This task is identical to the Midway Peer Review (see Task 6 for description), except that this time, you will evaluate each of your group members over the course of the entire fourth quarter. As a reminder, each individual should complete and submit his or her own peer review this is not a group assignment.

The final peer review is **due before 7:30 a.m. on Tuesday, May 22nd**. You are welcome to submit early, before May 22nd.

Similar to the Midway Peer Review, the Final Peer Review is worth 25 points and will be graded based on how well supported and thoroughly your assessments are, and whether you follow the guidelines.

However, there is an additional purpose for the Final Peer Review, which is explained in the following

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section.

GRADING AND EVALUATION

This project spans the entire fourth quarter and will constitute both your fourth quarter grade and your second semester exam grade. With the exception of the Peer Reviews, points for each task are earned/awarded by group. In other words, everyone in your group gets the same number of points.

However, in order to be fair and to encourage an equal distribution of work among group members, **your actual quarter grade will be based on your total points times a multiplier.** The multiplier (e.g. 0.8, 0.9, 1.0, 1.1, etc.) will be determined base on the peer reviews and our teacher's personal observations/discretion. The multiplier will be calculated using a widely accepted methodology that has been in use since 1991:

Consider the following SAMPLE point distribution:

	<i>Group Points</i>	<i>Individual Points</i>
<i>Developing an Idea</i>	<i>92/100</i>	
<i>The Proposal</i>	<i>85/100</i>	
<i>Detailed design</i>	<i>89/100</i>	
<i>Project Construction</i>	<i>271/300</i>	
<i>Midway Peer Review</i>		<i>21/25</i>
<i>Oral Presentation</i>	<i>48/50</i>	
<i>Written Report</i>	<i>280/300</i>	
<i>Final Peer Review</i>		<i>23/25</i>
Total	865/1,000	44/50

Slacker Scenario

Multiplier: .84 (as determined by Final Peer Review & teacher's discretion)
Final Grade: $0.84 \times 865 + 44 = 771$ points (out of 1,000) -> C for the quarter

Hard worker scenario

Multiplier: 1.05 (as determined by Final Peer Review & teacher's discretion)
Final Grade: $1.05 \times 865 + 44 = 952$ points (out of 1,000) -> A for the quarter

Equal Distribution of Labor Scenario

Multiplier: 1.0 (as determined by Final Peer Review & teacher's discretion)
Final grade: $1.0 \times 865 + 44 = 909$ points (out of 1,000) -> A- for the quarter