

Project Plan - IPRO 325 - Spring 2010

PROJECT PLAN

IPRO 325

“Providing for daily life.”

Essential
Dorothy Collins
Young Jung
Mark Kimball
William Lange
Nikki Parks

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PROJECT PLAN

I. TEAM CHARTER

1. Team Information

Team member roster (name, contact information)

Dorothy Collins - dcollin8@iit.edu
Young Jung - yjung8@iit.edu
Mark Kimball - mkimball@iit.edu
William Lange - wlange@iit.edu
Nikki Parks - nparks@iit.edu

Team member strengths, needs and expectations

Individual strengths to contribute

Dorothy is knowledgeable about materials, both structural and thermal, and has the resources to find out more.

Young is able to make physical and computer 3d models of prototype and has good research skills.

Mark has knowledge in different engineering fields: mechanical, electrical and civil. He is a fluent spanish speaker.

William is able to quickly sketch ideas to help group members visualize ideas and concepts and is a good resource for the physical construction process and making of a prototype.

Nikki is has decent writing skills, some knowledge of thermal properties, and has participated in an ipro once before.

New knowledge/skills to develop

Dorothy needs to learn better speaking and presenting skills.

Young needs to learn better communication skills.

Mark needs to learn how to deal with long-term projects.

William needs to work alongside the group more effectively.

Nikki needs to become more comfortable with speaking and presenting in public.

Overall expectations about the project

Dorothy wants to develop something that will make a real difference in the lives of people that will really benefit from it, and learn about materials in a real, practical, way.

Young wants to learn culture and life style of Peruvian first. Based on that knowlege, I wish I could find way to help the Peruvian people realistically.

Mark wants to develop skills that can help him in future similar projects.

William wants to have a project that reflects the strengths of the group that can be applied towards helping communities in Peru.

Nikki wants to come up with a creative and practical solutions to improve the situations of those living in poor communities.

Team identity

Name (acronym or other designation)

Essential

Logo (diagram, picture, words colors)



"Providing for daily life."

2. Team purpose and Objectives

Team purpose

3 billion people cook their meals over open fires on primitive stoves inside their homes. Indoor air pollution from those primitive stoves kills 1.5 million people worldwide. Furthermore, indoor air

pollution is fifth most costly environmental degradation issue in the Peru. Previous IPRO 325 classes have made stove for Peru. However, the stoves made from previous IPRO 325 classes did not work properly. The purpose of this subteam of the spring 2010 IPRO 325 is to improve the stove and help Peru realistically.

List the objectives the team has set

Reserching Peru
Identify problems
Identify problems in previous IPRO 325 project had.
Contact people who has knowledge about Peru
Reseaching stove
Researching material of stove
Analyze the problems
Improve stove base on previous IPRO 325
Test the solution

3. Background

Include information about the customer/sponsor involved.

There is currently no sponsor for this project.

Provide information about the user problem(s) the project is facing.

We are addressing the problem of poverty and deforestation in rural Peruvian communities. They are in need of a more efficient way to prepare food, that will be more self sufficient, as at the moment they are using so much wood that their forests are disappearing. Currently, the most common way to cook food in third world countries is to use open fires. We hope to address the problem of fumes from the fires entering the home, where they are quite detrimental to their health.

Present information about the technology or science involved or potentially involved in addressing the problem(s).

The design of the stove incorporates thermodynamics (in the insulation and cooking the food), material science (in choice of building materials), and structural considerations to ensure it does not fall apart.

Offer information on the historical success or failure of previous attempts in addressing the problem(s)

Previous IPRO 325 teams have designed multiple stoves, and some of which were fully functional, but faced problems in the long run, or could be significantly improved upon. We will use their design as a starting point and expand and improve their ideas.

Include any ethical issues that may be involved in investigating the problem(s).

The culture of the people we hope to help is very important for us to consider. We will need to be careful not to offend them, as we hope to build them a stove out of materials that they have been using for hundreds of years.

Provide information about the business or societal costs of the problem(s).

To carry out this project, we will essentially be foreigners coming into a very old and established society and presenting something new and unfamiliar. It may be difficult to convince them that this change will be good for them, as it is possible they see nothing wrong with the stoves they currently use. We hope that after we introduce our project that the locals will adopt it as their own business venture.

Offer details on the proposed implementation outline for any practical solutions developed by the project team.

Ideally we would complete a design, build a prototype, ensure that it is functional, bring it to Peru and teach the locals how to use it. Once they are knowledgeable about the device, they would build more and possibly set up some sort of business, or simply teach their neighbors how to make one.

Include research about similar solutions or literature search results.

Previous IPRO 325 projects have been successful in this approach.

4. Team Values Statement

List desired behaviors, e.g. time and obligation conflicts, addressing conflicts and complaints with team members directly, sharing all information with

The group should have a continuous communication between all its members. When one member has something to said, it should be said to all its group members so that everyone knows clearly what the others think. Otherwise the direction of the group could be divided and work process would be very slow. Everyone is responsible for making his best to attend the meetings. In case someone is not able to attend the meeting he should communicate in advance the reason why he is not attending the meeting and he should be able to tell the others his progress.

List how problems will be addressed, and/or IPRO instructors, approaches not recorded online, establish a process within team meetings that provides an agreed upon forum for discussing problems that may be important but challenging for individual team members to express.

When a group member or the whole group encounter a problem. A meeting should be set so that all members can discuss the best solution to the problem. The solution should be approach by everybodies opinions and everyone should agree with the solution. If the problem affects the whole

I PRO, it should be quickly communicated to the whole group (the 2 subteams) and find some time when all can meet to solve the problem.

II. PROJECT METHODOLOGY

1. Work Breakdown Structure

Describe how your team will go about solving the problem(s)

With each team member having different skill sets as well as time commitments we plan on assigning tasks taking both of these into account and not to simply assign one person to one section of the project. Each team member will be asked to research some between classes and meetings to help guide their own opinion and strengthen the overall group effort.

Prepare a process appropriate to the problem you are addressing.

Research
Identify problems
Brainstorm solutions
Identify obstacles
Select best solution
Develop solution
Design
Build
Test
Evaluate
Finalize
Present Ideas

Explain how the potential solutions will be tested, analyzed and documented.

Through our research we hope to be able to anticipate many of the problems before building a test model. Documenting through photos as well as a written description will help for anyone to understand the process better.

State whether it is reasonable for your team to be able to accomplish all t tasks within the timeframe and resources available.

The time frame given will be difficult to accomplish all goals put before us, but our team is ready for a challenge and has gotten off to a good start with our research and discussion of potential issues.

2. Create a team structure.

Identify team leader(s)

The team leader is William. As team leader he will assign tasks and try to settle disputes in the

fastest and least destructive way possible. He will also check in on individual members to assess the quality of the work as well as to help guide along the project.

Create sub-teams based on the major tasks and identify leaders for each one.

Our Ipro has already been split into sub-teams.

List all major project tasks pertaining to the problem solution or project chronological order.

Research
Identify problems
Brainstorm solutions
Identify obstacles
Select best solution
Develop solution
Design
Build
Test
Evaluate
Finalize
Present

Include an estimate of hours needed and number of team members needed to complete each task.

6 hours a week outside of class per member, so 30 hours a week for our subteam.

3. Expected Results

Provide details on expected activities involved in the project.

Research and prototyping is expected to be an integral part of this project. We will need to gain knowledge of Peruvian culture. Properties of potential building materials will need to be researched tested. We are planning on building a prototype for the stove so that fairly accurate testing can take place. An actual trip to Peru is definitely being considered, seeing as some materials may be hard to come otherwise.

Describe expected data from research or testing involved in the project.

By researching and testing various materials, we expect to arrive at R values that will enable us to improve on the previous stove designs. Also, by researching the individual culture, we hope to be able to fit its individual needs.

Define potential products resulting from research and testing.

A stove that can effectively and efficiently cook the selected cultures' food. It should have a lower fuel intake than previous methods for cooking, and better ventilation to reduce health risks. It will be constructed of local materials, have an easy to understand instructions manual in both English and Spanish, and be easily maintained.

Define potential outputs to be produced.

Instructions on building such a stove so that people local to the area can create a business of stove building to generate income.

Describe the expected results in terms of deliverable that will be produced by the project team, i.e., a working prototype, survey or focus group feedback, grant proposal, etc.

Our aim is to have a working prototype, significant test results and an instructions manual. If possible, we will have feedback from local residents on the product.

Summarize the challenges, risks and assumptions that you can anticipate affecting your results.

Since Peru is a large country, cultures, materials, living conditions, etc. can vary depending on location. This can effect the outcome and effectiveness of the stove. Also, some of our work may be incomplete since long term testing cannot be done in one semester, and we may have to assume there will be a following IPRO to finish the work.

Discuss how the expected results will be incorporated in a proposed solution or contribute to a solution process.

Designing a well working stove can be integral in fixing some health problems of poorer rural communities in developing countries. It can hopefully also help generate income.

4. Project Budget

Create an itemized list of proposed spending. Provide as much detail as possible and identify the tasks associated with the requested funds and the basis for the estimates provided.

Materials for model \$250

5. Designation of Roles

Assign roles

Minute Taker: records changes under consideration.

Nikki Parks

Agenda Maker: creates the meeting agendas and moves the meetings along.

William Lange

Time Keeper: is responsible for making sure meetings go according to the agenda.

Dorothy

iGroups Moderator: ensures that iGroups is updated regularly.

Young Jung

Reflector: analyzes group interaction and performs SII assessments.

Mark Kimball