I. Team charter

1. Team Information

A.

Name	Email	Phone Number
Alemayehu, Matti	malemaye@iit.edu	[redacted]
Amegasse, Pierre-Paul	pamegass@iit.edu	[redacted]
Hogan, Michael	mhogan2@iit.edu	[redacted]
Isoda, Mitchell	Misoda1@iit.edu	[redacted]
Li, Cheng	licheng@iit.edu	[redacted]
Mick, Emily	emick@iit.edu	[redacted]
Torres, Edgar	Etorres2@iit.edu	[redacted]
Lewis, Phil (professor)	Lewisp262@aol.com	[redacted]

B. Matti is a Chemistry major. She has experience in toxicity testing and analyzing chemicals, which will allow her to propose ideas while considering food safety. Matti would like to improve her skills in chemical analysis by investigating the different chemicals Land O' Frost utilizes for processing. Emily is also a Chemistry major. One of her strengths is time management, which will help the group stay on schedule. She would like to improve her teamwork skills to become less of an independent worker. Michael and Edgar are computer science majors. Their skill set will allow us to understand any of the programs currently used in the Land O' Frost factory, as well as allow us to efficiently analyze data collected using the computer. Michael would like to improve his inter-group communication skills, both within our IPRO and also through our IPRO's work with Land O'Frost. Edgar would like to improve his public speaking skills. Mitchell and Cheng are Applied Mathematics majors. This will help with the statistical analysis of our data. Mitchell, in particular, also has computer skills that will be useful. Mitchell would like to improve his web design, time management, and accumulation and synthesis of research data. Cheng would like to improve time management and teamwork skills. Pierre-Paul is a Chemical Engineering major. He looks forward to contributing his strong research skills, while he hopes to improve his communication skills. Everyone hopes to work collaboratively and creatively, finding the best solutions to improve Land O' Frost Formulation.

C. Name: Land O' Frost Formulation Improvement
Logo:

Motto: Great Taste, Low Cost

2. Team Purpose and Objectives

A. The purpose of this IPRO is to better understand the interdependent relationship of the Formulation process and its impact upon through time, productivity, and quality. We seek to suggest improvements to Land O' Frost in order to optimize their Formulation.

B. Objectives:

- Identify all inputs, outputs, assets, process parameters
- Map production process
- Observe activities and working
- Learn Six Sigma methodologies
- Identify bottlenecks
- Evaluate performance
- Suggest improvements to Formulation

3. Background

A. The project is sponsored by a company that has been in the meat processing business for 50 years. Land O' Frost offers different types of lunch meats: turkey, ham, beef and chicken. The family owned business is always looking for ways to improve its products.

B. The production process at Land O' Frost has two functions: Formulation and Packaging. The Formulation function encompasses ordering raw materials, blending the recipe of each meat product, curing and baking. Formulation is a complex process with many variables. Land O' Frost desires to better understand the interdependent relationships of these variables and their impact upon through time, productivity and quality. This IPRO team will study the Formulation process, identifying all inputs, mapping the production process, observing activities and working to identify improvements. The IPRO team will develop a process map of the company's Formulation function, noting inputs, outputs, assets and process parameters. Team members will have the opportunity to learn and apply Six Sigma methodologies to identify bottlenecks, evaluate performance and suggest improvements to Land O' Frost.

C. Computer and statistical analysis can be used to solve some of the problems Land O' Frost is experiencing during the Formulation process. The IPRO team will develop a process map of the company's Formulation process, noting inputs, outputs, assets and process parameters. Team members will have the opportunity to learn and apply Six Sigma methodologies to identify bottlenecks, evaluate performance and suggest improvements to Land O' Frost.

D. The company management has gone through Kellogg Business School and became enthused about Six Sigma processing. Coincidently, IIT made contact with Land O' Frost management at this time. Subsequently, Land O' Frost decided to do a process improvement IPRO in the Formulation part of the plant.

E. The main ethical issue involved while investigating the problems in the company is misuse of information. In this competitive market, discretion of acquired documents and recipes is vital for the survival of the company. Hence, IPRO team members must make use of all the information they acquire only to the advantage of the company. Respecting employees of the company is also crucial for this study.

F. Inefficient utilization of available resources not only costs the company fortunes, but also affects the market adversely. Efficient uses of resources can keep the market fueled by keeping employees in their jobs and by increasing output for consumption.

G. The IPRO team is going to collect data through observations at Land O' Frost and apply its knowledge to come up with some ideas that can solve the problems the company is experiencing.

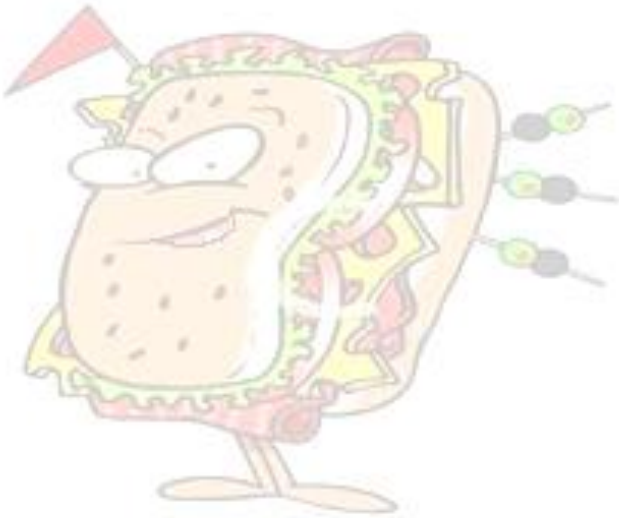
H. Research in Six Sigma and the company's history has been done. In the future, research may include other companies' practices.

I. Initial questions have been asked and answers have been received, and the plant layout has been provided, but these confidential documents cannot be included in this report. The class visited the company on September 4th and took copious amount of notes.

4. Team Values

A. Desirable behaviors in team members include respecting each other, honesty, cooperation, sharing the work load, showing up on time for meetings, discussing problems openly and listening to others' ideas.

B. Problems in the IPRO team can be addressed through discussion either in class or through iGroups.



II. Project Methodology

1. Work Breakdown Structure

A. We will be using Six Sigma methodologies to identify and eliminate inefficiencies in the Land O' Frost's Formulation process. On a basic level, this requires gathering data about every step in the process, analyzing it to identify which steps are producing the most waste and why, and then proposing a set of solutions to Land O' Frost to improve their system.

We have already visited their plant and requested data they have measured in their efforts to improve the process, and we will do so again several times.

This will allow us to produce a process map of Land O' Frost's Formulation division. This will be a diagram including all inputs and outputs to every step within their system.

Meanwhile, we will research other Formulation plants to discover what other companies have attempted to improve their processes.

By creating the process map, we will refine our understanding of how production is supposed to work, and by monitoring the inputs and outputs we will be able to identify which steps are slowing down the process. We will brainstorm ideas on how to remove these inefficiencies and offer our recommendations to Land O' Frost.

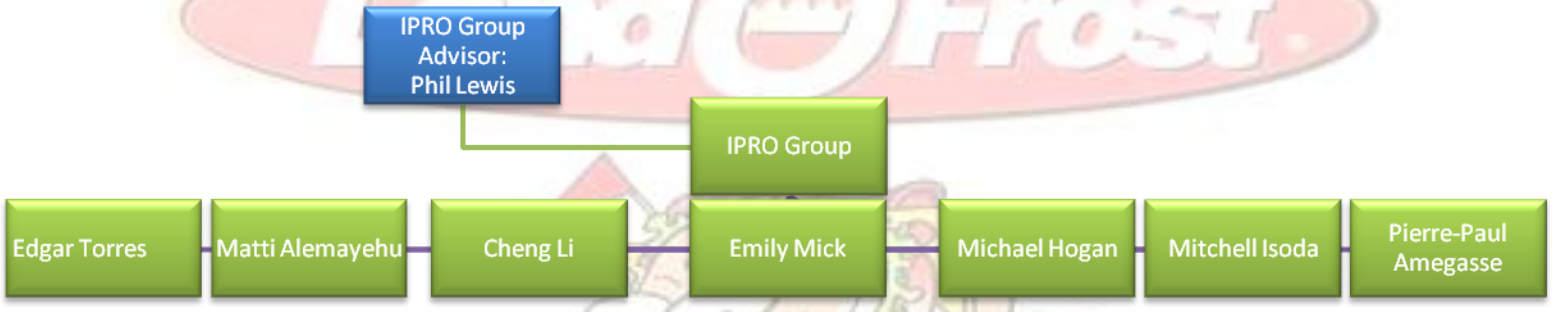
These recommended solutions will include data explaining why we feel the steps we focused on were the most problematic in the original process, why we concluded that our solution was the best way to address this, and what data we expect will be seen from the improved process.

Our goal is to have our first set of tentative recommendations ready to present to Land O' Frost halfway through the semester so they can offer input on our views, ensure that we are on the proper course, and provide us more data on problem steps in their process so that we can refine our search and create a second set of recommendations to present near the end of the term.

This is a substantial project, and our IPRO has fewer members than average. However, Land O' Frost has been very cooperative and is enthusiastic about our project, so by ensuring that each member of our team contributes and that we keep an open line of communication with our sponsor, we expect to achieve all required tasks by the end of the semester.

B.

IPRO 345 Hierarchy.



*Basic General Hierarchy: Subject to Change and or vary depending on task.
This group finds it unnecessary to assign leadership roles as the group is relatively small; furthermore many of the tasks require use of the entire team

Task Responsibilities

IPRO Group Advisor:

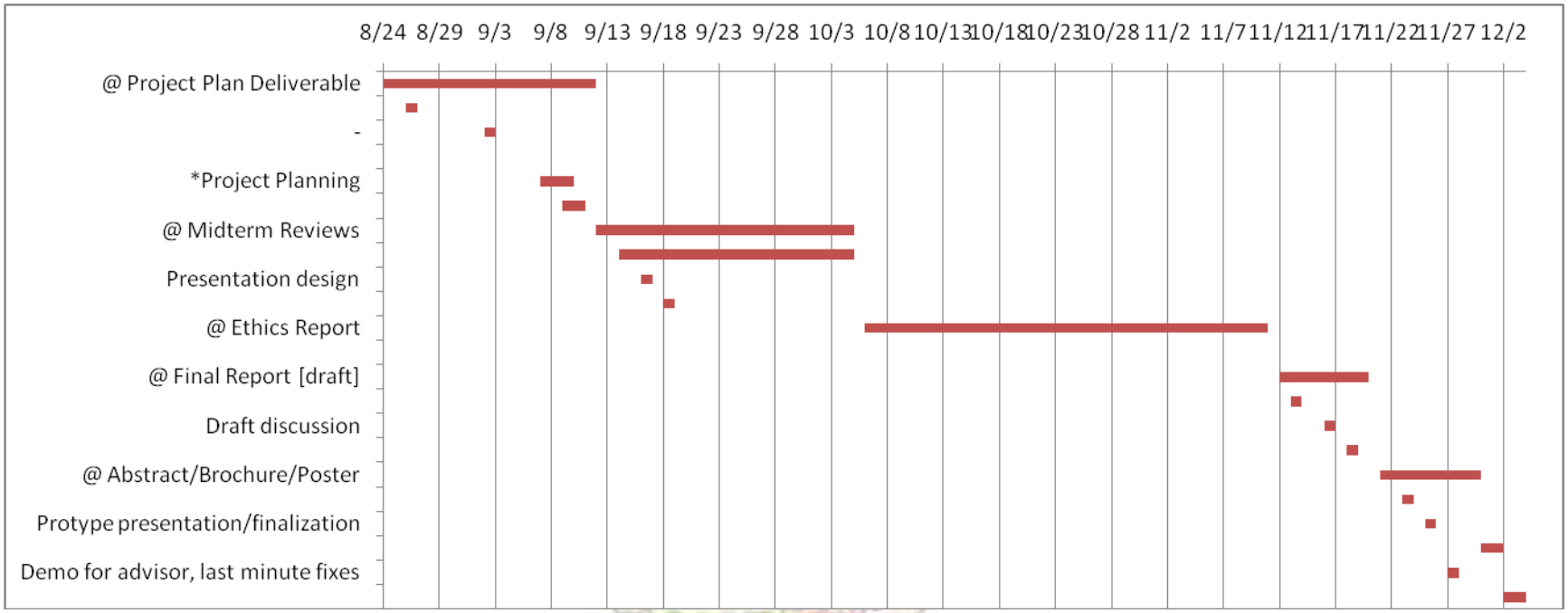
Responsible for guiding IPRO group. Makes suggestions, assists, and advises group on matters pertaining to industry, it's practices and regulations. Helps evaluate deliverable quality, judges team demos, and provides all around support for team success.

IPRO Group members:

Responsible for timely completion of project tasks, deliverable submissions, and all matters pertaining to project completion, while adhering to the strictest levels of professionalism and full cooperation and assistance in all IPRO group endeavors.

C.
IPRO 345 - Project Management Chart

Tasks	Start Date	Duration (days)	Members	End Date
@ Project Plan Deliverable	8/24/2009	19		9/12/2009
Logo design	8/26/2009	1	All	8/27/2009
- Factory Tour	9/4/2009	0	All	9/4/2009
*Project Planning	9/7/2009	3	All	9/10/2009
*Project Planning reviews	9/9/2009	2	All	9/11/2009
@ Midterm Reviews	9/12/2009	23	All	10/5/2009
Slide design	9/14/2009	21	All	10/5/2009
Presentation design	9/16/2009	1	All	9/17/2009
Demo/Practice show	9/18/2009	1	All	9/19/2009
@ Ethics Report	10/6/2009	36		11/11/2009
Factory Visit	10/16/2009	0		10/16/2009
@ Final Report [draft]	11/12/2009	8		11/20/2009
Task Assignments	11/13/2009	1	All	11/14/2009
Draft discussion	11/16/2009	1	All	11/17/2009
Draft presentation/finalization	11/18/2009	1	All	11/19/2009
@ Abstract/Brochure/Poster	11/21/2009	9		11/30/2009
Factory Visit /Protype creation	11/23/2009	1	All	11/24/2009
Protype presentation/finalization	11/25/2009	1	All	11/26/2009
@ Final Presentation	11/30/2009	2		12/2/2009
Demo for advisor, last minute fixes	11/27/2009	1	All	11/28/2009
@ Final Report	12/2/2009	2		12/4/2009



2. Expected Results

A. The main goal of the project is process improvement, which will result in better and more efficient performance for our client, Land O' Frost. As a team, the members will do the following activities:
- Collect data from the client of their current and past assessments to better understand their obstacles and potentials;
- Further research on failures and success stories of plants of the same nature;
- Learn the Six Sigma management strategy, and using it to identify the faults in the current systems and studying their existing process mapping;
- Analyzing data through statistical methods, assess the results to seek out possible flaws in the current process;
- Make 5 site visits to familiarize with the processes and systems of the plant, discussing ideas with and receiving feedback from the employees of Land O' Frost, as well as finalizing suggestions of improvement and possible implementations.

B. We expect to obtain the following data from research or testing:
- The average order entry lead time, which is, on average, the amount of time Land O' Frost's clients make their orders before their expected deadline for that particular order;
- The average actual order entry time needed, or average turnaround;
- The plant's current performance efficiency and potential efficiency;
- Currently measured: customer service level, safety, food safety, customer complaints, cost of quality, product quality, yields, direct labor, supplies, sanitation costs, overhead, etc;
- The average data of all the above in other plants in the meat processing business.

C. Potential products resulting from research include:
- A complete process map;
- An increase in performance efficiency;
- A higher potential efficiency.

D. Potential outputs to be produced include:
- Process map;
- Related fact finding;
- Process improvement suggestions.

E. The final product will involve a proposal including data analysis, possible statistical models, and specific suggestions on how to improve the processes of the plant with given evidence to the suggestions.

F. The challenges, risks and assumptions we anticipate affecting our results include:
- The team members lacking experiences in process improvement;
- Lack of knowledge on Six Sigma;
- Lack of communication between team members that could slow down the progress of the project as a whole;
- Assuming that there is room for improvement when there might not be any, given the current environment;
- Suggestions for improvement that might have conflicts with the labor union the employees are a part of.

G. The results and proposal, if accepted by our client, will be applied to the Formulation part of the plant of Land O' Frost. If all goes according to plans, this will help increase the productivity and efficiency of the plant.

3. Project Budget

Car Travel Mileage

Number of Cars	3
Total Miles per Trip	43.4
Reimbursement Rate	$ 0.55 / mile*
Estimated Number of Trips per Car	4
Total Reimbursement	$ 286.44

*assuming federal standard business mileage rates

Total Projected Budget for Semester: $ 286.44

4. Designation of Roles

Minute Taker – Emily Mick

Agenda Maker – Michael Hogan

Time Keeper – Edgar Torres

iGroups Moderator – Cheng Li