

# Enhancing teamwork skills and learning through multidisciplinary experience between nutrition and chemical engineering

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## BACKGROUND

In our world today, the problems faced often requires diverse teams containing members with a wide variety of perspectives, talents, and skill-sets. In order to provide college students with experiences working in teams, projects and numerous exercises are developed to foster team-based learning and enhance the soft-skills of outgoing graduates. New multidisciplinary work can be one method that challenges students to reach outside of their home discipline and comfort zone to work as a team to solve problems. This project focuses on developing joint curriculum between two disciplines aimed at enhancing student's teamwork skills outside of their discipline by working on a project which requires the expertise of non-peers. This collaboration between courses is evaluated by means of a pre and post survey on team structure, and reflective essays on the collaborative experience. Results will be analyzed to evaluate the effectiveness of the collaboration and used as formative feedback for future course iterations

## ASSIGNMENT

### Meeting with Food Scientist Client Group (1<sup>st</sup> time)

#### Description

You and your group will need to meet face to face with your food science group this week at a mutually agreed upon time. You will need to discuss the product and needs of the food scientists group. This report will inform decisions for your final report.

### Meeting with Chemical Engineer Consulting Group (1<sup>st</sup> time)

#### Description

After digitally sharing your flow process diagram with your consults, you and your group will need to meet face to face with your chemical engineering group this week at a mutually agreed upon time. You will need to discuss the report that the chemical engineering consults have created for you. This report will inform decisions for your final product formulation.

## METHODS

- Pre/Post Assessment Surveys (In Progress)
  - Selected Sample Questions
    - I feel comfortable engaging in shared decision making with other students
    - I feel comfortable clarifying misconceptions with other members of a team about the role of someone in my profession
    - I have a perception of myself as someone who engages in multidisciplinary work
    - I have an appreciation for the benefits of interprofessional team work
- Reflective Essay after first meeting
  - Writing Prompts
    - Were you and your group able to communicate to the chemical engineering students effectively?
    - What surprised you about the report feedback you received?
    - How receptive were the chemical engineering consults to your report?
    - Do you feel you met the needs of your consults? Why or why not?
    - What information or training may have been beneficial to enhance your group's ability to perform this project?

## PROJECT DESCRIPTION

**Nutrition:** Your food company will create a market-relevant, delicious and nutritious food product that targets children ages 10 and younger and sold in grocery stores and/or in Disney theme parks. The product must be centered around a Disney franchise. Products must meet the modified Mickey Check nutritional guidelines for either a mini-meal, side dish or snack. Your group will consult with an engineering firm twice to receive information on how to cut costs and scale up your product.

**Engineering:** Your engineering firm has been hired by a food production company that develops nutritional snacks for kids, to determine necessary adjustments to produce new products at capacity. The adjustments may be necessary to ensure desired quantity metrics are met without sacrificing nutritional content and overall quality of developed food products. An economic and sensitivity analysis will be performed on the proposed product line to identify areas of improvement in resource management, energy, and overall cost.



## RESULTS

### • Reflections from Students from First Meeting

#### • Nutrition Students

- I was very surprised, I'd say the whole group light bulbs immediately went off once the chemical engineers brought up a few pointers.
- I was surprised by all the things we haven't thought of surrounding our product like how expensive our product is if we kept to our original version and all the hypothetical things like opening and running a facility to create our product.
- Before this project, I thought food scientists would be like nutritionists or some kind of an organic chef. I just learned that food science covers physical, chemical, biological aspects of food.

#### • Chemical Engineering Students

- I learned how crucial it is for products to be stored and packaged to ensure good product quality.
- What surprised me most about the information that we received was how well thought out the process was. The food scientist students already had all the steps laid out nicely which will make our job much easier.

