IDEA Engineering Design Competition
2019

Student Organization Fundraising Product

Problem Statement:

Your friends are trying to help your high school's **Family, Career and Community Leaders of America- FCCLA** club design a product that could be manufactured, packaged, marketed, and sold at a profit by the club members. They know you are taking a high school engineering design class and will be attending college in the near future to study engineering and product design and they have challenged you to solve this problem.

The problem is that the FCCLA club needs you to design a product that they can manufacture and sell to raise funds to support their various activities. They would like the product to be focused on food preparation or serving. It should include your school's emblem/logo and the FCCLA initials. You must be able to involved 10-15 members in the production and assembly of your product. Your FCCLA clients have varying skill levels which must be taken into consideration when designing your product and planning it's production. Please keep safety a major consideration when planning your product and it's manufacture. The members like to learn new skills, make projects, work as a team, and interact with the public for sales. If your school has a FCCLA club, Family and Consumer Science -FACS program, or foods classes please interview members or teachers to gather ideas. Survey these experts, classmates, family members, or food industry members to gather ideas and brainstorm possible product solutions. The solution should be original and not a duplication of a current product.

FCCLA Club

Family, Career and Community Leaders of America is a nonprofit national career and technical student organization for young men and women in Family and Consumer Sciences education in public and private school through grade 12. Everyone is part of a family, and FCCLA is the only national Career and Technical Student Organization with the family as its central focus. Since 1945, FCCLA members have been making a difference in their families, careers, and communities by addressing important personal, work, and societal issues through Family and Consumer Sciences education.

Each part must be assigned appropriate materials.
The design must be:

- Must be easy to manufactured by your FCCLA clients.
- Must be affordable—under $20
- It will be a unique product, not a copy of an existing product—it may share features.
- Colors on the product must be appropriate and can show school identity.
- It must be able to be personalized.
- Must consist of at least 6 parts- fasteners/screws/nails,etc are not considered to be parts

Procedure

Your team, made up of 3 members, will focus on completing a presentation and project solution to present and sell your firm's design to the client. Upon arrival to the IDEA competition, all members of the firm should come prepared to give a presentation of their project solution to a panel of judges. Your firm should arrive to the competition with the presentation and project solution made ahead of time. The presentation should include:

Deliverables:

Design solution:

- Engineering Notebook documenting the design process and your design solution.
- A Gantt Chart documenting the solution process and activities involved.
- A full set of engineering drawings for the solution using AutoCAD, Inventor, SolidWorks, etc.
- Bill of Materials-BOM
- Cost estimate-- Profit/Loss analysis
- Product plan of procedure or assembly instructions and visuals that your FCCLA clients can follow.
- Packaging for the product.
- A prototype of your solution
- Any additional information or documentation needed to communicate the design solution.

Display:

- Display Board that is maximum of 28" X 40"
- Present your product with a medium of your choice.
- Title and description of the Engineering Design competition and your design solution.
- Documentation of the design process and your design solution

Presentation:

Your team will have up to 10 minute for the presentation of your product including your design, unique features of your design, estimated cost to produce, and lessons learned through the design process. A 5-minute question and answer period may/will follow your presentation.

Other documentation:

To be considered for an interview a resume and mock business card must be presented to the judges.

Judging Criteria

Judges will rate the following criteria based off of information learned through the presentations and the design solution.

1.	Quality and Clarity of Presentation	20%	20 pts
2.	Quality of the Engineering Notebook	20%	20 pts
3.	Functionality and Practicality of the Design Solution	20%	20 pts
4.	Technical Quality of Documentation and Drawings	20%	20 pts
5.	Technical Quality of Prototype	10%	10 pts
6.	Meeting of Presentation Time Requirements	5%	5pts
7.	Resume & Business Card	5%	5pts
		100%	100 pts

Each category above will be rated on a scale of one (poor) to max points (excellent).