egr 201

Ira A. Fulton Schools of Engineering
Arizona State University

FINAL PROJECT – PROJECT PROPOSAL

Due Date: Any time before Tuesday, 11/5, 11:59pm
Team Assignment
Points: 30

Your Task:
Create and submit a document (four pages maximum) that includes the following information. You may present this information as separate, disjoint sections (vs. a single, cohesive report).

- Morphological chart that depicts your concept generation to identify potential solutions to your defined problem. Identify potential solution functions using your project constraints and criteria. Calculate the total number of potential solutions resulting from your morphological chart.
- Pugh Selection Matrix to help identify the "best" solution to pursue. Your matrix should include a minimum of four solutions, at least two of which came from your submitted morphological chart.
- Summary of: (1) feedback obtained from your teacher client on your four solutions and the results of your Pugh Selection Matrix, and (2) any changes made to your chosen solution based on this feedback. (This feedback can be obtained via in person, phone, online conference, or email.)
- Description of your chosen solution, including how it will address your defined problem.
- An argument for how your solution was chosen over the other ideas considered, i.e., why you feel your chosen solution is best (your solution does not necessarily have to be the one with the highest score in the Pugh Selection Matrix, but you should justify why it is the best choice for your problem).
- An initial plan for prototyping your chosen solution.
- An itemized budget estimating the cost for parts and materials required and including references (e.g., URL links that show products and prices).

In order to begin purchasing or fabrication of prototypes, your proposal must be approved by your instructor. (Your team may request to change your idea later if you encounter problems.) **You may submit your proposal for approval at any time before 11:59pm on Tuesday, 11/5 (note: this would be considered your final submission). You should submit your project proposal as a Word or PDF document to the instructor via email.** Once you have addressed any questions and received approval from the instructor, you may begin modeling, testing, and prototyping your design. Please submit purchase requests as soon as possible following project approval, also via email. All purchase requests must follow the procedures described on the course Canvas site. The instructor will review these procedures in class on Thursday, 10/24. **The final deadline by which to submit your orders for your initial prototype plans to the instructor is 11:59pm on Monday, 11/11.** (You may add later only if necessary, but the bulk of your items need to be included in your initial order, so plan accordingly.)

See grading details on next page.

How Will You Be Graded?

9 points: systems thinking (S)

- (8 pts) Create a complete morphological chart, with at least 4-5 project constraints and criteria that you submitted in your Needs Identification & Benchmarking assignment, and at least two different concepts generated for each constraint and each criteria
- (1 pt) The calculation of the total number of potential solutions resulting from the morphological chart is calculated correctly.

15 points: research, testing, & evaluation (RTE)

- (4 pts) A fully complete Pugh Selection Matrix is submitted, with at least four solutions, two of which came from your submitted morphological chart
- (2 pts) Each solution rated on the design criteria you submitted in your Needs Identification & Benchmarking assignment
- (4 pts) Summary of: (1) feedback obtained from your teacher client on your four solutions and the results of your Pugh Selection Matrix, and (2) any changes made to your chosen solution based on this feedback.
- (1 pt) The "best" solution for your defined problem identified
- (2 pts) A brief description of your chosen solution
- (2 pts) A clear explanation of why your chosen solution was selected (i.e., how it accomplishes your stated objective and satisfies your team's constraints and criteria)

6 points: design/building (DB)

- (3 pts) The initial plan for prototyping is detailed enough that someone could approximate how to build the planned prototype after reading it
- (3 pts) An itemized budget to support the proposed prototype is provided and includes references (e.g., URL links that show products and prices)